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May 8-10, 2019 – Wilmington, NC

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Spring 2019 Criminal Case Update

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Cases covered include reported decisions from North Carolina and the U.S. Supreme Court decisions decided between October 2, 2018 and April 16, 2019. The summaries of state and U.S. Supreme Court criminal cases were prepared primarily by Jessica Smith. Summaries of Fourth Circuit cases were prepared by Phil Dixon. To view all of the summaries, go to the Criminal Case Compendium. To obtain the summaries automatically by email, sign up for the Criminal Law Listserv.

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Investigative Stops

Where reasonable suspicion developed during normal incidents of the traffic stop, the stop was not unlawfully extended under Rodriguez

State v. McNeil, ___ N.C. App. ___, 822 S.E.2d 317 (Nov. 20, 2018), *temp. stay allowed*, ___ N.C. ___, ___ S.E.2d ___ (Apr. 17, 2019). In this DWI case, an officer did not unduly prolong a traffic stop. While on patrol, officers ran a vehicle's tag and learned that the registered owner was a male with a suspended license. An officer stopped the vehicle based on the suspicion that it was being driven without a valid license. The officer who approached the vehicle immediately saw that the defendant, a female, was in the driver's seat and that a female passenger was next to her. Although the officer determined that the owner was not driving the vehicle, the defendant ended up charged with DWI. On appeal, the defendant argued that while the officers may have had reasonable suspicion to stop the vehicle, the stop became unlawful when they verified that the male owner was not driving the vehicle. The court disagreed, stating:

> Defendant's argument is based upon a basic erroneous assumption: that a police officer can discern the gender of a driver from a distance based simply upon outward appearance. Not all men wear stereotypical "male" hairstyles nor do they all wear "male" clothing. The driver's license includes a physical description of the driver, including "sex." Until [the] Officer . . . had seen Defendant's driver's license, he had not confirmed that the person driving the car was female and not its owner. While he was waiting for her to find her license, he noticed her difficulty with her wallet, the odor of alcohol, and her slurred speech.

Additionally, the time needed to complete a stop includes the time for ordinary inquiries incident to the stop, including checking the driver's license, determining whether there are outstanding warrants against the driver, and inspecting the vehicle's registration and proof of insurance. The officer's mission upon stopping the vehicle included talking with the defendant to inform her of the basis for the stop, asking for her driver's license, and checking that the vehicle's registration and insurance had not expired. While the officer was pursuing these tasks, the defendant avoided rolling her window all the way down and repeatedly fumbled through cards trying to find her license. Additionally because she was mumbling and had a slight slur in her speech, the officer leaned towards the window where he smelled an odor of alcohol. This evidence gave him reasonable suspicion to believe that the defendant was intoxicated. Because he developed this reasonable suspicion while completing the original mission of the stop, no fourth amendment violation occurred. Jeff Welty blogged about the case here.

Stop based on profanity yelled from car lacked reasonable suspicion and was not justified by community caretaking exception

State v. Brown, ___ S.E. 2d ___, ___ N.C. App. ___ (April 16, 2019). In this DWI case, neither reasonable suspicion nor the community caretaking exception justified the vehicle stop. While standing outside of his patrol car in the early morning hours, a deputy saw a vehicle come down the road and heard the words "mother fucker" yelled in the vehicle. Concerned that someone might be involved in a domestic situation or argument, he pursued the vehicle and stopped it to "make sure everybody was okay." The deputy did not observe any traffic violations or other suspicious behavior. The defendant was subsequently charged with DWI. In the trial court, the defendant moved to suppress arguing that no reasonable suspicion supported the stop. The trial court denied the motion to suppress, finding "that the officer's articulable and reasonable suspicion for stopping the vehicle was a community caretaking function." The defendant was convicted and he appealed. The court began by noting that the trial court conflated the reasonable suspicion and community caretaking exceptions to the warrant requirement. Analyzing the exceptions separately, the court began by holding that no reasonable suspicion supported the stop where the sole reason for it was that the deputy heard someone yelling a profanity in the vehicle. Turning to the community caretaking doctrine, it held: "we do not think the totality of the circumstances establish an objectively reasonable basis for a community caretaking function." The sole basis for the stop was that the deputy heard someone in the vehicle yell a profanity. The deputy did not know if the driver or a passenger yelled the words, if the vehicle contained passengers, if the windows were opened, or who the words were directed to. Among other things, he acknowledged that they could have been spoken by someone on the telephone. The court concluded: "We do not believe these facts . . . establish an objectively reasonable basis for a stop based on the community caretaking doctrine." The court went on to note that it has previously made clear that the community caretaking exception should be applied narrowly and carefully to mitigate the risk of abuse. In cases where the community caretaking doctrine has been held to justify a warrantless search, the facts unquestionably suggested a public safety issue. Here no such facts exist.

Seatbelt violation justified stop and officer did not extend stop when defendant could not produce identification; mission of the stop included verifying identity and lawfully frisking the defendant

State v. Jones, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 5, 2019). The trial court did not err by denying the defendant's motion to suppress, which argued that officers improperly extended a traffic stop. Officers initiated a traffic stop of the vehicle for a passenger seatbelt violation. The defendant was in the passenger seat. That seat was leaned very far back while the defendant was leaning forward with his head near his knees in an awkward position. The defendant's hands were around his waist, not visible to the officer. The officer believed that based on the defendant's position he was possibly hiding a gun. When the officer introduced himself, the defendant glanced up, looked around the front area of the vehicle, but did not change position. The officer testified that the defendant's behavior was not typical. The defendant was unable to produce an identity document, but stated that he was not going to lie about his identity. The officer testified that this statement was a sign of deception. The officer asked the defendant to exit the vehicle. When the defendant exited, he turned and pressed against the vehicle while keeping both hands around his waist. The defendant denied having any weapons and consented to a search of his person. Subsequently a large wad of paper towels fell from the defendant's pants. More than 56 grams of cocaine was in the paper towels and additional contraband was found inside the vehicle. The defendant was charged with drug offenses. He unsuccessfully moved to suppress. On appeal he argued that the officer lacked reasonable suspicion to extend the traffic stop. The court disagreed, holding that the officer's conduct did not prolong the stop beyond the time reasonably required to complete its mission. When the defendant was unable to provide identification, the officer "attempted to more efficiently conduct the requisite database checks" and complete the mission of the

stop by asking the defendant to exit the vehicle. Because the officer's conduct did not extend the traffic stop, no additional showing of reasonable suspicion was required.

Reasonable suspicion existed to seize defendant where he was out late in a high crime area in poor weather, his friend gave a false name and ran from the officer, and both gave vague answers

State v. Augustin, ___ N.C. App. ___, 824 S.E.2d 854 (Feb. 19, 2019). In this carrying a concealed handgun case, the trial court properly denied the defendant's motion to suppress where the officer had reasonable suspicion to seize the defendant. While patrolling a high crime area, the officer saw the defendant and Ariel Peterson walking on a sidewalk. Aware of multiple recent crimes in the area, the officer stopped his car and approached the men. The officer had prior interactions with the defendant and knew he lived some distance away. The officer asked the men for their names. Peterson initially gave a false name; the defendant did not. The officer asked them where they were coming from and where they were going. Both gave vague answers; they claimed to have been at Peterson's girlfriend's house and were walking back to the defendant's home, but were unable or unwilling to say where the girlfriend lived. When the defendant asked the officer for a ride to his house, the officer agreed and the three walked to the patrol car. The officer informed the two that police procedure required him to search them before entering the car. As the officer began to frisk Peterson, Peterson ran away. The officer turned to the defendant, who had begun stepping away. Believing the defendant was about to run away, the officer grabbed the defendant's shoulders, placed the defendant on the ground, and handcuffed him. As the officer helped the defendant up, he saw that a gun had fallen out of the defendant's waistband. Before the trial court, the defendant unsuccessfully moved to suppress discovery of the gun. He pleaded guilty, reserving his right to appeal the denial of his suppression motion. On appeal, the court rejected the defendant's argument that he was unlawfully seized when the officer discovered the gun. Agreeing with the defendant that exercising a constitutional right to leave a consensual encounter should not be used against a defendant "to tip the scale towards reasonable suspicion," the court noted that the manner in which a defendant exercises this right "could, in some cases, be used to tip the scale." However, the court found that it need not determine whether it was appropriate for the trial court to consider the fact that the defendant was backing away in its reasonable suspicion calculus. Rather, the trial court's findings regarding the men's behavior before the defendant backed away from the officer were sufficient to give rise to reasonable suspicion. The defendant was in an area where a "spree of crime" had occurred; Peterson lied about his name; they both gave vague answers about where they were coming from; and Peterson ran away while being searched. This evidence supports the trial court's conclusion that the officer had reasonable suspicion to seize the defendant.

Vague anonymous tip that was only partially correct and failed to identify criminal activity, coupled with "odd" but not illegal behavior, was insufficient to support stop

State v. Horton, ___ N.C. App. ___, ___ S.E.2d ___ (April 2, 2019). In this drug case, the trial court erred by denying the defendant's motion to suppress evidence obtained in a traffic stop. Sometime after 8:40 PM, an officer received a dispatch relating an anonymous report concerning a "suspicious white male," with a "gold or silver vehicle" in the parking lot, walking around a closed business, Graham Feed & Seed. The officer knew that a business across the street had been broken into in the past and that residential break-ins and vandalism had occurred in the area. When the officer arrived at the location he saw a silver vehicle in the parking lot. The officer parked his vehicle and walked towards the car as it was approaching the parking lot exit. When he shined his flashlight towards the driver's side and saw the defendant, a black male, in the driver's seat. The defendant did not open his window. When the officer

asked the defendant, “What’s up boss man,” the defendant made no acknowledgment and continued exiting the parking lot. The officer considered this behavior a “little odd” and decided to follow the defendant. After catching up to the defendant’s vehicle on the main road, and without observing any traffic violations or furtive movements, the officer initiated a traffic stop. Contraband was found in the subsequent search of the vehicle and the defendant was arrested and charged. The trial court denied the defendant’s motion to suppress the evidence seized as a result of the stop. The defendant was convicted and he appealed.

The court determined that the officer’s justification for the stop was nothing more than an inchoate and unparticularized suspicion or hunch. The anonymous tip reported no crime and was only partially correct. Although there was a silver car in the parking lot, the tip also said it could have been gold, and there was no white male in the lot or the vehicle. Additionally, the tip merely described the individual as “suspicious” without any indication as to why, and no information existed as to who the tipster was and what made the tipster reliable. As a result there is nothing inherent in the tip itself to allow a court to deem it reliable and provide reasonable suspicion. Additionally the trial court’s findings of fact concerning the officer’s knowledge about criminal activity refer to the area in general and to no particularized facts. The officer did not say how he was familiar with the area, how he knew that there had been break-ins, or how much vandalism or other crimes had occurred there. Additionally the trial court’s findings stipulated that there was no specific time frame given for when the previous break-ins had occurred. The court rejected the State’s argument that the officer either corroborated the tip or formed reasonable suspicion on his own when he arrived at the parking lot. It noted that factors such as a high-crime area, unusual hour of the day, and the fact that businesses in the vicinity were closed can help to establish reasonable suspicion, but are insufficient given the other circumstances in this case. The State argued that the defendant’s nervous conduct and unprovoked flight supported the officer’s reasonable suspicion. But, the court noted, the trial court did not make either of those findings. The trial court’s findings say nothing about the defendant’s demeanor, other than that he did not acknowledge the officer, nor do they speak to the manner in which he exited the parking lot. The court went on to distinguish cases offered by the State suggesting that reasonable suspicion can be based on a suspect’s suspicious activities in an area known for criminal activity and an unusual hour. The court noted that in those cases the officers were already in the areas in question because they were specifically known and had detailed instances of criminal activity. Here, the officer arrived at the parking lot because of the vague tip about an undescribed white male engaged in undescribed suspicious activity in a generalized area known for residential break-ins and vandalism. The trial court made no findings as to what suspicious activity by the defendant warranted the officer’s suspicion. In fact the officer acknowledged that the defendant was not required to stop when he approached the defendant’s vehicle. The court concluded:

> Accordingly, we are unpersuaded by the State’s argument and agree with Defendant that the trial court erred in concluding that Officer Judge had reasonable suspicion to stop him. Though the tip did bring Officer Judge to the Graham Feed & Seed parking lot, where he indeed found a silver car in front of the then-closed business with no one else in its vicinity at 8:40 pm, and although Defendant did not stop for or acknowledge Officer Judge, we do not believe these circumstances, taken in their totality, were sufficient to support reasonable suspicion necessary to allow a lawful traffic stop. When coupled with the facts that (1) Defendant was in a parking lot that did “not have a ‘no trespassing’ sign on its premises”—making it lawful for Defendant to be there; (2) Defendant was not a white male as described in the tip; (3) Defendant’s car was possibly in motion when Officer Judge arrived in the parking lot; (4) Defendant had the constitutional freedom to avoid

Officer Judge; and (5) Defendant did not commit any traffic violations or act irrationally prior to getting stopped, there exists insufficient findings that Defendant was committing, or about to commit, any criminal activity.

Concluding otherwise would give undue weight to, not only vague anonymous tips, but broad, simplistic descriptions of areas absent specific and articulable detail surrounding a suspect's actions.

Searches

(1) Search of vehicle incident to arrest was justified by open container and driving without a license; (2) Defendant's consent wasn't needed for search incident to arrest, and evidence would have been inevitably discovered

State v. Jackson, ___ N.C. App. ___, 821 S.E.2d 656 (Nov. 6, 2018). In this case involving drug charges and a charge of driving without an operator's license, the court declined to address the defendant's argument that the officer lacked reasonable suspicion to prolong the traffic stop and search the defendant, finding that the search was justified as a search incident to arrest for two offenses for which the officer had probable cause to arrest. An officer was on the lookout for a gold Kia sedan in connection with an earlier incident at the Green Valley Inn. As the officer was monitoring an intersection, he saw a Kia sedan drive through a red light. The officer conducted a traffic stop. The officer approached the vehicle and immediately saw an open beer container in the center console. The officer asked the defendant for his license and registration. The defendant said he did not have a license but handed over a Pennsylvania ID card, with a shaky hand. After noticing the defendant's red, glassy eyes and detecting an odor of alcohol from the vehicle, the officer asked the defendant to exit the car so that he could search it and have the defendant perform sobriety tests. Before searching the vehicle the officer frisked the defendant. As the officer returned to his police car to check the defendant's license for outstanding warrants, the defendant spontaneously handed the officer his car keys. Because it was cold, the officer allowed the defendant to sit in the back of the patrol car as he ran the license and warrant checks. The officer determined that the defendant's license was expired, the vehicle was not registered to the defendant, and the defendant had no outstanding warrants. While sitting in the officer's vehicle, the defendant voluntarily made a variety of spontaneous statements and asked the officer if he could give drive him back to the Green Valley Inn after the traffic stop completed. After doing the license and warrants check, the officer conducted standardized field sobriety tests, which were performed to his satisfaction. He then asked for and got consent to search the defendant, finding powder and crack cocaine in the defendant's pockets.

On appeal, the defendant argued that the officer lacked reasonable suspicion to extend the stop after determining that the defendant was not intoxicated. The court however concluded that the officer did not need reasonable suspicion to extend the stop; the court reasoned that because the officer had probable cause to justify arrest, the search was justified as a search incident to arrest. Specifically, the officer's discovery of the open container and that the defendant was driving without an operator's license gave the officer probable cause to arrest. An officer may conduct a warrantless search incident to a lawful arrest; a search is incident to an arrest even if conducted prior to the formal arrest.

(2) For similar reasons, the court rejected the defendant's argument that his consent to search was invalid because it was given while the stop was unduly prolonged. The court reasoned that because probable cause existed for the arrest and the search was justified as a search incident to an arrest, the

defendant's consent was unnecessary. The court went on to hold that even if the search was unlawful, discovery of the contraband on the defendant's person was inevitable. Here, the officer testified that he would not have allowed the defendant to drive away from the traffic stop because he was not licensed to operate a motor vehicle. The officer testified that he would have searched the defendant before giving him a ride or transporting him to jail because of his practice of searching everyone transported in his patrol car. Also, the defendant repeatedly asked the officer if he would give him a ride back to the Green Valley Inn. Thus, the State established that the cocaine would have been inevitably discovered because the officer would have searched the defendant for weapons or contraband before transporting him to another location or jail.

Anonymous tip, though not enough on its own, was buttressed by evasive behavior of the defendant and the fact that he failed to inform officers he was armed; this was sufficient to establish reasonable suspicion to frisk

State v. Malachi, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 5, 2019). In this possession of a firearm by a felon case, the trial court did not err by allowing evidence of a handgun a police officer removed from the defendant's waistband during a lawful frisk that occurred after a lawful stop. Police received an anonymous 911 call stating that an African-American male wearing a red shirt and black pants had just placed a handgun in the waistband of his pants while at a specified gas station. Officer Clark responded to the scene and saw 6 to 8 people in the parking lot, including a person who matched the 911 call description, later identified as the defendant. As Clark got out of his car, the defendant looked directly at him, "bladed" away and started to walk away. Clark and a second officer grabbed the defendant. After Clark placed the defendant in handcuffs and told him that he was not under arrest, the second officer frisked the defendant and found a revolver in his waistband. The defendant unsuccessfully moved to suppress evidence of the gun at trial. The court held that the trial court did not err by denying the motion to suppress. It began by holding that the anonymous tip was insufficient by itself to provide reasonable suspicion for the stop. However, here these was additional evidence. Specifically, as Clark exited his car, the defendant turned his body in such a way as to prevent the officer from seeing a weapon. The officer testified that the type of turn the defendant executed was known as "blading," which is "[w]hen you have a gun on your hip you tend to blade it away from an individual." Additionally the defendant began to move away. And, as the officers approached the defendant, the defendant did not inform them that he was lawfully armed. Under the totality of the circumstances, these facts support reasonable suspicion.

The court then held that the frisk was proper. In order for a frisk to be proper officers must have reasonable suspicion that the defendant was armed and dangerous. Based on the facts supporting a finding of reasonable suspicion with respect to the stop, the officers had reasonable suspicion to believe that the defendant was armed. This, coupled with his struggle during the stop and continued failure to inform officers that he was armed, supported a finding that there was reasonable suspicion that the defendant was armed and dangerous. Jeff Welty blogged about issues discussed within this case, here.

(1) Officers were lawfully present in defendant's driveway when they smelled marijuana and their presence did not constitute a search; (2) Defendant's argument that his signage on his front door revoked any implied license to approach the home was unpreserved and therefore waived

State v. Piland, ___ N.C. App. ___, 822 S.E.2d 876 (Dec. 18, 2018). In this drug case, the trial court did not err by denying the defendant's motion to suppress. After receiving a tip that the defendant was growing marijuana at his home, officers drove there for a knock and talk. They pulled into the driveway

and parked in front of the defendant's car, which was parked at the far end of the driveway, beside the home. The garage was located immediately to the left of the driveway. An officer went to the front door to knock, while two detectives remained by the garage. A strong odor of marijuana was coming from the garage area. On the defendant's front door was a sign that reading "inquiries" with his phone number, and a second sign reading "warning" with a citation to several statutes. As soon as the defendant opened the front door, an officer smelled marijuana. The officer decided to maintain the residence pending issuance of a search warrant. After the warrant was obtained, a search revealed drugs and drug paraphernalia. (1) The court began by rejecting the defendant's argument that the officers engaged in an unconstitutional search and seizure by being present in his driveway and lingering by his garage. Officers conducting a knock and talk can lawfully approach a home so long as they remain within the permissible scope afforded by the knock and talk. Here, given the configuration of the property any private citizen wishing to knock on the defendant's front door would drive into the driveway, get out, walk between the car and the path so as to stand next to the garage, and continue on the path to the front porch. Therefore, the officers' conduct, in pulling into the driveway by the garage, getting out of their car, and standing between the car and the garage, was permitted. Additionally the officers were allowed to linger by the garage while their colleague approached the front door. Thus, "the officers' lingering by the garage was justified and did not constitute a search under the Fourth Amendment."

(2) The court went hold that by failing to raise the issue at the trial level, the defendant failed to preserve his argument that he revoked at the officers' implied license through his signage and that by ignoring this written revocation, the officers of violated the Fourth Amendment.

Search Warrants

Search warrant for premises includes "limited" authority to detain persons on site, and a person presenting a threat to the safe execution of the warrant is deemed an occupant for this purpose; police then developed reasonable suspicion to frisk

State v. Wilson, ___ N.C. ___, 821 S.E.2d 811 (Dec. 21, 2018). On discretionary review of a unanimous, unpublished decision of the Court of Appeals, ___ N.C. App. ___, 803 S.E.2d 698 (2017), in this felon in possession of a firearm case, the court held that *Michigan v. Summers*, 452 U.S. 692 (1981), justifies a seizure of the defendant where he posed a real threat to the safe and efficient completion of a search and that the search and seizure of the defendant were supported by individualized suspicion. A SWAT team was sweeping a house so that the police could execute a search warrant. Several police officers were positioned around the house to create a perimeter securing the scene. The defendant penetrated the SWAT perimeter, stating that he was going to get his moped. In so doing, he passed Officer Christian, who was stationed at the perimeter near the street. The defendant then kept going, moving up the driveway and toward the house to be searched. Officer Ayers, who was stationed near the house, confronted the defendant. After a brief interaction, Officer Ayers searched the defendant based on his suspicion that the defendant was armed. Officer Ayers found a firearm in the defendant's pocket. The defendant, who had previously been convicted of a felony, was arrested and charged with being a felon in possession of a firearm. He unsuccessfully moved to suppress at trial and was convicted. The Court of Appeals held that the search was invalid because the trial court's order did not show that the search was supported by reasonable suspicion. The Supreme Court reversed holding "that the rule in *Michigan v. Summers* justifies the seizure here because defendant, who passed one officer, stated he was going to get his moped, and continued toward the premises being searched, posed a real threat to the safe and

efficient completion of the search." The court interpreted the *Summers* rule to mean that a warrant to search for contraband founded on probable cause implicitly carries with it the limited authority to detain occupants who are within the immediate vicinity of the premises to be searched and who are present during the execution of a search warrant. Applying this rule, the court determined that "a person is an occupant for the purposes of the *Summers* rule if he poses a real threat to the safe and efficient execution of a search warrant." Here, the defendant posed such a threat. It reasoned: "He approached the house being swept, announced his intent to retrieve his moped from the premises, and appeared to be armed. It was obvious that defendant posed a threat to the safe completion of the search."

Because the *Summers* rule only justifies detentions incident to the execution of search warrants, the court continued, considering whether the search of the defendant's person was justified. On this issue the court held that "both the search and seizure of defendant were supported by individualized suspicion and thus did not violate the Fourth Amendment." Shea Denning blogged about the case here.

Marijuana stems and rolling papers found in single garbage search did not provide probable cause for sweeping search of residence

U.S. v. Lyles, 910 F.3d 787 (4th Cir. 2018). Maryland police discovered the defendant's phone number in the contacts of a homicide victim's phone. Suspecting the defendant's involvement, law enforcement conducted a "trash pull" and searched four bags of the defendant's garbage after they were placed on the curb. Police found "three unknown plant type stems [which later tested positive for marijuana], three empty packs of rolling papers", and mail addressed to the residence. A search warrant for evidence of drug possession, drug distribution, guns, and money laundering was obtained on that basis. The warrant authorized the search of the home for any drugs, firearms, any documents and records of nearly any kind, various electronic equipment including cell phones, as well as the search of all persons and cars. Guns, ammunition, marijuana and paraphernalia were found and the defendant was charged with possession of firearm by felon. The district court suppressed the evidence, finding that the evidence from the garbage search did not establish probable cause that more drugs would be found within the home. The trial judge declined to apply the *Leon* good-faith, finding the warrant was "plainly overbroad." The government appealed.

The Fourth Circuit affirmed. It noted *California v. Greenwood*, 486 U.S. 35 (1988) allows the warrantless search of curbside garbage. The practice is an important technique for law enforcement, but also "subject to abuse" by its very nature—guests may leave garbage at a residence that ends up on the street; evidence can easily be planted in curbside garbage. In the words of the court:
The open and sundry nature of trash requires that [items found from a trash pull] be viewed with at least modest circumspection. Moreover, it is anything but clear that a scintilla of marijuana residue or hint of marijuana use in a trash can should support a sweeping search of the residence. Slip op. at 7.

The government argued that the warrant at least supplied probable cause for drug possession, and anything else seen in the course of the execution of the warrant was properly within plain view. In its view, a single marijuana stem would always provide probable cause to search a residence for drugs. The Fourth Circuit disagreed:

> The government invites the court to infer from the trash pull evidence that additional drugs probably would have been found in [the defendant's] home. Well perhaps, but not probably. . . .This was a single trash pull, and thus less likely to reveal evidence of recurrent

> or ongoing activity. And from that one trash pull, as defendant argues, 'the tiny quantity of discarded residue gives no indication of how long ago marijuana may have been consumed in the home.' This case is almost singular in the sparseness of evidence pulled in one instance from the trash itself and the absence of other evidence to corroborate even that. *Id*. at 10.

The court therefore found the magistrate lacked a substantial basis on which to find probable cause and unanimously reversed. The opinion continued, however, to note the breadth of the search. The warrant was "astonishingly broad"—it authorized the search of items "wholly unconnected with marijuana possession." *Id*. at 11. This was akin to a general warrant and unreasonable for such a "relatively minor" offense.

The court also rejected the application of *Leon* good faith to save the warrant, despite the fact that the warrant application was reviewed by the officer's superior and a prosecutor. "The prosecutor's and supervisor's review, while unquestionably helpful, 'cannot be regarded as dispositive' of the good faith inquiry. If it were, police departments might be tempted to immunize warrants through perfunctory superior review. . ." *Id*. at 14. Concluding, the court stated: "What we have here is a flimsy trash pull that produced scant evidence of a marginal offense but that nonetheless served to justify the indiscriminate rummaging through a household. Law enforcement can do better." *Id*. [*Author's note*: North Carolina does not recognize the *Leon* good-faith exception for violations of the state constitution.] Jeff Welty blogged about trash pull searches here.

31 day delay in obtaining search warrant for phone was unreasonable; denial of motion to suppress reversed

U.S. v. Pratt, 915 F.3d 266 (4th Cir. 2019). This South Carolina case arose from an investigation into a prostitution ring involving minors. The defendant posted an ad to Backpage.com advertising the services of a 17 year old female. Agents posed as a potential customer and arranged to meet the girl at a hotel. Upon revealing his identity as a law enforcement agent, the girl informed the agent of her age, acknowledged that she worked as a prostitute in the hotel, and that the defendant (her "boyfriend") brought her to South Carolina from North Carolina. She also indicated that she had texted the defendant nude pictures of herself and gave the agent her phone. Agents approached the defendant in the parking lot at the same time, who was holding a phone of his own. He acknowledged the phone belonged to him and that it contained pictures of the girl. Agents seized the phone, informing the defendant that they would be obtaining a warrant. The defendant refused to consent to a search of the phone and refused to provide the password to unlock it. A search warrant for the phone was not obtained for 31 days. When the phone was then searched, law enforcement discovered inculpatory texts and images on the phone. The defendant was subsequently indicted for various offenses relating to sex trafficking and child pornography. While in pretrial detention, the defendant attempted to continue the prostitution operation by coordinating with his mother on the phone from detention. His mother also arranged for the minor girl to speak to the defendant during these calls, where the defendant discouraged her from testifying several times.

The defendant moved to suppress the cell phone evidence. His motion only alleged that the seizure of the phone was improper, but at argument he raised the issue of the timeliness of the warrant based on the delay between the seizure of the phone and the issuance of the warrant. The government accounted for the delay by pointing to the need to determine in which jurisdiction the warrant should be sought (North or South Carolina). The trial judge denied the motion. At this point, the government

attempted to secure the minor child as a witness, but she became uncooperative and later could not be found. The government then sought to introduce her statements to agents at the hotel, which was allowed. The defendant was convicted at trial and received multiple life sentences. He appealed, arguing the district court erred in denying his motion to suppress and in admitting the girl's statements to agents. The Fourth Circuit reversed the denial of the suppression motion.

> A seizure that is lawful at its inception can nevertheless violate the Fourth Amendment because its manner of execution unreasonably infringed possessory interests. To determine if an extended seizure violates the Fourth Amendment, we balance the government's interest in the seizure against the individual's possessory interest in the object seized. Slip op. at 6.

Where the government has a stronger interest, a more extended seizure may be justified. Where the defendant's interests are stronger, such extended seizure may become unreasonable. Here, the government's only explanation for the delay was the need to decide where the warrant would be obtained. This, according the court, was "insufficient to justify the extended seizure of [the defendant's] phone." *Id*. at 7. A longer delay may be permissible where the defendant consents to the seizure or otherwise shares the information. Delays may likewise be justified where police or judicial resources are limited or overwhelmed. No such circumstances existed here. "Simply put, the agents failed to exercise diligence by spending a whole month debating where to get a warrant." *Id*. at 8. The government admitted at oral argument that the decision of where to obtain the warrant was not likely to impact the prosecution. Given that the defendant never consented to the seizure and thus retained his interest in the phone, here "a 31 day delay violates the 4th Amendment where the government neither proceeds diligently nor presents an overriding reason for the delay." *Id*. at 9. The court rejected the government's alternative position that the phone constituted an instrumentality of the crime and thus could have been retained "indefinitely." It was the data on the phone, not the phone itself, that held potential evidentiary value—the phone could have been returned to the defendant had agents copied the files from the phone. Instead, by keeping the phone and failing to seek a warrant in a timely manner, the seizure became unreasonable and the motion to suppress should have been granted. This error was not harmless as to the child pornography production convictions. Without the images on the phone, there was insufficient evidence to support those counts. As to the remedy, the court recognized it possessed discretion to vacate only that portion of the defendant's total sentence. "But because sentences are often interconnected, a full resentencing is typically appropriate when we vacate one or more convictions." *Id*. at 13. The court therefore vacated the entire sentence and remanded for a new sentencing.

Criminal Offenses

Aiding and Abetting

Sufficient evidence of aiding and abetting where defendant encouraged (but did not directly request) sexual assault on minor

State v. Bauguss, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In this child sexual assault case, the trial court did not err by denying the defendant's motion to dismiss five statutory sexual offense charges based on a theory of aiding and abetting. The State's theory was that the defendant encouraged the victim's mother to engage in sexual activity with the victim, and that the victim's mother did this to "bait" the defendant into a relationship with her. On appeal the defendant argued that the evidence was insufficient to show that he encouraged or instructed the victim's mother to perform cunnilingus or digitally penetrate the victim, or that any statement by him caused the victim's mother to perform the sexual acts. The court disagreed. The State's evidence included Facebook conversations between the victim's mother and the defendant. The defendant argued that these messages were fantasies and that even if taken at face value, were devoid of any instruction or encouragement to the victim's mother to perform sexual acts, specifically cunnilingus or penetration of the victim. The court rejected this argument, concluding that an explicit instruction to engage in sexual activity is not required. Here, the evidence showed that the defendant knew that the victim's mother wanted a relationship with him and that he believed she was using the victim to try to initiate that relationship. Numerous messages between the defendant and the victim's mother support a reasonable inference of a plan between them to engage in sexual acts with the victim. The victim's mother testified that she described sexual acts she performed on the victim to the defendant because he told her he liked to hear about them. The defendant argued that this description of sexual acts after the fact is insufficient to support a finding that he knew of or about these acts prior to their occurrence, a requirement for aiding and abetting. However, the court concluded, the record supports an inference that he encouraged the victim's mother to perform the acts. Among other things, the defendant specified nude photos that he wanted of the victim and initiated an idea of sexual "play" between the victim's mother and the victim. After the victim's mother videotaped her act of performing cunnilingus on the victim and send it to the defendant, the defendant replied that he wanted to do engage in that act. After he requested a video of the victim "playing with it," the victim's mother made a video of her rubbing the victim's vagina. This evidence was sufficient to support an inference that the defendant aided and abetted in the victim's mother's sexual offenses against the victim.

Attempt and Solicitation

Meeting and paying undercover officer to kill wife was sufficient to prove solicitation, but insufficient to constitute an overt act for attempted murder

State v. Melton, ___ N.C. ___, 821 S.E.2d 424 (Dec. 7, 2018). On discretionary review of a unanimous, unpublished decision of the Court of Appeals, ___ N.C. App. ___, 801 S.E.2d 392 (2017), the court reversed, holding that the evidence was insufficient to sustain a conviction for attempted murder. The evidence showed that the defendant solicited an undercover officer—who he thought to be a hired killer--to kill his former wife. He gave the officer $2,500 as an initial payment, provided the officer details necessary to complete the killing, and helped the officer plan how to get his former wife alone and how to kill her out of the presence of their daughter. The defendant was arrested after he left his meeting with the officer; he was charged—and later convicted—of attempted murder and solicitation to commit murder. Phil Dixon blogged about the case here.

Defendant had requisite intent to commit each sexual assault on child and his actions, in context, were sufficient overt acts to support attempted statutory sex offense

State v. Bauguss, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In this child sexual assault case, trial court did not err by denying the defendant's motion to dismiss two charges of attempted statutory sex offense of a child by an adult. On appeal, the defendant argued that there was insufficient evidence of his intent to engage in a sexual act with the victim and of an overt act. The court disagreed. The case involved a scenario where the victim's mother engaged in sexual acts with the victim to entice the defendant into a relationship with her. The first conviction related to the defendant's attempted statutory sex offense with the victim in a vehicle, which occurred on or prior to 19 July 2013. While the victim sat between the defendant and her mother, the defendant tried to put his hands up the victim's skirt, between her legs. The victim pushed the defendant away and moved closer to her mother. The defendant asserted that an intention to perform a sexual act cannot be inferred from this action. The court disagreed, noting, among other things, evidence that the defendant's phone contained a video and photograph depicting the victim nude; both items were created prior to the incident in question. Additionally, the defendant admitted that the photo aroused him. Moreover, conversations of a sexual nature involving the victim occurred between the defendant and the victim's mother on 9 July 2013. Messages of a sexual nature were also sent on 15 July 2013, including the defendant's inquiries about sexual acts between the victim's mother and the victim, and a request for explicit pictures of the victim. Additional communications indicated that the defendant wanted to see the victim in person. In a conversation on 19 July 2013, the defendant indicated that he had feelings for the victim and expressed the desire to "try something" sexual with the victim. In his interview with law enforcement, the defendant stated he would not have engaged in intercourse with the victim but would have played with her vagina by licking and rubbing it. This evidence supports a reasonable inference that the defendant attempted to engage in a sexual act with the victim when he placed his hands between her legs and tried to put his hand up her skirt. The evidence also supports the conclusion that his act was an overt act that exceeded mere preparation.

The second conviction related to the defendant's attempted statutory sex offense with the victim in a home. The court upheld this conviction, over a dissent. This incident occurred on 27 July 2013 when the defendant instructed the victim's mother to have the victim wear a dress without underwear because he was coming over to visit. The defendant argued that the evidence was insufficient to show his intent to engage in a sexual act with the victim or an overt act in furtherance of that intention. The court disagreed. The evidence showed that the victim's mother and the defendant had an ongoing agreement and plan for the victim's mother to teach the victim to be sexually active so that the defendant could perform sexual acts with her. Evidence showed that the victim's mother sent the defendant numerous photos and at least one video of the victim, including one that showed the victim's mother performing cunnilingus on the victim on 26 July 2013. An exchange took place on 27 July 2013 in which the defendant indicated his desire to engage in that activity with the victim, and her mother's desire to facilitate it. Specifically the defendant asked the victim's mother whether she could get the victim to put on a dress without underwear because he was coming over to their home. Based on the context in which the defendant instructed the victim's mother to have the victim wear a dress without underwear, there was substantial evidence of his intent to commit a sex offense against the victim. Furthermore, the defendant took overt actions to achieve his intention. The victim's mother admitted that she and the defendant planned to train the victim for sexual acts with the defendant, and the defendant's Facebook messages to the victim's mother and his interview with law enforcement show that he agreed to, encouraged, and participated in that plan. The defendant's instruction to dress the victim without underwear was more than "mere words" because it was a step in his scheme to groom the victim for sexual activity, as was other activity noted by the court.

Assault

"Significant" pain and scarring supported serious bodily injury

State v. Fields, ___ N.C. App. ___, ___ S.E.2d ___ (April 16, 2019). In an assault inflicting serious bodily injury case involving the defendant's assault on a transgender woman, A.R., the evidence was sufficient to establish that serious bodily injury occurred. A.R.'s injury required stitches, pain medication, time off from work, and modified duties once she resumed work. Her pain lasted for as much as six months, and her doctor described it as "significantly painful." This evidence tends to show a "permanent or protracted condition that causes extreme pain." Moreover, the assault left A.R. with a significant, jagged scar, which would support a finding of "serious permanent disfigurement." There was therefore no error in denying the motion to dismiss the offense of assault inflicting serious bodily injury.

Contempt

Repeated references to matters outside of evidence supported finding of willful contempt

State v. Salter, ___ N.C. App. ___, ___ S.E.2d ___ (April 2, 2019). The trial court did not err by holding the defendant in direct criminal contempt for statements he made during closing arguments in this pro se case. On appeal, the defendant argued that his actions were not willful and that willfulness must be considered in the context of his lack of legal knowledge or training. The trial court repeatedly instructed the defendant that he could not testify to matters outside the record during his closing arguments, given that he chose not to testify at trial. The trial court reviewed closing argument procedures with the defendant, stressing that he could not testify during his closing argument, and explaining that he could not tell the jury "Here's what I say happened." Although the defendant stated that he understood these instructions, he began his closing arguments by attempting to tell the jury about evidence that he acknowledges was inadmissible. The trial court excused the jury and again admonished the defendant not to discuss anything that was not in evidence. The defendant again told the trial court that he understood its instructions. When the jury returned however the defendant again attempted to discuss matters not in evidence. The trial court excused the jury and gave the defendant a final warning. Once again the defendant informed the trial court that he understood its warnings. However when the jury returned he continued his argument by stating matters that were not in evidence. This final incident served as the basis for the trial court's finding of criminal contempt. On this record, the trial court did not err by finding that the defendant acted willfully in violation of the trial court's instructions.

Drug Offenses

Even under revised interpretation of *Rogers*, evidence of single sale was insufficient to support conviction for maintaining a dwelling/vehicle

State v. Miller, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 19, 2019). In this maintaining a dwelling case on remand from the state Supreme Court for reconsideration in light of *State v. Rogers*, __ N.C. __, 817 S.E.2d 150 (2018), the court held that the evidence was insufficient to support the conviction. The State's evidence showed that the drugs were kept at the defendant's home on one occasion. Under *Rogers*, "the State must produce other incriminating evidence of the "totality of the circumstances" and

more than just evidence of a single sale of illegal drugs or "merely having drugs in a car (or other place)" to support a conviction under this charge." Here, the State offered no evidence showing any drugs or paraphernalia, large amounts of cash, weapons or other implements of the drug trade at the defendant's home. The State offered no evidence of any other drug sales occurring there, beyond the one sale at issue in the case. It stated: "Under "the totality of the circumstances," "merely having drugs in a car [or residence] is not enough to justify a conviction under subsection 90-108(a)(7).""" It concluded, stating that *Rogers* was distinguishable because it involved keeping of drugs in a motor vehicle, where other drugs and incriminating evidence of ongoing drug sales were present. Jessica Smith blogged about the underlying *Rogers* case here and Jeff Welty wrote about the Miller case here.

Fraud

Convictions for attempted obtaining property by false pretenses and the completed offense violated the 'single taking' rule where defendant's only misrepresentation was a single affidavit

State v. Buchanan, ___ N.C. App. ___, 821 S.E.2d 890 (Nov. 6, 2018). The trial court committed plain error with respect to its obtaining property by false pretenses instructions. The case was before the court on certification from the state Supreme Court for consideration of whether the trial court committed plain error by failing to instruct the jury that it could not convict the defendant of obtaining property by false pretenses and attempting to obtain property by false pretense because such a verdict would violate the "single taking rule." The defendant was indicted for two counts of false pretenses for signing a bank check fraud/forgery affidavit disputing three checks from his account totaling $900. In fact, the defendant pre-signed the checks, gave them to the mother of his daughter, and authorized her to use them for their child's care. Based on the defendant's representation in the affidavit, the bank gave him a temporary credit for one of the three checks (in the amount of $600) but denied him credit for the two other checks. The defendant was convicted of obtaining property by false pretenses for the $600 provisional credit and of attempting to obtain property by false pretenses for the two other checks. Because the defendant did not object to the instructions at trial, plain error applied. Here, plain error occurred. The defendant submitted one affidavit disputing three checks. The submission of the affidavit is the one act, or one false representation, for which the defendant was charged. Therefore there was only a single act or taking under the "single taking rule," which prevents the defendant from being charged or convicted multiple times for a single continuous actor transaction.

Firearms Offenses

Defendant may not be convicted of multiple counts of possession of firearm on educational property where all firearms were possessed during the same incident

State v. Conley, ___ N.C. App. ___, 825 S.E.2d 10 (Feb. 19, 2019), *temp. stay allowed,* ___ N.C. ___, 823 S.E.2d 579 (Mar. 6, 2019). A defendant may not be convicted of multiple offenses of possession of a gun on educational property when the defendant possesses multiple weapon in the same incident. The defendant was found guilty of, among other things, five counts of possession of a gun on educational property. On appeal the defendant argued that G.S. 14-269.2(b) does not permit entry of multiple convictions for the simultaneous possession of multiple guns on educational property. The defendant's argument relied on *State v. Garris*, 191 N.C. App. 276 (2008), a felon in possession case precluding

multiple convictions when a defendant possesses several weapons simultaneously. The court agreed with the defendant, holding:

> [T]he language of section 14-269.2(b) describing the offense of "knowingly . . . possess[ing] or carry[ing], whether openly or concealed, any gun, rifle, pistol, or other firearm of any kind on educational property," N.C.G.S. § 14- 269.2(b), is ambiguous as to whether multiple punishments for the simultaneous possession of multiple firearms is authorized. And consistent with this Court's application of the rule of lenity, also as applied in *Garris*, we hold that section 14- 269.2(b) does not allow multiple punishments for the simultaneous possession of multiple firearms on educational property.

The court therefore reversed and remanded for resentencing.

Homicide

Lengthy history of unsafe driving and reckless driving at the time supported element of malice

State v. Schmieder, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In this case involving a conviction for second-degree murder following a fatal motor vehicle accident, the evidence was sufficient to establish malice. Evidence of the defendant's prior traffic-related convictions are admissible to prove malice in a second-degree murder prosecution based on a vehicular homicide. Here, there was evidence that the defendant knew his license was revoked at the time of the accident and that he had a nearly two-decade-long history of prior driving convictions including multiple speeding charges, reckless driving, illegal passing, and failure to reduce speed. Additionally, two witnesses testified that the defendant was driving above the speed limit, following too close to see around the cars in front of him, and passing across a double yellow line without using turn signals. This was sufficient to establish malice.

Impaired Driving

Under G.S. 20-139.1(b5), no re-advisement of implied consent rights was required for a subsequent breath test; the statute only requires re-advisement when the defendant is requested to submit to additional chemical analyses of blood or other bodily fluid in lieu of the breath test

State v. Cole, ___ N.C. App. ___, 822 S.E.2d 456 (Nov. 20, 2018). In this DWI case, the trial court did not err by denying the defendant's motion to suppress intoxilyzer results. The defendant argued that the trial court improperly concluded that the officer was not required, under G.S. 20-139.1(b5), to re-advise him of his implied consent rights before administering a breath test on a second machine. The defendant did not dispute that the officer advised him of his implied consent rights before he agreed to submit to a chemical analysis of his breath; rather, he argued that because the test administered on the first intoxilyzer machine failed to produce a valid result, it was a "nullity," and thus the officer's subsequent request that the defendant provide another sample for testing on a different intoxilyzer machine constituted a request for a "subsequent chemical analysis" under G.S. 20-139.1(b5). Therefore, the defendant argued, the officer violated the defendant's right under that statute to be re-advised of implied consent rights before administering the test on the second machine. The court disagreed, finding that G.S. 20-139.1(b5) requires a re-advisement of rights only when an officer requests that a

person submit to a chemical analysis of blood or other bodily fluid or substance in addition to or in lieu of a chemical analysis of breath. Here, the officer's request that the defendant provide another sample for the same chemical analysis of breath on a second intoxilyzer machine did not trigger the re-advisement requirement of G.S. 20-139.1(b5).

Evidence that defendant had an unquantified amount of impairing substances in his blood was sufficient to go to the jury on impairment when defendant admitted taking drugs the day of the crash and his behavior indicated a lack of awareness and poor judgment

State v. Shelton, ___ N.C. App. ___, 824 S.E.2d 136 (Feb. 5, 2019). In this felony death by vehicle case involving the presence of narcotics in an unknown quantity in the defendant's blood, the evidence was sufficient to establish that the defendant was impaired. The State's expert testified that Oxycodone and Tramadol were present in the defendant's blood; tests revealed the presence of these drugs in amounts equal to or greater than 25 nanograms per milliliter — the "detection limits" used by the SBI for the test; the half-lives of Oxycodone and Tramadol are approximately 3-6 and 4-7 hours, respectively; she was unable to determine the precise quantities of the drugs present in the defendant's blood; and she was unable to accurately determine from the test results whether the defendant would have been impaired at the time of the accident. The defendant's motion to dismiss was denied and the defendant was found guilty of felony death by motor vehicle based on a theory of impairment under G.S. 20-138(a)(1) ("While under the influence of an impairing substance"). On appeal the court rejected the defendant's argument the State's evidence merely showed negligence regarding operation of his vehicle as opposed to giving rise to a reasonable inference that he was impaired. The court noted that it was undisputed that the defendant ingested both drugs on the day of the accident and that they were present in his blood after the crash. It continued: "Taking these facts together with the evidence at trial regarding Defendant's lack of awareness of the circumstances around him and his conduct before and after the collision, reasonable jurors could — and did — find that Defendant was appreciably impaired." Specifically, the court noted: the labels on the medicine bottles warned that they may cause drowsiness or dizziness and that care should be taken when operating a vehicle after ingestion, and these substances are Schedule II and Schedule IV controlled substances, respectively; the defendant testified that he failed to see the victim on the side of the road despite the fact that it was daytime, visibility was clear, the road was straight, and three eyewitnesses saw the victim before the defendant hit her; the defendant admitted that he was unaware that his vehicle had hit a human being despite the fact that the impact of the crash was strong enough to cause the victim's body to fly 59 feet through the air; and the defendant testified that his brakes had completely stopped functioning when he attempted to slow down immediately before the accident, he decided not to remain at the scene, instead driving his truck out of the ditch and to his home despite the fact that he had no operable brakes. Finding that this was sufficient evidence for the issue of impairment to go to the jury, the court noted that under *Atkins v. Moye*, 277 N.C. 179 (1970), impairment can be shown by a combination of evidence that a defendant has both (1) ingested an impairing substance; and (2) operated his vehicle in a manner showing he was so oblivious to a visible risk of harm as to raise an inference that his senses were appreciably impaired. Shea Denning blogged about the case here.

Error to use aggravating factors in sentencing where no formal notice given; that aggravating factors were used in district court does not excuse State's failure to give notice of aggravating factors in superior court

State v. Hughes, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). Because the State failed to give notice of its intent to use aggravating sentencing factors as required by G.S. 20-179(a1)(1), the trial court

committed reversible error by using those factors in determining the defendant's sentencing level. The case involved an appeal for trial de novo in superior court. The superior court judge sentenced the defendant for impaired driving, imposing a level one punishment based on two grossly aggravating sentencing factors. On appeal, the defendant argued that the State failed to notify him of its intent to prove aggravating factors for sentencing in the superior court proceeding. The State did not argue that it gave notice to the defendant prior to the superior court proceeding. Instead, it argued that the defendant was not prejudiced because he received constructive notice of the aggravating factors when they were used at the earlier district court proceeding. The court rejected this argument, determining that allowing the State to fulfill its statutory notice obligations by relying on district court proceedings "would render the statute effectively meaningless." The court concluded that the State "must provide explicit notice of its intent to use aggravating factors in the superior court proceeding." The court vacated the defendant's sentence and remanded for resentencing.

Larceny and Robbery

Where the State failed to present no evidence of felonious intent and all evidence supported defendant's claim of right to the property, trial court erred in failing to grant motion to dismiss robbery

State v. Cox, ___ N.C. App. ___, 825 S.E.2d 266 (Mar. 5, 2019), *temp. stay allowed,* ___ N.C. ___, 824 S.E.2d 127 (Mar. 22, 2019). The trial court erred by denying the defendant's motion to dismiss a charge of conspiracy to commit armed robbery. The Supreme Court has stated that a defendant is not guilty of robbery if he forcefully takes possession of property under a bona fide claim of right or title to the property. Decisions from the Court of Appeals, however, have questioned that case law, rejecting the notion that a defendant cannot be guilty of armed robbery where the defendant claims a good faith belief that he had an ownership interest in the property taken. Although the court distinguished that case law, it noted that to the extent it conflicts with earlier Supreme Court opinions, the court is bound to follow and apply the law as established by the state Supreme Court. Here, the evidence showed that the defendant and two others—Linn and Jackson--went to the victim's home to retrieve money they provided to her for a drug purchase, after the victim failed to make the agreed-to purchase. All of the witnesses agreed that the defendant and the others went to the victim's house to get money they believed was theirs. Thus, the State presented no evidence that the defendant possessed the necessary intent to commit robbery. Rather, all of the evidence supports the defendant's claim that he and the others went to the victim's house to retrieve their own money. The defendant cannot be guilty of conspiracy to commit armed robbery where he and his alleged co-conspirators had a good-faith claim of right to the money. Because there was no evidence that the defendant had an intent to take and convert property belonging to another, the trial court erred by denying the defendant's motion to dismiss the charge of conspiracy to commit armed robbery.

The court continued, holding that the trial court erred by denying the defendant's motion to dismiss a charge of felonious breaking or entering, where the felonious intent was asserted to be intent to commit armed robbery inside the premises. The court remanded for entry of judgment on misdemeanor breaking or entering, which does not require felonious intent. Phil Dixon blogged about the case here.

Sexual Assaults

(1) No error where trial court failed to instruct on lack of consent; lack of consent implied where rape predicated on physical helplessness; (2) Evidence was sufficient to show victim physically helpless

State v. Lopez, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 19, 2019). (1) In this second-degree rape case, the trial court did not commit plain error by failing to instruct the jury that lack of consent was an element of rape of a physically helpless person. Because lack of consent is implied in law for this offense, the trial court was not required to instruct the jury that lack of consent was an essential element of the crime.

(2) The evidence was sufficient to support a conviction of second-degree rape. On appeal the defendant argued that there was insufficient evidence showing that the victim was physically helpless. The State presented evidence that the victim consumed sizable portions of alcohol over an extended period of time, was physically ill in a club parking lot, and was unable to remember anything after leaving the club. When the victim returned to the defendant's apartment, she stumbled up the stairs and had to hold onto the stair rail. She woke up the following morning with her skirt pulled up to her waist, her shirt off, and her underwear on the bed. Her vagina was sore and she had a blurry memory of pushing someone off of her. She had no prior sexual relationship with the defendant. Moreover, the defendant's actions following the incident, including his adamant initial denial that anything of a sexual nature occurred and subsequent contradictory admissions, indicate that he knew of his wrongdoings, specifically that the victim was physically helpless. There was sufficient evidence that the victim was physically unable to resist intercourse or to communicate her unwillingness to submit to the intercourse.

Evidence that defendant supported child by providing her a place to live and financial support, as well as representing himself as her custodian was sufficient to establish parental role for sexual activity by substitute parent/custodian

State v. Sheridan, ___ N.C. App. ___, 824 S.E.2d 146 (Feb. 5, 2019). There was sufficient evidence that a parent-child relationship existed between the defendant and the victim to sustain a conviction for sexual offense in a parental role. A parental role includes evidence of emotional trust, disciplinary authority, and supervisory responsibility, with the most significant factor being whether the defendant and the minor "had a relationship based on trust that was analogous to that of a parent and child." The defendant paid for the victim's care and support when she was legally unable to work and maintain herself and made numerous representations of his parental and supervisory role over her. He indicated to police he was her "godfather," represented to a friend that he was trying to help her out and get her enrolled in school, and told his other girlfriends the she was his "daughter." Additionally, while there was no indication that the defendant was a friend of the victim's family, he initiated a relationship of trust by approaching the victim with references to his daughter, who was the same age, and being "always" present when the two girls were "hanging out" at his house. This was sufficient evidence of the defendant's exercise of a parental role over the victim.

Stalking

Stalking statute unconstitutional as applied to defendant; social media posts "about" the victim but not "directed at" the victim were protected speech

State v. Shackelford, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 19, 2019). Concluding that application of the stalking statute to the defendant violated his constitutional free speech rights, the court vacated the convictions. The defendant was convicted of four counts of felony stalking based primarily on the content of posts made to his Google Plus account. On appeal, the defendant asserted an as-applied challenge to the stalking statute, G.S. 14-277.3A. The court first rejected the State's argument that the defendant's Google Plus posts are excluded from First Amendment protection because they constitute "speech that is integral to criminal conduct." The court reasoned that in light of the statutory language "his speech itself was the crime," and no additional conduct on his part was needed to support his stalking convictions. Thus, the First Amendment is directly implicated by his prosecution under the statute.

The court next analyzed the defendant's free speech argument within the framework adopted by the United States Supreme Court. It began by determining that as applied to the defendant, the statue constituted a content-based restriction on speech, and thus that strict scrutiny applies. It went on to hold that application of the statute to the messages contained in the defendant's social media posts did not satisfy strict scrutiny.

Having determined that the defendant's posts could not constitutionally form the basis for his convictions, the court separately examined the conduct giving rise to each of the convictions to determine the extent to which each was impermissibly premised on his social media activity. The court vacated his first conviction because it was premised entirely upon five social media posts; no other acts supported this charge. The second and third charges were premised on multiple social media posts and a gift delivery to the victim's workplace. The gift delivery, unlike the social media posts, constituted non-expressive conduct other than speech and therefore was not protected under the First Amendment. However, because the statute requires a course of conduct, this single act is insufficient to support a stalking conviction and thus these convictions also must be vacated. The defendant's fourth conviction encompassed several social media posts along with two emails sent by the defendant to the victim's friend. Even if the emails are not entitled to First Amendment protection, this conviction also must be vacated. Here, the jury returned general verdicts, without stating the specific acts forming the basis for each conviction. Because this conviction may have rested on an unconstitutional ground, it must be vacated. Shea Denning blogged about the case here.

Pleadings

Presentments

Simultaneous presentment and indictment is improper and invalidates both documents, but remedy is remand to district court, not dismissal

State v. Baker, ___ N.C. App. ___, 822 S.E.2d 902 (Dec. 18, 2018). Although the State improperly circumvented district court jurisdiction by simultaneously obtaining a presentment and an indictment from a grand jury, the proper remedy is to remand the charges to district court, not dismissal. The defendant was issued citations for impaired driving and operating an overcrowded vehicle. After the defendant's initial hearing in district court, she was indicted by the grand jury on both counts and her case was transferred to Superior Court. The grand jury was presented with both a presentment and an indictment, identical but for the titles of the respective documents. When the case was called for trial in

Superior Court, the defendant moved to dismiss for lack of subject matter jurisdiction due to the constitutional and statutory invalidity of the presentment and indictment procedure. The Superior Court granted the defendant's motion and the State appealed.

G.S. 15A-641 provides that "[a] presentment is a written accusation by a grand jury, made on its own motion . . . ." It further provides that "[a] presentment does not institute criminal proceedings against any person, but the district attorney is obligated to investigate the factual background of every presentment . . . and to submit bills of indictment to the grand jury dealing with the subject matter of any presentments when it is appropriate to do so." The plain language of G.S. 15A-641 "precludes a grand jury from issuing a presentment and indictment on the same charges absent an investigation by the prosecutor following the presentment and prior to the indictment." The court rejected the State's argument that G.S. 15A-644 governs the procedure for presentments and that because the presentment met the requirements of that statute it is valid, concluding in part: "It is not the sufficiency of the presentment form and contents that is at issue, but the presentment's simultaneous occurrence with the State's indictment that makes both invalid." Here, the prosecutor did not investigate the factual background of the presentment after it was returned and before the grand jury considered the indictment. Because the prosecutor submitted these documents to the grand jury simultaneously and they were returned by the grand jury simultaneously in violation of G.S. 15A-641 "each was rendered invalid as a matter of law." The court thus affirmed the superior court's ruling that it did not have subject matter jurisdiction over the case.

The court went on to affirm the lower court's conclusion that the superior court prosecution violated the defendant's rights under Article I, Section 22 of the state constitution, but found that it need not determine whether the defendant was prejudiced by this violation. It further held that the trial court erred in holding that the State violated the defendant's rights under Article I, Sections 19 and 23 of the North Carolina Constitution.

On the issue of remedy, the court agreed with the State that the proper remedy is not dismissal but remand to District Court for proceedings on the initial misdemeanor citations. Shea Denning blogged about the case here.

Indictments

Indictment for second-degree murder was sufficient to charge B1 or B2 murder; indictment need not identify specific theory of murder

State v. Schmieder, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In a case involving a conviction for second-degree murder following a fatal motor vehicle accident, the indictment was sufficient. On appeal the defendant argued that the indictment only charged him with Class B1 second-degree murder, a charge for which he was acquitted, and not the Class B2 version of second-degree murder for which he was convicted. The court disagreed. Under G.S. 15-144, "it is sufficient in describing murder to allege that the accused person feloniously, willfully, and of his malice aforethought, did kill and murder (naming the person killed)." Here, the indictment alleged that the defendant "unlawfully, willfully, and feloniously and of malice aforethought did kill and murder Derek Lane Miller." This is sufficient to charge the defendant with second-degree murder as a B2 felony. The defendant however argued that the indictment was insufficient because, by only checking the box labeled "Second Degree" and not checking the box beneath it labeled "Inherently Dangerous Without Regard to Human Life," the

defendant was misled into believing he was not being charged with that form of second degree murder. The court disagreed, stating: "by checking the box indicating that the State was charging "Second Degree" murder, and including in the body of the indictment the necessary elements of second degree murder, the State did everything necessary to inform [the defendant] that the State will seek to prove second degree murder through any of the legal theories the law allows." Moreover, it noted, the defendant did not show that he was actually misled, and the record indicates that he understood that the State would seek to introduce his prior driving record and argue that his pattern of driving demonstrated that he engaged in an act that is inherently dangerous to human life done recklessly and wantonly as to manifest a mind utterly without regard for human life and social duty and deliberately bent on mischief.

(1) Embezzlement indictment was not fatally flawed where it failed to allege fraudulent intent; (2) allegation that defendant "embezzled" money without describing more specific acts was sufficient to put the defendant on notice of the charges and did not affect her ability to defend the case

State v. Booker, ___ N.C. App. ___, 821 S.E.2d 877 (Nov. 6, 2018). (1) An embezzlement indictment was not fatally defective. The indictment alleged that the defendant: unlawfully, willfully and feloniously did embezzle three thousand nine hundred fifty seven dollars and eighty one cents ($3,957.81) in good and lawful United States currency belonging to AMPZ, LLC d/b/a Interstate All Battery Center. At the time the defendant was over 16 years of age and was the employee of AMPZ, LLC d/b/a Interstate All Battery Center and in that capacity had been entrusted to receive the property described above and in that capacity the defendant did receive and take into her care and possession that property. The defendant argued that the indictment failed to allege that she acted with fraudulent intent. The court determined that "the concept of fraudulent intent is already contained within the ordinary meaning of the term 'embezzle,'" as used in the indictment. The court noted that the defendant did not argue that she was prejudiced in her ability to prepare a defense because of this issue. It further noted that to convict the defendant of embezzlement, the State must prove that she fraudulently *or* knowingly and willfully misapplied or converted the property. Here, the indictment can fairly be read to allege that the defendant "knowingly and willfully" embezzled from her employer.

(2) The court also rejected the argument that the indictment was defective for failing to specify the acts constituting embezzlement. The indictment alleges that the defendant embezzled a specific sum of money entrusted to her in a fiduciary capacity as an employee of the company. The court "fail[ed] to see how these allegations would not adequately apprise Defendant as to the charges facing her or prejudiced her ability to prepare a defense." Jonathan Holbrook blogged about this case in part here.

(1) Reading all of the counts of the indictment together, indictment for resisting public officer was sufficient to identify the officer and his public office; (2) Allegation that the officer tried to remove defendant from the property was sufficient to state the officer's official duty at the time

State v. Nickens, ___ N.C. App. ___, 821 S.E.2d 864 (Nov. 6, 2018). The indictment properly charged resisting a public officer. On appeal the defendant argued that the indictment was invalid because it failed to sufficiently allege the officer's public office. The indictment alleged that the defendant "did resist, delay and obstruct Agent B.L. Wall, a public officer holding the office of North Carolina State Law Enforcement Agent, by refusing commands to leave the premises, assaulting the officer, refusing verbal commands during the course of arrest for trespassing and assault, and continuing to resist arrest." Count I of the indictment which charged the separate offense of assault on a government officer,

identified the officer as "Agent B.L. Wall, a state law enforcement officer employed by the North Carolina Division of Motor Vehicles." Both counts, taken together, provided the defendant was sufficient information to identify the office in question. (2) The court also rejected the defendant's argument that the indictment was defective because it failed to fully and clearly articulate a duty that the officer was discharging. After noting the language in Count II, the court noted that Count III, alleging trespass, asserted that the defendant remained on the premises of the specified DMV office "after having been notified not to remain there by a person in charge of the premises." The court held that "the charges" specifically state the duties the officer was attempting to discharge, namely: commanding the defendant to leave the premises and arresting or attempting to rest her when she failed to comply. Jonathan Holbrook blogged about this case in part here.

Statutory rape indictment identifying victim as "Victim #1" was fatally defective and did not confer jurisdiction

State v. Shuler, ___ N.C. App. ___, 822 S.E.2d 737 (Dec. 18, 2018). An indictment charging statutory rape of a person who is 13, 14, or 15 years old was facially defective where it did not identify the victim by name, identifying her only as "Victim #1." An indictment charging this crime must name the victim. The indictment need not include the victim's full name; use of the victim's initials may satisfy the "naming requirement." However, an indictment "which identifies the victim by some generic term is not sufficient."

Citations

N.C. Supreme Court holds citation sufficient to confer jurisdiction despite failure to allege multiple elements of the crime; pleading standards are relaxed for citations

State v. Jones, ___ N.C. ___, 819 S.E.2d 340 (Oct. 26, 2018). On appeal from a decision of a divided panel of the Court of Appeals, ___ N.C. App. ___, 805 S.E.2d 701 (2017), the court affirmed, holding that the citation charging the offense in question was legally sufficient to properly invoke the trial court's subject matter jurisdiction. The defendant was cited for speeding and charged with operating a motor vehicle when having an open container of alcohol while alcohol remained in his system. With respect to the open container charge, the citation stated that the defendant "did unlawfully and willfully WITH AN OPEN CONTAINER OF ALCOHOLIC BEVERAGE AFTER DRINKING (G.S. 20-138.7(A))[.]" The defendant moved to dismiss the open container charge on grounds that the citation was fatally defective. The District Court denied the motion and found the defendant guilty of both offenses. The defendant appealed to Superior Court and a jury found him guilty of the open container offense. Before the Court of Appeals, the defendant argued that the trial court lacked jurisdiction to try him for the open container offense because the citation failed to allege all of the essential elements of the crime. The Court of Appeals found no error and the Supreme Court affirmed. Relying in part on the Official Commentary to the statutes, the Supreme Court held that a citation need only identify the crime at issue; it need not provide a more exhaustive statement of the crime as is required for other criminal pleadings. If the defendant had concerns about the level of detail contained in the citation, G.S. 15A-922(c) expressly allowed him to move that the offense be charged in a new pleading. The court further determined that because the defendant did not move in District Court to have the State charge him in a new pleading while the matter was pending in the court of original jurisdiction, the defendant was precluded from challenging the citation in another tribunal on those grounds. The court concluded: "A citation that identifies the charged offense in compliance with N.C.G.S. § 15A-302(c) sufficiently satisfies the legal requirements applicable to the contents of this category of criminal pleadings and establishes

the exercise of the trial court's jurisdiction. Under the facts and circumstances of the present case, the citation at issue included sufficient criminal pleading contents in order to properly charge defendant with the misdemeanor offense for which he was found guilty, and the trial court had subject-matter jurisdiction to enter judgment in this criminal proceeding." Jeff Welty blogged about the Court of Appeals decision in the case here, and Shea Denning blogged about the N.C. Supreme Court decision here.

Informations

Bill of information that failed to explicitly waive right to indictment was fatally defective and failed to confer jurisdiction

State v. Nixon, ___ N.C. App. ___, 823 S.E.2d 689 (Feb. 5, 2019). The trial court erred by denying the defendant's motion for appropriate relief alleging that the trial court lacked subject matter jurisdiction to enter judgment where the defendant was charged with a bill of information that did not include or attach a waiver of indictment. G.S. 15A-642 allows for the waiver of indictment in non-capital cases where a defendant is represented by counsel. The statute further requires: "Waiver of Indictment must be in writing and signed by the defendant and his attorney. The waiver must be attached to or executed upon the bill of information." G.S. 15A-642(c). The court rejected the State's argument that the statute's requirements about waiver of indictment were not jurisdictional.

Evidence

Brady Material and Discovery

Trial court erred in failing to conduct *in camera* review of law enforcement emails for *Brady* material

U.S. v. Abdallah, 911 F.3d 201 (4th Cir. 2018). The defendant was arrested and taken to the police station for questioning. The interrogation was not recorded. During the agent's *Miranda* warning, the defendant interrupted and remarked that he "wasn't going to say anything at all." The agent continued reading the *Miranda* warning and immediately thereafter asked the defendant if he knew why he was under arrest. The defendant indicated he did not, and the agent repeated the *Miranda* warning a second time without interruption. The defendant then acknowledged he understood his rights and made several inculpatory statements. The defendant argued it was unclear whether any *Miranda* warning was given at all and sought additional discovery on communications between agents. The notes taken by the one agent at the time of questioning indicated the *Miranda* warning was understood and noted that the defendant wasn't willing to answer questions. The notes failed to mention the defendant's interruption. Another agent later prepared a report from memory. That draft report was emailed to other agents involved in the case, and "some modifications" were made. The final report acknowledged that the defendant interrupted the first *Miranda* warning. The defendant claimed that the inconsistency between the notes (by one agent) and the final report (by another agent) required production of the emails between all of the agents involved in the modification of the final report. The district court denied the request, crediting the agent who drafted the report that "he had not removed a request for counsel or a request to remain silent [from his report]."

While the case was resolved on the *Miranda* issue, the court also addressed the discovery issue regarding the officers' emails. *Brady v. Maryland*, 373 U.S. 83 (1963), guarantees defendants the right to disclosure of evidence "favorable to the accused and material to guilt or punishment." In cases where the defense seeks *Brady* material which the government asserts is confidential or otherwise protected, a defendant is required only to make a "plausible showing that exculpatory material exists" within the confidential information. *Id*. at 25. This lower standard applies because a defendant necessarily cannot know whether the confidential information will in fact contain *Brady* material. A plausible showing is made by identifying the protected information with specificity. When a plausible showing is made regarding specific evidence, the defendant is entitled to an *in camera* review by the trial judge to determine what, if any, of the information should be released to the defendant as *Brady* material. Here, the defendant made a plausible showing that the specific evidence of the email exchanges between officers regarding the drafting of the final report existed and may be exculpatory. The inconsistency between the handwritten notes by one agent and the final written report of the other officer was "sufficient to meet the 'meager' plausibility requirement for an *in camera* review." *Id*. at 27. The trial court therefore erred by denying the defendant's request and crediting the agent's testimony that the emails would have no exculpatory value. "[T]he district court cannot solely 'rely on the government's good faith' as a basis to avoid review." *Id*. at 26. It was "plausible" that the information sought would contain evidence favorable to the defense, and an *in came*ra review should have been conducted.

(1) No Brady violation where law enforcement failed to disclose (and subsequently destroyed) blank audio tape; defendant failed to demonstrate materiality or bad faith of potentially useful evidence; (2) No abuse of discretion for trial court to refuse to impose sanctions for alleged discovery violation; (3) No error to refuse jury instruction on lost evidence where defendant couldn't demonstrate bad faith or exculpatory value of lost tape

State v. Hamilton, ___ N.C. App. ___, 822 S.E.2d 548 (Dec. 4, 2018). (1) In this drug trafficking case, the trial court did not err by denying the defendant's motion to dismiss all charges due to the State's failure to preserve and disclose a blank audio recording of a conversation between an accomplice and the defendant. After the accomplice Stanley was discovered with more than 2 pounds of methamphetamine in his vehicle, he told officers that the defendant paid him and a passenger to pick up the drugs in Atlanta. Stanley agreed to help officers establish that the defendant was involved by arranging a control delivery of artificial methamphetamine. With Lt. Moody present, Stanley used a cell phone to call the defendant to arrange a pick up at a specified location. The defendant's associates were arrested when they arrived at the site and testified as witnesses for the State against the defendant. During trial, defense counsel asked Moody on cross-examination if he attempted to record the telephone conversations between Stanley and the defendant. Moody said that he tried to do so with appropriate equipment but realized later that he had failed to record the call. Defense counsel told the trial court that no information had been provided in discovery about Moody's attempt to record the call. After questioning Moody outside of the presence of the jury, the defendant filed a motion for sanctions seeking dismissal of the charges for a willful violation of the discovery statutes and his constitutional rights. The trial court denied the motion. The defendant was convicted and appealed. The defendant argued that the State violated his *Brady* rights by not preserving and disclosing the blank audio recording of the conversation. The court disagreed. The defendant had the opportunity to question Stanley about the phone call, cross-examine Moody about destruction of the blank recording, and argue the significance of the blank recording to the jury. Although the blank recording could have been potentially useful, the defendant failed to show bad faith by Moody. Moreover, while the evidence may have had the potential to be favorable, the defendant failed to show that it was material. In this respect, the court rejected the notion that the blank recording implicated Stanley's credibility.

(2) The court rejected the defendant's argument that the trial court erred by denying his motion for sanctions for failure to preserve and disclose the blank recording. Under the discovery statutes, Moody should have documented his efforts to preserve the conversation by audio recording and provided the blank audio file to the District Attorney's Office to be turned over to the defendant in discovery. The court noted that when human error occurs with respect to technology used in investigations "[th]e solution in these cases is to document the attempt and turn over the item with that documentation, even if it appears to the officer to lack any evidentiary value." However, failure to do so does not always require dismissal or lesser sanctions. Here, the trial court considered the materiality of the blank file and the circumstances surrounding Moody's failure to comply with his discovery obligations. In denying sanctions, it considered the evidence presented and the arguments of counsel concerning the recording. The trial court found Moody's explanation of the events surrounding the recording to be credible. On this record, the trial court did not abuse its discretion in denying sanctions.

(3) The trial court did not err by failing to provide a jury instruction with respect to the audio recording. The court noted that in *State v. Nance*, 157 N.C. App. 434 (2003), it held that the trial court did not err by declining to give a special instruction requested by the defendant concerning lost evidence when the defendant failed to establish that the police destroyed the evidence in bad faith and that the missing evidence possessed an exculpatory value that was apparent before it was lost. As in this case, the defendant failed to make the requisite showing and the trial court did not err by declining to give the requested instruction.

Character Evidence

Victim's character is not an essential element of self-defense and the trial court properly excluded specific instances of violence by the victim under Rule 405

State v. Bass, ___ N.C. ___, 819 S.E.2d 322 (Oct. 26, 2018). On appeal from a decision of a divided panel of the Court of Appeals, ___ N.C. App. ___, 802 S.E.2d 477 (2017), the Supreme Court reversed, holding that the trial court properly excluded specific instances of the victim's violent conduct for the purpose of proving that he was the first aggressor. The charges arose from the defendant's shooting of the victim. The defendant asserted self-defense. In his case in chief, the defendant sought to introduce testimony describing specific instances of violent conduct by the victim, specifically testimony from three witnesses about times when they had experienced or witnessed the victim's violent behavior. The trial court excluded this evidence but allowed each witness to testify to his or her opinion of the victim's character for violence and the victim's reputation in the community. Construing the relevant evidence rules, the Supreme Court determined that character is not an essential element of self-defense. Therefore, with regard to a claim of self-defense, the victim's character may not be proved by evidence of specific acts. Here, the excluded evidence consisted of specific incidents of violence committed by the victim. Because Rule 405 limits the use of specific instances of past conduct to cases in which character is an essential element of the charge, claim, or defense, the trial court properly excluded testimony regarding these specific prior acts of violence by the victim. John Rubin blogged about the case here.

Evidence of victim's gang membership, tattoos and gun possession did not involve "specific instances of conduct" and was properly excluded under 405(b)

State v. Greenfield, ___ N.C. App. ___, 822 S.E.2d 477 (Dec. 4, 2018), *temp. stay allowed,* ___ N.C. ___, 822 S.E.2d 411 (Jan. 23, 2019). In this case arising out of homicide and assault charges related to a drug deal gone bad, the trial court did not err by excluding evidence that the deceased victim was a gang leader, had a "thug" tattoo, and previously had been convicted of armed robbery. The defendant argued this evidence showed the victim's violent character, relevant to his assertion of self-defense. The court noted that a defendant claiming self-defense may produce evidence of the victim's character tending to show that the victim was the aggressor. Rule 405 specifies how character evidence may be offered. Rule 405(a) states that evidence regarding the victim's reputation may be offered; Rule 405(b) states that evidence concerning specific instances of the victim's conduct may be offered. Here, the defendant argued that the evidence was admissible under Rule 405(b). The court concluded, however, that the evidence concerning the victim's gang membership, possession of firearms, and tattoo do not involve specific instances of conduct admissible under the rule. Regarding the victim's prior conviction for armed robbery, the court excluded this evidence under Rule 403 finding that prejudice outweighed probative value. Here, the defendant made no argument that the trial court erred in excluding the evidence under Rule 403 and thus failed to meet his burden on appeal as to this issue.

Confrontation Clause

Victim's statements were made to assist in apprehending armed suspects and were properly considered non-testimonial

State v. Guy, ___ N.C. App. ___, 822 S.E.2d 66 (Nov. 6, 2018). In this case involving armed robbery and other charges, the victim's statements to a responding officer were nontestimonial. When officer Rigsby arrived at the victim's home to investigate the robbery call, the victim was shaken up, fumbling over his words, and speaking so fast that it sounded like he was speaking another language. Once the victim calmed down he told the officer that a group of black men robbed him, that one of them put a snubnosed revolver to the back of his head, one wore a clown mask, the suspects fled in a silver car, and one of the robbers was wearing red clothing. Shortly thereafter, another officer informed Rigsby that she had found a vehicle and suspects matching the description provided by 911 communications. Rigsby immediately left the victim to assist that officer. Although the suspects had fled the victim's home, an ongoing emergency posing danger to the public existed. The victim's statements to Rigsby were nontestimonial because they were provided to assist police in meeting an ongoing emergency and to aid in the apprehension of armed, fleeing suspects.

(1) No confrontation clause violation where substitute analyst conducted independent analysis; (2) Testimony of analyst regarding weight of drugs was machine-generated and therefore not testimonial or hearsay

State v. Pless, ___ N.C. App. ___, 822 S.E.2d 725 (Dec. 18, 2018). (1) In this drug case, the court held—with one judge concurring in result only—that the trial court did not err by admitting evidence of the identification and weight of the controlled substances from a substitute analyst. Because Erica Lam, the forensic chemist who tested the substances was not available to testify at trial, the State presented Lam's supervisor, Lori Knops, who independently reviewed Lam's findings to testify instead. The defendant was convicted and he appealed, asserting a confrontation clause violation. The court found that no such violation occurred because Knops's opinion resulted from her independent analysis of Lam's data. As to the identity of the substances at issue, Knops analyzed the data and gave her own independent expert opinion that the substance was heroin and oxycodone. (2) With respect to the

weight of the substances, Knops's opinion was based on her review of Lam's "weights obtained on that balance tape." Because weight is machine generated, it is non-testimonial.

(1) Stipulation to lab result waived any Confrontation Clause objections and the trial court need not address the defendant personally before accepting such stipulation; (2) oral stipulation treated no differently than written stipulation

State v. Loftis, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 26, 2019). (1) In this drug case, the trial court did not err by admitting a forensic laboratory report after the defendant stipulated to its admission. The defendant argued that the trial court erred by failing to engage in a colloquy with her to ensure that she personally waived her sixth amendment right to confront the analyst whose testimony otherwise would be necessary to admit the report. *State v. Perez*, __ N.C. App. __, __, 817 S.E.2d 612, 615 (2018), establishes that a waiver of Confrontation Clause rights does not require the type of colloquy required to waive the right to counsel or to enter a guilty plea. In that case, the defendant argued that the trial court erred by allowing him to stipulate to the admission of forensic laboratory reports without engaging in a colloquy to ensure that he understood the consequences of that decision. The court rejected that argument, declining the defendant's request to impose on trial courts an obligation to personally address a defendant whose attorney seeks to waive any of his constitutional rights through a stipulation. In *Perez*, the court noted that if the defendant did not understand the implications of the stipulation, his recourse is a motion for appropriate relief asserting ineffective assistance of counsel. (2) The court rejected the defendant's attempt to distinguish *Perez* on grounds that it involved a written stipulation personally signed by the defendant, while this case involves defense counsel's oral stipulation made in the defendant's presence. The court found this a "distinction without a difference." Here, the stipulation did not amount to an admission of guilt and thus was not the equivalent of a guilty plea. The court continued:

> [W]e . . . decline to impose on the trial courts a categorical obligation "to personally address a defendant" whose counsel stipulates to admission of a forensic report and corresponding waiver of Confrontation Clause rights. That advice is part of the role of the defendant's counsel. The trial court's obligation to engage in a separate, on-the-record colloquy is triggered only when the stipulation "has the same practical effect as a guilty plea."

Defendant's Silence

No plain error to admit evidence of defendant's post-arrest silence where defendant opened the door

State v. Booker, ___ N.C. App. ___, 821 S.E.2d 877 (Nov. 6, 2018). In this embezzlement case, the trial court did not commit plain error by allowing a detective to testify regarding the defendant's post-arrest silence. The defendant opened the door to the testimony by pursuing a line of inquiry on cross-examination centering around the detective's attempts to contact the defendant before and after her arrest.

Identifications

Victim's identification testimony was not the result of improperly suggestive procedures and was properly admitted

State v. Mitchell, ___ N.C. App. ___, 822 S.E.2d 51 (Nov. 6, 2018). The trial court properly denied the defendant's motion to suppress a victim's identification of the defendant as the perpetrator. The defendant was charged with armed robbery of a Game Stop store and threaten use of a firearm against a store employee, Cintron, during the robbery. Although Cintron failed to identify an alleged perpetrator in a photographic lineup shown to him two days after the robbery, he later identified the defendant when shown a single still-frame photograph obtained from the store's surveillance video. Cintron then identified the defendant as the perpetrator in the same photographic lineup shown to him two days after the robbery and again in four close-up, post-arrest photographs of the defendant showing his neck tattoos. The defendant unsuccessfully moved to suppress Cintron's in-court and out-of-court identifications.

On appeal the defendant argued that the State conducted an impermissibly suggestive pretrial identification procedure that created a substantial likelihood of misidentification. The court rejected that argument, finding that the trial court's challenged findings and conclusions—that the authorities substantially followed statutory and police department policies in each photo lineup and that the substance of any deviation from those policies revolved around the defendant's neck tattoos—are supported by the evidence. The defendant fit the victim's initial description of the perpetrator, which emphasized a tattoo of an Asian symbol on the left side of his neck and notable forehead creases. Based on this description, the victim had the ability to identify the defendant both in court and in photographs reflecting a close-up view of the defendant's tattoos, and he specifically testified to his ability to recognize the defendant as the perpetrator independent of any lineup or photo he had been shown. Thus, the trial court's ultimate conclusion—that the procedures did not give rise to a substantial likelihood that the defendant was mistakenly identified—is supported by the totality of the circumstances indicating that the identification was sufficiently reliable.

No error where trial judge considered suggestibility of identification but failed to explicitly make findings on the use of a DMV photo to identify defendant; identification was reliable and not impermissibly suggestive

State v. Pless, ___ N.C. App. ___, 822 S.E.2d 725 (Dec. 18, 2018). In this drug case, the trial court did not err by denying the defendant's motion to suppress evidence regarding in-court identifications on grounds that they were unreliable, tainted by an impermissibly suggestive DMV photograph. Detective Jurney conducted an undercover narcotics purchase from a man known as Junior, who arrived at the location in a gold Lexus. A surveillance team, including Sgt. Walker witnessed the transaction. Junior's true identity was unknown at the time but Walker obtained the defendant's name from a confidential informant. Several days after the transaction, Walker obtained a photograph of the defendant from the DMV and showed it to Jurney. Walker testified that he had seen the defendant on another occasion driving the same vehicle with the same license plate number as the one used during the drug transaction. At trial Jurney and Walker identified the defendant as the person who sold the drugs in the undercover purchase. The defendant was convicted and he appealed.

On appeal the defendant argued that the trial court erred by failing to address whether the identification was impermissibly suggestive. The court found that although the trial court did not make an explicit conclusion of law that the identification procedure was not impermissibly suggestive, it is clear that the trial court implicitly so concluded. The court found the defendant's cited cases distinguishable, noting in part that there is no absolute prohibition on using a single photograph for an identification. The court noted that even if the trial court failed to conclude that the identification

procedure was not impermissibly suggestive, it did not err in its alternative conclusion that the identification was reliable under the totality of the circumstances. It concluded:

> While we recognize that it is the better practice to use multiple photos in a photo identification procedure, the trial court did not err in its conclusion that, in this case, the use of a single photo was not impermissibly suggestive. And even if the procedure was impermissibly suggestive, the trial court's findings of fact also support a conclusion that the procedure did not create "a substantial likelihood of irreparable misidentification." The trial court's findings of fact in this order are supported by competent evidence, and these factual findings support the trial court's ultimate conclusions of law.

Imperfect, but reliable, show-up identification properly admitted

State v. Juene, ___ N.C. App. ___, 823 S.E.2d 889 (Jan. 15, 2019). In this case involving armed robbery and other convictions, the trial court did not err by denying the defendant's motion to suppress evidence which asserted that the pre-trial identification was impermissibly suggestive. Three victims were robbed in a mall parking lot by three assailants. The defendant was apprehended and identified by the victims as one of the perpetrators. The defendant unsuccessfully moved to suppress the show-up identification made by the victims, was convicted and appealed. On appeal the defendant argued that the show-up identification should been suppressed because it was impermissibly suggestive. Before the robbery occurred the defendant and the other perpetrators followed the victims around the mall and the parking lot; the defendant was 2 feet from one of the victims at the time of the robbery; the show-up occurred approximately 15 minutes after the crime; before the show-up the victims gave a physical description of the defendant to law enforcement; all three victims were seated together in the back of a police car during the show-up; the defendant and the other perpetrators were handcuffed during the show-up and standing in a well-lit area of the parking lot in front of the police car; the defendant matched the description given by the victims; upon approaching the area where the defendant and the others were detained, all three victims spontaneously shouted, "That's him, that's him"; and all of the victims identified the defendant in court. Although these procedures "were not perfect," there was not a substantial likelihood of misidentification in light of the reliability factors surrounding the crime and the identification. "Even though the show-up may have been suggestive, it did not rise to the level of irreparable misidentification."

Lay Opinions

Where the defendant failed to object to the officer's lay opinion of property damage over $1000, the opinion (along with other evidence of damage) was sufficient to survive motion to dismiss

State v. Gorham, ___ N.C. App. ___, 822 S.E.2d 313 (Nov. 20, 2018). In this felony speeding to elude case, the State presented sufficient evidence that the defendant caused property damage in excess of $1000, one of the elements of the charge. At trial, an officer testified that the value of damages to a guardrail, vehicle, and house and shed exceeded $1000. Additionally, the State presented pictures and videos showing the damaged property. The court noted that because the relevant statute does not specify how to determine the value of the property damage, value may mean either the cost to repair the property damage or the decrease in value of the damaged property as a whole, depending on the circumstances of the case. It instructed: "Where the property is completely destroyed and has no value

after the damage, the value of the property damage would likely be its fair market value in its original condition, since it is a total loss." It continued, noting that in this case, it need not decide that issue because the defendant did not challenge the jury instructions, and the evidence was more than sufficient to support either interpretation of the amount of property damage. Here, the officer's testimony and the photos and video establish that besides hitting the guard rail, the defendant drove through a house and damaged a nearby shed. "The jury could use common sense and knowledge from their 'experiences of everyday life' to determine the damages from driving through a house alone would be in excess of $1000.

Expert Opinions

No error to exclude portions of defense expert testimony on eyewitness identification reliability

State v. Vann, ___ N.C. App. ___, 821 S.E.2d 282 (Oct. 2, 2018). The trial court did not abuse its discretion by partially sustaining the State's objection to expert testimony by a defense witness regarding the factors affecting the reliability of eyewitness identification. UNC-Charlotte Prof. Dr. Van Wallendael was qualified and accepted by the court as an expert witness in the field of memory perception and eyewitness identification. The defendant sought to have her testify concerning whether any factors were present that could have affected the witnesses' identification of the defendant as the shooter. At a voir dire, the witness identified four factors in the case which could have affected the witnesses' identifications: the time factor; the disguise factor; the stress factor; and the weapon focus effect. According to the time factor, the likelihood of an accurate identification increases the longer in time a witness has to view the perpetrator's face. Under the disguise factor, anything covering the face of the perpetrator decreases the chances of an accurate identification later by the eyewitness. The stress factor states that stress, especially from violent crimes, can significantly reduce an eyewitness's ability to remember accurately. Studies on the weapon focus factor show that people confronted with a weapon tend to concentrate their attention on the weapon itself, and not the individual holding the weapon, which decreases the likelihood of an accurate identification of the assailant or shooter later. The trial court sustained the State's objection to opinion testimony concerning the time and disguise factors, noting that they are commonsense conclusions that would be of little if any benefit to the jury. It did however allow testimony on the stress factor and the weapon focus effect. The defendant failed to show any abuse of discretion by the trial court in partially sustaining the State's objection. The trial court properly found that the time and disguise concepts were commonsense conclusions that would be of little benefit to the jury.

Error for chemist to testify to identity of pills without explaining testing methodology, but did not rise to the level of plain error warranting a new trial

State v. Piland, ___ N.C. App. ___, 822 S.E.2d 876 (Dec. 18, 2018). In this drug case, the trial court erred but did not commit plain error by allowing the State's expert to testify that the pills were hydrocodone. With no objection from the defendant at trial, the expert testified that she performed a chemical analysis on a single tablet and found that it contained hydrocodone. On appeal the defendant asserted that this was error because the expert did not testify to the methods used in her chemical analysis. The court agreed holding: "it was error for the trial court not to properly exercise its gatekeeping function of requiring the expert to testify to the methodology of her chemical analysis." However, the court concluded that the error does not amount to plain error "because the expert testified that she performed a "chemical analysis" and as to the results of that chemical analysis. Her testimony stating

that she conducted a chemical analysis and that the result was hydrocodone does not amount to "baseless speculation," and therefore her testimony was not so prejudicial that justice could not have been done."

Where State's theory did of physical helplessness did not depend on the victim's lack of memory, proposed expert testimony that an impaired person can engage in volitional actions and not remember was properly excluded as not assisting the trier of fact

State v. Lopez, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 19, 2019). In this second-degree rape case involving a victim who had consumed alcohol, the trial court did not abuse its discretion by refusing to allow testimony of defense expert, Dr. Wilkie Wilson, a neuropharmacologist. During voir dire, Wilson testified that one of his areas of expertise was alcohol and its effect on memory. He explained that he would testify "about what's possible and what's, in fact, very, very likely and [sic] when one drinks a lot of alcohol." He offered his opinion that "someone who is having a blackout might not be physically helpless." The State objected to this testimony, arguing that his inability to demonstrate more than "maybe" possibilities meant that his testimony would not be helpful to the jury. The trial court sustained the objection, determining that the expert would not assist the trier of fact to understand the evidence or to determine a fact in issue in the case. Because the State's theory of physical helplessness did not rest on the victim's lack of memory, the expert's testimony would not have helped the jury determine a fact in issue. Thus, the trial court did not abuse its discretion in excluding this testimony. Even if the trial court had erred, no prejudice occurred given the State's overwhelming evidence of the victim's physical helplessness.

State's expert opinion that child was abused in absence of physical evidence of abuse was impermissible vouching and constituted reversible error

State v. Casey, ___ N.C. App. ___, 823 S.E.2d 906 (Jan. 15, 2019). In this child sexual assault case, the court reversed the trial court's order denying the defendant's Motion for Appropriate Relief (MAR) seeking a new trial for ineffective assistance of counsel related to opinion testimony by the State's expert. The defendant was convicted of sexual offenses against Kim. On appeal the defendant argued that the trial court should have granted his MAR based on ineffective assistance of both trial and appellate counsel regarding expert opinion testimony that the victim had in fact been sexually abused.

The court began by concluding that the testimony offered by the State's expert that Kim had, in fact, been sexually abused was inadmissible. The court reiterated the rule that where there is no physical evidence of abuse, an expert may not opine that sexual abuse has in fact occurred. In this case the State offered no physical evidence that Kim had been sexually abused. On direct examination the State's expert testified consistent with governing law. On cross-examination, however, the expert expressed the opinion that Kim "had been sexually abused." And on redirect the State's expert again opined that Kim had been sexually abused. In the absence of physical evidence of sexual abuse, the expert's testimony was inadmissible.

Relevance and Prejudice

Evidence of jailhouse attack on witness was relevant and not unduly prejudicial

State v. Smith, ___ N.C. App. ___, 823 S.E.2d 678 (Jan. 15, 2019). In this non-capital murder case, the trial court did not err by allowing a State's witness to testify, over objection, about a jailhouse attack. Witness Brown testified that he was transferred to the county courthouse to testify for the State at a pretrial hearing. When he arrived, the defendant—who was present inside a holding cell--threatened Brown and made a motion with his hands "like he was going to cut me. He was telling me I was dead." After Brown testified at the pretrial hearing, he was taken back to the jail and placed in a pod across from the defendant, separated by a glass window. The defendant stared at Brown through the window and appeared to be "talking trash." A few minutes later "somebody came to him and threatened him" for testifying against the defendant. Soon after Brown returned to his cell, the same person who had threatened him moments earlier came into the cell and assaulted Brown, asking him if he was telling on the defendant. On appeal the defendant argued that evidence of the jailhouse attack was both irrelevant and unduly prejudicial.

The evidence regarding the jailhouse attack was relevant. The defendant's primary argument on appeal was that there was no evidence that the defendant knew about, suggested, or encouraged the attack. The court disagreed noting, among other things that the defendant stared at Brown through the window immediately before the assailant approached and threatened Brown, and that the assailant asked Brown if he was telling on the defendant. This testimony "clearly suggests" that the defendant "was, at minimum, aware of the attack upon Brown or may have encouraged it." Evidence of attempts to influence a witness by threats or intimidation is relevant. Additionally, Brown testified that he did not want to be at trial because of safety concerns. A witness's testimony about his fear of the defendant and the reasons for this fear is relevant to the witness's credibility. Thus the challenged testimony is clearly relevant in that it was both probative of the defendant's guilt and of Brown's credibility.

The court went on to find that the trial court did not abuse its discretion by admitting the challenged testimony under Rule 403, finding that the defendant failed to demonstrate how the challenged testimony was unfairly prejudicial or how its prejudicial effect outweighed its probative value.

Hearsay

Statement by investigative target "them are my boys, deal with them" properly admitted under hearsay exception for statement by co-conspirator in furtherance of conspiracy

State v. Chevallier, ___ N.C. App. ___, 824 S.E.2d 440 (Mar. 5, 2019). In this drug case the trial court did not err by admitting a hearsay statement under the Rule 801(d)(E) co-conspirator exception. An undercover officer arranged a drug transaction with a target. When the officer arrived at the prearranged location, different individuals, including the defendant, pulled up behind the officer. While on the phone with the officer, the target instructed: "them are my boys, deal with them." This statement was admitted at trial under the co-conspirator exception to the hearsay rule. The defendant was convicted and appealed. On appeal the defendant argued that the statement was inadmissible because the State failed to prove a conspiracy between the target and the defendant and the others in the car. The court disagreed. The officer testified that he had previously planned drug buys from the target. Two successful transactions occurred at a Bojangles restaurant in Warsaw, NC where the target had delivered the drugs to the officer. When the officer contacted the target for a third purchase, the target agreed to sell one ounce of cocaine for $1200; the transfer was to occur at the same Warsaw Bojangles. When the target was not at the location, the officer called the target by phone. During the

conversation, three men parked behind the officer's vehicle and waved him over to their car, and the target made the statement at issue. A man in the backseat displayed a plastic bag of white powder and mentioned that he knew the officer from prior transactions. The officer retrieved his scale and weighed the substance; it weighed one ounce. This was sufficient evidence of a conspiracy between the target and the men in the car. In so holding the court rejected the defendant's argument that because the substance turned out to be counterfeit cocaine, there was no agreement and thus no conspiracy. Because both selling actual cocaine and selling counterfeit cocaine is illegal under state law, the evidence was sufficient to establish a prima facie case of conspiracy by way of an agreement between the target and the men to do an unlawful act.

Criminal Procedure

Closing Argument

Court admonishes prosecutor for improperly commenting on defendant's exercise of right to trial, but finds error harmless in light of overwhelming evidence of guilt

State v. Degraffenried, ___ N.C. App. ___, 821 S.E.2d 887 (Nov. 6, 2018). In this drug trafficking case, the court rejected the defendant's argument that the trial court erred by failing to intervene *ex mero motu* during the State's closing argument. During those arguments, the prosecutor, without objection, made references to the defendant's right to a jury trial and noted that the defendant had exercised that right despite "[a]ll of the evidence" being against him. The defendant has a constitutional right to plead not guilty and be tried by a jury. Reference by the State to a defendant's failure to plead guilty violates the defendant's constitutional right to a jury trial. Here, the prosecutor's comments were improper. The court stated: "Counsel is admonished for minimalizing and referring to Defendant's exercise of his right to a trial by jury in a condescending manner." However, because the evidence of guilt was overwhelming the defendant failed to show that the comments were so prejudicial as to render the trial fundamentally unfair.

Prosecutor's argument highlighting defendant's silence was improper and may have resulted in a new trial, had the issue been preserved for appellate review

State v. Thompson, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In this assault and felon in possession of a firearm case, the court declined to review on appeal the defendant's argument that the trial court committed plain error by allowing the prosecutor to make improper comments during closing argument related to the defendant's exercise of his right to remain silent, where the defendant failed to object at trial. Constitutional arguments regarding closing statements which are not objected to are waived. The court continued, however, cautioning prosecutors against making similar arguments. It noted that if the defendant's challenge had been preserved, "it may well have justified a new trial." During arguments, the prosecutor asserted that after seeing still pictures from a surveillance video of the incident, the defendant put his head down and said, "I'm done talking." The prosecutor continued, noting that the defendant had a right to remain silent but asked, "[I]f you were in an interview room and a detective was accusing you of committing the shooting and you didn't do it, how would you react? Would you put your head down and go to sleep?"

No error for court to fail to intervene *ex mero motu* in prosecutor's closing argument; (1) standard for impairment was correctly stated when viewed in full context; (2) Argument that jury could "send a message" and was the "moral voice" of the community were not improper

State v. Shelton, ___ N.C. App. ___, 824 S.E.2d 136 (Feb. 5, 2019) (1) In this felony death by vehicle case, the prosecution did not incorrectly state the standard for impairment in jury argument. The defendant asserted that the prosecutor's statements suggested that the jury could find the defendant guilty merely if impairing substances were in his blood. The court disagreed finding that the when viewed in totality, the prosecutor's statements made clear that the defendant could only be convicted if he was, in fact, legally impaired. (2) The prosecutor did not improperly appeal to the jury's passion and prejudice requiring the trial court to intervene ex mero motu. The prosecutor asserted that the jury "can send a message" with its verdict and told the jury that it was "the moral voice and conscience of this community." Neither of these argument are improper.

Defenses

Affirming Court of Appeals, N.C. Supreme Court holds trial court erred in omitting stand-your-ground language from self-defense jury instructions where defendant was lawfully present outside of his apartment building

State v. Bass, ___ N.C. ___, 819 S.E.2d 322 (Oct. 26, 2018). On appeal from a decision of a divided panel of the Court of Appeals, ___ N.C. App. ___, 802 S.E.2d 477 (2017), the court affirmed, holding that the trial court committed prejudicial error by omitting stand-your-ground language from the self-defense jury instructions. The incident in question occurred outside of the Bay Tree Apartments. The defendant gave notice of his intent to pursue self-defense and throughout the trial presented evidence tending to support this defense. At the charge conference, the defendant requested that the jury charge include language from Pattern Jury Instruction 308.45 providing, in relevant part, that the defendant has no duty to retreat in a place where the defendant has a lawful right to be and that the defendant would have a lawful right to be at his place of residence. Believing that the no duty to retreat provisions applies only to an individual located in his own home, workplace, or motor vehicle, the trial court declined to give the requested instruction. After deliberations began, the jury asked for clarification on duty to retreat. Outside the presence of the jury, the defendant again requested that the trial court deliver a no duty to retreat instruction, this time pointing to Pattern Jury Instruction 308.10, including its language that the defendant has no duty to retreat when at a place that the defendant has a lawful right to be. The trial court again concluded that because the defendant was not in his residence, workplace, or car, the no duty to retreat instruction did not apply. The Court of Appeals held that the trial court committed reversible error in omitting the no duty to retreat language from its instruction. Reviewing the relevant statutes, the Supreme Court affirmed this holding, concluding that "wherever an individual is lawfully located—whether it is his home, motor vehicle, workplace, or any other place where he has the lawful right to be—the individual may stand his ground and defend himself from attack when he reasonably believes such force is necessary to prevent imminent death or great bodily harm to himself or another." John Rubin blogged about the Court of Appeals decision in the case here.

Reversible error not to instruct on self-defense; instruction was supported by the evidence when viewed in the light most favorable to the defendant

State v. Parks, ___ N.C. App. ___, 824 S.E.2d 881 (Feb. 19, 2019). In this assault case, the trial court committed prejudicial error by failing to instruct the jury on self-defense. Aubrey Chapman and his friend Alan McGill attended a party. During the party, the defendant punched McGill in the face. Chapman saw the confrontation and hit the defendant. Security escorted the defendant out of the venue. Chapman followed, as did others behind him. The evidence conflicts as to what occurred next. Chapman claimed that the defendant charged him with a box cutter. Reggie Penny, a security guard who was injured in the incident, said that people rushed the defendant and started an altercation. Sherrel Outlaw said that while the defendant had his hands up, a group of guys walked towards him. When the defendant took a couple of steps back, someone hit him in the face and a group of guys jumped on him. Outlaw did not see the defendant with a weapon. The trial court denied the defendant's request for a self-defense instruction. The defendant was convicted and appealed. The court found that the trial court erred by failing to instruct the jury on self-defense, finding that the defendant presented competent evidence that he reasonably believed that deadly force used was necessary to prevent imminent death or great bodily harm. Citing Penny and Outlaw's testimony, it held that evidence is sufficient to support the defendant's argument that the assault on him gave rise to his reasonable apprehension of death or great bodily harm. Although the State correctly asserts that some of the evidence shows that the defendant was the initial aggressor, conflicting evidence indicates that he was not brandishing a weapon and was attacked without provocation. The court noted that it must view the evidence in the light most favorable to the defendant. The court went on to conclude that the trial court's error was prejudicial.

Pleas

No error to reject guilty plea where defendant maintained innocence during plea colloquy

State v. Chandler, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In a child sexual assault case, the court held, over a dissent, that the trial court did not err by refusing to accept a tendered guilty plea. The defendant was indicted for first-degree sex offense with a child and indecent liberties. The defendant reached a plea agreement with the State and signed the standard Transcript of Plea form. The form indicated that the defendant was pleading guilty, as opposed to entering a no contest or Alford plea. However, during the trial court's colloquy with the defendant at the plea proceeding, the defendant stated that he did not commit the crime. Because the defendant denied his guilt, the trial court declined to accept the plea. At trial, the defendant continued to maintain his innocence. The defendant was convicted and appealed, asserting that the trial court improperly refused to accept his guilty plea in violation of G.S. 15A-1023(c). That provision states that if the parties have entered into a plea agreement in which the prosecutor has not agreed to make any recommendations regarding sentence, the trial court must accept the plea if it determines that it is the product of informed choice and that there is a factual basis. Here, the trial court correctly rejected the plea where it was not the product of informed choice. When questioned about whether he understood his guilty plea, the defendant maintained his innocence. Because of the conflict between the defendant's responses during the colloquy and the Transcript of Plea form, the trial court could not have found that the plea was knowingly, intelligently, and understandingly entered. The court explained: "To find otherwise would be to rewrite the plea agreement as an *Alford* plea." In a footnote, it added:

> [I]f we were to accept Defendant's argument, the likelihood that factually innocent defendants will be incarcerated in North Carolina increases because it removes discretion and common sense from our trial judges. Judges would be required to accept guilty pleas,

not just *Alford* pleas, when defendants maintain innocence. Such a result is incompatible with our system of justice.

Speedy Trial

63 month delay between trial and arrest triggered review of *Barker* factors but ultimately did not violate defendant's speedy trial right

State v. Farmer, ___ N.C. App. ___, 822 S.E.2d 556 (Dec. 4, 2018). In this child sexual assault case, the court held, over a dissent, that the defendant's speedy trial right was not violated. On 7 May 2012, the defendant was indicted for first-degree sex offense with a child and indecent liberties. The defendant waived arraignment on 24 May 2012 and 5 November 2012. Although the defendant filed a motion requesting a bond hearing on 15 July 2013, the motion was not calendared. Trial was scheduled for 30 January 2017. However, defense counsel and the prosecutor agreed to continue the case until the 17 July 2017 trial session. On 6 March 2017 the defendant filed a motion for speedy trial, requesting that the trial court either dismiss the case or establish a peremptory date for trial. On 11 July 2017, the defendant filed a motion to dismiss, alleging a violation of his constitutional right to a speedy trial. The trial court denied the motions. The defendant was convicted on both charges and appealed. Applying the *Barker* speedy trial factors, the court first considered the length of delay. It concluded that the length of delay in this case—63 months— is significant enough to trigger an inquiry into the remaining factors. Regarding the 2nd factor—reason for the delay—the defendant asserted administrative neglect by the State to calendar his trial and motions. Considering the record, the court found it "undisputed" that the primary reason for the delay was a backlog of pending cases and a shortage of ADAs to try them. The court also found it significant that the defendant had filed his motion for a speedy trial after he had agreed to continue his case. Noting that "case backlogs are not encouraged," the court found that the defendant did not establish that the delay was caused by neglect or willfulness. It concluded: "The record supports that neither party assertively pushed for this case to be calendared before 2017, and after defendant agreed to continue his case, scheduling conflicts prevented defendant's case from being calendared before 20 July 2017." As to the third *Barker* factor--assertion of the right--the court noted that the defendant formally asserted his speedy trial right on 6 March 2017, almost 5 years after his arrest. His case was calendared and tried within 4 months of his assertion of that right. Given the short period of time between the defendant's demand and the trial, the court found that the defendant's failure to assert his speedy trial right sooner weighs against him in the balancing test. As to the final *Barker* factor—prejudice—the defendant argued that the delay potentially affected witnesses' ability to accurately recall details and therefore possibly impaired his defense. In this respect the court concluded:

> However, the victim, who was nine at the time she testified, was able to recall details of the incident itself although she demonstrated some trouble remembering details before and after the incident which occurred when she was three years old. Other witnesses, however, testified and outlined the events from that day. Also, as the trial court pointed out, defendant has had access to all the witnesses' interviews and statements to review for his case and/or use for impeachment purposes. Considering that the information was available to defendant, we do not believe defendant's ability to defend his case was impaired.

The court went on to conclude that it was unpersuaded by the defendant's argument that he suffered prejudice as a result of the delay. Having considered the four-factor balancing test, the court held that the defendant failed to demonstrate that his speedy trial right was violated.

Where trial court ruled on defendant's pro se speedy trial motion, court erred in failing to consider all *Barker* factors and not making findings

State v. Sheridan, ___ N.C. App. ___, 824 S.E.2d 146 (Feb. 5, 2019). In this child sexual assault case, the court remanded for further findings with respect to the defendant's speedy trial motion. Although the trial court was not obligated to consider the defendant's pro se speedy trial motion while he was represented, because it did so, it erred by failing to consider all of the *Barker v. Wingo*, 407 U.S. 514 (1972) factors and making appropriate findings. The court remanded for a proper *Barker v. Wingo* analysis and appropriate findings.

Joinder and Severance

Where the transactional connection between two offenses was sufficient for joinder, trial court did not err in denying motion to sever offenses; defendant's assertion that he may have testified in one case was insufficient to establish prejudice without more

State v. Knight, ___ N.C. App. ___, 821 S.E.2d 622 (Oct. 16, 2018). In this gang-related case involving two shootings and charges of first-degree murder, assault with a deadly weapon with intent to kill inflicting serious injury, attempted first-degree murder, and discharging a weapon into an occupied dwelling, the trial court did not err by denying the defendant's motion to sever. Here, the transactional connection between the offenses was sufficient for joinder. Each arose from a continuous course of violent criminal conduct related to gang rivalries. The evidence tended to show that the second shooting was in retaliation for the first. The two shootings occurred the same day; the same pistol was used in both; and witnesses testified to evidence that applied to both shootings, or testified that they were present at both crime scenes. Additionally, neither the number of offenses nor the complexity of the evidence offered required severance. The evidence was not unduly complicated or confusing. The jury instructions clearly and carefully separated the offenses, and the verdict forms unmistakably distinguished the offenses by using the victim's names. The court rejected the defendant's argument that severance was necessary to protect his constitutional right to choose to testify with respect to some of the charges but not others. The court noted that a trial court does not abuse its discretion by refusing to sever multiple offenses against the same defendant where the defendant's only assertion of prejudice is that he might have elected to testify in one of the cases and not in the others.

Jury Instructions

Prejudicial error to omit no duty to retreat and stand your ground instructions

State v. Irabor, ___ N.C. App. ___, 822 S.E.2d 421 (Nov. 20, 2018). In a case where the defendant was found guilty of second-degree murder, assault with a deadly weapon, and discharging a firearm into an occupied dwelling, the trial court committed prejudicial error by failing to include no duty to retreat and stand your ground provisions in the jury instruction on self-defense. Viewed in the light most favorable to the defendant, the defendant was aware of the victim's violent and dangerous propensities on the night of the shooting. The defendant's testimony established, among other things, that the victim had

achieved high-ranking gang membership by killing a rival gang member, that the defendant saw the victim rob others multiple times, and that he knew the victim always carried a gun. The defendant's knowledge of the victim's violent propensities, being armed, and prior acts support a finding that the defendant reasonably believed it was necessary to use deadly force to save himself from death or great bodily harm. Prior to the shooting, the victim stood outside of the defendant's apartment with two others and waited to confront the defendant about an alleged prior incident. The defendant also testified that he borrowed a gun for protection. When the victim noticed the defendant walking towards his apartment, the victim told the defendant, "this is war, empty your pocket", continued to advance after the defendant fired two warning shots, and lunged at the defendant while reaching behind his back towards his waistband. In the light most favorable to the defendant, a jury could conclude that the defendant actually and reasonably believed that the victim was about to shoot him and it was necessary to use deadly force to protect himself. The fact that the defendant armed himself does not make the defendant the initial aggressor. Although law enforcement officers did not find a gun when they searched the victim's body, evidence presented at trial suggested that he may have been armed. Thus, a jury could infer that the defendant reasonably believed the victim was armed at the time of the altercation.

No error to instruct on flight where evidence supported the instruction, but court questions probative value of flight evidence

State v. Parks, ___ N.C. App. ___, 824 S.E.2d 881 (Feb. 19, 2019). In this assault case, the trial court did not err by instructing the jury that it could consider the defendant's alleged flight as evidence of guilt. The court began: "The probative value of flight evidence has been "consistently doubted" in our legal system, and we note at the outset that we similarly doubt the probative value of Defendant's alleged flight here." However, it went on to conclude that the evidence supports a flight instruction. Specifically, witnesses testified that the defendant ran from the scene of the altercation.

No abuse of discretion to deny requested instruction on witness bias when given instruction was in "substantial conformity" with the request and the requested instruction wasn't supported by the evidence

State v. Smith, ___ N.C. App. ___, 823 S.E.2d 678 (Jan. 15, 2019). In this non-capital first-degree murder case, the trial court did not err by declining to give the defendant's requested special jury instruction regarding potential bias of a State's witness. Because the issue it involves the trial court's choice of language in jury instructions, the standard of review was abuse of discretion. With respect to witness Brown, the defendant requested a special jury instruction stating: "There is evidence which tends to show that a witness testified with the hope that their testimony would convince the prosecutor to recommend a charge reduction. If you find that the witness testified for this reason, in whole or in part, you should examine this testimony with great care and caution. If, after doing so, you believe the testimony, in whole or in part, you should treat what you believe the same as any other believable evidence." The trial court denied the requested special instruction and gave the pattern jury instruction on interested witnesses and informants, N.C.P.I. 104.20, and the general pattern jury instruction concerning witness credibility, N.C.P.I. 101.15. Considering the facts of the case, the court found that the trial court's charge to the jury, taken as a whole, was sufficient to address the concerns motivating the defendant's requested instruction. The entire jury charge was sufficient to apprise the jury that they could consider whether Brown was interested, biased, or not credible; was supported by the evidence; and was in "substantial conformity" with the instruction requested by the defendant. The court further noted that the defendant's requested instruction—that Brown testified with the hope that his testimony

would convince the prosecutor to recommend a charge reduction—was not supported by the law or the evidence; there was no possibility that Brown could receive any charge reduction because he had no pending charges at the time of his testimony. Even if the trial court erred with respect to the jury instruction, the defendant could not demonstrate prejudice.

Jury Management

No error to dismiss juror mid-trial for misconduct in failing to abide by the court's instructions and providing different answers in response to inquiries by the court

State v. Knight, ___ N.C. App. ___, 821 S.E.2d 622 (Oct. 16, 2018). The trial court did not err by dismissing an empaneled juror. During trial he State moved for the trial court to inquire into the competency of Juror 7 to render a fair and impartial verdict. The trial court conducted a hearing in which a bailiff testified that the juror asked the bailiff "if they could have prayer during the breaks in the jury room," and said that "he felt it was inappropriate and rude for [the District Attorney] to be pointing at people in the audience while a witness was testifying." Upon questioning, the juror said that he did not remember making any statement pertaining to the case and agreed that he had not formed an opinion that would affect his ability to be a fair and impartial juror. Rather than dismiss the juror, the trial court gave curative instructions to the jury. Later that day, the State played audio from a jailhouse call between the defendant and his mother, revealing that the defendant's mother knew Juror 7. The State renewed its request to dismiss the juror. The trial court again asked the juror whether he had made the comment about the district attorney being rude. The juror admitted that he could "vaguely remember" discussing the jury's security and whether he could pray for the jury because he believed they were "in jeopardy somehow." The trial court made findings of fact indicating that the juror provided a different response to the same question during separate hearings and ignored the trial court's instructions. In these circumstances, the trial court did not abuse its discretion by dismissing the juror.

Jury Selection

Trial court may determine race of prospective jurors based on its observations for *Batson* challenge where race is "clearly discernable"

State v. Bennett, ___ N.C. App. ___, 821 S.E.2d 476 (Oct. 16, 2018), *review allowed*, ___ N.C. ___, 824 S.E.2d 405 (Mar. 27, 2019). In this drug case, the court rejected the defendant's *Batson* claim, concluding that the defendant failed to make a prima facie case. With respect to the trial court's findings regarding the jurors' race, the court rejected the notion "that the only method a trial court may use to support a finding concerning the race of a prospective juror is to ask that juror (and, apparently, just accept the juror's racial self-identification)." It held, in part:

[I]f the trial court determines that it can reliably infer the race of a prospective juror based upon its observations during voir dire, and it thereafter makes a finding of fact based upon its observations, a defendant's burden of preserving that prospective juror's race for the record has been met. Absent evidence to the contrary, it will be presumed that the trial court acted properly – i.e. that the evidence of the prospective juror's race was sufficient to support the trial court's finding in that regard. If the State disagrees with the finding of the trial court, it should challenge the finding at trial and seek to introduce evidence supporting its position. Questioning the juror at that point could be warranted. Here, however, the State clearly agreed with the trial court's findings related to the race of the five identified

prospective jurors. Absent any evidence that the trial court's findings were erroneous, "we must assume that the trial court's findings of fact were supported by substantial competent evidence."

The court continued, noting that nothing in the case law requires "the trial court to engage in needless inquiry if a prospective juror's race is clearly discernable without further inquiry." Citing the record, the court determined that here it was clearly discernable to the trial court and the lawyers that five African-Americans had been questioned on voir dire, that three made it onto the jury, and that the other two were excused pursuant to the State's peremptory challenges. The trial court found that on these facts, the defendant failed to make a prima facie case. Assuming arguendo, that defendant's argument was properly preserved for appeal, the court found no error. One judge concurred only in the result, concluding that the defendant had waived the *Batson* issue by failing to preserve an adequate record setting forth the race of the jurors.

Miranda

(1) Consent to knock and talk valid despite agent's statement, "Open the door or we're going to knock it down" (2) No *Miranda* violation where defendant was not in custody at the time of his statements

U.S. v. Azua-Rinconada, 914 F.3d 319 (4th Cir. 2019). (1) In this case from the Eastern District of North Carolina, Homeland Security agents led a "knock and talk" investigation through a Robeson County mobile home community in early 2016. At least one agent was in a "Police" t-shirt with his badge and gun displayed, and another officer wore a body camera that captured the interactions. When agents approached the defendant's home, they knocked and received no response. An agent said "open the door" in Spanish, and later "Publisher's Clearinghouse." Agents heard voices inside, and knocked again more with more force, stating in Spanish, "Open the door or we're going to knock it down." Slip op. at 3. Inside the home, the defendant and his pregnant fiancée were "scared" but ultimately opened the door. The defendant testified at suppression that "he did not 'believe that they were going to take down the door.'" *Id*. After initially representing that she was the only person present in the home, the fiancée eventually acknowledged she wasn't alone and agreed to let officers inside. Along with the defendant, the defendant's brother in law was present. An agent asked the group if there were any guns inside, and the brother in law acknowledged he rented the home and owned guns. Agents asked for and received consent to search the premise. While the brother in law was filling out the consent form, agents asked the defendant where he was from. When he indicated he was from Mexico, the agent handed him a form listing questions designed to determine immigration status, instructing the defendant to "start filling this out" and "answer every question." *Id*. at 5. Agents had the defendant submit to fingerprinting, which revealed two deportation warrants. The defendant was indicted and convicted of illegal entry following the denial of his motions to suppress. He was ultimately sentenced to time served, and placed in custody of Homeland Security for deportation proceedings. The defendant appealed.

The motions to suppress sought to exclude all evidence obtained inside the home as a Fourth Amendment violation for the knock and talk and all statements to the agents inside as a *Miranda* violation. The magistrate and district court concluded the defendant gave his fiancée knowing and voluntary consent for the officers to enter the home and that the defendant wasn't in custody at the time of his statements to agents (and thus not entitled to a *Miranda* warning). The Fourth Circuit affirmed. As to the knock and talk, the defendant argued that the agent's statement to "knock down the door" showed coercion and a lack of voluntary consent. Voluntariness of consent is determined by

looking at the totality of the circumstances. *Schneckloth v. Bustamonte*, 412 U.S. 218, 233 (1973). Reviewing for clear error, the court found this interaction stood "'in stark contrast' to those cases where consent was found to be involuntary." *Id*. at 8. While the court did not approve of the agent's statements at the door, it was not fatal to voluntary consent here. The body camera footage showed the fiancée open the door, engage in conversation with the agents (who were "calm" and "casual"), and she "freely and with a degree of graciousness invited the officers" inside. *Id*. at 9. She also testified that she consented to the entry. It was therefore not clear error for the district court to find voluntary consent under these circumstances.

(2) As to the alleged *Miranda* violation, the defendant was mostly questioned while on the couch of the living room next to his fiancée, where he chose to sit. The officers were on the other side of the room, their "language, demeanor, and actions were calm and nonthreatening, and the tenor of the interaction remained conversational." *Id*. at 12. The agent's statement to the defendant to fill out the form and answer the questions completely, while couched in terms of a command, was more consistent with explaining how to fill out the form rather than commanding the defendant to complete it.

> [W]hile [the defendant] was undoubtedly intimidated during the interaction by having police in his home, especially in view of his immigration status, that intimidation appeared no great than that which is characteristic of police questioning generally. And 'police questioning, by itself, is unlikely to result in a [constitutional] violation.' *Id*.

The court distinguished these facts from other cases where interactions were found to be custodial. The defendant pointed to the agent's statement that police would knock down the door to support his argument that he thought he was required to comply with the officers' requests. While that statement by police was properly considered as a factor in the custodial analysis, in light of the rest of the defendant's interactions with the agents, it failed to establish a custodial interrogation here. Further, the fact the defendant was never told he was free to leave is likewise only a factor and not dispositive. The court concluded:

> In sum, considering the totality of the circumstances, [the defendant's] 'freedom of action' was not 'curtailed to the degree associated with a formal arrest,' meaning that he was not in custody and *Miranda* warnings were therefore not required. *Id*. at 14.

The district court's judgment was therefore affirmed in all respects. A concurring judge wrote separately to note the opinion does not undercut the general rule in the circuit that "a defendant's alleged consent to a search of his property ordinarily will be deemed invalid when that consent is obtained through 'an officer's misstatement of authority.'" *Id*. at 15. This case was a "rare exception" to the general rule. While the agent's statement he would break down the door was a misstatement of his authority, the subsequent interactions with the occupants of the home were in no way aggressive—the camera footage revealed the opposite, that the interaction was "casual and nonconfrontational, such that any coercive effect of [the agent's] initial statement had dissipated" by the time law enforcement entered the home. *Id*. at 17. Absent this "ameliorating context," the threat to break down the door would have invalidated any purported consent.

Defendant's statement during Miranda warning that he "wasn't going to say anything at all" was an unequivocal invocation of his right to remain silent

U.S. v. Abdallah, 911 F.3d 201 (4th Cir. 2018). In this case from the Eastern District of Virginia, the defendant was convicted of numerous offenses relating to the sale and distribution of synthetic marijuana (a schedule I controlled substance known as "spice"). The defendant was arrested and taken to the police station for questioning. The interrogation was not recorded. During the agent's *Miranda* warning, the defendant interrupted and remarked that he "wasn't going to say anything at all." The agent continued reading the *Miranda* warning and immediately thereafter asked the defendant if he knew why he was under arrest. The defendant indicated he did not, and the agent repeated the *Miranda* warning a second time without interruption. The defendant then acknowledged he understood his rights and made several inculpatory statements. Arguing that he clearly invoked his right to remain silent, the defendant moved to suppress his statements. The trial judge denied the motion, finding the invocation of his right to silence was "ambiguous, especially given the fact that he voluntarily waived his *Miranda* rights minutes later once informed of the charges against him and the subject of the interrogation." Slip op. at 5.

The defendant also argued it was unclear whether any *Miranda* warning was given at all and sought additional discovery on communications between agents. The notes taken by the one agent at the time of questioning indicated the *Miranda* warning was understood and noted that the defendant wasn't willing to answer questions. The notes failed to mention the defendant's interruption. Another agent later prepared a report from memory. That draft report was emailed to other agents involved in the case, and "some modifications" were made. The final report acknowledged that the defendant interrupted the first *Miranda* warning. The defendant claimed that the inconsistency between the notes (by one agent) and the final report (by another agent) required production of the emails between all of the agents involved in the modification of the final report. The district court denied the request, crediting the agent who drafted the report that "he had not removed a request for counsel or a request to remain silent [from his report]." *Id*. at 6. The defendant moved for the court to reconsider both issues, pointing to other inconsistencies from the agent's testimony before the grand jury, at suppression, and in his final report. Specifically, the agent testified before the grand jury that the defendant waived *Miranda* "both orally and in writing" before the questioning began, and did not mention the defendant's interruption. At suppression, the same agent testified that no written *Miranda* waiver was obtained. The trial judge again denied both requests and the defendant was convicted following trial. The Fourth Circuit reversed.

The court noted that a suspect's unambiguous invocation of the right to remain silent (or request for counsel) ends the interrogation. The test is objective:

> An invocation is unambiguous when a 'reasonable police officer under the circumstances would have understood' the suspect intended to invoke his Fifth Amendment rights. Accordingly, 'a suspect need not speak with the discrimination of an Oxford don' to invoke his Fifth Amendment rights. *Id*. at 9-10.

The defendant's statement here that he "wasn't going to say anything" is "materially indistinguishable" from numerous other cases where courts have found an unambiguous assertion of the right to remain silent. The statement was therefore not ambiguous, and questioning should have ceased after that remark. The district court erred in relying on the fact that the defendant later voluntarily waived *Miranda*:

> When determining whether an invocation is ambiguous, courts can consider whether the 'request itself . . . or the circumstances *leading up* to the request would render the request

> ambiguous'. But courts cannot cast ambiguity on an otherwise clear invocation by looking to circumstances which occurred *after* the request. *Id*. at 11 (emphasis in original).

Distinguishing cases from other circuits where similar remarks were found to be ambiguous, the court recognized evidence of "context preceding the defendant's purported invocations [can render] what otherwise might have been unambiguous language open to alternative interpretations." *Id*. at 12. Here, there was no such pre-request context.

The government also argued that since the defendant invoked *Miranda* before the warning was completed by the officer, the invocation of rights could be neither knowing nor intelligent. This argument conflates the standard for waiver of *Miranda* rights with the standard for invocation of *Miranda*. "[T]here is no requirement that an unambiguous invocation of Miranda right also be 'knowing and intelligent.' That is the standard applied to *waiver* of Miranda, not to the invocation of such rights." *Id*. at 13. Thus, "[t]he officers could not ignore Defendant's unambiguous invocation merely because they decided that Defendant's invocation was not 'knowing and intelligent.'" *Id*. at 16. The statements therefore should have been suppressed. Given the detailed and damaging nature of the defendant's statements and the government's reliance on them at trial, the court declined to find the error harmless. A unanimous court reversed all of the convictions.

Pretrial Release

Superior court lacked subject-matter jurisdiction to grant habeas relief for allegedly unlawful immigration detention

Chavez v. Carmichael, ___ N.C. App. ___, 822 S.E.2d 131 (Nov. 6, 2018), *review allowed*, ___ N.C. ___, 824 S.E.2d 399 (Mar. 27, 2019). In this appeal by the Mecklenburg County Sheriff from orders of the Superior Court ordering the Sheriff to release two individuals from his custody, the court vacated and remanded to the trial court to dismiss the habeas corpus petitions for lack of subject matter jurisdiction. Defendant Lopez was arrested for common law robbery and other charges and was incarcerated in the County Jail after arrest on a $400 secured bond. He then was served with an administrative immigration arrest warrant issued by the Department of Homeland Security (DHS). Additionally DHS served the Sheriff with an immigration detainer, requesting that the Sheriff maintain custody of Lopez for 48 hours to allow DHS to take custody of him. Defendant Chavez was arrested for impaired driving and other offenses and detained at the County Jail on a $100 cash bond. He also was served with a DHS administrative immigration warrant, and the Sheriff's office was served with a DHS immigration detainer for him. On October 13, both defendants satisfied the conditions of release set on their state charges, but the Sheriff continued to detain them pursuant to the immigration detainers and arrest warrants. That day they filed petitions for writs of habeas corpus in Superior Court. The Superior Court granted both petitions and, after a hearing, determined that the defendant's detention was unlawful and ordered their immediate release. However, before the court issued its orders, the Sheriff's office had turned physical custody of both of the defendants over to ICE officers. The Sheriff sought appellate review.

The court began by rejecting the defendants' argument that the cases were moot because they were in ICE custody. The court found that the matter involves an issue of federal and state jurisdiction invoking the "public interest" exception to mootness, specifically, the question of whether North Carolina state courts have jurisdiction to review habeas petitions of alien detainees held under the authority of the federal government.

The court also rejected the defendants' argument that it should not consider the 287(g) Agreement between the Sheriff and ICE because the Agreement was not submitted to the Superior Court. It noted, in part, that the Agreement is properly in the record on appeal and an appellate court may consider materials that were not before the lower court to determine whether subject matter jurisdiction exists. On the central issue, the court held that the Superior Court lacked subject matter jurisdiction to review the defendants' habeas petitions. It began by rejecting the defendants' argument that the Superior Court could exercise jurisdiction because North Carolina law does not allow civil immigration detention, even when a 287(g) Agreement is in place. Specifically, they argued that G.S. 162-62 prevents local law enforcement officers from performing the functions of immigration officers or assisting DHS in civil immigration detentions. The court declined to adopt a reading of the statute that would forbid Sheriffs from detaining prisoners who were subject to immigration detainers and administrative warrants beyond the time they would otherwise be released from custody or jail under state law. Moreover, the court noted that G.S. 128-1.1 specifically authorizes state and local law enforcement officers to enter into 287(g) agreements and perform the functions of immigration officers, including detaining aliens. Finding the reasoning of cases from other jurisdictions persuasive, the court held that "[a] state court's purported exercise of jurisdiction to review the validity of federal detainer requests and immigration warrants infringes upon the federal government's exclusive federal authority over immigration matters." As a result, the trial court did not have subject matter jurisdiction or any other basis to receive and review the habeas petitions or issue orders other than to dismiss for lack of jurisdiction. Further, it held that even if the 287(g) Agreement between the Sheriff and ICE did not exist or was invalid, federal law—specifically, 8 U.S.C. § 1357(g)(10)(A)-(B)--allows and empowers state and local authorities and officers to communicate with ICE regarding the immigration status of any person or otherwise to cooperate with ICE in the identification, apprehension, detention, or removal of aliens unlawfully in the United States. It continued: "A state court's purported exercise of jurisdiction to review petitions challenging the validity of federal detainers and administrative warrants issued by ICE, and to potentially order alien detainees released, constitutes prohibited interference with the federal government's supremacy and exclusive control over matters of immigration."

The court added: "[a]n additional compelling reason that prohibits the superior court from exercising jurisdiction to issue habeas writs to alien petitioners, is a state court's inability to grant habeas relief to individuals detained by federal officers acting under federal authority." The court cited Supreme Court decisions as standing for the proposition that no state judge or court after being judicially informed that a person is imprisoned under the authority of the United States has any right to interfere with the person or require the person to be brought before the court. On this point it stated: "In sum, if a prisoner's habeas petition indicates the prisoner is held: (1) under the authority, or color of authority, of the federal government; and, (2) by an officer of the federal government under the asserted "authority of the United States", the state court must refuse to issue a writ of habeas corpus." Here, it was undisputed that the Sheriff's continued detention of the defendants after they were otherwise released from state custody was pursuant to federal authority delegated to the Sheriff's office under the 287(g) Agreement, and after issuance of immigration arrest warrants and detainers. Additionally, 8 U.S.C. § 1357(g)(3) indicates state and local law enforcement officers act under color of federal authority when performing immigration functions authorized under 287(g) agreements. Thus, the Sheriff was acting under the actual authority of the United States by detaining the defendants under the immigration enforcement authority delegated to him under the agreement, and under color of federal authority provided by the administrative warrants and detainer requests. The court next turned to whether the Sheriff was acting as a federal officer under the 287(g) Agreement by detaining the defendants pursuant to the detainers and warrants, noting that the issue was one of first impression. Considering federal

authority on related questions, the court concluded: "To the extent personnel of the Sheriff's office were deputized or empowered by DHS or ICE to perform immigration functions, including detention and turnover of physical custody, pursuant to the 287(g) Agreement, we find . . . federal cases persuasive to conclude the Sheriff was empowered and acting as a federal officer by detaining Petitioners under the detainer requests and administrative warrants." Because the defendants were being detained under express, and color of, federal authority by the Sheriff who was acting as a de facto federal officer, the Superior Court was without jurisdiction, or any other basis, to receive, review, or consider the habeas petitions, other than to dismiss them for lack of jurisdiction, to hear or issue writs, or intervene or interfere with the defendants' detention in any capacity. The court went on to hold that the proper jurisdiction and venue for the defendants' petitions is federal court. Jonathan Holbrook blogged about the case here.

Due process claims for lengthy pretrial solitary confinement can proceed; summary judgment and grant of qualified immunity reversed

Williamson v. Stirling, 912 F.3d 154 (4th Cir. 2018). In this 42 U.S.C.§ 1983 case from South Carolina, the court reversed a grant of summary judgment and remanded the matter for trial. The plaintiff was a pretrial detainee accused of murder, robbery and related offenses. He was seventeen years old at the time of his arrest and bail was denied. Due to the nature of his charges, he was placed in maximum security. In the third month of his confinement, the plaintiff wrote a letter to the local sheriff that threatened numerous law enforcement officers, as well as a judge. When the plaintiff was interviewed by law enforcement about the letter, he was "combative" and hit a guard. Various officials then arranged to place the plaintiff in so-called "safekeeper" status.

South Carolina law allows a pretrial detainee to be designated as a "safekeeper" where the detainee presents a high risk of escape, is extremely violent or uncontrollable, or where such placement is necessary to protect the detainee. A detainee in safekeeping is kept in solitary confinement and without normal privileges of other detainees (such as access to books, canteen, outdoor exercise, etc.). To effectuate a transfer from general population to safekeeper status, the sheriff must prepare an affidavit that explains the need for the transfer. The circuit solicitor (South Carolina's version of a prosecutor) must agree with the sheriff's decision to request safekeeping, and the detainee's attorney must be served with a copy of the application. The application is then sent to the director of South Carolina Department of Corrections for review and approval. If approved, an order is prepared for the Governor to sign. Once the Governor signs the order, the detainee is delivered to the safekeeping facility. The safekeeping order is only valid for up to 120 days, with the possibility of renewal for up to an additional 90 days for "good cause and/or no material change in circumstances." Detainees with mental illness are not eligible for safekeeper status. Here, the safekeeper order was renewed 13 times for over three years. The record showed that while there was documentation of the director's recommendations and the Governor's approvals of some of the renewal orders, there was nothing documenting the county's requests for renewal of the order or any substantive record of a continuing need (or changed circumstances) for the safekeeper orders.

The plaintiff was in solitary confinement 24 hours a day for two days a week, and 23 hours a day for the other five days of the week with very limited human interaction. He ultimately spent approximately 1300 days under these or very similar conditions. Approximately 19 months after being placed into safekeeping, the plaintiff began developing serious mental health issues. He was treated for "unspecified psychosis, grief, nightmares, [and] depression." Slip op at 12. He was prescribed anti-psychotic drugs for the first time in his life. This change in the plaintiff's mental health was never

referenced in any of the renewal applications, and it is not clear it was ever considered by officials during the course of the renewal orders. He was ultimately acquitted of murder, pled guilty to armed robbery, and his other charges were dismissed. He filed suit pro se against the director of the prison system, the local sheriff, and various other local and state officials alleging due process violations based on the conditions of his pretrial detention. The district court found no violations and alternatively held that the defendants were entitled to qualified immunity.

The Fourth Circuit affirmed the district court's judgment as to a jail administrator and a prosecutor based on their minimal involvement in the events. "To establish personal liability under § 1983 . . . the plaintiff must 'affirmatively show that the official charged acted personally in the deprivation of the plaintiff's rights.'" *Id*. at 28. The sheriff and director of prisons, by contrast, were directly involved in the process of obtaining and renewing the safekeeping orders. The court therefore analyzed the claims on the merits as to those parties.

Pretrial detainees have a due process right to be free from punishment before an adjudication of guilt under *Bell v. Wolfish*, 441 U.S. 535 (1979). Substantive due process ensures that the general conditions of confinement do not constitute punishment. "In order to prevail on a substantive due process claim, a pretrial detainee must show that a particular restriction was either: 1) imposed with an expressed intent to punish or (2) not reasonably related to a legitimate nonpunitive governmental objective." *Id*. at 34.

Pretrial detainees may also pursue a procedural due process claim in regards to "individually-imposed restrictions." *Bell* distinguished between impermissible "punitive measures" and permissible "regulatory restraints." *Id*. "[J]ail officials are entitled to discipline pretrial detainees for infractions committed in custody and to impose restrictions for administrative purposes without running afoul of *Bell*." *Id*. What process the pretrial detainee is due in such situations depends on the why the condition was imposed. The imposition of disciplinary restrictions entitles the detainee to notice, a hearing, and written explanation of the outcome. With the imposition of administrative restrictions (such as for security purposes), a detainee's procedural rights are "diminished," but some protections are remain. A pretrial detainee is entitled to "some" notice and at least an opportunity to be heard on the administrative restriction, although the opportunity to be heard may occur within a reasonable time after the imposition of the restriction. Both disciplinary and administrative restrictions "must yet be rationally related to a legitimate governmental purpose, regardless of the procedural protections provided." *Id*. at 36. The court noted that a pretrial detainee necessarily retains at least the same level of protections as a convicted person. Further, pretrial detainees in solitary (like convicted prisoners) are entitled to meaningful "periodic review of their confinement to ensure that administrative segregation is not used as a pretext for indefinite confinement." *Id*. at 38.

The district court erred by not properly analyzing the distinct due process claims presented and by failing to view the evidence in the light most favorable to the plaintiff. As to the substantive due process claim that the extended period of solitary confinement constituted an impermissible punishment, the trial judge accepted the defendant's argument that the purpose of placing the plaintiff in solitary served a legitimate security purpose, pointing to the plaintiff's threatening letter. This "uncritical acceptance" of the defendant's stated explanation was error. "A court weighing a pretrial detainee's substantive due process claim must meaningfully consider whether the conditions of confinement were 'reasonably related' to the stated objective, or whether they were 'excessive' in relation thereto." *Id*. at 42. Here, the plaintiff spent over three years in solitary "because of single incident of unrealized and unrepeated threats . . . . In such circumstances, a security justification for placing [the plaintiff] in solitary confinement for three-and-a-half years is difficult to discern." *Id*. at 42-43. A jury could find that the

placement into solitary was excessive and therefore punishment in contravention of *Bell*. A jury might also find that the multiple renewals of the safekeeping order were improper to the point of violating substantive due process—the plaintiff had no further disciplinary issues after sending the threatening letter, the renewal orders were unsupported by documentation of the "good cause" necessary to support renewal, and the director's memos to the Governor were "perfunctory, containing the same boilerplate language over three-and-a-half years." *Id*. at 44. The director also apparently failed to consider the plaintiff's declining mental health, a "striking omission." This evidence, taken as true, supported substantive due process claims for unconstitutional punishment and the district court erred in granting the defendant's motion for summary judgment.

As to the procedural due process claim, the court determined that whether the imposition of solitary confinement here was disciplinary or administrative in nature, the condition implicated the plaintiff's liberty interests and required some level of procedural due process. At a minimum, the process must include at least some notice and some opportunity be heard within a reasonable time after being placed into solitary, as well as the opportunity to have periodic review of such detention. "Absent a right to such process, administrative segregation could become 'a pretext'—as may have occurred here." *Id*. at 53. The same facts that support the substantive due process claim also support the procedural due process claim. The question of whether the purpose of plaintiff's placement into solitary was administrative or disciplinary (and therefore what process is due), as well as whether these rights were in fact violated, are questions for the jury. Thus, summary judgement was also improper as to this claim.

The court then turned to the question of qualified immunity. Where a reasonable person would not know that the conduct at issue violated "clearly established" law, government officials are protected by qualified immunity. Here, the district court found the plaintiff's rights in this context were not clearly established. The Fourth Circuit reversed. As to the substantive due process claim: "It has been clearly established since at least 1979 that pretrial detainees are not to be punished." *Id*. As to the procedural due process claim, the court found that at least by July 2015, it was clearly established that placement into solitary confinement required at least some minimal procedural protections. Since the plaintiff was confined in solitary after that time, qualified immunity would not protect the defendants after that point if they failed to provide him at least minimal procedural due process regarding the confinement. The court indicated the jury may decide this issue as well. The unanimous court therefore affirmed in part, vacated in part, and remanded for further proceedings.

Sentencing

Aggravating and Mitigating factors

Any error (if any) was harmless where trial judge found aggravating factor that defendant willfully violated probation in the past 10 years

State v. Hinton, ___ N.C. App. ___, 823 S.E.2d 667 (Jan. 15, 2019). The court held that even if the trial court erred under *Blakely* by finding the existence of an aggravating factor and sentencing the defendant in the aggravated range, any error was harmless. After the jury found the defendant guilty of two counts of common-law robbery the trial court dismissed the jury and held a sentencing hearing. The State had given timely notice of his intent to prove the existence of an aggravating factor, specifically that during the 10-year period prior to the commission of the offense the defendant was found in willful

violation of his conditions of probation (aggravating factor G.S. 15A-1340.16(d)(12a)). At sentencing hearing, the State offered evidence demonstrating the existence of the aggravating factor. Over the defendant's objection that under the statutes and *Blakely* the existence of aggravating factor must be found by the jury, the trial court sentenced the defendant in the aggravated range. The court opined that "Given the standard of proof that applies in this State, it is arguable whether a judgment of a willful probation violation—be it by admission or court finding—is sufficiently tantamount to a "prior conviction" to allow a sentencing judge to use that previous finding as an aggravating factor justifying an increase in the length of a defendant's sentence beyond that authorized by the jury's verdict alone consonant with the demands of due process." However, it found that it need not decide the issue, concluding instead that even if an error occurred it was harmless given the State's evidence.

Eighth Amendment and Adults

Argument that 138 year minimum sentence for sexual assault of a child was unpreserved and therefore waived

State v. Hill, ___ N.C. App. ___, 821 S.E.2d 631 (Oct. 16, 2018). In this child sexual assault case, the court rejected the defendant's argument that the trial court's consecutive sentences, totaling a minimum of 138 years, violated his constitutional right to be free from cruel and unusual punishment under the Eighth Amendment. The court began by finding that because the defendant failed to object to the sentencing on constitutional grounds in the trial court, he failed to preserve the issue for appellate review. The court went on however to reject the defendant's argument on the merits. It noted that a punishment may be cruel or unusual if it is not proportionate to the crime for which the defendant has been convicted. Here, the trial court exercised its discretion and consolidated the 70 verdicts into six identical judgments, each of which were sentenced in the presumptive range, and the trial court ordered that these 276-month sentences be served consecutively.

While loss of memory alone is not enough, the 8th Amendment bars execution of one who no longer rationally understands reason for execution

Madison v. Alabama, 586 U.S. ___, 139 S. Ct. 718 (Feb. 27, 2019). If a defendant with no memory of his crime rationally understands why the State seeks to execute him, the Eighth Amendment does not bar execution; if a defendant with dementia cannot rationally understand the reasons for his sentence, it does. What matters, explained the Court, is whether a person has a "rational understanding," not whether he has any particular memory or any particular mental illness.

The Court noted that in *Ford v. Wainwright*, 477 U. S. 399 (1986), it held that the Eighth Amendment's ban on cruel and unusual punishments precludes executing a prisoner who has "lost his sanity" after sentencing. It clarified the scope of that category in *Panetti v. Quarterman* by focusing on whether a prisoner can "reach a rational understanding of the reason for [his] execution." Here, Vernon Madison killed a police officer in 1985. An Alabama jury found him guilty of capital murder and he was sentenced to death. In recent years, Madison's mental condition sharply deteriorated. He suffered a series of strokes, including major ones in 2015 and 2016. He was diagnosed with vascular dementia, with attendant disorientation and confusion, cognitive impairment, and memory loss. Madison claims that he can no longer recollect committing the crime for which he has been sentenced to die. After his 2016 stroke, Madison petitioned the trial court for a stay of execution on the ground that he had become mentally incompetent, citing *Ford* and *Panetti.* The trial court found Madison competent to be executed. Madison then unsuccessfully sought federal habeas corpus relief. When Alabama set an

execution date in 2018, Madison returned to state court arguing again that his mental condition precluded the State from going forward, noting, in part, that he suffered further cognitive decline. The state court again found Madison mentally competent. The U.S. Supreme Court agreed to review the case.

The Court determined that a person lacking memory of his crime may yet rationally understand why the State seeks to execute him; if so, the Eighth Amendment poses no bar to his execution. It explained: "Assuming, that is, no other cognitive impairment, loss of memory of a crime does not prevent rational understanding of the State's reasons for resorting to punishment. And that kind of comprehension is the *Panetti* standard's singular focus." It continued, noting that a person suffering from dementia or a similar disorder, rather than psychotic delusions, may be unable to rationally understand the reasons for his sentence; if so, the Eighth Amendment does not allow his execution. What matters, it explained, "is whether a person has the "rational understanding" *Panetti* requires—not whether he has any particular memory or any particular mental illness." The Court continued, noting that the "standard has no interest in establishing any precise cause: Psychosis or dementia, delusions or overall cognitive decline are all the same under *Panetti,* so long as they produce the requisite lack of comprehension." Ultimately, the Court returned the case to the state court for renewed consideration of Madison's competency, instructing:

> In that proceeding, two matters disputed below should now be clear. First, under *Ford* and *Panetti*, the Eighth Amendment may permit executing Madison even if he cannot remember committing his crime. Second, under those same decisions, the Eighth Amendment may prohibit executing Madison even though he suffers from dementia, rather than delusions. The sole question on which Madison's competency depends is whether he can reach a "rational understanding" of why the State wants to execute him. *Panetti*, 551 U. S., at 958.

Prior Record Level

Divided N.C. Supreme Court holds that defendant's stipulation on record level worksheet to classification of prior murder conviction as a B1 offense was binding and not an improper stipulation to a matter of law

State v. Arrington, ___ N.C. ___, 819 S.E.2d 329 (Oct. 26, 2018). On appeal from a decision of a divided panel of the Court of Appeals, ___ N.C. App. ___, 803 S.E.2d 845 (2017), the court reversed, holding that as part of a plea agreement a defendant may stipulate on his sentencing worksheet that a second-degree murder conviction justified a B1 classification. In 2015 the defendant entered into a plea agreement with the State requiring him to plead guilty to two charges and having attained habitual felon status. Under the agreement, the State consolidated the charges, dismissed a second habitual felon status count, and allowed the defendant to be sentenced in the mitigated range. As part of the agreement, the defendant stipulated to the sentencing worksheet showing his prior offenses, one of which was a 1994 second-degree murder conviction, designated as a B1 offense. Over a dissent, the Court of Appeals vacated the trial court's judgment and set aside the plea, holding that the defendant improperly stipulated to a legal matter. The Court of Appeals reasoned that because the legislature divided second-degree murder into two classifications after the date of the defendant's second-degree murder offense, determining the appropriate offense classification would be a legal question inappropriate for a stipulation. Reversing, the Supreme Court noted that the crime of second-degree murder has two potential classifications, B1 and B2, depending on the facts. It continued: "By stipulating

that the former conviction of second-degree murder was a B1 offense, defendant properly stipulated that the facts giving rise to the conviction fell within the statutory definition of a B1 classification. Like defendant's stipulation to every other offense listed in the worksheet, defendant's stipulation to second-degree murder showed that he stipulated to the facts underlying the conviction and that the conviction existed."

The court went on to reject the defendant's argument that he could not legally stipulate that his prior second-degree murder conviction constituted a B1 felony. It noted that before 2012, all second-degree murders were classified at the same level for sentencing purposes. However, in 2012 the legislature amended the statute, elevating second-degree murder to a B1 offense, except when the murder stems from either an inherently dangerous act or omission or a drug overdose. Generally, a second-degree murder conviction is a B1 offense which receives nine sentencing points; when the facts of the murder meet one of the statutory exceptions thereby making it a B2 offense, it receives six points. It is undisputed that the State may prove a prior offense through a stipulation. "Thus," the court continued "like a stipulation to any other conviction, when a defendant stipulates to the existence of a prior second-degree murder offense in tandem with its classification as either a B1 or B2 offense, he is stipulating that the facts underlying his conviction justify that classification." Here, the defendant could properly stipulate to the facts surrounding his offense by either recounting the facts at the hearing or stipulating to a general second-degree murder conviction that has a B1 classification. By stipulating to the worksheet, the defendant simply agreed that the facts underlying his second-degree murder conviction fell within the general B1 category because the offense did not involve either of the two factual exceptions recognized for B2 classification. Jamie Markham blogged about the case here.

Where record silent as to proper classification of defendant's prior conviction for possession of drug paraphernalia and the defendant did not stipulate, reversible error to treat conviction as a Class 1 misdemeanor

State v. McNeil, ___ N.C. App. ___, 821 S.E.2d 862 (Nov. 6, 2018), *temp. stay allowed,* ___ N.C. ___, 820 S.E.2d 519 (Nov. 28, 2018). Because the State failed to meet its burden of proving that the defendant's 2012 possession of drug paraphernalia conviction was related to a drug other than marijuana, the court remanded for resentencing. Since 2014, state law has distinguished possession of marijuana paraphernalia, a Class 3 misdemeanor, from possession of paraphernalia related to other drugs, a Class 1 misdemeanor. Here, where the State failed to prove that the 2012 conviction was for non-marijuana paraphernalia, the trial court erred in treating the conviction as a Class 1 misdemeanor. Jamie Markham blogged about the case here.

Matters Outside the Record

Consideration of unrelated homicide by trial judge was improper and warranted new sentencing

State v. Johnson, ___ N.C. App. ___, ___ S.E. 2d ___ (April 16, 2019). In this drug case, the court held, over a dissent, that the trial judge improperly considered her personal knowledge of matters outside the record when sentencing the defendant and that a resentencing was required. The defendant asserted that during sentencing the trial court improperly considered her personal knowledge of unrelated charges arising from a heroin-related death in her home community. A sentence within the statutory limit is presumed regular and valid. However that presumption is not conclusive. If the record discloses

that the trial court considered irrelevant and improper matter in determining the sentence, the presumption of regularity is overcome, and the sentence is improper. The verbatim transcript indicates that the trial court did in fact consider an unrelated homicide. The State did not dispute that there was no evidence of the homicide charge in the record, nor did it argue that the charge was relevant to the defendant's sentencing. Instead, the State argued that, in context, the trial court's statement reflects the seriousness of the drug charges, an appropriate sentencing consideration. The court agreed that the trial court's remarks must be considered in context and that the seriousness of drug crimes is a valid consideration. It noted that if the trial court had only addressed the severity of the offenses by reference to the effects of the drug epidemic in her community or nationwide, "there would be no issue in this case." Here, however, the trial court did not just consider the impact of the defendant's drug offenses on the community, "but clearly indicated in her remarks that she was considering a specific offense in her community for which the defendant was not charged." This was error. The court remanded for resentencing without consideration of matters outside the record.

Fines

Excessive Fines Clause of the 8th Amendment is incorporated and applies to the states

Timbs v. Indiana, 586 U.S. ___, 139 S. Ct. 682 (Feb. 20, 2019). The Court held that the Eighth Amendment's Excessive Fines Clause is an "incorporated" protection applicable to the States under the Fourteenth Amendment's Due Process Clause. Tyson Timbs pleaded guilty in Indiana state court to dealing in a controlled substance and conspiracy to commit theft. The trial court sentenced him to one year of home detention and five years of probation, which included a court-supervised addiction-treatment program. The sentence also required Timbs to pay fees and costs totaling $1,203. At the time of Timbs's arrest, the police seized his vehicle, a Land Rover SUV Timbs had purchased for about $42,000. Timbs paid for the vehicle with money he received from an insurance policy when his father died. The State engaged a law firm to bring a civil suit for forfeiture of the Land Rover, charging that the vehicle had been used to transport heroin. After Timbs's guilty plea in the criminal case, the trial court held a hearing on the forfeiture. Although finding that Timbs's vehicle had been used to facilitate violation of a criminal statute, the court denied the requested forfeiture, observing that Timbs had recently purchased the vehicle for $42,000, more than four times the maximum $10,000 monetary fine assessable against him for his drug conviction. Forfeiture of the Land Rover, the court determined, would be grossly disproportionate to the gravity of Timbs's offense, hence unconstitutional under the Eighth Amendment's Excessive Fines Clause. The Indiana Court of Appeals affirmed that determination, but the Indiana Supreme Court reversed. The state Supreme Court did not decide whether the forfeiture would be excessive. Instead, it held that the Excessive Fines Clause constrains only federal action and is inapplicable to state impositions. The US Supreme Court granted certiorari. The question presented was: Is the Eighth Amendment's Excessive Fines Clause an "incorporated" protection applicable to the States under the Fourteenth Amendment's Due Process Clause? The Court answered in the affirmative, stating:

Like the Eighth Amendment's proscriptions of "cruel and unusual punishment" and "[e]xcessive bail," the protection against excessive fines guards against abuses of government's punitive or criminal law-enforcement authority. This safeguard, we hold, is "fundamental to our scheme of ordered liberty," with "dee[p] root[s] in [our] history and tradition." *McDonald v. Chicago*, 561 U. S. 742, 767 (2010) (internal quotation marks omitted; emphasis deleted). The Excessive Fines Clause is therefore incorporated by the Due Process Clause of the Fourteenth Amendment.

The Court went on to reject the State of Indiana's argument that the Excessive Fines Clause does not apply to its use of civil in rem forfeitures. Jamie Markham blogged about the case here.

Post-conviction

Motions for Appropriate Relief

(1) Failure to raise issue of ineffective assistance of trial counsel on direct appeal procedurally barred the related MAR claim where the record was sufficient to determine the issue; (2) MAR should have been granted on issue of ineffective assistance of appellate counsel

State v. Casey, ___ N.C. App. ___, 823 S.E.2d 906 (Jan. 15, 2019). In this child sexual assault case, the court reversed the trial court's order denying the defendant's Motion for Appropriate Relief (MAR) seeking a new trial for ineffective assistance of counsel related to opinion testimony by the State's expert. The defendant was convicted of sexual offenses against Kim. On appeal the defendant argued that the trial court should have granted his MAR based on ineffective assistance of both trial and appellate counsel regarding expert opinion testimony that the victim had in fact been sexually abused. The court agreed with the defendant that this expert opinion was improper vouching and inadmissible in the absence of physical evidence of abuse. (1) The court held that because the defendant failed to raise the issue on direct appeal, his claim that trial counsel was ineffective by failing to move to strike the expert's opinion that victim Kim had in fact been sexually abused was procedurally defaulted. The record from the direct appeal was sufficient for the court to determine in that proceeding that trial counsel provided ineffective assistance of counsel. Defense counsel failed to object to testimony that was "clearly inadmissible" and the court could not "fathom any trial strategy or tactic which would involve allowing such opinion testimony to remain unchallenged." And in fact, the trial transcript reveals that allowing the testimony to remain unchallenged was not part of any trial strategy. Moreover trial counsel's failure to object to the opinion testimony was prejudicial. Because the "cold record" on direct appeal was sufficient for the court to rule on the ineffective assistance of counsel claim, the MAR claim was procedurally barred under G.S. 15A-1419(a)(3).

(2) The court continued, however, by holding that the defendant was denied effective assistance of appellate counsel in his first appeal when appellate counsel failed to argue that it was error to allow the expert's testimony that Kim had, in fact, been sexually abused. The court noted that the ineffective assistance of appellate counsel claim was not procedurally barred. And, applying the *Strickland* attorney error standard, the court held that appellate counsel's failure to raise the issue on direct appeal constituted ineffective assistance of counsel. The court thus reversed and remanded for entry of an order granting the defendant's MAR.

Satellite-Based Monitoring

(1) Where State raised the issue of reasonableness of SBM but failed to present any evidence, SBM issue was preserved and order reversed; (2) Preservation rules for SBM vary depending on which party (if any) raises the issue of reasonableness

State v. Lopez, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 19, 2019). (1) In this second-degree rape case, the trial court erred by ordering lifetime SBM where the State did not meet its burden of proving that SBM was a reasonable Fourth Amendment search. The United States Supreme Court has held that SBM is a search. Therefore, before subjecting a defendant to SBM, the trial court must first examine whether the monitoring program is reasonable. Here, the State failed to carry its burden of proving the SBM was a reasonable Fourth Amendment search where it failed to put on any evidence regarding reasonableness. The State will have only one opportunity to prove that SBM is a reasonable search. Here, because it failed to do so, the court reversed the trial court's SBM order.

(2) The opinion acknowledged that it was a "tumultuous time" in SBM litigation. It noted three basic scenarios that can impact preservation of the claim. Where the defendant fails to object, the State doesn't raise reasonableness and the court doesn't rule on the issue, the claim is not preserved. Where the defendant objects to the imposition of SBM but fails to mention *Grady* or the Fourth Amendment, the issue is preserved, at least when apparent from context. Where the State raises the issue of reasonableness (as it did here), the defendant fails to object, and the court considers the issue, the issue is preserved for appellate review. While the defendant must object to preserve the issue where the trial court fails to consider reasonableness, the issue is preserved when the State raises the issue and the trial court rules on it, even without an objection from the defendant.

Appellate Issues

Where the record is silent regarding the district court disposition of a DWI charge, the court exercises discretion to treat appeal of DWI conviction in Superior Court as petition for writ of certiorari and reach the merits

State v. McNeil, ___ N.C. App. ___, 822 S.E.2d 317 (Nov. 20, 2018), *temp. stay allowed*, ___ N.C. ___, ___ S.E.2d ___ (Apr. 17, 2019). Notwithstanding the fact that the court was unable to determine whether the trial court had jurisdiction when it entered judgment in this DWI case, the court held—over a dissent--that it would exercise its discretion to treat the defendant's appeal as a petition for certiorari in order to reach the merits of her argument.

Court grants relief on unpreserved double jeopardy argument where defendant was sentenced for possession of stolen goods and armed robbery for the same property

State v. Guy, ___ N.C. App. ___, 822 S.E.2d 66 (Nov. 6, 2018). Although the defendant failed to object on double jeopardy grounds to being sentenced for both armed robbery and possession of stolen goods taken during the robbery, the court addressed the merits of the defendant's argument, noting that it may consider whether a sentence is unauthorized even in the absence of an objection at trial.

Variance argument not raised at trial was waived on appeal

State v. Nickens, ___ N.C. App. ___, 821 S.E.2d 864 (Nov. 6, 2018). By failing to object at trial to a fatal variance between a second-degree trespass indictment and the evidence at trial, the defendant failed to preserve the issue. The court declined to invoke Rule 2 to address the issue on the merits.

Failure to file motion to suppress pretrial waived any appellate review of *Miranda* issue; motion to suppress made during trial for the first time was untimely and properly denied

State v. Rivera, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 19, 2019). In this indecent liberties case, the defendant waived any right of appellate review with respect to his arguments challenging admission of his inculpatory statements (he had asserted a *Miranda* violation and that the statements were involuntary). The defendant has the burden of establishing that a motion to suppress is made both timely and in proper form. Here, the defendant failed to meet that burden and thus waved appellate review of these issues. The court continued, however, holding that the record was insufficient to consider the defendant's related ineffective assistance of counsel claim, and dismissed that claim without prejudice to the defendant's right to file a motion for appropriate relief in superior court.

Failure to make suppression motion pretrial waived right to contest admissibility of evidence on constitutional grounds; trial judge did not err in failing to conduct hearing on admissibility sua sponte

State v. Loftis, ___ N.C. App. ___, ___ S.E.2d ___ (Mar. 26, 2019). In this drug case, the defendant failed to preserve her argument that the trial court erred by failing to sua sponte conduct a hearing to confirm that the defendant's in-custody statements to law enforcement were knowing and voluntary. The defendant did not move to suppress the statements before or at any time during trial. When the State first asked about the statements at trial, defense counsel stated "objection." The trial court overruled the objection, and defense counsel said nothing more. When no exception to making a motion to suppress before trial applies, a defendant's failure to make a pretrial motion to suppress waives any right to contest the admissibility of evidence at trial on constitutional grounds. Thus, the trial court properly overruled the defendant's objection as procedurally barred.

***Strickland* prejudice presumed where defense counsel failed to file notice of appeal despite instructions from defendant to do so, appeal waiver notwithstanding**

Garza v. Idaho, 586 U.S. ___, 139 S. Ct. 738 (Feb. 27, 2019). The presumption of prejudice recognized in *Roe v. Flores-Ortega*, 528 U. S. 470 (2000), applies regardless of whether the defendant has signed an appeal waiver. Defendant Garza signed two plea agreements arising from charges brought by the State of Idaho. Each agreement included a provision stating that Garza waived his right to appeal. The trial court accepted the agreements and sentenced Garza. Shortly thereafter Garza told his trial counsel that he wanted to appeal. Although Garza continuously reminded his attorney of this directive, counsel did not file a notice of appeal informing Garza that appeal was problematic because of the waiver. About four months after sentencing Garza sought post-conviction relief in state court, alleging that trial counsel provided ineffective assistance by failing to file notices of appeal despite his requests. The trial court denied relief, and this ruling was affirmed by the state appellate courts. The U.S. Supreme Court granted certiorari to resolve a split of authority on this issue.

As a general rule, a defendant claiming ineffective assistance of counsel must prove that counsel's representation fell below an objective standard of reasonableness and that prejudice occurred. In certain circumstances however prejudice is presumed, such as where the defendant is denied counsel at a critical stage or where counsel entirely fails to subject the prosecution's case to meaningful adversarial testing. Additionally, in *Flores-Ortega*, 528 U.S. 470 (2000), the Court held that when an attorney's deficient performance costs a defendant an appeal that the defendant would have otherwise pursued, prejudice is presumed. The question presented in this case was: whether that rule applies even when

the defendant has, in the course of pleading guilty, signed an "appeal waiver"—that is, an agreement forgoing certain, but not all, possible appellate claims. The Court held that it does.

The Court first determined that Garza's lawyer provided deficient performance: "Where, as here, a defendant has expressly requested an appeal, counsel performs deficiently by disregarding the defendant's instructions." Turning to the crux of the case, the Court held that the *Flores-Ortega* presumption of prejudice applied despite the appeal waiver. The Court reasoned that because there is no dispute that Garza wished to appeal, a direct application of that case resolves this one. It held: When counsel's constitutionally deficient performance deprives a defendant of an appeal that he otherwise would have taken, the defendant has made out a successful ineffective assistance of counsel claim entitling him to an appeal, with no need for a further showing of the merit of his claim, regardless of whether an appeal waiver was signed.

ETHICS BASED CLIENT CENTERED ADVOCACY

D. Tucker Charns
Chief Regional Defender
Indigent Defense Services
Public Defender Spring Conference May 2019

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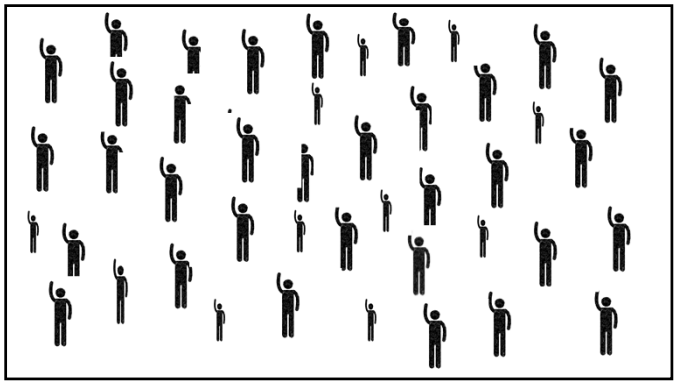

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JAMA Original Investigation
Medical Education
November 30, 2018

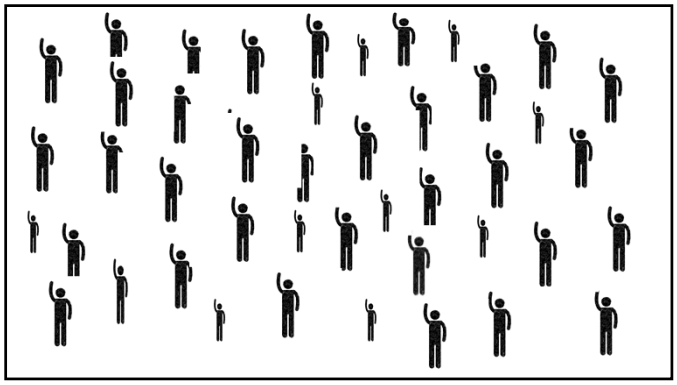
Prevalence of and Factors Associated With Patient Nondisclosure of Medically Relevant Information to Clinicians

Andrea Gurmankin Levy, PhD, MBE[1]; Aaron M. Scherer, PhD[2]; Brian J. Zikmund-Fisher, PhD[3]; et al
Knoll Larkin, MPH[4]; Geoffrey D. Barnes, MD, MSc[5]; Angela Fagerlin, PhD[6]

Patients lie to their doctors.

81% of patients said they had lied at one time to their doctors about exercise, food intake, medication and stress reduction.

50% reported they did not speak up about not understanding the doctor.



Why would people lie to someone who is trying to help them?

Fear of judgment.

Fear of shame.

Risking more sickness.

Risking death.

Fear of judgment and shame.

Fear we won't work hard for them if they tell us everything.

Risking losing the case.

Risking freedom.

Court-appointed clients have even more fears.

?

Trust.

Client-centered advocacy is the building block of every trial skill.

Client relationships.

N. C. State Bar:

Rule 1.1 Competence
Rule 1.3 Diligence
Rule 1.6 Confidentiality of Information*

1. Know the law.
2. Keep the client informed.
3. Don't reveal confidential information.*

Client centered advocacy is recognizing that an attorney is ethically bound to use any and all legal means necessary to achieve the best outcome for the client, as expressed by the fully informed client.

Client-centered advocacy at work.

1. Decision time.
2. First client meeting.
3. Confidentiality.

1. The decisions.

State v. Ali
329 N.C. 394 (1991)

"[W]hen counsel and a fully informed criminal defendant reach an absolute impasse as to such tactical decisions, the client's wishes must control…in accord with the principal-agent nature of the attorney-client relationship."

Fully informed.

The client's wishes must control…

The nature of the attorney-client relationship is principal-agent.

We represent their expressed interest, not what we think is their best interest.

Client centered.

Not lawyer centered.

"I told my lawyer, 'man, you work for me.
Object. Object.
This ain't right.'"

Batson v. Kentucky, 476 U.S. 79 (1985)

How does it help to win cases by recognizing that the client is the decision maker whose definition of "best outcome" controls?

2. First client meeting.

Blink: The Power of Thinking Without Thinking –
Malcolm Gladwell

"(First) judgments are, first of all, enormously quick: they rely on the thinnest slices of experience…they are also unconscious."

How to affect the blink.

Meet the client as soon as possible after the event.

In the interview, the attorney talks first.

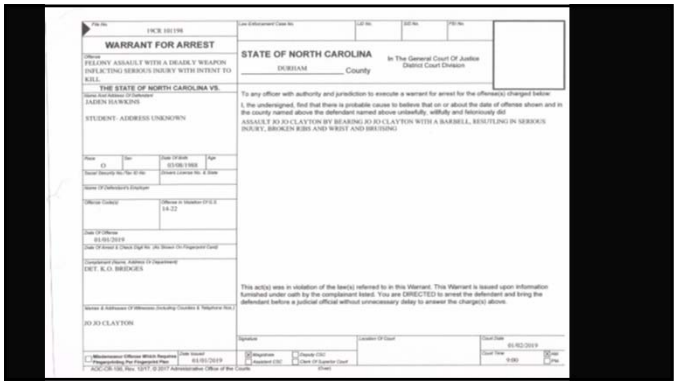
Explain confidentiality.

Explain the elements.
Explain the defenses.
Explain the process and what happens next.

If you ask questions about the event, be mindful of how you ask the questions.

Leave them room to come back and correct.

Google, Esquire.



WARRANT FOR ARREST

STATE OF NORTH CAROLINA

DURHAM County

In The General Court Of Justice
District Court Division

FELONY ASSAULT WITH A DEADLY WEAPON INFLICTING SERIOUS INJURY WITH INTENT TO KILL

THE STATE OF NORTH CAROLINA VS.

JAIDEN HAWKINS

STUDENT- ADDRESS UNKNOWN

To any officer with authority and jurisdiction to execute a warrant for arrest for the offense(s) charged below:

I, the undersigned, find that there is probable cause to believe that on or about the date of offense shown and in the county named above the defendant named above unlawfully, willfully and feloniously did

ASSAULT JO JO CLAYTON BY BEARING JO JO CLAYTON WITH A BARBELL, RESULTING IN SERIOUS INJURY, BROKEN RIBS AND WRIST AND BRUISING

DET. K.O. BRIDGES

JO JO CLAYTON

This act(s) was in violation of the law(s) referred to in this Warrant. This Warrant is issued upon information furnished under oath by the complainant listed. You are DIRECTED to arrest the defendant and bring the defendant before a judicial official without unnecessary delay to answer the charge(s) above.

01/01/2019

01/02/2019

9:00

Jayden (Client)

Jo Jo (Complainant)

Jayden (Client)

Jo Jo (Complainant)

We blink, too.

Confidentiality.

In court. Alone.

I do not have any information that I am able to provide.

REFUSING THE PLEA

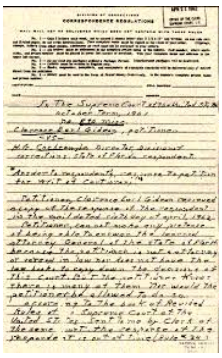
Dealing with people we see everyday about a person we may never see again.

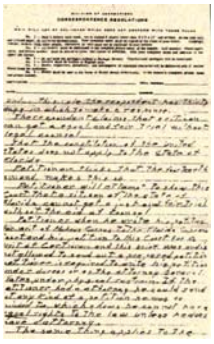
Be mindful of how we define a case.

Client-centered advocacy wins cases.

Client-centered advocacy brings more cases.

A case of great client-centered advocacy.





Questions?

Reading Driving Records & Protecting the Privilege to Drive

2019 Spring Public Defender Conference
May 8-10, 2019

MIKE PADUCHOWSKI – PARTNER
MATTHEW CHARLES LAW

May 2019

Reading Driving Records & Protecting the Privilege to Drive

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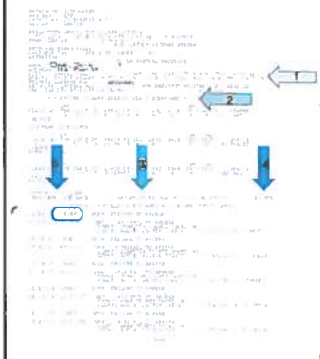
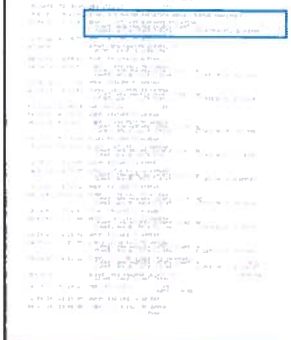
May 2019

Driving Record



1. Personal Information Section
   a. Defendant's Name; Address, Date of Birth, License Number
2. Driver's License Status
   a. active, Expired; Suspended, Inactive; Eligible for Reinstatement, Suspended –Pick up License
3. Nature of Record or Division Action
   a. Conviction County in which case originated and Original Case Number
   b. Action DMV took as a result of the Conviction or Inaction of defendant
4. Points/PJC
   a. Points assessed as a result of conviction or record of PJC
      Note: Zero points is blank
5. Important Dates
   a. Occurrence / Beginning
   b. Conviction / Ending

Driving Record



- 1st moving violation while suspended

How To Read a NC Driving Record

- Be familiar with abbreviations
  - PERM – Permanent Revocation
    - Permanently means forever? Yes, but that is where you come in
  - INDEF – Indefinite Revocation
    - Revoked until the revocation is ended
  - PJC – Prayer for Judgment Continued
    - Shows when a PJC was used
  - ACDNT – Accident
    - If an accident was reported, then it is on the record. This does not mean the person was at fault, just that they were involved.
  - CLS – Class
    - Describes the class of license to let you know if a Commercial Drivers License (CDL) is in play (Class C is a typical non-CDL)

2 Types of Suspension

N.C. Gen. Stat. § 20-24.1 (Indefinite Suspension)

- Revocation (INDEF) for FTA or FTP/FTC
- Remains in effect until the FTA case is disposed or FTC case is paid

N.C. Gen. Stat. § 20-28 (a) and N.C. Gen. Stat. § 20-28.1 (Definite Suspension)

- Any moving violation conviction requires additional suspension of 1 year, 2 years or permanently if the moving violation was committed while in a state of suspension (20-28.1)
- Same with any conviction of DWLR-Impaired or DWLR-Non-Impaired with an offense date before 12/1/2015

Other Possible Causes of a Revocation

North Carolina General Statute § 20-16 provides, that the Division of Motor Vehicles has the authority to suspend the license of any driver, if a driver has:

- Accumulated twelve or more points within a three year period
- Been convicted of Driving While Impaired
- Been convicted of Speeding more than 80 MPH in a 70 MPH zone
- Been convicted of Speeding more than 75 MPH in a less than 70 MPH zone
- Been convicted in 12 months of Speeding 55 to 80 MPH and:
  - Speeding 55 to 80 MPH, or
  - Careless and Reckless Driving, or
  - Aggressive Driving
- Committed Fraud involving a Driver's License or Learner's Permit
- Been Convicted of Illegally Transporting Alcohol
- Been Ordered Suspended as part of a Court Order

Moving vs. Non-Moving Violations

Moving Violations

- DWLR (Impaired)
- Speeding
- Stop Sign/Stoplight
- No Insurance
- Unsafe movement
- Reckless Driving (C&R)
- Move Over Law
- DWLR Non-Impaired**
- No Operator's License (NOL)**

**Offense Date Before 12-1-2015

- Driving While Impaired (DWI)
- Open Container
- Following Too Closely
- Left of Center
- Passing a Stopped School Bus
- Failure to Yield to Emergency Vehicle
- Illegal Passing
- Child Seat/Child Seatbelt (<16 years)

Moving vs. Non-moving

Non-moving Violations

- Improper Equipment
- Adult Seatbelt (age ≥ 16)
- Exp/Rev/Fict Registration
- Exp Inspection
- Fictitious Info to Officer
- Parking in a Handicapped Space

- Failure to Notify DMV of Address Change
- Window Tint
- All City Ordinance Violations
- DWLR (Non-Impaired)*
- No Operators License*

*Offense 12/1/15 or later

Alternatives to a Moving Violation Conviction

- Dismissal or Acquittal
- Reduce or Amend to Non-Moving Violation
- Prayer for Judgment Continued (PJC)

Dismissal/Acquittal

- Acquittal (i.e. a NG verdict) is usually an impractical route in these cases (exceptions apply)
- Outright dismissal of moving violations
  - Exception: Defendant agrees to plea to another moving violation, a non-moving violation, a criminal charge, etc. (Dismissal per plea)
  - Exception: Unsafe movement, Failure To Reduce Speed, etc resulting from a vehicle collision – Defendant presents a letter from his insurance company
- BUT, a dismissal of CHARGED non-moving violation is quite common – FIX IT and show proof!
  - Expired Inspection, Registration
  - Improper Equipment, Window Tint

Reduce or Amend to Non-moving Violation

- Speeding → Improper Equipment-Speedometer
  - Exception: IE is NOT available if speed > 25mph over
- Stoplight/Stop Sign → City Code Violation (or Improper Equipment-Brakes)
- DWLR/NOL → A non-moving violation for offense dates on/after Dec 1, 2015

Prayer for Judgment Continued (PJC)

- PJC is unique to North Carolina
- Guilty but not a "conviction" (court agrees to continue the judgment indefinitely)
- ***NOTE:*** only 2 PJCs per driver every 5 years for DMV purposes
- ***BUT*** only 1 PJC per *household/policy* every 3 years for insurance purposes
  - See N.C. Gen. Stat. § 58-36-75(f)

- DMV will not honor a PJC for the following:
  - DWI
  - Passing Stopped School Bus
  - Speed > 25mph over
  - Any offense committed while driving a commercial vehicle OR possessing a commercial drivers license

Extraordinary Relief

- (1) FTA Sent In Error
- (2) Nunc pro tunc
- (3) Motion for Appropriate Relief (MAR)
- (4) Chapter 14 criminal charge of FTA

FTA Sent In Error

- Judge orders the clerk to transmit to the DMV that the clerk sent the FTA in error.
- If the FTA is removed (on the original charge), the moving violation no longer occurred while in a state of suspension. Cindy now can plead to the current moving violation. This effectively removes the FTA INDEF Suspension (and the FTA fee).
- Practical Tip: Prepare an order saying the FTA is "Stricken and Sent In Error by no fault of the clerk"

Nunc Pro Tunc (now for then)

- Rewrite history by changing the date a conviction, PJC or other action is entered. Has a retroactive legal effect. It is as though the action had occurred at an earlier date.
- Can use on an open or closed case. BUT, if want to Nunc Pro Tunc a date on a closed case, you need a way to open the closed case (see MAR…)
- VERY difficult to do in most counties

Motion for Appropriate Relief (MAR)

- N.C. Gen. Stat. § Section 15A-1415
- Allows an old case to be opened and change what happened in the past. Use when:
  - PJC was used improperly and need to get it back to use today
  - PJC was available and was not used OR is now available
  - Pled to speed when IE was an option
  - Change a Speeding plea to Exceeding a Safe Speed in a situation where there are two speeds greater than 55mph within a year

Chapter 14 Criminal Charge of FTA

- Ask ADA to amend the Chapter 20 traffic ticket (DWLR or moving violation) to the *criminal* charge of Failure to Appear (Chapter 14).
- Chapter 14 is not a traffic charge. If person pleads Guilty to a Chapter 14 charge of Failure to Appear, their DL will NOT be revoked because this is NOT a Chapter 20 moving violation.

Limited Driving Privilege

- N.C. Gen. Stat. § 20-20.1 Petition and Order (2 step process)
- COURT order allowing a person with a revoked license to drive on a limited basis. Prior to implementation of this statute, a DMV hearing was the only way to obtain a driving privilege.
- License is still revoked but Judge grants a limited driving privilege (work, school, household maintenance, religious worship)

Limited Driving Privilege (cont'd)

- Does not need a DMV hearing (issued by Judge).
- The person's license must be currently revoked under N.C. Gen. Stat. § G.S. 20-28.1 and this must be the ONLY revocation currently in effect.
- Cannot be granted if person currently has any indefinite suspensions, has pending traffic charges or a suspension was a result of a DWI.

Limited Driving Privilege Cont'd

- Eligible to file petition in district court in the county of the person's residence:
  - 90 days after 1 year revocation period begins
  - 1 year after 2 year revocation period begins
  - 2 years after Permanent revocation period begins
- If Judge issues, clerk of court sends copy of the limited driving privilege to DMV.
- After one year of driving on a limited driving privilege for a Permanent Revocation, the license must be reinstated (but, for some reason, a hearing is still required)

Misdemeanor Reclassification

- DWLR – Impaired Revocation is still a Class 1 misdemeanor where counsel may be appointed
- DWLR – Non-Impaired Revocation is a Class 3 misdemeanor with a cost/fine disposition therefore eliminating the ability to apply for appointed counsel

  Exception: Where a defendant has 4 or more previous convictions, a disposition other than a cost/fine is possible so the defendant may apply for court appointed counsel

  Practical Tip: Courts will often appoint counsel on DWLR Non-Impaired if the defendant already has appointed counsel on other charges

NC Drivers License Restoration Act

What Does the NC DL Restoration Act do?

- The Act provides some weapons in the fight against the License Revocation Cycle
- The Act made great strides in ending additional license suspensions from "Driving While Poor"
- The Act has provided traction for programs in some counties to clean up old FTAed cases

In a Nutshell…

- The Act makes DWLR (Non-Impaired) a NON-MOVING violation

  This eliminates any suspensions for DWLR (as they currently stand…like moving violations while suspended)

  Applies to anyone who is charged with DWLR on or after December 1, 2015

  - NOTE: "Charged" not "Convicted" – Changed in the Technical Corrections phase of the law
  - Practical Tip: DMV is not currently issuing suspensions for convictions after 12/1/2015 regardless of offense date

What Did This Do?

- You can now enter a plea to DWLR to (hopefully) get the accompanying moving violation (speeding, etc) dismissed → No Additional Suspension (Stops the DWLR Cycle)
- The Act WAS INTENDED TO encourage those with old charges to add them on to a docket and resolve them by plea. They can enter a plea of guilty to DWLR charges, pay off what they owe, and get a license back. Now it encourages new charges first.
- Get more licensed, insured drivers on the road (or reduce the amount of unlicensed/uninsured drivers)

Potential Pitfalls

- DMV may still view any pleas to non-moving violations as evidence of driving.
  - Even though a non-moving violation will not make a defendant ineligible for a hearing, it can be used against them as evidence of driving during the suspension (very common)
  - Practical Solution: Evidence of driving is irrelevant in consideration for the limited driving privilege, and after successfully having the privilege for 1 year, the license is reinstated (although a hearing is still required for a perm susp)

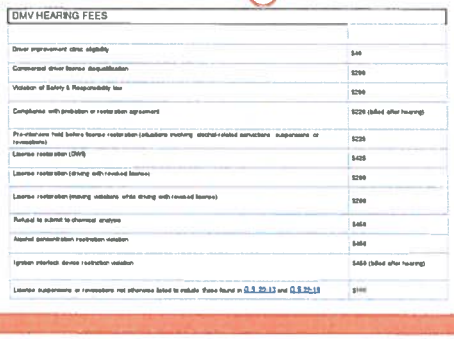
Potential Pitfalls

- The act encourages pleas that will result in a criminal record
  - DWLR (misdemeanor) will not suspend you further…Speeding 1mph over the limit (infraction) will suspend you for 1 year, 2 years, or permanently
  - There is a strong motivation to enter a plea of guilty to a misdemeanor (creating a criminal record if otherwise clean) instead of a traffic infraction to avoid a license suspension

NC DMV Hearings

- Most DMV Hearings and Interviews cannot be scheduled until a hearing fee has been paid
- DMV will let you pay for a hearing, schedule a hearing, and show up for a hearing…just to tell you that you are not eligible for a hearing
- Things that are perfectly fine for court and limited privilege purposes can be held against you in a DMV hearing and prevent license reinstatement

Filing Fees for DMV Hearings



DMV HEARING FEES	
[illegible]	$46
[illegible]	$290
[illegible]	$290
[illegible]	$229 (billed after hearing)
[illegible]	$235
[illegible]	$429
[illegible]	$290
[illegible]	$290
[illegible]	$464
[illegible]	$464
[illegible]	$464 (billed after hearing)
[illegible]	$100

Affidavit of Indigence for DMV Hearings

- Available in English and Spanish online
- Income must be verified
  - Recent W-2 or 1099 tax docs
  - Tax Filings or Statement
  - Pay Stubs
  - Proof of government assistance

Tips For License Restoration

- Always keep the DL in mind when resolving criminal cases. Even if unrelated, you can often help get a license back by getting charges dismissed with the same plea you were going to enter anyway. Always check CIPRS (NC Public Criminal & Infraction Records) before a plea!
- You can <u>never</u> have a license if you don't resolve the INDEF suspensions!
  - If indefinite suspensions exist you will be in a revoked status
  - If definite/permanent suspensions exist you have an end date

Tips for License Restoration

- Keep money in mind! Your client definitely will.
  - An FTA can cost $200 extra.
  - Just because you can get something dismissed doesn't always mean you should
  - Post-Act, you can save the $200 fee and avoid the additional suspension by entering a plea on the new DWLR charge (non-moving violation)
    - Remember: It is a criminal charge

Tips for License Restoration

- Use and Build Your Network!
  - Call around and find out how a client can reset an old case in another county and if that is feasible to do without an attorney
  - Some counties will really try to help those who are trying to help themselves obtain a valid license
  - You will be surprised how many people will volunteer to help and can often just get an old case dismissed by showing what the client has done/paid so far

Questions, Comments, Concerns?

Feel free to contact me at any point in the future if I can help you out in any way.

Mike Paduchowski – Partner
Matthew Charles Law
Chapel Hill & Durham, NC
www.MatthewCharlesLaw.com
mike@matthewcharleslaw.com
919-619-3242

NORTH CAROLINA
DIVISION OF MOTOR VEHICLES

AFFIDAVIT OF INDIGENCE
REQUEST TO WAIVE AN ADMINISTRATIVE HEARING FEE

If you believe you are unable to afford an administrative hearing, complete this form to have the Division of Motor Vehicles ("Division") determine whether you are eligible for a waiver of the hearing fee.

THIS AFFIDAVIT IS VALID AS OF JULY 16, 2018.

For a hearing request to be valid you must: (1) complete a Hearing Request form; (2) complete this Affidavit, including signing and affirming before a notary; (3) attach ALL required income verification documents shown in Section 4 and (4) send these documents as instructed in Section 6.

SECTION 1 - APPLICANT INFORMATION

Last Name		First		Middle	
Mailing Address					
City		State		ZIP	
Phone		E-mail Address			
SSN:				DOB	

SECTION 2 – HOUSEHOLD SIZE AND INCOME INFORMATION

2.1 Total number of persons in your household? ▶ _____

Note: Household size includes you, your spouse, and your children if the children will receive more than half their support from you. It includes other people only if they live with you now, they receive more than half their support from you now, and they will continue to receive this support from you for the year that you affirm your household size. Support includes money, gifts, loans, housing, food, clothes, car, medical and dental care, and payment of college costs.

2.2 What is your total household income from the prior tax year? | | | | , | | | | . | 0 | 0 |

What is your total household monthly income, currently? | | | | , | | | | . | 0 | 0 |

Note: Household income includes but is not limited to: income from employment or self-employment (salaries, wages, commissions, bonuses, dividends, severance pay, etc.); ownership or operation of a business, partnership, or corporation; rental of property; retirement or pensions; interest, trusts, or annuities; capital gains; social security benefits; workers compensation benefits; unemployment insurance benefits; disability pay and insurance benefits; gifts or prizes; and alimony.

SECTION 3 – FEDERAL INCOME TAX RETURN STATUS

Remember that household income includes but is not limited to: income from employment or self-employment (salaries, wages, commissions, bonuses, dividends, severance pay, etc.); ownership or operation of a business, partnership, or corporation; rental of property; retirement or pensions; interest, trusts, or annuities; capital gains; social security benefits; workers compensation benefits; unemployment insurance benefits; disability pay and insurance benefits; gifts or prizes; and alimony.

3.1	If you have filed a federal income tax return for either of the past two tax years, attach documents as described in Section 4.1 or 4.2.
3.2	If you have not filed a federal income tax return for either of the past two years, and you have you earned or received any household income, attach documents as described in Section 4.2.
3.3	If you have no household income in the past calendar year, proceed to Section 4.3.

SECTION 4 – INCOME VERIFICATION DOCUMENTS

Please review the methods of proving income below. Once you collect the documents, check the box to indicate that you have collected all the documents requested and that you have included them in your submission to the Division.

4.1 Provide your most recent federal income tax return (first two pages). You must also include the federal income tax return (first two pages) of your spouse if you filed "married but filing separately."

▶ ☐ I have included the first two pages of my most recent federal tax return, and I have included my spouse's first two pages of their federal tax return because I filed married but filing separately.

4.2 If you have not filed a federal income tax return for either of the past two tax years, you must provide documentation of all household income you and your spouse (if applicable) receive.

You must provide at least one piece of documentation for each source of household income. Acceptable forms of income include:

- pay stubs (for the past month)
- letter from your employer containing your income by month or year
- W-2
- 1099
- interest or bank statements
- documents from the Division of Employment Security

If you claimed that anyone is in your household (Section 2.1 and Section 2.2 above), for each person claimed you must provide the person's full name, birth date, and describe the person's relationship to you.

▶ ☐ I have included at least one piece of documentation for each source of household income, and for each person in my household I have included: (1) how the person is related to me; (2) their full name; and (3) birth date.

4.3 If you have no household income, you must still provide documentation. You may either provide a sworn or affirmed statement from the person who has provided support and maintenance to you over the last calendar year, or you may provide supporting documentation that you are supporting yourself primarily through government assistance.

▶ ☐ I have included a sworn or affirmed statement from the person providing for my support.

▶ ☐ I have included supporting documentation that I am primarily supporting myself through government assistance.

▶ ☐ Description of Document being sent (please explain)_____

_____.

SECTION 5 – AUTHORIZATION AND CERTIFICATION

Under penalty of perjury, I declare that the information provided on this form and in any accompanying documentation is true, complete, and correct to the best of my knowledge, and that I am financially unable to pay for an administrative hearing. I understand that a false or dishonest answer made under oath or affirmation concerning my financial status could lead to prosecution for perjury, which is a felony. I further understand that I may be subject to civil penalties including revocation of my driver's license.

I further authorize the release of financial information to the Division to allow it to verify eligibility of a waiver of administrative hearing fees. This release includes employers and any governmental agencies, including the Internal Revenue Service (IRS), the North Carolina Department of Revenue, and any other entities that could aid the Division in determining eligibility.

Printed Name _____

Signature _____ Date _____

State of _____

County of _____

Affirmed to and subscribed before me this _____ day of _____, 20 ____.

_____
Signature of Notary Public

(Official Seal)

_____, Notary Public
(Printed or typed name)

My commission expires: _____

This form **may not** be notarized by an employee of the DMV.

SECTION 6 - WHERE TO SEND THIS FORM AND OTHER DOCUMENTS

You may mail, fax, or deliver this form and any accompanying documentation to the Division as follows:

Mailing Address:
Administrative Support Unit
3118 Mail Service Center
Raleigh, N.C. 27697-3118

Fax:
(919) 715-0132

Physical Address:
1100 New Bern Avenue
Raleigh, N.C. 27697

SECTION 7 - THE NEXT STEPS

After the Division receives your Hearing Request, completed Affidavit of Indigence and required income or benefit verification documents, it will be reviewed to determine if you are eligible for a waiver of the administrative hearing fee. Your eligibility is based upon the number of persons in your household, your household income, and the most recent released Federal Poverty Level Guidelines. After the Division reviews your application and required income verification documents, it will do one of the following:

1. Determine that you are eligible for a waiver of the administrative hearing fee, schedule a hearing, and mail the notice of hearing to the address identified on this Affidavit.

2. Determine that you need to provide the Division additional documentation to assess your eligibility for a waiver of the administrative hearing fee. The Division will notify you what additional information is required, and you will have 10 calendar days to comply with the Division's request for additional documentation. If you fail to provide the documentation, your request for an administrative hearing will be withdrawn.

3. Determine that you are not eligible for a waiver of the administrative hearing fee. The Division will then notify you that you have 10 calendar days to pay the full amount of the hearing fee to proceed with your request for an administrative hearing. If you fail to provide the required fee, your request for an administrative hearing will be withdrawn.

4. Determine that you did not complete this form or did not otherwise provide the requested information. Therefore, request for an administrative hearing will be immediately withdrawn.

DIVISIÓN DE VEHÍCULOS MOTORIZADOS
de CAROLINA del NORTE

DECLARACIÓN JURADA DE INDIGENCIA
SOLICITUD PARA EXIMIR CUOTA POR AUDIENCIA ADMINISTRATIVA

Si usted cree que no puede pagar por una audiencia administrativa, llene este formulario para que la División de Vehículos Motorizados ("División) determine si es elegible para quedar exento del pago de la cuota por la audiencia.

ESTA DECLARACIÓN JURADA ES VÁLIDA A PARTIR DEL 16 DE JULIO DE 2018.

Para que su solicitud de audiencia sea válida, usted deberá: (1) completar el formulario Solicitud de audiencia; (2) completar esta declaración jurada, incluyendo su firma y declaración ante notario; (3) adjuntar TODOS los documentos de verificación de ingresos requeridos en la Sección 4 y (4) enviar estos documentos como se indica en la Sección 6.

SECCIÓN 1 – INFORMACIÓN DEL APLICANTE

Apellido		Primer nombre		Segundo nombre	
Dirección					
Ciudad		Estado		ZIP	
Teléfono		Correo electrónico			
# de SS:				FDN	

SECCIÓN 2 – INFORMACIÓN E INGRESOS DEL HOGAR

2.1 ¿Cuántas personas viven en total en su hogar? ▸ _____

Nota: el número de personas en el hogar se refiere a usted, su pareja y sus hijos, si sus hijos reciben más de la mitad de su manutención de usted. Incluye también otras personas si estas viven con usted, reciben más de la mitad de su manutención de usted y continuarán recibiendo esa manutención de usted durante el año en el que declara esta información. Dicha manutención incluye dinero, regalos, préstamos, techo, comida, ropa, auto, cuidado de salud y dental y pago de gastos universitarios.

2.2 ¿Cuáles fueron los ingresos de su hogar el año fiscal anterior? | | | | , | | | | . | 0 | 0 |

¿Cuáles son los ingresos mensuales de su hogar, actualmente? | | | | , | | | | . | 0 | 0 |

Nota: los ingresos del hogar incluyen, pero no están limitados a: ingresos de empleados y trabajadores independientes (salarios, comisiones, bonos, dividendos, liquidaciones, etc.); propiedad u operación de un negocio, sociedad o corporación; renta de una propiedad; fondos de retiro o pensiones; intereses, fondos o anualidades; ganancias de capital; beneficios del seguro social; beneficios por compensación laboral; beneficios del seguro por desempleo; pago por incapacidad y beneficios de un seguro; regalos o premios; y pagos por manutención.

SECCIÓN 3 – ESTATUS DE DECLARACIÓN FEDERAL DE IMPUESTOS

Recuerde que los ingresos del hogar incluyen, pero no están limitados a: ingresos de empleados y trabajadores independientes (salarios, comisiones, bonos, dividendos, liquidaciones, etc.); propiedad y operación de un negocio, sociedad o corporación; renta de una propiedad; fondos de retiro o pensiones; intereses, fondos o anualidades; ganancias de capital; beneficios del seguro social; beneficios por compensación laboral; beneficios del seguro por desempleo; pago por incapacidad y beneficios de un seguro; regalos o premios; y pagos por manutención.

3.1	Si usted a realizado una declaración federal de impuestos en alguno de los dos últimos años, adjunte los documentos como se describe en la Sección 4.1 o 4.2.
3.2	Si usted no a realizado una declaración federal de impuestos en alguno de los dos últimos años y su hogar ha ganado o recibido ingresos, adjunte los documentos como se describe en la Sección 4.2.
3.3	Si su hogar no ha recibido ingresos en el último año, continúe en la Sección 4.3.

SECCIÓN 4 – DOCUMENTOS PARA VERIFICACIÓN DE INGRESOS

Por favor, revise los métodos para proporcionar sus ingresos que aparecen más abajo. Una vez tenga los documentos, marque el cuadro indicando que ya tiene todos los documentos requetidos y que los ha incluido en su solicitud a la División.

4.1 Proporcione su declaración federal de impuestos más reciente (las primeras dos páginas). También deberá incluir la declaración federal de impuestos (las primeras dos páginas) de su cónyuge si declaró impuestos como "casado, pero declarando por separado".

► ☐ He incluido las primeras dos páginas de mi declaración federal de impuestos más reciente, así como las dos primeras páginas de la declaración federal de impuestos de mi cónyuge, debido a que declaré impuestos como casado, pero por separado.

4.2 Si usted no ha declarado impuestos federales en los último dos años fiscales, deberá proporcionar documentación de todos los ingresos del hogar, tanto los suyos como los de su cónyuge (si aplica).

Deberá proporcionar al menos un documento de cada fuente de ingresos del hogar. Se aceptan los siguientes:

- talones de pago (del último mes)
- carta de su empleador que incluya su salario mensual o annual
- W-2
- 1099
- estados de cuenta bancarios
- documentos de la División para la Seguridad en el Empleo

Si usted menciona personas como parte de su hogar (Sección 2.1 y Sección 2.2 más arriba), deberá proporcionar el nombre completo, fecha de nacimiento y la relación de cada persona con usted.

► ☐ He incluido al menos un documento de las fuentes de ingreso de mi hogar, y para cada persona quie es parte de mi hogar he incluido: (1) cuál es mi relación de dicha persona; (2) su nombre completo; y (3) su fecha de nacimiento.

4.3 Si nadie en su hogar recibe ingresos, de todas maneras deberá proporcionar documentos que así lo indiquen. Deberá proporcionar una declaración jurada de la persona que le ha mantenido durante el último año, o documentación que indique usted se mantiene recibiendo ayuda del gobierno.

► ☐ He incluido una declaración jurada de la persona que me mantiene.
► ☐ He incluido documentos que comprueban me mantengo recibiendo ayuda del gobierno.
► ☐ Descripción del documento enviado (por favor, explique)_____

_____.

SECCIÓN 5 – AUTORIZACIÓN Y CERTIFICACIÓN

Bajo pena de perjurio, declaro que la información brindada en este formulario y en cualquier otro documento que lo acompaña es verdadera, completa y correcta, según mi conocimiento, y que no tengo recursos económicos para pagar por una audiencia administrativa. Reconozco que una respuesta falsa o deshonesta hecha bajo juramento o declaración en relación con mi condición financiera puede resultar en mi enjuiciamiento por perjurio, que es un delito grave. También reconozco que podría ser sometido a penalidades civiles, incluyendo la revocación de mi licencia de conducir.

También autorizo la entrega de información financiera a la División para permitirle que verifique mi eligibilidad para quedar exento del pago de cuotas administrativas. Dicha entrega cubre empleadores y cualquier agencia del gobierno, incluyendo el Servicio de Impuestos Internos (IRS), el Departamento de Hacienda de Carolina del Norte y cualquier otra entidad que pueda ayudar a la División a determinar mi eligibilidad.

Nombre impreso _____

Firma _____ Fecha _____

Estado de _____

Condado de _____

Declarado y firmado ante mi en el _____ día de _____, 20 ____.

_____
Firma del notario público

(sello oficial)

_____, notario público
(nombre impreso o tecleado)

Mi comisión expira en: _____

Este formulario **no** debe ser notarizado por un empleado de la DMV.

SECCIÓN 6 – DÓNDE ENVIAR ESTE FORMULARIO Y OTROS DOCUMENTOS

Puede enviar por correo, fax o en persona este formulario y documentos a la División de la siguiente manera:

Dirección de correo:
Administrative Support Unit
3118 Mail Service Center
Raleigh, N.C. 27697-3118

Fax:
(919) 715-0132

Dirección física:
1100 New Bern Avenue
Raleigh, N.C. 27697

SECCIÓN 7 – PASOS SIGUIENTES

Después que la División reciba su Solicitud de audiencia, Declaración jurada de indigencia completa y los documentos para la verificación de ingresos o beneficios requeridos, analizará si usted es elegible para quedar exento del pago de la cuota por una audiencia administrativa. Su elegibilidad se basa en el número de personas en su hogar, los ingresos de su hogar y las Directrices Federales de Nivel de Pobreza más recientes. Una vez que la División analice su aplicación, tomará alguna de las siguientes acciones:

1. Determinará que usted es elegible para quedar exento del pago de la cuota por una audiencia administrativa, programará dicha audiencia y enviará por correo el aviso de audiencia a la dirección que aparece en esta Declaración jurada.

2. Determinará que usted debe brindar a la División documentos adicionales para evaluar su elegibilidad para quedar exento del pago de la cuota por una audiencia administrativa. La División le informará qué información adicional es requerida y usted tendrá 10 días para cumplir con dicha solicitud de la División. Si usted no logra entregar esa documentación adicional en dicho plazo, su solicitud para una audiencia administrativa será retirada.

3. Determinará que usted no es elegible para quedar exento del pago de la cuota por una audiencia administrativa. La División le informará que usted tiene 10 días para pagar la cuota por dicha audiencia para proceder con su solicitud de una audiencia administrativa. Si usted no logra entregar esa documentación adicional en dicho plazo, su solicitud para una audiencia administrativa será retirada.

4. Determinará que usted no completó este formulario o no brindó la información solicitada. Su solicitud para una audiencia administrativa será retirada inmediatamente.

Blood Tests and Non-alcohol DWI

Marcus Hill
Attorney
Law Offices of Marcus E. Hill
Durham, NC

Crying Wolf

What never before published data proves about Standardized Field Sobriety Tests

By Greg Kane, M.D.

I recently reviewed never before published data from the latest, most up to date Standardized Field Sobriety Test validation research put out by the National Highway Traffic Safety Administration. The study is commonly called the 1998 San Diego study.[1] What I discovered may surprise you.[2]

To a first approximation the SFST works this way: the test says everyone is guilty; the officer ignores the test and arrests or releases people according to his unstandardized gut instincts.

DUI defense attorneys often counter SFST evidence by attacking the way the SFST was performed in this particular defendant's case. The DUI defense bar complains about the un-peer reviewed science-for-hire used to support claims of SFST accuracy.

The San Diego study's raw data suggests a new defense. The science has been done. **The science proves SFSTs do not work.** The science proves that if juries rely on the SFST to decide the guilt of drivers charged with DWAI at the current 0.05% level, they will wrongly convict ninety-three percent of the innocent drivers who go to trial.

Field Sobriety Tests

Field sobriety tests are imagined to be accurate, objective measures of blood alcohol concentration.[3] Suspect drivers do two coordination exercises (One Leg Stand, Walk And Turn), and an officer checks their eyes for jerkiness (Horizontal Gaze Nystagmus). If they fail any one component, the standardized SFST interpretation criteria are clear: their blood alcohol concentration is above 0.10%. Or 0.08%. Or 0.05%. Or 0.04% - whatever level the NHTSA wishes to "validate" in this particular study.

Some SFST apologists claim the tests are "valid" scientific predictors of blood alcohol concentration. Others say they identify impairment. SFST admissibility at trial varies by state, but in some jurisdictions failed FSTs are used to convict drivers whose BACs were in the legal range. Drivers proven to have BACs of *zero* may be charged with impairment by some other drug. The government's theory: **they failed the SFST, they must have been impaired** by something.

Figure 1. What the San Diego SFST Validation Study Keeps Secret

1a. This data was reported:
Officer BAC guesstimates.[1,2]

Officer's BAC Estimate 0.08%

Measured BAC	< 0.08	≥ 0.08	% correct
≥ 0.08	4	210	98%
< 0.08	59	24	71%
Totals →			
Correct →	94%	90%	

Innocent driver conviction rate 29%

4 high-BAC drivers were guesstimated innocent
210 high-BAC drivers were guesstimated guilty
59 innocent drivers were guesstimated innocent
24 innocent drivers were guesstimated guilty

1b. This data was kept secret.
How the SFST actually performed.

SFST 0.08%

Measured BAC	< 0.08	≥ 0.08	% correct
≥ 0.08	0	213	100%
< 0.08	24	59	29%
Totals →			
Correct →	100%	78%	

Innocent driver conviction rate 71%

0 high-BAC drivers passed the SFST
213 high-BAC drivers failed the SFS
24 innocent drivers passed the SFST
59 innocent drivers failed the SFST

Arrest Accuracy

In this study group the "accuracy" of officer's unstandardized BAC guesstimates was 90%. We've seen before the chief statistical utility of this number is to fool people into thinking a test works.[6] NHTSA validation studies can and do (and in this study did) inflate this so called "accuracy" by skewing the mix of sober and impaired drivers they choose to study. Even so, the "accuracy" of SFST's ≥0.08% answer is only 78%. Even with the study group heavily skewed, SFSTs could not be made to look useful. The NHTSA could not report the true SFST results and still claim the SFST is useful. The San Diego SFST validation study does not reveal its SFST results.

How did FSTs get to be this important? The foundation of field sobriety tests' forensic use[4] lies in three un-peer reviewed "validation studies" paid for by the NHTSA in the 1990s.[5] In the Colorado, Florida, and San Diego studies police on patrol duty administered FSTs to drivers suspected of alcohol impairment. "Using SFSTs" the officers estimated each driver's BAC (San Diego) and/or made decisions to arrest or release suspects (Colorado, Florida). These validation studies compared the officers' BAC estimates / arrest decisions with drivers' actual BACs, misapplied statistics,[6] and pronounced success.

The San Diego study puts it this way: "Decision analyses found that officers' estimates of whether a motorist's BAC was above or below 0.08 or 0.04 percent were extremely accurate."[7]

The Data

I wanted to see SFST validation studies' raw data, so I asked the NHTSA and the Southern California Research Institute (the contractor, as I read the reports, for the Colorado and Florida studies) to release copies. No dice.

I found researcher Dr. Mike Hlastala,[8] who sent me a Microsoft Excel file of the data set for the 1998 San Diego study. He originally got the file from the NHTSA via a FOIA request. Later I got a second Excel file from helpful Dr. Jack Stuster, principal author of the San Diego study. The two data sets were identical.

I've put this never before published data online. You can review the records and download your own copy at: FieldSobrietyTest.info/raw.html.

Crying Wolf

With the official data on my PC, I looked inside the latest, most up to date NHTSA SFST validation study. Here's what the data shows.

The SFST cries wolf.

When drivers are impaired, the SFST cries "impaired." When drivers are not impaired, the SFST still cries "impaired."

Pause for a moment to take in the bigness of that deal. Police and courts don't use SFSTs just to identify impaired drivers, they also use the test, or imagine they do, to identify and release innocent drivers. But a test that cries wolf can't do that. The SFST cannot possibly do what the government says it does.

In the old fable, when folks in the village heard the shepherd cry "Wolf!" they couldn't tell whether their sheep were being attacked or not, because the shepherd boy always cried "wolf."

Nowadays folks in the courthouse can't tell whether a driver was impaired or not, because the SFST always cries "impaired."

Always cries "impaired"? OK, I exaggerate — by one percentage point. In the San Diego validation study, using the standardized interpretation criteria for a 0.04% BAC, ninety-nine percent of everyone given the SFST failed.

296 drivers took the SFST
292 failed — 99%.
4 passed — 1%

Twenty-nine **innocent** people took the SFST. Twenty-seven failed—ninety-three percent. On innocent people the SFST cries wolf ninety-three times out of one hundred. On innocent people, the accuracy is seven percent. **Seven percent!**

So when a jury hears that a driver failed an SFST, how can they tell whether the driver was really impaired, or whether the driver was just one of those ninety-three percent of innocent drivers who also fail the SFST? They can't. If juries rely on the SFST to decide the guilt of drivers charged with DWAI at the current 0.05% level, they will wrongly convict ninety-three percent of the innocent drivers who go to trial.

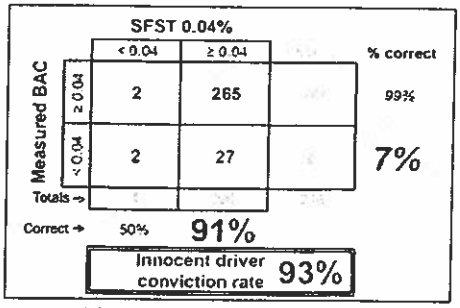
And yet the NHTSA claims: "Using only the standardized 3-test battery (Walk-and-Turn, One-Leg Stand, Horizontal Gaze Nystagmus), officers seldom erred when they decided to arrest a driver. Breath or blood specimens confirmed that 93% of the arrested drivers were above 0.05% BAC."[9]

You got that? The NHTSA has a way to make you believe a test with an innocent driver false conviction rate of ninety-three percent does the opposite — gives the correct answer ninety-three percent of the time. Howdo they do that?

Part of how they do that is to use statistical tricks. The way to validate a shepherd who shouts "Wolf!" three times a day is to stand him beside a pack of wolves. That way it looks like he's really spotting wolves, instead of just randomly crying "Wolf!"

Figure 1c. The SFST at 0.04% BAC

The SFST has two sets of interpretation rules. One is imagined to target a BAC of 0.08%. Or 0.10%. Or 0.05%. The other is imagined to target 0.04%. Here's what the unpublished raw data proves about the SFST at the 0.04% level.



The NHTSA's misleading "accuracy" statistic, the go-to statistic the agency uses to validate the SFST in every validation study, including this one, looks pretty good: 91%.[12] But here, at the low 0.04% BAC, the NHTSA's study report didn't mention this favorable looking "accuracy." Why?

Look at the accuracy of the SFST on innocent drivers: 7%. That's not a typo. Seven percent. On innocent drivers, the SFST gives the wrong answer 93% of the time! The NHTSA couldn't tell you about the favorable looking (but misleading) 91% accuracy without letting you see the real 93% inaccuracy. The San Diego SFST validation study does not reveal its SFST results.

Instead of studying the SFST with what scientists call a "random sample" of drivers, NHTSA validation studies skew the groups of drivers they study. They load up on drunks. Study groups skewed to drunks inflate the accuracies these studies "discover." Skewed samples make it look like the SFST is really spotting impairment, instead of just crying "impaired" for most people tested.

Earlier articles in this series deconstruct the statistics.[10]

Magician's Misdirection

The other part of how the NHTSA makes you think ninety-three wrong is ninety-three right is to fool you with a magician's misdirection.

SFST validation studies gather data on and report **officer decisions**. They also gather data on SFST accuracy, but they keep those results secret. Unless you know what to look for, you'll probably miss the distinction. This is an SFST study; you figure you're seeing the SFST's accuracy. You're not. You're seeing the (statistically enhanced) accuracy of the police officers' guesstimate. The **in**accuracy of the SFST stays hidden because the accuracy of the SFST itself is never released.

It's as if the agency did a shepherd validation study by having the village policeman drive out and check for wolves himself — and the study reported the officer's performance as if it were the shepherd's, thus keeping the shepherd's **in**accuracy secret. "When the shepherd was identifying wolves, the officer's decisions were 93% accurate."

Look at Figure 1a. This is accuracy information released in NHTSA's SFST report. But it does not reflect the SFST. It reflects officers' estimates. In this group of drivers, officers' estimates were ninety percent accurate.

Now look at Figure 1b. Compiled from never before published data the NHSTA claims to have lost, **this** is the SFST's accuracy. The SFST predictions were only 78 percent accurate.[11]

Figure 2 OFFICERS DID NOT USE SFST TO GUESSTIMATE BAC

The unpublished raw data from the San Diego SFST validation study proves police officers could not have used SFST results to identify impaired drivers. Let me ask you to estimate driver BACs. Your only information: real SFST scores from the latest, most up to date SFST validation study. Let's see if it's possible to duplicate the study officers' results. I've selected all the drivers in the study with the following SFST score: each failed the HGN test at the 0.08% BAC level, and each passed both the OLS and WAT tests. Please estimate each driver's BAC.

How many different BACs did you predict for these thirteen drivers?
What criteria did you use to pick each BAC?
Where did those criteria come from? How did you know they would work?

Second question: It turns out seven of these thirteen drivers were innocent. Please identify the innocent drivers.

Now let's see how San Diego police officers did. Remember, these drivers had **identical** SFST scores.[14] According to standardized SFST interpretation criteria detailed in the study's report, each driver should have had a BAC estimate of "? 0.08." Instead, officers somehow came up with these results: 0.03, 0.05, 0.06, 0.06, 0.06, 0.07, 0.08, 0.09, 0.12, 0.12, 0.14, 0.14, 0.19. That's nine different BAC guesstimates, from 0.03% all the way up to 0.19%. The high guesstimate was more than six times the low, for identical SFST scores! One SFST score; nine different BACs. How did officers do that? What criteria did they use? How did they know those criteria would work? Officers did not, could not had they wanted to, rely on these identical SFST scores to come up with nine different BAC guesstimates. In the San Diego SFST validation study, officers **did** SFSTs, they did not **use** SFSTs.

What's more, instead of the SFST's standardized interpretation results - BAC **<0.08 or ≥0.08** - officers were somehow able to guesstimate BAC levels to 1 part in 100. There are no standardized SFST interpretation criteria for estimating BAC to 1 part in 100. Officers did not, could not had they wanted to, use these identical SFST scores to come up with their nuanced, 1 part in 100, BAC scores. In the San Diego SFST validation study, officers **did** SFSTs, they did not **use** SFSTs.

Case	HGN	OLS	WAT	SFST prediction	Your BAC estimate
29	> 4	< 2	< 2	≥ 0.08%	
34	> 4	< 2	< 2	≥ 0.08%	
54	> 4	< 2	< 2	≥ 0.08%	
56	> 4	< 2	< 2	≥ 0.08%	
62	> 4	< 2	< 2	≥ 0.08%	
76	> 4	< 2	< 2	≥ 0.08%	
114	> 4	< 2	< 2	≥ 0.08%	
134	> 4	< 2	< 2	≥ 0.08%	
166	> 4	< 2	< 2	≥ 0.08%	
176	> 4	< 2	< 2	≥ 0.08%	
189	> 4	< 2	< 2	≥ 0.08%	
232	> 4	< 2	< 2	≥ 0.08%	
280	> 4	< 2	< 2	≥ 0.08%	

Remember how you had no way to pick which of these drivers were innocent? The study officers had a way. They knew almost exactly which SFST results to throw out. The SFST said every one of these thirteen drivers was guilty. The SFST cried wolf. The SFST was wrong. Seven were innocent. Guess what, officers correctly identified five of those innocent drivers as having low BACs. How'd they do that? How did officers know which SFSTs to throw out? What criteria did they use? How did they know those criteria would work? You couldn't do it. Neither can I. Because it can't be done, not with the SFST. Officers must have used some method other than the SFST to determine driver BAC levels. The guys doing the validation study knew the SFST doesn't work, so they just ignored the results! **That's** what the validation study proves.

Figure 3. OFFICER'S IGNORED THE SFST

Over and over SFST study officers ignored SFST results and systematically violated standardized SFST interpretation criteria. They knew the test didn't work. They ignored it.

Figure 3a SFST 0.08%

Measured BAC	< 0.08	≥ 0.08
≥ 0.08	0 ignored: 0 ignored: n/a	213 ignored: 4 Ignored: 2%
< 0.08	24 ignored: 0 Ignored: 0%	59 ignored: 35 Ignored: 59%
ignored TRUE		2%
ignored FALSE		59%

The boxes in 3a show you how often officers ignored the SFST. The top number in each box (0, 213, 24, 59) is the driver counts from Figure 1b. The middle number, from a driver by driver analysis of the unpublished raw data, is a count of how many of those SFST results officers ignored. The bottom number turns that count into a percentage: 4 is 2% of 213, etc. When the SFST gave the correct answer, officers rejected the test only 2% of the time.

When the SFST gave the wrong answer, officers rejected the test a whopping 59% of the time! How'd they do that? How did officers know which SFSTs to ignore and which SFSTs to accept? The chance of this distribution of answers happening by chance, at random, is tiny. Officers must have had some other way to determine driver impairment.

The pattern of officers ignoring the SFST repeats across the entire study.

Figure 3b	SFST rejection rate	
Component test	True answers	False answers
Horizontal Gaze Nystagmus 0.04%	2%	54%
Horizontal Gaze Nystagmus 0.08%	4%	49%
One Leg Stand	4%	62%
Walk and Turn	3%	63%
SFST 0.08%	2%	59%
SFST 0.04%	1%	48%

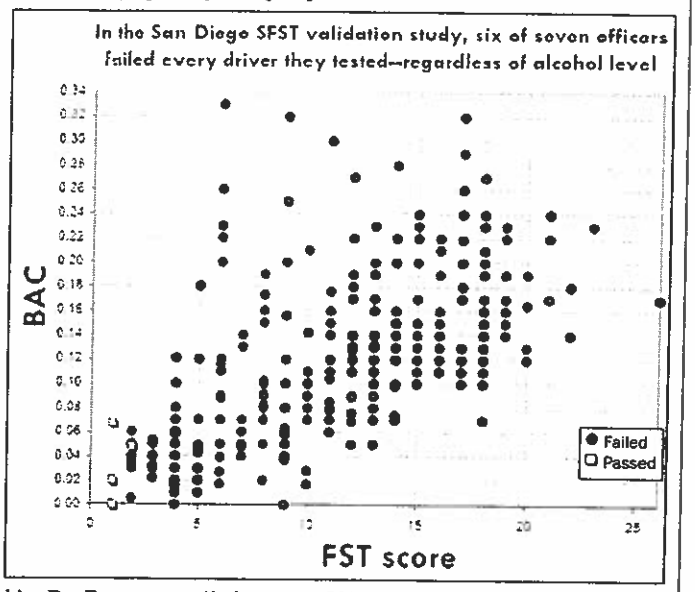
The officer's ninety percent accuracy is touted in the study's final report. The SFST's seventy-eight percent accuracy is not included at all. **The SFST's accuracy is kept out of SFST validation study reports.** If the NHTSA told you the SFST is only seventy-eight percent accurate, you wouldn't believe the test was worthwhile.

Look at Figure 1c. Compiled from never before published data the agency claims to have lost, this is the SFST's accuracy performance at the 0.04% BAC level. If the NHTSA released the raw SFST study data, people could see that on innocent people at the current legal limit the SFST gives the wrong answer ninety-three percent of the time. No one would believe a test like that was worthwhile.

Releasing the SFST validation data would prove the test is not "valid." The SFST's accuracy is kept out of SFST validation study reports. The agency claims the data is lost.

Figure 4a: Show me the graph

This is a graph of never-before-published data from the NHTSA's 1998 San Diego SFST validation study. Data was gathered by seven experienced alcohol enforcement officers given personal SFST training by Dr. Marcelline Burns,[15] (effectively the inventor of the SFST). Each point on the graph represents one driver in the study: total FST score on the x-axis, Blood Alcohol Concentration on the y-axis. Drivers who failed the FST at the 0.04% BAC level are represented by solid dots [●]. Drivers who passed the SFST at that level are represented by open squares [☐].



296 drivers performed at least one of the three components of the SFST.

292 failed – 99%

4 passed – 1% Three of these four drivers were tested by a single officer. The fourth was tested only with OLS.

In other words, seven highly experienced alcohol enforcement officers, personally trained by Dr. Burns, patrolled a major US city for more than five months, stopping and assessing hundreds of motorists. And in all those months, in all those hundreds of tests, only one officer ever completed even a single SFST that came back "non-impaired" at the 0.04% BAC level. NHTSA science proves that for six of seven highly experienced DUI patrol officers, every single driver who is able to take the SFST fails the SFST.

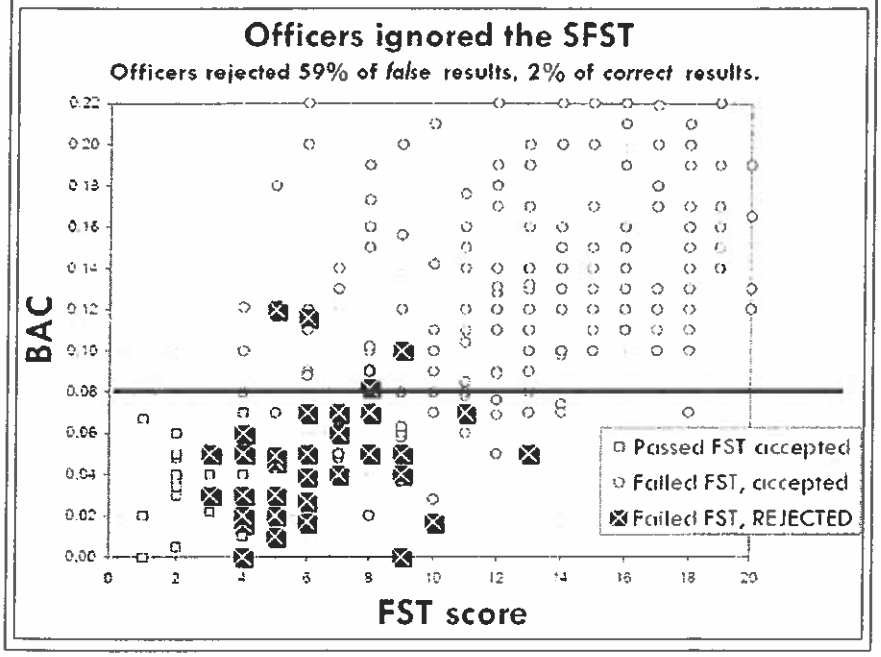
At BAC 0.04% six of seven officers did SFSTs that failed every driver who could take the test. Their accuracy on innocent drivers was zero percent. ***Zero percent!*** See if you can spot the magician's misdirection in the study report's description of these facts: "Officers' estimates of whether a motorist's BAC was above 0.04 percent but lower than 0.08 percent were accurate in 94 percent of the decisions to arrest and in 80 percent of cases overall." [16]

Figure 4d. Officers *systematically* ignored the SFST BAC 0.08%

This data from the San Diego validation study shows where the SFST's mistakes are (below the black line), and which of those SFST mistakes study officers corrected by ignoring the SFST results (black boxes).

The dark horizontal line marks the then legal BAC limit, 0.08%. The open circles below the black line and black boxes below the black line are SFST mistakes—59 open circles (some stacked on each other). 35 of the circles have been converted to black boxes (some stacked), representing drivers whose mistaken SFST result, "guilty," was ignored by the officer in favor of the officer's unstandardized gut instinct, "innocent."

If the NHTSA had reported the actual SFST results, people would have know that the accuracy of the SFST on innocent people is 29%. Instead, study officers were allowed to ignore the SFST, effectively correcting the test's mistakes. The NHTSA then kept the actual SFST results secret and reported only the officer-corrected numbers.



SFSTs Did Not Spot Impairment

All right, the SFST isn't perfect, but at least it helps officers spot impaired drivers, right? No. The answer is No.

There's fancy math to prove this, but common sense will do. Think about it this way: to identify impairment a test must also identify non-impairment — otherwise it can't tell one from the other. The raw data prove the SFST cried "impaired" for ninety-nine percent of all the people tested. The SFST can't tell the difference between impaired and not impaired. You cannot use the SFST to tell which drivers were and which were not impaired.

Try it yourself. Figure 2 asks you to use real SFST results to estimate BAC levels for real drivers. Do the exercise. Answer the questions. Did San Diego study officers use the SFST to guide their BAC estimates? They couldn't have. It's not possible.

The SFST cannot have been how study officers identified impairment.

Study Officer's Ignore the SFST

The SFST cries wolf a lot. For innocent drivers, it cries "impaired" ninety-three percent of the time. On innocent people, the test gives the wrong answer ninety-three percent of the time.

To understand how study officers dealt with the SFST when it cried wolf,

Figure 4b. INNOCENT drivers, BAC 0.04%

These data from the San Diego validation study shows SFST performance on innocent drivers at BAC 0.04%.

29 innocent drivers took the SFST.
2 passed.
27 failed — 93%.

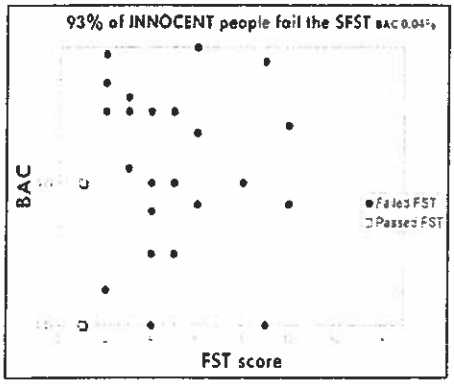
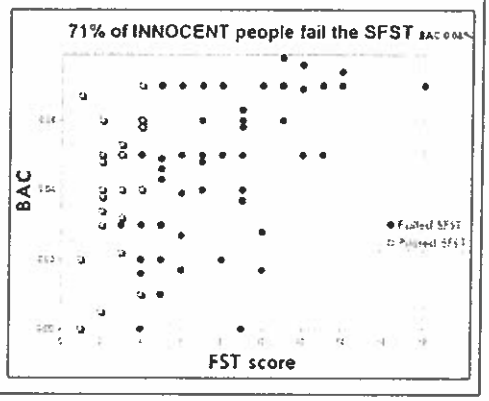


Figure 4c. INNOCENT drivers, BAC 0.08%

This data from the San Diego validation study shows SFST performance on innocent drivers at BAC 0.08%.

83 innocent drivers took the SFST.
24 passed. 59 failed—71%.



FIELD SOBRIETY TESTS
IS A+ The Only Passing Grade?

W&T

1) Stand with hands at side
2) One Foot in front of other
3) Listen to instructions
3) Answer-do you understand?
4) Don't start until told
5) Start

Each step
1) one foot in front of other
2) on line
5x9=45
3) hands at sides
x2=90
4) Count out loud
5) look at foot

6) Turn
1)9th Step-step around like shown
2)Same direction I did
(? in instructions)

=+2 or (+3)

90+5+2=97 separate tasks (or 98 if turn direction counts)

OLS

1) Stand, feet together, hands at sides (3)
2) Listen to instructions
3) Don't start until told

30 Test: 1) Count to 30 (or estimate 30 seconds)
2) Leg 6" or more
3) Keep hands at sides
4) Don't sway
5) Don't put foot down

3+30+4=37 separate tasks

Finger count

Each pass
1) 8 touches tip to tip
2) 8 count

16x3=48 separate tasks
(Assumes 3 passes required)

Finger to Nose Test

1) Hold hands out
2) Straight from shoulder
3) Don't do until told
4) Point finger
5) Use hand I say
6) Touch nose tip to tip
7) Don't hesitate (in instructions?)
8) Close eyes
9) Feet together
10) Listen to and follow instructions
=10 times # of attempts
so: 4 attempts =40 separate tasks

MAJOR INDICATORS	CNS DEPRESSANTS	CNS STIMULANTS	HALLUCINOGENS	PHENCYCLIDINE	NARCOTIC ANALGESIC	INHALANTS	CANNIBIS
HGN	PRESENT	NONE	NONE	PRESENT	NONE	PRESENT	NONE
VERTICAL NYSTAGMUS	PRESENT * HIGH DOSES	NONE	NONE	PRESENT	NONE	PRESENT * HIGH DOSES	NONE
LACK OF CONVERGENCE	PRESENT	NONE	NONE	PRESENT	NONE	PRESENT	PRESENT
PUPIL SIZE	NORMAL (1)	DILATED	DILATED	NORMAL	CONSTRICTED	NORMAL (4)	DILATED (6)
REACTION TO LIGHT	SLOW	SLOW	NORMAL (3)	NORMAL	LITTLE OR NONE VISIBLE	SLOW	NORMAL
PULSE RATE	DOWN (2)	UP	UP	UP	DOWN	UP	UP
BLOOD PRESSURE	DOWN	UP	UP	UP	DOWN	UP/DOWN (5)	UP
BODY TEMPERATURE	NORMAL	UP	UP	UP	DOWN	UP/DOWN/ NORMAL	NORMAL
MUSCLE TONE	FLACCID	RIGID	RIGID	RIGID	NORMAL TO FLACCID	FLACCID	NORMAL
GENERAL INDICATORS	UNCOORDINATED DISORIENTED SLUGGISH THICK SLURRED SPEECH DRUNK-LIKE BEHAVIOR DROWSINESS DROOPY EYES FUMBLING GAIT ATAXIA *NOTE METHA-QUALONE PULSE ELEVATED & BODY TREMORS ETOH & QUAALUDES ELEVATE PULSE SOMA & QUALLUDES DILATE PUPILS	RESTLESSNESS BODY TREMOR EXCITED EUPHORIC TALKATIVE EXAGGERATED REFLEXES ANXIETY GRINDING TEETH (BRUXISM) REDNESS TO NASAL AREA RUNNY NOSE LOSS OF APPETITE INSOMNIA INCREASED ALERTNESS DRY MOUTH IRRITABILITY	DAZED APPEARANCE BODY TREMORS SYNESTHESIA HALLUCINATIONS PARANOIA UNCOORDINATED NAUSEA DISORIENTED DIFFICULTY IN SPEECH PERSPIRING POOR PERCEPTION OF TIME & DISTANCE MEMORY LOSS DISORIENTATION FLASHBACKS *NOTE: LSD, PILORECTION MAY BE OBSERVED (GOOSE BUMPS, HAIR STANDING ON END)	PERSPIRING WARM TO TOUCH BLANK STARE VERY EARLY ANGLE OF HGN ONSET DIFFICULTY IN SPEECH INCOMPLETE VERBAL RESPONSES REPETITIVE SPEECH INCREASED PAIN THRESHOLD CYCLIC BEHAVIOR CONFUSED AGITATED HALLUCINATIONS POSSIBLY VIOLENT & COMBATIVE CHEMICAL ODOR *MOON WALKING*	DROOPY EYELIDS-(PTOSIS) *ON THE NOD* DROWSINESS DEPRESSED REFLEXES LOW, RASPY, SLOW SPEECH DRY MOUTH FACIAL ITICHING EUPHORIA FRESH PUNCTURE MARKS NAUSEA TRACK MARKS *NOTE: TOLERANT USERS EXHIBIT RELATIVELY LITTLE PSYCHOMOTOR IMPAIRMENT (HIPPUS-RHYTHIMIC PULSATING OF PUPILS AS THEY DILATE AND CONTRICT)	RESIDUE OF SUBSTANCE AROUND NOSE & MOUTH ODOR OF SUBSTANCE POSSIBLE NAUSEA SLURRED SPEECH DISORIENTATION CONFUSION BLOODSHOT, WATERY EYES LACK OF MUSCLE CONTROL FLUSHED FACE NON-COMMUNICATIVE INTENSE HEADACHES *NOTE*: ANESTHETIC GASES CAUSE BELOW NORMAL BLOOD PRESSURE; VOLATILE SOLVENTS AND AEROSOLS CAUSE ABOVE NORMAL BLOOD PRESSURE	MARKED REDDENING OF CONJUNCTIVA ODOR OF MARIJUANA MARIJUANA DEBRIS IN MOUTH BODY TREMORS EYELID TREMORS RELAXED INHIBITIONS INCREASED APPETITE IMPAIRED PERCEPTION OF TIME & DISTANCE DISORIENTATION POSSIBLE PARANOIA (REBOUND – PUPILS PULSATE IN SIZE, GROWING LARGER ON EXPANSION PULSATIONS)
DURATIONS OF EFFECTS	BARBITURATES: 1-16 HOURS TRANQUILIZERS: 4-8 HOURS METHAQUA-LONE 4-8 HOURS	COCAINE: 5-90 MINUTES AMPHETAMINES: 4-8 HOURS METHAMPHETAMINE 12 HOURS	DURATIONS VARIES WIDELY FROM ONE HALLUCINOGEN TO ANOTHER	ONSET: 1-5 MINUTES PEAK EFFECTS: 15-30 MINUTES EXHIBITS EFFECTS UP TO 4-6 HOURS	HEROIN: 4-6 HOURS METHADONE UP TO 24 HOURS OTHERS: VARY	6-8 HOURS FOR MOST VOLATILE SOLVENTS – ANESTHETIC GASES AND AEROSOLS VERY SHORT DURATION	2-3 HOURS EXHIBITS EFFECTS – (IMPAIRMENT MAY LAST UP TO 24 HOURS WITHOUT AWARENESS OF EFFECT)
USUAL METHODS OF ADMINSTRATION	ORAL INJECTED – OCCASIONALLY	INSUFFLATION (SNORTING) SMOKED INJECTED ORAL	ORAL INSUFFLATION SMOKED INJECTED TRANSDERMAL	SMOKED ORAL INSUFFLATION INJECTED EYE DROPS	INJECTED ORAL SMOKED INSUFFLEATED	INSUFFLATED (HISTORICALLY, HAVE BEEN TAKEN ORALLY)	SMOKED ORAL
OVERDOSE SIGNS	SHALLOW BREATHING COLD CLAMMY SKIN, PUPILS DILATED, RAPID WEAK PULSE COMA	AGITATION INCREASED BODY TEMP HALLUCINATIONS CONVULSIONS	LONG INTENSE TRIP	LONG INTENSE TRIP	SLOW SHALLOW BREATHING SKIN, COMA CONVULSIONS	COMA	FATIGUE PARANOIA

FOOTNOTE: THESE INDICATORS ARE THE MOST CONSISTENT WITH THE CATEGORY. KEEP IN MIND THAT THERE MAY BE VARATIONS DUE TO INDIVIDUAL REACTION, DOSE TAKEN AND DRUG INTERACTIONS.

1. SOMA QUALUDES USUALLY DILATE PUPILS
2. QUAALUDES AND ETOH MAY ELEVATE
3. CERTAIN PSYCHADELIC AMPHETAMINES CAUSE SLOWING
4. NORMAL BUT MAY BE DILATED
5. DOWN WITH ANESTHETIC GASES, BUT UP WITH VOLATILE SOLVENTS AND AEROSOLS
6. PUPIL SIZE POSSIBLY NORMAL

<u>NORMAL RANGES</u>

PULSE: 60-90 BEATS PER MINUTE
PUPIL SIZE:
ROOM LIGHTING: 2.5MM – 5.0MM
NEAR TOTAL DARKNESS: 5.0MM – 8.5MM
DIRECT LIGHT: 2.0MM-4.5MM
BLOOD PRESSURE: 120-140 SYSTOLIC
70-90 DIASTOLIC
BODY TEMPERATURE: 98.6 +/- 1.0 DEGREE

NHTSA Reports Sent To Congress

Electronic Systems Performance in Passenger Motor Vehicles **(PDF format) January 2016**

Report to Congress: Operation of Neighborhood Electric Vehicles (NEVs) with a Maximum Speed Limit of 40 mph (64 kph): Fuel Consumption Savings and Safety Ramifications **(PDF format) June 2012**

Report to Congress: Drug-Impaired Driving - Understanding the Problem and Ways to Reduce It **(PDF format) December 2009**

Report to Congress: Refusal of Intoxication Testing **(PDF format) September 2008**
In contrast to being stopped by an officer for other driving violations, the result of an impaired driving stop may dramatically impact a person's life.

Report to Congress on NHTSA Vehicle Safety Rulemaking and Supporting Research Priorities **(PDF format)**

Report To Congress on Theme for Impaired Driving Campaign **(PDF format)**

Report To Congress on Impaired Driving Targeted Population **(PDF format)**

Report To Congress on Guidance and Oversight of State Highway Safety Grant Programs **(PDF format)**

Report To Congress, Combined Safety Mobilization Effort **(PDF format)**

Report To Congress, Impaired Driving, Motorcycle and National Occupant Protection Program Expenditure Justifications for Fiscal Year 2003 and Planned Expenditures for 2004 **(PDF format)**

Report To Congress, Repeat Offender Tracking Model **(PDF format)**

Report To Congress, Anton's Law, Section 6 - Evaluation of Integrated Child Safety Systems **(PDF format)**
On December 4, 2002, President Bush signed Anton's Law, Public Law 107-318 (116 Stat. 2772), which, in part, calls for evaluation of integrated child safety systems. Section 6 of Anton's Law directs the Secretary of Transportation to evaluate built-in or integrated child restraints and booster seats.

Report To Congress, Child Restraint Systems, Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act**(PDF format)**
Child restraints are highly effective in reducing the likelihood of death and/or serious injury in motor vehicle crashes. The National Highway Traffic Safety Administration (NHTSA) estimates that for children less than 1-year-old, a child restraint can reduce the risk of fatality by 71 percent when used in a passenger car and by 58 percent when used in a pickup truck, van, or sport utility vehicle SUV). Child restraint effectiveness for children between the ages 1 to 4 years old is 54 percent in passenger cars and 59 percent in light trucks.

Report To Congress On The Fy 2003 Expenditure of Funds For Judges And Prosecutors
In FY 2003, Congress provided special funding for judges and prosecutors through the U. S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) appropriation

(See Conference Report to the Consolidated Appropriations Resolution, 2003 (House Report 108-10) and the Senate Report on the Department of Transportation and Related Agencies Appropriations Bill, 2003 (Senate Report 107-224), requesting that NHTSA provide $1.5 million for judicial and prosecutorial actions to combat alcohol-impaired driving.

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Witness Guidelines

I am not sure that I will recommend that you testify. I make that decision after I hear the States' evidence. The final decision as to whether to testify is always yours, though I would suggest that you trust me as I have much experience in these matters. If you do testify there are some absolute unbendable rules:

1. Tell the truth. Never lie or speculate as a witness. Tell the truth even if it hurts your case.
2. I will be responsible for handling the case. Your only responsibility is to be entirely and completely honest.
3. Answer the question first. If you don't know the answer that's a fair answer as long as it's true.
4. Explanations come after answers. The less you explain the better I like it. The more you talk the less I'm in control. The less I'm in control the worse your case will turn out in the end.
5. Do not respond to argumentative or insulting questions in an argumentative or insulting manner. Your task is to remain calm, cool and collected and to be someone that everybody knows is telling the truth. Maintain a level head, even in difficult circumstances, and you win the game.
6. Look the person who asks the question directly in the eyes and answer the question. Answers to questions are yes, no, maybe, I'm not sure, I don't know. Explanations come after answers. I prefer that you not explain unless it is absolutely neccessary to do so. If you do explain, explain as briefly as possible. If we need further explanation I will certainly ask you to do that.
7. Let me decide what is important. I know that at times people feel put upon by the police or the system and feel that they have been wronged. The best time to reveal your anger with the system is not during your testimony in a criminal trial. Stay completely on topic and only talk about things that are important to your case at this time. Your other concerns can be addressed at another time and in other forums.
8. Don't look at me for help, don't fidget, don't look away from the questioner for any reason. Answer by looking them directly in the eye and only look away when you are completely finished talking.
9. Try to avoid crossing your arms or legs while you are sitting in the witness chair. The best and most truthful posture that a person can adopt is open. When you cross your arms you look as if you are hiding something or being dishonest, and how you look is how you are perceived in many cases. You are performing for the judge as soon as you approach the courthouse, so plan your actions accordingly.
10. Listen carefully to each question. Do not anticipate questions and do not read things into questions that are not asked. If you don't understand the question ask to have it repeated and then give a careful and thoughtful answer. If you realize your answer was wrong correct it immediately. If you realize your answer was unclear clarify it immediately.

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11. If someone says "objection," stop talking immediately even if you are in the middle of a word or the middle of a sentence. The most important thing you do as a witness is to keep the judge happy. The judge has control of the courtroom and expects you to obey him or her quickly and without question. I will be sure to let you say what you feel is important if I feel that it is relevant to your case. If it is not relevant we will discuss it later. After the objection the judge will rule: 1) that the objection is sustained which means you can't say what you were going to say or 2) that it is overruled which means you can answer. In either case feel free to ask what to do after the conversation between the judge and the lawyers.
12. If the judge interrupts you, stop immediately and ask for direction once the judge has finished speaking. Never interrupt a judge or an attorney.
13. Do not answer a question with a question. If you cannot fairly answer a question, say "I can not fairly answer that question because....." and very briefly explain why you can not answer that question.
14. If you are asked a question that you do not want to answer and no one objects you must answer the question. This is the peril of being a witness. When questions are asked you must answer them truthfully and completely.
15. If you are asked if you have been over your case with anyone, the answer to that question is yes. Of course we have prepared your case and prepared your testimony. Only a foolish attorney will put a witness on the stand unprepared. You should not be embarrassed about your preparation and should freely admit that you are nervous and uncomfortable on the witness stand.
16. Some questions are designed to test your truthfulness. The answers to those questions will be easy: tell the truth. Answer the question as honestly as you can and these questions will fail to elicit dishonest testimony and to discredit your other testimony. Don't answer the question you thought you heard, answer the question that was actually asked.
17. You may pause before you answer to collect your thoughts. If you can answer without pausing, do so. A careful answer is much preferable to a quick, incorrect, unconsidered answer.
18. You will likely be asked a question like this "In the last 10 years what have you been convicted of that carries a sentence of 90 days or more in jail?" If the answer is nothing then that is what you should answer. If you have been convicted of things but you are not sure of the time that you could have spent in jail, ask me before you testify. If your record is lengthy then give a quick summary of it and say if you are not sure of the time that you spent in jail for these charges. I don't think those questions or your answers are effective in discrediting your testimony unless you lie about your record.
19. Don't try to be more clever than I am. Though that would be easy, the goal for you is to be and appear honest, forthright and straightforward. My goal is to win your case. If you achieve your goal, it will more likely that I will achieve mine.

Remember you have entrusted me to handle your case. I will do so to the best of my ability. You are not in charge of the legal aspects of your case so don't overthink them. Your job as a witness is to be honest and truthful, forthright and candid. Focus on those goals and you will be an asset to the case.

Drug-Impaired Driving: Understanding the Problem & Ways to Reduce It

A Report to Congress

National Highway Traffic Safety Administration

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16. Abstract

This report was prepared in accordance with Section 2013 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The report summarizes a series of studies undertaken by the National Highway Traffic Safety Administration to acquire the information needed to address the general problem of drug-impaired driving.

The report describes the research conducted on prevention, detection, and prosecution of driving under the influence of drugs; issues associated with determining what drugs impair driving; difficulties in relating blood levels of drugs and impairment; lack of information about what drugs are frequently used by drivers and what drugs elevate crash risk; problems in obtaining representative data about current enforcement, prosecution, and adjudication of drug-impaired driving; training for law enforcement officers in recognizing drug-impaired drivers; review of drug-impaired driving laws; and what is known about the role of drugs as causal factors in traffic crashes. It highlights the need for further research and concludes with recommendations to better address the problem of drug-impaired driving.

17. Key Words	18. Distribution Statement
Drug-Impaired Driving, Drugged Driving, Drugs and Driving, DUID	Document is available through the National Technical Information Service www.NTIS.gov

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INTRODUCTION

Section 2013 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), enacted on August 10, 2005, directs the Secretary of Transportation to advise and coordinate with other Federal agencies on how to address the problem of driving under the influence of an illegal drug; to conduct research on the prevention, detection, and prosecution of driving under the influence of an illegal drug; and to submit to Congress a report on the problem of drug-impaired driving.

SEC. 2013. DRUG-IMPAIRED DRIVING ENFORCEMENT.

(a) ILLICIT DRUG.—In this section, the term ''illicit drug'' includes substances listed in schedules I through V of section 112(e) of the Controlled Substances Act (21 U.S.C. 812) not obtained by a legal and valid prescription.

(b) DUTIES. — The Secretary shall—

(1) advise and coordinate with other Federal agencies on how to address the problem of driving under the influence of an illegal drug; and

(2) conduct research on the prevention, detection, and prosecution of driving under the influence of an illegal drug.

(c) REPORT.—

(1) IN GENERAL. — Not later than 18 months after the date of enactment of this Act, the Secretary, in cooperation with the National Institutes of Health, shall submit to Congress a report on the problem of drug-impaired driving.

(2) CONTENTS. — The report shall include, at a minimum, the following:

(A) An assessment of methodologies and technologies for measuring driver impairment resulting from use of the most common illicit drugs (including the use of such drugs in combination with alcohol).

(B) Effective and efficient methods for training law enforcement personnel, including drug recognition experts, to detect or measure the level of impairment of a driver who is under the influence of an illicit drug by the use of technology or otherwise.

(C) A description of the role of drugs as causal factor in traffic crashes and the extent of the problem of drug impaired driving.

(D) A description and assessment of current State and Federal laws relating to drug-impaired driving.

(E) Recommendations for addressing the problem of drug-impaired driving, including recommendations on levels of impairment.

(F) Recommendations for developing a model statute relating to drug-impaired driving.

(d) MODEL STATUTE.—

(1) IN GENERAL.—The Secretary shall develop a model statute for States relating to drug-impaired driving.

(2) CONTENTS. — Based on recommendations and findings contained in the report submitted under subsection (c), the model statute may include—

(A) threshold levels of impairment for illicit drugs;

(B) practicable methods for detecting the presence of illicit drugs; and

(C) penalties for drug impaired driving.

(3) DATE. — The model statute shall be provided to States not later than 1 year after date of submission of the report under subsection (c).

(e) RESEARCH AND DEVELOPMENT. — Section 403(b) of title 23, United States Code, is amended by adding at the end the following:

''(5) Technology to detect drug use and enable States to efficiently process toxicology evidence.

''(6) Research on the effects of illicit drugs and the compound effects of alcohol and illicit drugs on impairment.''.

(f) FUNDING. — Out of amounts made available to carry out section 403 of title 23, United States Code, for each of fiscal years 2006 through 2009, the Secretary shall make available $1,200,000 for such fiscal year to carry out this section.

This report documents the progress and the available results of the research conducted on the problem of drug-impaired driving, and recommends further steps for addressing the problem.

BACKGROUND

Drug-impaired driving is a complex problem due to the large number of substances with the potential to impair driving and increase crash risk, the variations in the ways different drugs can impair driving, the lack of basic information about many potentially impairing drugs, and the differences in the ways that drugs can affect the body and behavior. Other critical factors include the poorly understood pharmacokinetics and pharmacodynamics of many psychoactive drugs, in addition to the problems presented by individual differences, sensitivity, and tolerance, and the myriad of ways that various substances interact. A discussion of some of these issues is useful to appreciate the difficulties that must be overcome in addressing the drug-impaired driving problem.

Since the effects of alcohol on driving performance are relatively well understood, it is useful to review and contrast what is known about alcohol with what is known and not known about other drugs. Ethyl alcohol is a simple molecule that is readily and fairly rapidly absorbed into the body, typically through the stomach and large intestine. Alcohol passes easily through the blood-brain barrier. It is distributed by the circulatory system throughout the body and is metabolized primarily in the liver.

The processes of absorption, distribution, and metabolism of alcohol occur at the same time. The concentration of alcohol in the body can be measured in the blood (also in the breath and in other bodily substances) and a single dose will result in a rapid increase in blood concentration, reaching a peak, and then diminishing over a period of hours. Repeated dosing will raise the peak blood alcohol concentration (BAC) and prolong the time elevated levels are present in the body. The time course during which the effects of alcohol on the body and behavior can be measured parallels the time course during which BAC is elevated in the body. There is a close relationship between BAC level and impairment. Some effects are detectable at very low BACs (e.g., .02 grams per deciliter, or g/dL) and as BAC rises, the types and severity of impairment increase.

Unfortunately, the behavioral effects of other drugs are not as well understood as the behavioral effects of alcohol. Certain generalizations can be made: high doses generally have a larger effect than small doses; well-learned tasks are less affected than novel tasks; and certain variables, such as prior exposure to a drug, can either reduce or accentuate expected effects, depending on circumstances. The ability to predict an individual's performance at a specific dosage of drugs other than alcohol is limited.

Most psychoactive drugs are chemically complex molecules whose absorption, action, and elimination from the body are difficult to predict. Further, there are considerable differences between individuals with regard to the rates with which these processes occur. Alcohol, in comparison, is more predictable. A strong relationship between BAC level and impairment has been established, as has the correlation between BAC level and crash risk.

Factors that make similar prediction difficult for most other psychoactive drugs include:

- The large number of different drugs that would need to be tested (extensive testing of alcohol has been undertaken over many decades; whereas relatively little similar testing has occurred for most other drugs);

- Poor correlation between the effects on psychomotor, behavioral, and/or executive functions, and blood or plasma levels (peak psychomotor, behavioral, and executive function effects do not necessarily correspond to peak blood levels; detectable blood levels may persist beyond the impairing effects or the impairing effects may be measurable when the drug cannot be detected in the blood);

- Sensitivity and tolerance (accentuation and diminution of the impairing effects with repeated exposure);

- Individual differences in absorption, distribution, action, and metabolism (some individuals will show evidence of impairment at drug concentrations that are not associated with impairment in others; wide ranges of drug concentrations in different individuals have been associated with equivalent levels of impairment);

- Accumulation (blood levels of some drugs or their metabolites may accumulate with repeated administrations if the time-course of elimination is insufficient); and

- Acute versus chronic administration (it is not unusual to observe much larger impairment during initial administrations of drugs than is observed when the drug is administered over a long period of time).

The result of these factors is that, at the current time, specific drug concentration levels cannot be reliably equated with effects on driver performance.

REPORT OVERVIEW

In response to the direction provided by the Congress to the Secretary of Transportation, the National Highway Traffic Safety Administration undertook a series of studies to address issues raised in Section 2013 of SAFETEA-LU. These studies were designed to acquire information necessary to address the general problem of drug-impaired driving and the specific issues requested.

This report follows the order of the issues raised in Section 2013. While that section specifically mentions illegal drugs, many prescription drugs and some over-the-counter medications have similar potential to impair driving. Consequently, some of the research covers these drug types as well.

ADVISE AND COORDINATE WITH OTHER FEDERAL AGENCIES

The NHTSA has established a working group on driving under the influence of drugs with representatives from the National Institute on Drug Abuse, the National Institute on Alcoholism and Alcohol Abuse, the Substance Abuse and Mental Health Services Administration, the National Transportation Safety Board, and the National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. This working group meets on an ad hoc basis and has discussed the problem of drug-impaired driving and ways to address the problem.

The working group assisted in the planning and conducting of two expert panel meetings to discuss the feasibility of establishing a methodology for identifying drugs that impair driving. The working group helped ensure that relevant disciplines and expertise were represented on the expert panel and suggested leading experts in these fields. Members of the working group were also invited to participate in a discussion on the methodology for conducting a case-control study on drug-impaired driving.

RESEARCH ON THE PREVENTION, DETECTION, AND PROSECUTION OF DRIVING UNDER THE INFLUENCE OF DRUGS (DUID)

The NHTSA has conducted research on drug-impaired driving for several decades. The agency periodically updates the literature on this topic through publication of state-of-the-knowledge reports on driving under the influence of drugs (DUID), the latest being issued in 2003 (Jones, Shinar, & Walsh, 2003). This research has taken the form of laboratory studies (Bigelow, Bickel, Liebson, & Nowowieski, 1985), driving simulator studies (Friedel et al., 1990, 1991; Moskowitz, & Wilkinson, 2004; Moskowitz, Ziedman, & Sharma, 1976), on-the-road studies of the effects of selected drugs on driving-related skills (Riedel, Quasten, Hausen, & O'Hanlon, 1988; Robbe & O'Hanlon, 1993, 1999), and literature reviews of selected research on drugs and driving (Dobbs, 2005; Moskowitz & Wilkinson, 2004; Robbe & O'Hanlon, 1993). Research has also been conducted into methods to aid law enforcement to recognize drug-impaired drivers (Bigelow et al., 1985; Compton, 1986, 1988; Compton, Preusser, Ulmer, & Preusser, 1997; Preusser, Ulmer, & Preusser, 1992; Shinar & Compton, 2002); the development of training

courses for judges and prosecutors (National Highway Traffic Safety Administration [NHTSA], 2007b), and research into the accuracy of drug testing technology for law enforcement use (Crouch, Walsh, Cangianelli, & Quintela, 2008; Hersch, Crouch, & Cook, 2000; Walsh & Cangianelli, 2009). The NHTSA has also developed educational material for consumers on the dangers of using certain drugs and driving (NHTSA, 2004) and information for physicians on the potentially impairing effects of medications (Loccoco & Tyree, 2007; Wang, Kosinski, Schwartzberg, & Shanklin, 2003).

Recent research on these topics includes assembling a panel of experts to examine a variety of issues associated with the prosecution of drug-impaired drivers and the quality of supporting toxicology evidence (Logan, 2007). The NHTSA also funded the development of Drug Fact Sheets for the use of toxicologists and prosecutors, which contain information on the effects of a variety of frequently used substances that impair driving ability (Couper & Logan, 2004).

To better understand the current situation regarding drug-impaired driving enforcement, the NHTSA recently conducted a study to collect information on the enforcement, prosecution, and adjudication of drug-impaired driving in the States (Moulden, Cangianelli, Walsh, & Atkins, 2009). Also, the NHTSA conducted a research study to examine whether the adoption of drug per se laws produced a noticeable difference in the prosecution and conviction of drug-impaired driving (Lacey, Brainard, & Snitow, 2009). Fifteen States have enacted some version of drug per se statutes for selected illegal drugs (controlled substances). These laws make it illegal to drive with any amount of these drugs in the body. Some States set threshold levels above which the driver is presumed to be positive for the presence of the drug. These types of laws do not make specific reference to driver impairment as a result of drug use.

A further complication for understanding drug-impaired driving is the use of multiple potentially impairing substances. It is not uncommon for drivers to take two or three potentially impairing drugs at the same time. Drivers frequently combine use of drugs with alcohol. While many individual substances taken by themselves, at normal doses, may not impair driving sufficiently to raise crash risk, when taken together the effects may be synergistic and produce an increased risk of crash involvement. Limited research on the combined effects of substances has shown this to be the case. The NHTSA has recently conducted a number of studies designed to explore the potential risk of multiple medication use by drivers (LeRoy & Morse, 2008; Lococo & Staplin, 2006; Staplin, Lococo, Gish, & Martell, 2008).

MEASURING DRIVER IMPAIRMENT

Congress requested that an assessment of methodologies and technologies for measuring driver impairment resulting from use of the most common illicit drugs (including the use of such drugs in combination with alcohol) be conducted. The measurement of driver impairment is challenging since driver performance is a product of manual, cognitive, and perceptive skills and the range of performance reflected in the normal driver population is large.

Current knowledge about the effects of drugs other than alcohol is insufficient to allow the identification of dosage limits that are related to elevated crash risk. However, it is likely that better methods and technology to detect drug use by drivers would greatly facilitate the

enforcement, prosecution, and adjudication of existing drug-impaired-driving laws. With this in mind, the NHTSA conducted a study to look at current methods and technologies to detect drug use by drivers (Walden & the Texas Transportation Institute, 2008).

The Impaired-Driving-Detection Process

The detection of driver drug impairment typically takes place as a result of a law enforcement officer observing inappropriate driving behavior. The officer will stop the vehicle and engage the driver in conversation while the driver is inside the vehicle. The officer at this time may form a suspicion that the driver is impaired. This suspicion can be based on observations of driving behavior, the appearance of the driver, the behavior of the driver, and any statements the driver has made about alcohol or drug use. If the officer suspects that the driver is impaired, the officer will request that the driver exit the vehicle, and the officer will proceed to conduct pre-arrest screening tests. This phase can include the use of the Standardized Field Sobriety Tests (SFSTs) that helps the officer determine whether the driver is impaired by alcohol and if the driver's BAC is likely to be above the legal limit.

Based on this information, the officer may place the driver under arrest for suspicion of impaired driving. At this point, the officer will request a BAC sample, typically a breath sample, but a blood or urine sample could be requested in lieu of breath. The officer may also take the offender to a booking location where a sample (of blood, breath, or urine) will be requested, or, in many instances, the officer may obtain a sample at the roadside in the patrol vehicle or in a mobile testing van or similar setting, if an evidential breath test device is available.

Since most driver impairment is from alcohol, an officer will typically begin by testing this possibility. Only when the BAC test results are incompatible with the observed impairment would an officer consider drugs other than alcohol (unless the driver exhibits signs and symptoms not indicative of alcohol use). Typically, if the suspect is found to be under the influence of alcohol, especially when the BAC is at or above the legal limit, the investigation stops, even if the officer has reason to suspect use of other drugs are contributing to the suspect's impairment.

There are several disincentives for investigating potential impairment due to drugs other than alcohol when BAC evidence clearly shows an illegal alcohol level. Generally, the alcohol charge meets the burden of proof, and State laws typically do not have additional penalties for multiple substance impairment.

However, if impairment is observed and BAC tests are negative, officers can seek additional evidence to support a drug-impaired driving charge. In jurisdictions that participate in the Drug Evaluation and Classification (DEC) Program, the arresting officer may request an evaluation by a Drug Recognition Expert (DRE). This program, originally developed by the Los Angeles Police Department in the 1970s, trains officers to recognize the signs and symptoms of drug use as an aid to investigating suspected drug-impaired-driving cases. The DRE performs a drug influence evaluation on the suspected impaired driver in order to determine whether the observed impairment is likely to be due to drug use (and if so, what specific type of drugs) or whether the observed impairment is due to neurological conditions, illness, or disease. The DRE, or arresting officer in cases where no DRE is available, gathers a biological sample (blood or urine) to be analyzed by a toxicology lab to confirm the suspect had used a drug or drugs. Currently, there are about 6,000 DREs in the 46 States that participate in the DEC program.

Laboratory Testing

Because conviction for drug-impaired driving may depend on evidence of drug use through laboratory testing, the accuracy and reliability of the toxicology results is important. Unfortunately, there are no national standards for conducting these types of toxicology tests and considerable variation exists among laboratories in terms of equipment, procedures, and training of personnel conducting the tests.

In 2004, the NHTSA held an expert panel meeting with toxicologists, DREs, and prosecutors to discuss and identify potential issues associated with conducting toxicology tests for impaired-driving cases and to identify ways to improve the process (Logan, 2007). The meeting resulted in a report that described three steps to improve toxicology testing in impaired-driving cases: (1) survey labs about current practices; (2) establish a Web site with current information on alcohol, drugs, and impairment and toxicological resources; and (3) develop recommendations to standardize methods used in laboratories supporting the DEC programs. Thus far, three surveys tracking current and needed resources have been conducted, the recommendations have been published, and the Web site will soon be operational (Farrell, Kerrigan, & Logan, 2007).

Specimen Collection

To determine whether a suspected impaired driver has actually used a drug requires evidence that it is present in a biological specimen. Typically, urine or blood specimens are taken for this purpose and then sent to a laboratory for analysis. There may be a delay of days, weeks, or months before the results are known. Thus, an officer will not know the test results prior to the time the suspect is charged. Different biological specimens have advantages and disadvantages, depending on the purpose of the testing. Biological specimens for drug testing include:

- Oral Fluid Testing — The collection of oral fluid is minimally invasive and effective in detecting many types of drugs. The technology to rapidly, accurately, and reliably collect oral fluid at the point of arrest is quickly evolving. Devices that collect oral fluid for laboratory testing appear to be a reliable means of testing for recent drug use. Some companies market self-contained test kits that can be used by law enforcement; however, these point-of-arrest screening devices have not been proven to be accurate and reliable.

- Sweat Testing — The collection of sweat over time can produce a cumulative record of prior drug use. However, a positive sweat test result cannot be regarded as evidence of impairment at the time of an arrest or crash. Sweat testing has no advantages over oral fluid testing and is susceptible to contamination.

- Hair Testing — Although it is possible to test samples of hair for drug usage, the results are of limited utility for drug-impaired-driving cases. Positive hair test results cannot be used to demonstrate drug use at the time of driving. In addition, variations in hair growth and the addition of substances to the hair, such as coloring products, make it difficult to extrapolate when drug usage occurred and may also affect the results.

- Urine Testing — The drug testing methodology for urinalysis is well established. Drugs and drug metabolites are detectable in urine for several days (sometimes weeks) after the drug has been used. As a result, unless extremely high levels of a drug or metabolite are found,

which would indicate recent use, urine test results generally cannot prove that a driver was under the influence of the drug at the time of arrest or testing.

- Blood Testing — Blood testing is considered the "gold standard" for testing for the presence of drugs in impaired driving cases. However, as described in the background section to this report, currently there is limited ability to relate the amount of a drug or metabolite in blood to the presence and amount of impairment. Collecting a blood sample is an invasive procedure requiring a nurse or licensed phlebotomist.

Summary

The development of a method of measuring driver impairment due to the use of drugs would greatly enhance the ability of law enforcement to investigate suspected drug-impaired driving cases. However, there is currently no accurate and reliable way to measure the level or degree of driving impairment associated with the use of drugs.

DUID LAW ENFORCEMENT AND ADJUDICATION

In order to understand the current status of DUID enforcement and prosecution in the United States, the NHTSA conducted a study to collect nationally representative data regarding the number of drivers arrested, prosecuted, and convicted of DUID in all 50 States. The study was also designed to compare States with and without the DEC program to determine whether the presence of Drug Recognition Experts affect the DUID arrest rate and to compare States with and without drug per se laws to determine whether these laws were associated with higher conviction rates (Moulden et al., 2009).

A lack of law enforcement, prosecution, and adjudication records posed a major challenge to the successful conduct of this research. While considerable effort was made to obtain the necessary arrest and disposition records for Driving While Intoxicated (DWI) by alcohol and DUID, this was not entirely successful. Chief among the difficulties were: the lack of statewide record systems for either arrest or disposition data and the inability to distinguish between DWI and DUID offenses. In those jurisdictions where samples of DUID arrest data could be obtained, the number of DUID arrests comprised a relatively small percentage of all impaired driving arrests, ranging from 2% to 16%. The State with the highest DUID arrest rate of 16%, Mississippi, has neither a DEC program nor a drug per se law. However, the lack of complete data does not allow conclusions to be drawn about the contribution of either the DEC program or the drug per se statute to enforcing drug-impaired driving.

It is likely that the lack of incentives for investigating drug impairment when alcohol is detected at BACs above .08 g/dL has led to fewer impaired drivers being arrested and prosecuted for drug-impaired driving than were encountered by law enforcement.

Methods for Training Law Enforcement Personnel

Training on drug-impaired driving is available to law enforcement officers in three increasingly detailed levels. Officers at the highest level of training are capable of making determinations about which drug category (or categories) may be contributing to a driver's inability to operate a vehicle. Depending on the individual State requirements, officers may or may not receive training in DUID prior to completing their basic training requirements.

To improve consistency in training, the NHTSA developed an 8-hour course, *Drugs That Impair Driving,* which can be used in conjunction with the SFST training. The NHTSA considers SFST training the foundation for all impaired driving detection training. The *Drugs That Impair Driving* course was developed to provide a general description of drugs, signs that may indicate drug use, and medical conditions that show signs similar to drug use. The course was also developed to acquaint officers with the most common types of drugs that impair driving.

A second level course, the 16-hour *Advanced Roadside Impaired Driving Enforcement Program*, is designed to give officers the ability to apply information they have learned about DUID to make effective arrests based on probable cause that provides the necessary evidence for prosecution. In order to accomplish this goal, the program seeks to increase the officer's overall knowledge of the general manifestations of alcohol and drug impairment and to increase their ability to recognize these indicators in the drivers they encounter during their enforcement duties. If these drivers are suspected to be impaired, then officers will be better informed in the arrest decision.

The highest level of training comes in the form of the DEC program (NHTSA, 2007a). In the early 1980s the NHTSA developed the DEC program based on the Los Angeles Police Department's DRE program. The DEC program trains officers to identify the signs and symptoms of drug use that could be used to determine whether a suspected impaired driver was impaired by drugs and to rule out other possible causes such as neurological deficits, diseases, and illness. The procedure was designed to aid the officer in determining what specific type of drug was the likely cause of the observed impairment. The program was intended to help develop evidence of impairment and guide the analyses of biological specimens when looking for the presence of drugs other than alcohol in impaired drivers. The DEC training requires 9 days in the classroom and additional days of field certification testing. The program is designed to provide a limited number of DREs in a jurisdiction. It is not designed for the routine patrol officer.

THE ROLE OF DRUGS IN CAUSING TRAFFIC CRASHES AND THE EXTENT OF THE PROBLEM OF DRUG-IMPAIRED DRIVING

The scope and magnitude of the drug-impaired driving problem in this country cannot be clearly specified at this time. However, a number of factors suggest that a problem exists, including the widespread use of drugs; the number of controlled substances, psychoactive prescription drugs, and over-the-counter medications that have the potential to impair driving; and specific studies indicating that many crash-involved drivers have used these drugs.

A better understanding of the drug-impaired-driving problem will require that several necessary types of information be obtained. These include:

- Which drugs impair driving ability;
- What drug dose levels are associated with impaired driving;
- How frequently drugs that impair driving are being used by drivers; and
- Which drugs are associated with higher crash rates.

As noted previously, it is important to know which drugs and dosage levels impair driving-related skills. This is a large undertaking, given the number of drugs with the potential to impair driving. Some laboratory research has been conducted on a number of high-priority drugs that measure the effects of drug usage on driving-related skills (e.g., divided attention, visual tracking, reaction time to sudden events). While the necessary connection to actual driving performance has not been established, laboratory tests have been useful to separate potentially hazardous drugs from those that do not produce performance impairment (such as non-narcotic analgesics like aspirin and ibuprofen). Thus, laboratory data can be used to focus attention on the drugs most likely to be highway safety problems.

Once it has been shown that a drug produces driving-related performance impairment in the laboratory, it becomes important to know the frequency with which people drive after having consumed that drug, and the extent to which crash risk is increased. Determining the frequency with which people drive after having consumed drugs may be approached in several different ways. These include questionnaires to obtain self-reported data on drug use and driving and roadside surveys of a representative sample of drivers that involve the collection and analysis of body fluids (e.g., blood or saliva) for the presence and amount of drugs.

Self-report data can be affected by biases. Respondents can be subject to pressure to give socially responsible answers, distrust that responses will be anonymous, or give misleading or inaccurate information. A more accurate determination of drug use by drivers can be made by collecting and analyzing body fluids.

Estimating the crash risk caused by drug use is important to verify that drugs that are known to impair performance on laboratory tasks have a measurable effect on actual crash risk.
One method to estimate the crash risk associated with drug use involves a comparison of the frequency of drug use by crash- and non-crash-involved drivers. Finding that the incidence of drug use in crash-involved drivers is higher than in non-crash involved drivers strongly suggests that the drugs may have contributed to the occurrence of the crashes. If use of a drug is unrelated

to crash risk, there should be no difference in the number of crash-involved and non-crash-involved drivers using the drug.

Knowing only the frequency with which crash-involved drivers use drugs does not directly indicate the crash risk of drug use, since drug use rates for crash-involved drivers may simply reflect the drug use pattern in the general driving public. For example, finding a certain use rate of nicotine or caffeine in crash-involved drivers may simply reflect the use pattern for these drugs in the general driving population and does not imply they played a role in the occurrence of the crashes. Only finding that a drug was overrepresented in crash-involved drivers in comparison to non-crash-involved drivers would indicate that drug use is associated with crash risk.

The NHTSA has recently undertaken new research to identify drugs that may affect driving and to assess their association with crash risk.

Expert Panel to Develop a Protocol for Determining Whether a Drug Is Likely to Impair Driving

Better information about which drugs have the potential to impair driving would be helpful in several respects. Not only would it focus further research attention on relevant drugs, it would also assist physicians and pharmacists in providing patient warnings and education. In addition, it would allow consumers to be educated on the potential dangers of combining use of specific drugs and driving. In order to facilitate research to identify drugs with the potential to impair driving, the NHTSA recently convened an expert panel to determine the feasibility of developing a method or protocol that would be generally accepted for establishing whether a particular drug (over-the-counter, prescription, or illegal) is likely to impair driving, and if so, how such a protocol would be established. The panel was composed of behavioral scientists, epidemiologists, toxicologists and traffic safety professionals to provide a broad based perspective on the issue.

The panel determined that while it is not currently possible to produce a list of drugs that impair driving, it is feasible to determine the likely effects of drugs on driving and laid out a general process to be followed to evaluate any specific drug for the potential likelihood to impair driving. A tiered approach to assessing drugs was suggested that would start with an evaluation of the basic pharmacological data on a drug to determine whether it was psychoactive or otherwise likely to produce effects that might impair driving.

The next step would be to test the drug for its effects on critical driving-related skills or functions. These would take the form of testing for impairment on such functions as simple and complex reaction time, alertness/arousal, sensory/perceptual functioning, attention/information processing demand, and executive functions (e.g., planning, decision-making, monitoring/vigilance). The panel proposed a process to develop and validate a test battery for this purpose and specified criteria that acceptable tests would have to meet that include accuracy, reliability, sensitivity, and validity.

The next level of testing would involve the use of driving simulators and over-the-road testing employing approaches such as the Standardized Driving Test. Finally, additional data could be obtained by using instrumented vehicles. The panel recognized that each of these levels of assessment provides incremental evidence as to the impairing nature of drugs and can be used

together to reach a more complete understanding of the risks associated with a particular drug. A final level of evidence would be an indication that the drug is overrepresented in crashes.

A summary report on the expert panel's recommended approach to determining whether a drug is likely to impair driving is expected in 2010.

2007 National Roadside Survey of Alcohol and Drug Use by Drivers

The NHTSA recently conducted the first nationally representative roadside survey of alcohol and drug use by drivers. The 2007 National Roadside Survey (NRS) involved random stops of drivers at 300 locations across the contiguous United States. Data were primarily collected on weekend nights (10 p.m. to midnight on Fridays and Saturdays and 1 a.m. to 3 a.m. on Saturdays and Sundays), but also included weekday daytime data collection (Fridays 9:30 a.m. to 11:30 a.m. or 1:30 p.m. to 3:30 p.m.).

Participation in the survey was voluntary and anonymous. Whereas prior alcohol roadside surveys excluded commercial vehicles and motorcycles, the 2007 NRS included motorcycles. Almost 11,000 eligible drivers entered the survey sites. Biological measures included breath-alcohol measurements on 9,413 drivers (86%), oral fluid samples from 7,719 drivers (71%), and blood samples from 3,276 nighttime drivers (39%). The study will identify use of a variety of drugs including over-the-counter medications, prescription, and illegal drugs. Drug categories included in the tests are stimulants, sedatives, antidepressants, marijuana, and narcotic analgesics. The study is examining drug use by driver age, gender, income, employment status, education, vehicle type, alcohol and drug abuse syndromes, and other socio-demographic variables.

The results of this study are expected to be released soon. The 2007 NRS will, for the first time, provide national prevalence rates for drug use by drivers. As discussed earlier in this report, drug use by drivers does not necessarily imply impairment. For many drug types, drug presence can be detected long after any impairment that might affect driving has passed. For example, traces of marijuana can be detected in blood samples several weeks after ingestion.

Crash Risk of Driving After Using Drugs

The NHTSA has another large-scale study under way to estimate the crash risk of drug use by drivers. This case–control study will compare the incidence of drug use by crash-involved drivers to similarly exposed non-crash-involved drivers. Data collection started in 2009 and will extend for at least one year in a large metropolitan area. A random sample of at least 2,500 crashes reported to the police will be included, along with 5,000 control subjects stopped at the same locations, same day of week, time of day, and direction of travel, one week later.

This study will allow for an estimation of the risk of crash involvement associated with drug use. Due to the complexity, difficulty, and expense of conducting this type of research, it is likely that only a few drugs other than alcohol will be detected with sufficient frequency to allow for crash risk estimation. Data collection and analysis will take approximately 2 years to complete.

CURRENT STATE LAWS RELATING TO DRUG-IMPAIRED DRIVING

The NHTSA commissioned a review of each State statute regarding drug-impaired driving as of December 2008 (Walsh, 2009). The DUID statutes are generally found in the State Transportation Code or Title, or Motor Vehicle Code or Title. In only two States (Idaho and Texas) can the State's DUID statutes be found in the penal or criminal codes.

There is a high degree of variability across the States in the way they approach drug-impaired driving. Current laws in many States contain provisions making it difficult to identify, prosecute, or convict drug-impaired drivers.

State laws commonly identify drug-impaired driving in one of the following three ways:

1. The presence of drugs renders a driver incapable of driving safely;
2. The driver is under the influence or affected by an intoxicating drug; or
3. A per se statue that makes it a criminal offense for a driver to have a drug or metabolite in his/her body while operating a motor vehicle.

The first two types of laws are most prevalent. In such cases a State must prove that the drug "caused" the impaired driving (i.e., a prosecutor must show a connection between drug ingestion and the incapacity or impairment of the driver). Fifteen States have drug per se statutes (which are actually zero tolerance statutes since they typically make it illegal to drive with any amount of specified illegal drugs in the driver's body). In seven States (Arizona, Delaware, Georgia, Indiana, Minnesota, Pennsylvania and Utah) it is illegal to have any amount of a drug or its metabolite in the body while operating a motor vehicle (note: the Minnesota law exempts marijuana). In five States (Illinois, Iowa, Michigan, Rhode Island and Wisconsin) it is illegal to have any amount of a prohibited drug in the body while operating a motor vehicle. Three States (Nevada, Ohio and Virginia) it is illegal to have specific amounts of specified prohibited substances in the body while operating a motor vehicle. Two States (North Carolina and South Dakota) make it illegal for people under age 21 to drive with any amount of a prohibited drug or substance in their bodies. Five States (California, Colorado, Idaho, Kansas and West Virginia) make it illegal for any drug addict or habitual user of drugs to drive a vehicle.

Only two States (Hawaii and New York) have DUID statutes separate from their alcohol DUI laws. In all other States, a driver violates a DUI statute if the driver drives under the influence of alcohol, drugs, or a combination of alcohol and drugs. The violation is the same, as are the penalties. The one exception is the State of Washington, in which there are different penalties for drug use only, as opposed to alcohol use or a combination of alcohol and drug use.

Twenty States (Alabama, Arizona, Arkansas, Delaware, Georgia, Idaho, Illinois, Kansas, Kentucky, Montana, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Vermont, Washington, and West Virginia) and Puerto Rico specifically disallow legal entitlement to use the drug as a defense to a DUID charge. Use of a drug pursuant to a valid prescription and/or according to directions is a defense to a DUID charge in several States.

All but five States (Alabama, Alaska, Massachusetts, New Jersey and West Virginia) extend their implied consent laws (i.e., to provide a specimen if requested by law enforcement) to DUID. However, both Alabama and Alaska make a provision for compulsory testing in cases involving serious injury or fatal crashes. Of the remaining 45 States (plus the District of Columbia and Puerto Rico) that extend their implied consent laws to drug-impaired driving, nine States (Arizona, Indiana, Louisiana, Maryland, Minnesota, Nebraska, New Mexico, Ohio and Rhode Island) provide criminal penalties for a refusal to take a test under the implied consent law. Twenty-eight States and the District of Columbia and Puerto Rico allow for a forced taking of a specimen over the objection of the driver, but this is generally in cases of a serious injury or fatal crash, and there is probable cause that the driver was under the influence of a drug.

Under implied consent provisions, most State laws stipulate the type of specimen that police officers are authorized to collect. Thirty-four States permit blood and/or urine; eight States allow for blood collection only; six States permit saliva; and eight States plus Puerto Rico permit "other bodily substances."

With respect to sanctions, some States have relatively light sentences for first offenders, while others are more severe in their handling of first offenders. Some States have made a second or third offense a felony, whereas in other States felony status is not reached until the fourth or subsequent offense. Penalties including fines and incarceration differ from State to State. Many States use community service, house arrest, electronic monitoring, work release, restitution, and assessment of cost and fees to supplement the court's ability to sanction offenders. Approximately 35 States provide for court-ordered substance abuse treatment and/or education for offenders. A growing number of States require participation in a program or treatment as a condition of probation or as a prerequisite to reinstatement of driving privileges.

Clearly, there is great variability among the States in how they approach driving under the influence of drugs. Having no separate offense for driving under the influence of drugs makes it difficult to distinguish between DUID and DWI-alcohol arrest and disposition. A recent attempt to investigate the effectiveness of drug per se laws was unable to draw conclusions due to the paucity of objective data and the inability of State data systems to distinguish between DUID and DWI-alcohol arrests and convictions (Lacey, Brainard, & Snitow, 2009). In addition, in cases where a driver shows evidence of impairment by multiple substances, the lack of difference in sanctions between drug-impaired and alcohol-impaired driving provides little incentive for criminal justice officials to pursue a drug-impaired driving charge in addition to an alcohol offense.

RECOMMENDATIONS FOR ADDRESSING THE PROBLEM OF DRUG-IMPAIRED DRIVING

This report has reviewed a variety of information pertaining to drug-impaired driving, including issues associated with determining which drugs impair driving, the difficulties that exist in relating blood levels of drugs to degree of impairment, the lack of information about which drugs are frequently used by drivers and which drugs elevate crash risk, the problems in obtaining representative data about current enforcement, prosecution, and adjudication of drug-impaired driving. The report also described three levels of training for law enforcement officers for

recognizing drug-impaired drivers, reviews drug-impaired driving laws, and discusses what is known about the role of drugs as causal factors in traffic crashes.

The report highlights the need for further research and specifically points to the need for better data and information systems to allow continued progress in understanding and addressing the drug-impaired driving problem.

In particular, a lack of statewide arrest or disposition data distinguishing drug-impaired from alcohol-impaired driving arrests significantly impedes the States' ability to assess the extent of drug-impaired driving and evaluate the impact of countermeasures. Similarly, the lack of standardized and complete State record systems limits the NHTSA's ability to make clear inferences about the scope of the national drug-impaired-driving problem.

Better records would allow States to evaluate the impact of the DEC program on DUID arrest rates and convictions. Similarly, accurate and complete data about arrests and convictions for drug-impaired driving would allow documentation of the effects of drug per se statutes on arrest and convictions.

The NHTSA recommends the following data and record system improvements:

- States should develop record systems that distinguish among alcohol, drugs, or both for impaired driving cases. These records should be integrated into computerized data systems of law enforcement agencies, the court record systems, and motor vehicle records. One way to accomplish this would be to have separate offenses for driving impaired by alcohol and driving impaired by drugs.

- State records systems should document which drugs drug-impaired drivers are using. This information would be helpful for law enforcement, toxicologists, and prosecutors.

- Standard screening methodologies should be developed for drug testing laboratories to use in identifying drugs that impair driving. These methodologies should include standard analytic procedures and minimum detection thresholds. There also should be training requirements for the personnel operating these tests.

In addition to these data and record system needs, the NHTSA recommends the following change in State statutes:

- State statutes should be amended to provide separate and distinct sanctions for alcohol- and drug-impaired driving that could be applied individually or in combination to a single case. This would provide an incentive for law enforcement officers to pursue a possible drug-impaired driving charge even when a BAC equal to or above the limit of .08 g/dL has already been established.

Adoption of these recommendations would lead to a greater understanding of the drug-impaired-driving problem and ways to effectively reduce drug-impaired-driving crashes.

RECOMMENDATIONS FOR DEVELOPING A MODEL STATUTE RELATING TO DRUG-IMPAIRED DRIVING

The NHTSA, working with the National Traffic Law Center at the American Prosecutors Research Institute, National District Attorneys Association, has drafted a model drug-impaired driving law:

Model Drug-Impaired Driving Statute

Offenses —

A. It shall be unlawful for a person to drive or be in actual physical control of a vehicle in this State under any of the following circumstances:
   1. While under the influence of any controlled substance, drug or any other substance which renders him or her incapable of safely driving; or
   2. While under the influence of any combination of alcohol, controlled substance, drug or any other substance which renders him or her incapable of safely driving.

B. It is not a defense to a charge of a violation of subsection A, paragraphs 1 or 2 of this section if the person is or has been entitled to use the controlled substance, drug or other substance under the laws of this State.

Definitions —
The following definitions shall apply to this section:

A. "Controlled substance," for the purposes of this section, shall have the meaning ascribed to it by [insert specific State reference under Uniform Controlled Substances Act].

B. "Drug" shall include any substance, when taken into the human body, which can impair the ability of the person to operate a vehicle safely.

OFFICIAL REMARKS:

The model statute does not contain any provisions for a per se (either specific level or zero-tolerance) prohibition because of the lack of a clear correlation between blood drug concentrations and impairment for many drugs.

It is strongly recommended that there be an enhanced or greater penalty for multiple (or poly-) drug use (including alcohol) compared to situations in which the driver is under the influence of only one substance. However, specific recommendations for sentencing have been excluded due to the variety of State-specific methodology and mechanisms for imposing sanctions (Logan, 2007).[1,2]

[1] See also, *Transportation Research E-Circular: Issues and Methods in the Detection of Alcohol and Other Drugs* (Number E-C020), September 2000.

[2] The Walsh Group. (2002). *The feasibility of per se drugged driving legislation consensus report 2002* (Robert Wood Johnson Foundation Substance Abuse Policy Research Program, Grant ID No. 040023). Princeton, NJ: Robert Wood Johnson Foundation.

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North Carolina Schedules, Controlled Substances & Penalties for Possession*

The Schedules, Controlled Substances and Penalties for Possession listed below describe the schedule system, gives examples of drugs in each schedule, and outlines the minimum punishment for possession of any amount of the substance. The punishments for illegally trafficking controlled substances are much more severe than those for possession. The Illegal Trafficking Penalties listed below describe the minimum amount of controlled substance that one must possess in order to be charged with trafficking.

Schedules, Controlled Substances and Penalties for Possession

Schedule I
Has a high potential for abuse. Has no medical use. Has a lack of accepted safety.
Heroine, Ecstasy, GHB, Methaqualone, Peyote, Opiates (and others)
First Offense - Class 1 Felony, 4-5 months
Schedule II
Has a high potential for abuse. Has accepted medical use with severe restrictions. Abuse may lead to physical or psychologial dependence.
Cocaine, Raw Opium, Opium Extracts-Fluid and Powder, Codeine, Hydrocodone, Morphine, Methadone, Methamphetamine, Ritalin (and others)
First Offense - Class 1 Misdemeanor, 45 Days in Jail
Second Offense - Class 1 Felony, 4-5 Months
Schedule III
Has potential for abuse, but less than Schedule I or II substances. Has an accepted medical use. Abuse may lead to limited dependence.
Ketamine, Anabolic Steriods, Some Barbituates (and others)
First Offense - Class 1, 45 Days in Jail
Second Offense - Class 1 Felony, 4-5 Months
Schedule IV
Has a low potential for abuse. Has an accepted medical use. Abuse may lead to limited dependence.
Valium, Xanax, Rohypnol, Darvon, Clonazepam, Barbital (and others)

First Offense - Class 1 Misdemeanor, 45 Days in Jail
Second Offense - Class 1 Felony, 4-5 Months
Schedule V
Has a low potential for abuse. Has an accepted medical use. Abuse may lead to limited dependence.
Over the counter cough medicines with codeine (and others)
First Offense- Class 2 Misdemeanor, 30 Days in Jail
Second Offense - Class 1 Misdemeanor, 45 Days in Jail
Schedule VI
Has a low potential for abuse. Has no accepted medical use. Abuse may lead to limited dependence.
Marijuana, Hashish, Hashish Oil
First Offense - Class 3 Misdemeanor, 10 Days in Jail or Suspended Sentence
Second Offense- Class 2 Misdemeanor 30 Days in Jail

Illegal Trafficking Penalties

Marijuana		
10 - 49 lbs.	Class H Felony 25 - 30 Months	$5,000 Fine
50 - 1,999 lbs.	Class G Felony 35 - 42 Months	$25,000 Fine
2,000 - 9,999 lbs.	Class F Felony 70 - 84 Months	$50,000 Fine
10,000 lbs. or more	Class D Felony 175 - 219 Months	$200,000 Fine

Heroine		
4 - 13 grams	Class F Felony 70 - 84 Months	$50,000 Fine
14 - 27 grams	Class E Felony	$100,000 Fine

	90 - 117 Months	
28 grams or more	Class C Felony 225-279 Months	$250,000 Fine

Cocaine		
28 - 199 grams	Class G Felony 35 - 42 Months	$50,000 Fine
200 - 399 grams	Class F Felony 70 - 87 Months	$100,000 Fine
400 grams or more	Class D Felony 175 - 219 Months	$250,000 Fine

Methamphetamines		
28 - 199 grams	Class F Felony 70 - 84 Months	$50,000 Fine
200 - 399 grams	Class E Felony 90 - 117 Months	$100,000 Fine
400 grams or more	Class C Felony 225 - 279 Months	$250,000 Fine

NORTH CAROLINA

COUNTY

STATE OF NORTH CAROLINA,
Plaintiff,

v.

IN THE GENERAL COURT OF JUSTICE
DISTRICT COURT DIVISION
FILE NO.

BRIEF ON THE RIGHT TO A FAIR AND FULL TRIAL

ARGUMENT AND STATEMENT OF THE LAW

Every person charged with a crime has an absolute right to a fair trial. A trial is fair when it is conducted before an impartial judge and an unprejudiced jury,in keeping with the substantive and procedural due process requirements of the U.S. Constitution's Fourteenth Amendment. "The principle that every person who stands accused of a crime is entitled to the fundamental liberty of a fair and impartial trial is essential to the concept of due process. State v. Ryder, 196 N.C. App. 56, 61 (2009); State v. Stokes, 621 S.E.2d 311, 318 (2005).

A defendant's right to a fair trial has also been linked to the Sixth Amendment to the U.S. Constitution. "A heavy obligation rests on trial judges to effectuate the fair-trial guarantee of Sixth Amendment. U.S. v. Columbia Broadcasting System, Inc., 497 F.2d 102, 104 (1974).

A judge's role in safeguarding a defendant's right to a fair trial is an active, not a passive one. "No judge should remain aloof while the prosecution ignores important evidence or while the defense fails to explore testimony essential to issues at trial or fails to raise defenses which may exonerate the defendant; judge is not a passive bystander in the arena of justice or a spectator at a sporting event; rather he or she has the most pressing affirmative responsibility to see that justice is done in every case." U.S. v. McCord, 509 F.2d 334, 348 (1974).

In a fair trial, an impartial judge in an atmosphere of judicial calm sets forth the law and the unprejudiced jury finds the facts and applies the law to the facts. State v. Allen, 166 N.C. 265 (1914). In some cases, however, a judge may act in the dual capacity of judge and jury. For example, in superior civil court, when parties waive a jury, the trial judge acts in the dual capacity of judge and jury. Terry's Floor Fashions, Inc. v. Crown General Contractors, Inc. 645 S.E.2d 810 (2007); Mann Contractors, Inc. v. Flair with Goldsmith Consultants-II, Inc. 135 N.C.App. 772, 522 (1999).

There are no jury trials in North Carolina criminal district courts. N.C.G.S §7A-196(B). In a district criminal trial, a judge functions as both the impartial judge and the unprejudiced jury because constitutional rights apply in North Carolina district court.

Canon 3 of the North Carolina Code of Judicial Conduct provides: "A judge should perform the duties of his office impartially and diligently. . . . (4) A judge should accord to every person who is legally interested in a proceeding, or his lawyer, full right to be heard according to law. . ."

North Carolina Criminal Jury Pattern Instruction 100.25 contains a judge's precautionary instructions to jurors before trial. The judge is to instruct the jury after it is impaneled, ". . .Following opening statements, evidence will be offered. . . All of the competent evidence in the case will be presented while you are present in the courtroom. . .Your duty is to decide the facts from the evidence. You, and you alone, are the judges of the facts."

As explained by the North Carolina Pattern Jury Instructions, a juror must not form an opinion about the guilt or innocence of the defendant until all of the evidence and all of the arguments are heard. 100.25 reads in part: While you sit as a juror in this case, you are not to form an opinion about the guilt or innocence of the defendant, nor are you to express to anyone any opinion about the case until I tell you to begin your deliberations.

N.C.P.I. Crim. 101.5. FUNCTION OF THE JURY

Members of the jury: All of the evidence has been presented. It is now your duty to decide from this evidence what the facts are. You must then apply the law which I am about to give you to those facts. It is absolutely necessary that you understand and apply the law as I give it to you, and not as you think it is, or as you might like it to be. This is important because justice requires that everyone tried for the same crime be treated in the same way and have the same law applied.

N.C.P.I. Crim. 101.35, provides for the judge in his concluding instructions to direct the jury, "You should consider all the evidence, the arguments, contentions and positions urged by the attorney(s), and any other contention that arises from the evidence."

CONCLUSION

Allowing a defendant a fair trial in which he can present all his evidence, arguments, contentions and positions urged by his attorney before any decision is made on the issue of guilt or innocence is required by the 6th and 14th Amendments to the U.S. Constitution. A defendant's fair trial right, referenced in the North Carolina Code of Judicial Conduct and the North Carolina jury pattern instructions, is absolute. In effectuating a defendant's constitutional rights, a North Carolina district court judge in a criminal case must take an active role and listen to all evidence, arguments, contentions and positions urged by defendant and his attorney.

Respectfully submitted this the _____ day of _____, 20_____.

_____
Marcus E. Hill
Attorney for Defendant
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North Carolina Pattern Jury Instructions

NC Pattern Jury Instructions for Criminal Cases

Part 1. General

General Cautionary Instructions

Includes 2011 changes

N.C.P.I. Crim. 100.25. PRECAUTIONARY INSTRUCTIONS TO JURORS. (TO BE GIVEN AFTER JURY IS IMPANELED.)

Ladies and Gentlemen, you have been selected and impaneled to serve as jurors in the case of the State of North Carolina versus (*name of defendant*).

At this time I want to explain to you the manner in which we will proceed as we attempt together to find the truth in this case. First, the attorneys will have an opportunity to make opening statements. The purpose of an opening statement is narrow and limited. It is an outline of what the attorney believes the competent and admissible evidence will be. An opening statement is not evidence and must not be considered by you as evidence. (*The evidence will come in the form of the testimony of the witnesses, admissions of the parties, stipulations of counsel, or any physical exhibits that may be offered by the parties.*)

(The court sets a time limit of ___ minutes to each side for opening statements.)

Following opening statements, evidence will be offered. Witnesses will be placed under oath and questioned by the attorneys. It may be that documents and other tangible exhibits will be offered and received as evidence. If any exhibit is given to you to examine, you should examine it carefully, individually, and without comment.

It is the right of the attorneys to object when testimony or other evidence is offered that the attorney believes is not admissible. When the court sustains an objection to a question, the jurors must disregard the question and the answer, if one has been given, and draw no inference from the question or answer or speculate as to what the witness would have said if permitted to answer. When the court overrules an objection to any evidence, you must not give such evidence any more weight than if the objection had not been made.

If the court grants a motion to strike all or part of the answer of a witness to a question, you must disregard and not consider the evidence that has been stricken.

During the course of the trial, it may be that questions of law will arise that need to be considered by the court out of the presence of the jury. When this happens, I may ask you to go to the jury room for a few minutes. You should not worry or speculate about what takes place in the courtroom during your absence-we will merely be considering questions of law that have to be heard out of the presence of the jury. All of the competent evidence in the case will be presented while you are present in the courtroom.

When the evidence is completed, the attorneys will make their final statements or arguments. The final arguments of the attorneys are not evidence, but are given to assist you in evaluating the evidence.

Your duty is to decide the facts from the evidence. You, and you alone, are the judges of the facts.

It is important that you be fair and attentive during the trial. You will see and hear the evidence and decide the facts. You will then apply the law that I will give you to those facts. To be an effective juror, you must not be influenced to any degree by personal feelings, sympathy for, or prejudice against any of the parties involved in the case.

The fact that a criminal charge has been filed against the defendant is not evidence. The defendant is innocent of any crime unless and until the state proves the defendant's guilt beyond a reasonable doubt.

Finally, before you retire to consider your verdict, you must obey the following rules:

First, you must not talk about the case amongst yourselves. The only place this case may be discussed is in the jury room and then only after you begin your deliberations.

Second, you must not talk about this case with anyone else (including members of your families) or allow anyone else to talk with you or say anything in your presence about this case. If anyone communicates or attempts to communicate with you or in your presence about this case, you must notify the bailiff of that fact immediately.

In this age of instant electronic communication and research, I want to emphasize that in addition to not speaking face-to-face with anyone about the case, you should not engage in any form of electronic communication about the trial, including but not limited to: Twitter, blogging, Facebook, text messaging, instant messaging, and any other such means of electronic communication.

Third, you must keep all cell phones turned off when you are in the courtroom or the jury room.

Fourth, while you sit as a juror in this case, you are not to form an opinion about the guilt or innocence of the defendant, nor are you to express to anyone any opinion about the case until I tell you to begin your deliberations.

Fifth, you must not talk or communicate in any way with any of the parties, attorneys, or witnesses involved in the case. This rule applies inside as well as outside the courtroom, and it prohibits any type of conversation, whether about the evidence in this case or about the weather, or just to pass the time of day.

Sixth, you must not read or listen to any news media coverage of this case or trial, including television, newspaper, radio, or Internet accounts. Newspaper, radio, television, and Internet accounts may be inaccurate, or they may contain references to matters which are not proper for your consideration. Your verdict must be based solely on the evidence presented during this trial and no other source.

Seventh, you must not visit the scene or place that is the subject matter of this trial or make any independent inquiry or investigation about this matter. You may not conduct any research, including Internet research, to look for any information regarding the case.

Each of you must obey each of these rules to the letter. Unless you do so, there is no way the parties can be assured of absolute fairness and impartiality. It is your duty, while the trial is in progress, or while it is in recess, or while you are in the jury room, to see that you remain a fair and impartial trier of the facts. If you violate these rules, you violate an order of the court and this is contempt of court and could subject you to punishment as provided by law.

We are now ready for the opening statements of counsel.

North Carolina Pattern Jury Instructions

NC Pattern Jury Instructions for Criminal Cases

Part 1. General

General Cautionary Instructions

Includes 2011 changes

N.C.P.I. Crim. 101.35. CONCLUDING INSTRUCTIONS--JURY CONSIDER ALL EVIDENCE, JUDGE NOT EXPRESS OPINION, UNANIMOUS VERDICT, SELECTION OF FOREPERSON

Members of the jury, you have heard the evidence and the arguments of counsel. If your recollection of the evidence differs from that of the attorneys, you are to rely solely upon your recollection. Your duty is to remember the evidence whether called to your attention or not.

You should consider all the evidence, the arguments, contentions and positions urged by the attorney(s), and any other contention that arises from the evidence.

The law requires the presiding judge to be impartial. You should not infer from anything I have done or said that the evidence is to be believed or disbelieved, that a fact has been proved or what your findings ought to be. It is your duty to find the facts and to render a verdict reflecting the truth. All twelve of you must agree to your verdict. You cannot reach a verdict by majority vote.

When you have agreed upon a unanimous verdict(s) (as to each charge) your foreperson should so indicate on the verdict form(s).

NOTE WELL: EXCUSE THE ALTERNATE JUROR.

After reaching the jury room your first order of business is to select your foreperson. You may begin your deliberations when the bailiff delivers the verdict form(s) to you. Your foreperson should lead the deliberations. When you have unanimously agreed upon a verdict (as to each charge) and are ready to announce [it] [them] your foreperson should record your verdict(s), sign and date the verdict form(s), and notify the bailiff by knocking on the jury room door (or otherwise summoning the bailiff). You will be returned to the courtroom and your verdict will be announced.

Thank you. You may retire and select your foreperson.

*NOTE WELL: After the jury retires and before sending the verdict form(s) to the jury the judge **must** address the attorneys as follows:*

Before the jury begins deliberation the Court will consider requests for corrections and additions to the instructions and to other matters you deem appropriate.[1]

Are there any objections or specific requests for corrections or additions to the instructions?

NOTE WELL: Consider all specific requests and if appropriate recall the jury and correct or add to the charge. If request(s) for corrections or additions are rejected, attorneys must be allowed to make specific objections on the record.

After all specific requests have been submitted and rejected and the proper notation(s) recorded, hand the verdict form(s) to the bailiff and instruct the bailiff to deliver [it] [them] to the jury without

comment.

If necessary to return the jury to the courtroom for corrections or additions to the charge the judge should address the jury as follows:

Members of the jury, my attention has been properly directed to instructions necessary to [correct] [supplement] my previous instructions.

I charge you that . . . .

You may retire now and begin your deliberation when you receive the written verdict form(s).

NOTE WELL: Repeat to the lawyers the question regarding objections, corrections or additions. If there are further instructions upon specific requests, follow the same procedure as before; if not, instruct the bailiff to deliver the verdict form(s) to the jury.

NOTE WELL: If the jury requests additional instructions after retiring to deliberate, the trial judge should obtain the jury requests in writing, confer with the attorneys, and further instruct the jury if necessary.

S v. Privette, 317 N.C. 148 (1986) holds that it is within the trial court's discretion to determine whether instructions in addition to those requested should be given at the same time.

NOTE WELL: It is suggested that requests from the jury should be reduced to writing, marked as court exhibits, and made part of the record. In a capital case, the failure to share the jury's questions with the defendant denies the defendant the right to be present at every stage of the proceeding although the State may be able to prove the error was harmless beyond a reasonable doubt. State v. Smith, 654 S.E.2d 730 (N.C. Ct. App. 2008).

Footnotes

[1] While G.S. 15A-1231 does not expressly require the judge to address the attorneys after the charge and before the jury begins deliberations, when applying Appellate Rule 10(b)(2) pertaining to defendant's assignment of error as to jury instructions, the North Carolina Court of Appeals has not allowed the defendant to assign error to the jury charge if given an opportunity by the trial judge to object before deliberations. *State v. Godwin*, 59 N.C. App. 662, 297 S.E.2d 623 (1982).

North Carolina Pattern Jury Instructions

NC Pattern Jury Instructions for Criminal Cases

Part 1. General

General Cautionary Instructions

Includes 2011 changes

#3

N.C.P.I. Crim. 101.05. FUNCTION OF THE JURY

Members of the jury: All of the evidence has been presented. It is now your duty to decide from this evidence what the facts are. You must then apply the law which I am about to give you to those facts. It is absolutely necessary that you understand and apply the law as I give it to you, and not as you think it is, or as you might like it to be. This is important because justice requires that everyone tried for the same crime be treated in the same way and have the same law applied.

U.S. Department
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National Highway
Traffic Safety
Administration

NHTSA

DOT HS 812 440

July 2017

Marijuana-Impaired Driving
A Report to Congress

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16. Abstract

This report was prepared in accordance with Section 4008 (Marijuana-Impaired Driving) of the Fixing America's Surface Transportation Act (FAST Act), Pub. L. 114-94. The report summarizes what is known about marijuana use and driving.

The report describes the absorption, distribution and elimination of delta-9-tetrahydrocannabinal (THC) the primary psychoactive substance in marijuana, in the body. It contrasts this process with the absorption, distribution and elimination of alcohol in the body, as they are very different processes. The poor correlation of THC concentrations in the blood with impairment is discussed, along with the implication that setting per se levels is not meaningful. Some of the challenges of measuring driving impairment resulting from marijuana use are reviewed. State laws relating to marijuana and driving are presented. What is known about the prevalence of marijuana-impaired driving and the crash risk associated with marijuana-impaired driving is reviewed.

Finally, the report presents information on training for law enforcement to detect marijuana impairment in drivers, the feasibility of developing an impairment standard for driving under the influence of marijuana and recommendations for increasing data collection regarding the prevalence and effects of marijuana-impaired driving.

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Marijuana-Impaired Driving

A Report to Congress

Introduction

This report has been prepared in response to a requirement in Section 4008 (Marijuana-Impaired Driving) of the Fixing America's Surface Transportation Act (FAST Act), Pub. L. 114-94. This section states:

SEC. 4008. MARIJUANA-IMPAIRED DRIVING.
(a) STUDY.—The Secretary, in consultation with the heads of other Federal agencies as appropriate, shall conduct a study on marijuana-impaired driving.

(b) ISSUES TO BE EXAMINED.—In conducting the study, the Secretary shall examine, at a minimum, the following:

(1) Methods to detect marijuana-impaired driving, including devices capable of measuring marijuana levels in motor vehicle operators.
(2) A review of impairment standard research for driving under the influence of marijuana.
(3) Methods to differentiate the cause of a driving impairment between alcohol and marijuana.
(4) State-based policies on marijuana-impaired driving.
(5) The role and extent of marijuana impairment in motor vehicle accidents.

(c) REPORT.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary, in cooperation with other Federal agencies as appropriate, shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report on the results of the study.
(2) CONTENTS.—The report shall include, at a minimum, the following:

(A) FINDINGS.—The findings of the Secretary based on the study, including, at a minimum, the following:

(i) An assessment of methodologies and technologies for measuring driver impairment resulting from the use of marijuana, including the use of marijuana in combination with alcohol.
(ii) A description and assessment of the role of marijuana as a causal factor in traffic crashes and the extent of the problem of marijuana-impaired driving.
(iii) A description and assessment of current State laws relating to marijuana -impaired driving.
(iv) A determination whether an impairment standard for drivers under the influence of marijuana is feasible and could reduce vehicle accidents and save lives.

(B) RECOMMENDATIONS.—The recommendations of the Secretary based on the study, including, at a minimum, the following:

i) Effective and efficient methods for training law enforcement personnel, including drug recognition experts, to detect or measure the level of impairment of a motor vehicle operator who is under the influence of

marijuana by the use of technology or otherwise.

(ii) If feasible, an impairment standard for driving under the influence of marijuana.

(iii) Methodologies for increased data collection regarding the prevalence and effects of marijuana impaired driving.

(d) MARIJUANA DEFINED.—In this section, the term ''marijuana'' includes all substances containing tetrahydrocannabinol.

This report also is in response the Senate Report #114-243, pg.56-57, that accompanied the Consolidated Appropriations Act, 2017 (Public Law 115-31) dated May 5, 2017 which required the Secretary to "develop standards for impairment and assess technologies for measuring driver impairment…[and] develop criteria for roadside drug testing."

This report is organized to respond to the requirements stated above in Section 4008 and in the amendment to Section 4008 contained in the report accompanying the Consolidated Appropriations Act of 2017. It addresses the five issues to be examined, the four topics for which findings are to be provided, and concludes with the three areas where recommendations were required (if feasible). It also addresses the development of standards for impairment, examines the technology available for measuring impairment and the criteria for roadside drug testing.

First, a background section covers some critical information necessary for the reader to understand some of the complex technical issues that are the basis for the content that follows. This information is designed to provide a basic understanding of the process of absorption, distribution and elimination of alcohol and marijuana in the body, the time course for these processes, the effects these drugs have on driving-related skills, how drug testing is conducted, and the impaired driving detection process.

In 2009 the National Highway Traffic Safety Administration (NHTSA) issued a Report to Congress on Drug-impaired Driving (Compton, Vegega, and Smither, 2009) that addressed some of the same issues covered in this report and some of the material from that report is relevant here and is incorporated in this report.

Background

There is a large group of drugs that have the potential to impair driving and cause crashes. This larger body of drugs with the potential to impair driving consists of all psychoactive substances. Psychoactive substances include alcohol, some over-the-counter drugs, some prescription drugs, and most illegal drugs. The mechanism by which these drugs affect the body and behavior, the extent to which they impair driving, and the time course for the impairment of driving can differ greatly among these drugs.

Since the effects of alcohol on driving performance and crash risk are relatively well understood, it is useful to review and compare what is known about alcohol-impaired driving and marijuana-impaired driving as it clarifies some of the challenges and unknowns that pertain to marijuana-impaired driving. Alcohol-impaired driving has been a subject of intense interest and research for well over 60 years. There have been many studies conducted on the role of alcohol in contributing to traffic crashes starting in the 1950's. This research involved studies of alcohol-impaired driving related skills, primarily through laboratory studies involving subjects dosed on alcohol, using psychomotor tasks (reaction time, tracking, target detection), driving simulators and drivers on closed courses in instrumented vehicles,

epidemiological studies including roadside surveys of alcohol use by drivers, and studies of alcohol use by crash-involved drivers. This research built a persuasive case that alcohol was a significant contributor to traffic crashes. For example, in the 1950's it was estimated that alcohol-positive drivers were involved in approximately 50 percent of fatal crashes (involving over 25,000 fatalities per year), while the latest data available shows that alcohol-related fatal crashes have declined to around 30 percent (involving over 10,000 fatalities per year). In the 1960's research was able to estimate the crash risk of drivers at different alcohol concentration levels.

In the ensuing decades extensive efforts were taken to reduce the harm caused by alcohol use by drivers. These efforts included strengthening laws against alcohol-impaired driving, public education efforts about the dangers of driving after drinking, development of tools to assist law enforcement in detecting and arresting impaired drivers, and the prosecution of alcohol-impaired drivers. This included the development of the Breathalyzer and subsequent more sophisticated methods of measuring alcohol concentration in the breath. Laws were enacted that made specific alcohol concentrations presumptive of impairment; subsequently laws were passed that made it a crime to drive with an alcohol level at, or above a specified level (known as "illegal Per Se" levels). To address the deliberate pace often encountered in the criminal justice system many States adopted "administrative per se" laws that allowed for the almost immediate suspension or revocation of the driver license for persons operating a motor vehicle with an alcohol concentration above a specified level.

Much of this progress in addressing the harm caused by alcohol-impaired driving and the public's understanding of this problem derives from the pharmacokinetics (the absorption, distribution and elimination of a drug from the body) and pharmacodynamics (how a drug affects physiological process and behaviors). These processes differ, often substantially, for other drugs, including marijuana. Understanding these differences is critical to understanding how marijuana-impaired driving differs, and the impact these differences will have on efforts to reduce the harm from drug-impaired driving.

When one consumes alcohol (typically in a drink) it is readily absorbed into the blood system in the gastrointestinal tract. While there are factors that influence this process (e.g., presence of food) it occurs in a fairly regular fashion over time. The peak blood alcohol concentration is generally reached within about 20 minutes after the cessation of drinking. The process of eliminating alcohol from the body starts almost immediately upon its entry into the blood system. This process takes place primarily in the liver. Most doses of alcohol overwhelm the quantity and capacity of the enzymes that break it down, so that alcohol is removed from the bloodstream at an approximately constant rate. The elimination of most other drugs from the body occurs at a rate proportional to the current concentration, so that they exhibit exponential decay. This means the elimination occurs most rapidly when higher concentrations are present and slows down when less of the drug is present.

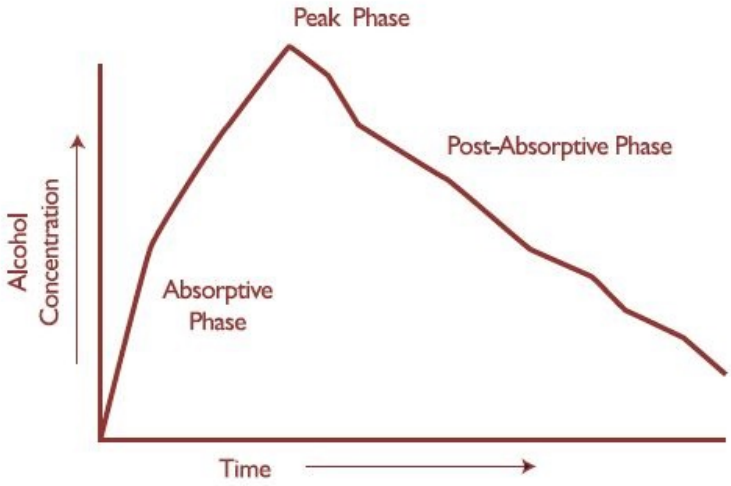
This fairly steady rate of elimination of alcohol occurs regardless of the concentration of alcohol in the blood. The rate is influenced by a number of factors (e.g., the health of the liver, experience consuming alcohol). Thus, the peak BAC reached after consumption of a specific quantity of alcohol depends primarily on the rate and amount of alcohol consumed, as the rate of elimination is fairly constant. It should be noted that alcohol readily passes through the blood-brain barrier (that prevents many harmful substances in the blood from entering the brain). See Figure 1 for a graphic display of this process of absorption and elimination of alcohol (adapted from APRI, 2003).

When one compares the effects of consuming alcohol on behavior (balance, coordination, reaction time), attention (divided attention, vigilance), cognition (decision making), and other propensities like risk taking and judgement, one finds that observed impairment in these functions correlates fairly well with alcohol concentration (in the blood or breath). Impairment increases with rising alcohol concentration

and declines with dropping alcohol concentration. This correlation between alcohol concentration and impairment has allowed the use of alcohol concentration (BAC- blood alcohol concentration or BrAC – breath alcohol concentration) to be used to infer the degree of impairment caused by the consumption of alcohol. The higher the BAC or BrAC the greater the impairment one will find. This well-established relationship has provided the basis for laws prohibiting driving with high BACs.

FIGURE 1

General Alcohol Concentration Curve



In summary, ethyl alcohol is a relatively simple drug whose absorption, distribution and elimination from the body along with the behavioral and cognitive effects are fairly well documented.

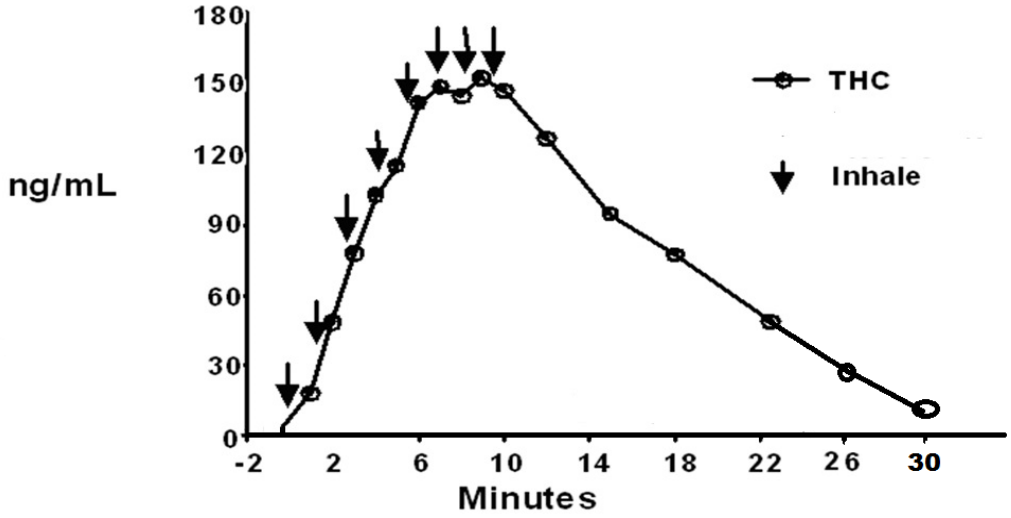
In comparison, the absorption, distribution and elimination from the body of marijuana (and many other drugs), along with the behavioral and cognitive effects is very different from the case with alcohol. The term marijuana refers to the plant known as marijuana (*cannabis sativa*). The typical way in which marijuana is consumed has been through smoking the plant material (leaves, flowers, seeds and stem), though other means of ingestion have been used, like through eating food products laced with an active ingredient of marijuana. The use of edible marijuana products has been increasing in recent years and presents some interesting new challenges that will be discussed briefly later in this report.

The primary psychoactive substance in marijuana is delta-9-tetrahydrocannabinal (THC). THC is one of over 500 known compounds in the cannabis plant, including more than 80 other cannabinoids. THC is associated with the psychoactive effects of ingesting marijuana plant material. THC has been shown to bind with receptors in the brain (and to a lesser extent in other parts of the body) and it is likely that this process underlies some of the psychoactive (behavioral and cognitive) effects of marijuana use.

While ethyl alcohol is readily soluble in water, and hence blood, THC is fat soluble. This means that once ingested, THC is stored in fatty tissues in the body and can be released back into the blood sometimes long after ingestion. Some studies have detected THC in the blood at 30 days post ingestion (Heustis, 2007). Thus, while THC can be detected in the blood long after ingestion, the acute psychoactive effects of marijuana ingestion last for mere hours, not days or weeks. Also, unlike alcohol, which is metabolized at a steady rate, the metabolism of THC occurs in a different fashion such that

THC blood levels decline exponentially. Some studies have reported a fairly wide variability that is affected by the means of ingestion (smoking, oil, and edibles), potency, and user characteristics. Most research on the effects of marijuana has used smoking and often do not measure the concentration of THC in the blood.

Figure 2
Absorption of THC in Plasma after Smoking



Note: Whole Blood THC is less than Plasma THC

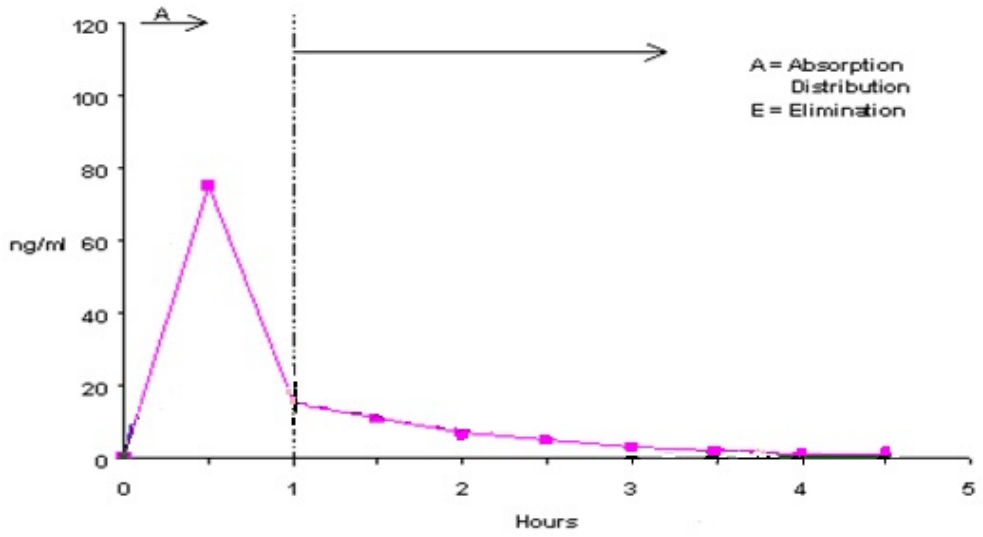
Figure 2 (above) shows a generalized example of the absorption of THC in the blood (plasma) after smoking a marijuana cigarette (Heustis, 2007, Huestis, Hemmingfield, Cone, 1992). Blood plasma is whole blood with the blood cells removed, in other words just the liquid portion of whole blood (serum is plasma without clotting factors). Note that THC is detectable in the blood within a minute or so after the initiation of smoking. The peak THC level occurs at the end of smoking or immediately after cessation (depending on the rate and duration of inhalations). THC levels drop rapidly after cessation of smoking. In contrast to alcohol, which is metabolized at a relatively steady rate, THC is metabolized at an exponentially declining rate where the THC blood level first drops rapidly, followed by a slower decline as lower THC levels are reached. As seen in Figure 2, within 30 minutes the THC level has dropped to 80 – 90 percent of the peak level. After a few hours only low or no THC can be detected in the blood. Very low THC levels may persist in the blood from a single administration for more than six hours.

While peak THC levels occur right after smoking ends, when alcohol is ingested by drinking, a peak BAC level in the blood or breath does not occur until sometime after the last drink is consumed. As mentioned above, alcohol primarily is absorbed into the blood (and hence into the lungs) through the gastrointestinal tract. Depending on a variety of factors it can take 20 minutes or more before alcohol is detectable in the blood or breath. The peak BAC level is dependent on the rate of intake and the rate of elimination. For the average person BAC is eliminated at a steady rate of approximately .015 BAC per hour. Thus, someone with a peak BAC of .16 would still have detectable alcohol in their blood ten hours later.

Figure 3 (below) shows the time course for THC in plasma after smoking over a longer period of time (Berghaus 1998; Chester 1995). When a driver's blood sample is collected, either because of a crash or if they are stopped by police for suspicion of impaired driving, the collection almost always occurs hours after ingestion has ceased. Often, time passes between the cessation of smoking and the beginning of driving, and more time passes between the beginning of driving and the encounter with law enforcement officials. Yet more time passes between the beginning of this encounter and point in time when blood is drawn (often after a search warrant is obtained for driving under the influence of drugs or

Figure 3

Time Course of THC Concentration in Plasma after Smoking Marijuana
[15mg THC in a 70kg person]
(Adapted from Berghaus et. al. 1998 and Chester 1995)



after the driver has been transported to a hospital post-crash). Thus, the likely THC level detectable in such a blood sample will be relatively low.

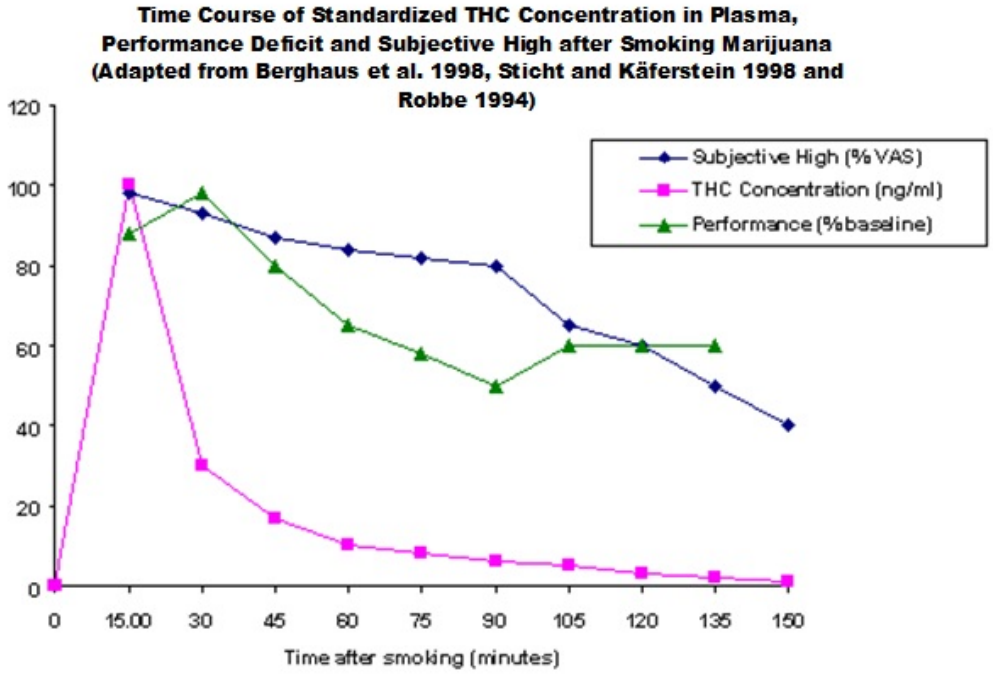
It was mentioned above that the effects of alcohol consumption on behavior, judgement, cognition and emotions all correlate fairly well with the rise and fall of alcohol concentration in the body as measured by blood alcohol concentration and breath alcohol concentration. This has been well established through a large number of carefully controlled studies in which subjects were dosed with alcohol and had their BAC or BrAC measured repeatedly while they performed a variety of tasks over time (see US DOT, 1991). The higher the alcohol concentration the greater the impairment that was observed. As alcohol concentration rose so did the degree of impairment; as alcohol concentration declined so did the degree of impairment.

Unlike alcohol, marijuana is classified as a Schedule I substance under the Controlled Substances Act. A much smaller number of studies have looked at the impairing effects of marijuana use on driving-related skills. Less is known about these effects due in part to the typical differences in research methods, tasks, subjects and dosing that are used. A clearer understanding of the effects of marijuana use will take additional time as more research is conducted. The extra precautions associated with

conducting research on a Schedule I drug may contribute to this relative lack of research. For example, these include the need for a government license to obtain, store and use marijuana, the security requirements for storage, and documentation requirements and disposal requirements.

While fewer studies have examined the relationship between THC blood levels and degree of impairment, in those studies that have been conducted the consistent finding is that the level of THC in the blood and the degree of impairment do not appear to be closely related. Peak impairment does not occur when THC concentration in the blood is at or near peak levels. Peak THC level can occur when low impairment is measured, and high impairment can be measured when THC level is low. Thus, in contrast to the situation with alcohol, someone can show little or no impairment at a THC level at which someone else may show a greater degree of impairment.

Figure 4



While high levels of THC are detected in the blood (and oral fluid) during and right after smoking, they are not typically observed an hour or two later. In cases of traffic crashes or arrests for impaired driving, it is most likely that only relatively low levels of THC will be found by the time an oral fluid or blood sample is obtained. Low THC levels of a few nanograms per milliliter (ng/ml) in blood can result from relatively recent use (e.g., smoking within 1 – 3 hours) when some slight or even moderate impairment is likely to be present, or it can result from chronic use where no recent ingestion has occurred and no impairment is present.

Figure 4 above shows this lack of clear correspondence between THC level in plasma and impairment (also subjective reports of being "high") in subjects who ingested marijuana through smoking (Ward, N.J. and Dye, L. 1999). As expected, the peak THC level is reached soon after smoking ends. However, peak performance deficits are observed long after the peak THC level occurs. In fact, peak impairment occurs at 90 minutes after smoking while the THC level has declined over 80 percent from

the peak level at that point in time. Notice also that the subjectively reported "high" also does not correspond well with blood plasma THC concentration. THC level in blood (or oral fluid) does not appear to be an accurate and reliable predictor of impairment from THC. Also, when low levels of THC are found in the blood, the presence of THC is not a reliable indicator of recent marijuana use.

The next two sections provide a brief overview of the impaired driving detection process and the drug testing process.

The Impaired Driving Detection Process

The detection of driver drug impairment typically takes place as a result of a law enforcement officer observing inappropriate driving behavior. The officer will stop the vehicle and engage the driver in conversation while the driver is inside the vehicle. The officer at this time may form a suspicion that the driver is impaired. This suspicion can be based on observations of driving behavior, the appearance of the driver (e.g., face flushed, speech slurred, odor of alcoholic beverages on breath), the behavior of the driver, and any statements the driver has made about alcohol or drug use. If the officer suspects that the driver is impaired, the officer will request that the driver exit the vehicle, and the officer will proceed to conduct pre-arrest screening tests. This phase can include the use of the Standardized Field Sobriety Test (SFST), which helps the officer determine whether the driver is impaired by alcohol and if the driver's BAC or BrAC is likely to be above the legal limit (Compton, et. al., 2009; Jones, et. al., 2003).

Based on this information, the officer may place the driver under arrest for suspicion of impaired driving. At this point, the officer will request a breath or blood sample for alcohol concentration testing – most typically a breath sample, but blood or urine samples could also be requested. If the suspect agrees to take an alcohol concentration test the officer will, in a jurisdiction that uses breath alcohol testing, take the offender to a booking location where the sample will be requested, for example, for an evidential breath test. However in many instances, the officer may obtain the sample at roadside in the patrol vehicle or in a mobile testing van or similar setting, if an evidential breath test device is available in the field. In a jurisdiction in which blood alcohol testing is used, the officer will typically obtain a search warrant and transport the driver to a medicinal facility where a blood sample can be drawn. In some cases the driver may be transported to a booking facility if a nurse or phlebotomist is available. In a few jurisdictions law enforcement officers are trained and licensed as phlebotomists and can draw the blood sample themselves. A recent U.S. Supreme Court case decision said that warrantless blood tests of alcohol concentration are not generally allowed (Missouri v. McNeely, No. 11–1425, decided April 17, 2013), although warrantless breath alcohol tests are generally permissible as they are less intrusive than blood tests of alcohol concentration (Birchfield v. North Dakota, No. 14–1468, decided June 23, 2016).

While there are cases where an impaired driver exhibits signs and symptoms not indicative of alcohol consumption, most often driver impairment is from alcohol, and thus the officer will typically begin by testing this possibility. When the BAC test results are incompatible with the observed impairment, then the officer will consider drugs other than alcohol as the likely cause of the observed impairment. Typically, if the suspect is found to be under the influence of alcohol, especially when the BAC is at, or above, the legal limit, the investigation stops at that point, even if the officer has reason to suspect that the use of other drugs is contributing to the suspect's impairment.

There are several disincentives for investigating potential impairment due to drugs other than alcohol when BAC evidence clearly shows an illegal alcohol level. Generally, the alcohol charge meets the

burden of proof and State laws typically do not have additional penalties for multiple substance impairment.

However, if impairment is observed and BAC tests are negative, officers can seek additional evidence to support a drug-impaired driving charge. In jurisdictions that participate in the Drug Evaluation and Classification (DEC) Program, the arresting officer may request an evaluation by a Drug Recognition Expert (DRE). This program, originally developed by the Los Angeles Police Department in the 1970's, trains officers to recognize the signs and symptoms of drug use as an aid to investigating suspected drug-impaired driving cases. The program is now managed nationally by the International Association of Chiefs of Police (IACP), with technical assistance from NHTSA. The DRE performs a drug influence evaluation (DIE) on the suspected impaired driver in order to determine whether the observed impairment is likely to be due to drug use (and if so, what specific type of drug(s)) or whether the observed impairment is due to neurological conditions, illness, or disease. The DRE, or arresting officer in cases where no DRE is available, gathers a biological sample (blood or urine) to be analyzed by a toxicology lab to confirm the suspect had used a drug or drugs. Currently all fifty States and the District of Columbia participate in the DEC program with over 8,000 certified DREs.

Drug Testing Process

Generally, prosecution on a drug-impaired driving offense will include evidence that the driver had used a specific potentially impairing drug, and that an observed impairment likely resulted from that drug use. It is difficult, though not impossible, to obtain a conviction for drug-impaired driving without evidence of drug use by the suspect. For example, a suspect may refuse to provide a specimen for testing and/or the officer may be unable to obtain a search warrant in a timely fashion.

Evidence of drug use is typically obtained by the investigating law enforcement officer (physical evidence, odor of marijuana use, etc.), but most often comes from forensic testing conducted in a laboratory of a biological specimen taken from the suspect. Laboratory testing of biological specimens can be time consuming and expensive.

Laboratory Testing

Because of the large number of potentially impairing drugs the standard process is to conduct a screening test that will give an indication which of a number of drug categories might be present in the specimen. Screening tests are easier to conduct, cheaper, and can test for a number of drug categories simultaneously. For marijuana, it is common to use an immunoassay test designed to detect cannabinoids. However, a positive screening test cannot be taken as evidence that the drug is present in the specimen, as these tests lack high specificity, are subject to cross-reactivity, and may on occasion produce a false positive result. Many of the THC immunoassay screening tests can give a positive response to the presence of THC metabolites, even though THC is not present in the sample.

Following a positive screening test indicating that a type of drug appears to be present in the specimen, a more accurate, sensitive and specific test will be conducted for the drugs in the category indicated by the screening test. These tests are more complicated to conduct, require expensive equipment, and are time consuming. Many laboratories have backlogs of samples waiting for testing that are many months or longer.

The testing methods used will often depend on the suspect drug class. Most common are techniques combining a gas chromatograph (GC) with mass spectrometry (MS), often referred to as gas chromatography–mass spectrometry (GC/MS). Liquid chromatography is also used in combination with mass spectrometry, often referred to as liquid chromatography–mass spectrometry (LC-MS).

Often, this process involves further ionization with a second pass through the mass spectrometer or LC/MS/MS. Not only are these methods highly specific in detecting a specific molecule (based on atomic weight and molecular structure) they allow the quantification of the amount of the drug present.

Specimen Collection

Evidence that a suspected impaired driver has actually used a drug can be provided by a test that definitively shows that it is present in a biological specimen. Typically urine or blood specimens are taken for this purpose and then sent to a laboratory for analysis. There may be a delay of days, weeks, or months before the results are known. Thus, an officer will not know the test result prior to the time the suspect is charged. Different biological specimens have advantages and disadvantages, depending on the purpose of the testing. Biological specimens for drug testing include the following:

- Blood Testing – Blood testing is considered the "gold standard" for testing for the presence of drugs in impaired driving cases. However, as described in the background section to this report, currently there is limited ability to relate the amount of a drug or metabolite in blood to the presence and amount of impairment. Collecting a blood sample is an invasive procedure typically requiring a search warrant and a nurse or licensed phlebotomist.

- Oral Fluid Testing — The collection of oral fluid is minimally invasive and effective in detecting many types of drugs, though it may require a search warrant under the same conditions that pertain to blood sample collection. Devices that collect oral fluid for laboratory testing appear to be a reliable means of testing for recent drug use. The technology to rapidly, accurately and reliably collect oral fluid at the point of arrest is quickly evolving. Some companies market self-contained test kits that can be used by law enforcement; however, these point-of-arrest screening devices have not been shown to be completely accurate and reliable. Marijuana (THC) is readily detected in oral fluid, however, there are issues associated with distinguishing use versus environmental exposure, that have not been fully addressed.

- Sweat Testing — The collection of sweat over time can produce a cumulative record of prior drug use. However, a positive sweat test result cannot be regarded as evidence of impairment at the time of an arrest or crash. Sweat testing has no advantages over oral fluid testing, and is susceptible to contamination.

- Hair Testing — Although it is possible to test samples of hair for drug usage, the results are of limited utility for drug-impaired driving cases. Positive hair test results cannot be used to demonstrate drug use at the time of driving. In addition, variations in hair growth and the addition of substances to the hair, such as coloring products, make it difficult to extrapolate when drug usage occurred and may also affect the results. While THC can be detected in hair it can result from environmental exposure (e.g., from marijuana smoke) that can produce a positive hair test result.

- Urine Testing — The drug testing methodology for urinalysis is well established. Drugs and drug metabolites are detectable in urine for several days after the drug has been used (and sometimes for weeks). Urine test results cannot be used to prove that a driver was under the influence of the drug at the time of arrest or testing. Detection of THC or other cannabinoids in urine does not necessarily reflect recent use.

Measuring Driver Impairment Due to Marijuana Use

Review of Research on the Effects of Marijuana use on Driving

Smoking marijuana has been shown to affect a number of driving-related skills. Laboratory, simulator and instrumented vehicle studies have shown that marijuana can impair critical abilities necessary for safe driving, such as:

- slow reaction time, for example, responding to unexpected events - emergency braking (Casswell, 1977; Smiley et. al., 1981; Lenné, M.G., et al., 2010);
- cause problems with road tracking - lane position variability (Smiley, et. al., 1981; Robbe and O'Hanlon, 1993; Ramaekers, 2004);
- decrease divided attention - target recognition (Smiley, 1999; Menetrey, et. al., 2005), impair cognitive performance - attention maintenance (Ramaekers, et. al., 2004); and impair executive functions - route planning, decision making, and risk taking (Dott, 1972, Ellingstad et al, 1973; Menetrey, et al., 2005).

It should be noted that this type of research typically does not involve measurement of blood THC levels; rather, subjects' performance between non-dosed trials (placebo condition) and dosed trials (when administered marijuana) are compared. As a result of differences in how subjects conduct the smoking regime (inhalation rate, depth of inhalation, and time between inhalation and exhalation), fairly wide differences in blood THC levels are likely between subjects.

An example of this type of research on the effects of marijuana on driving related skills is a recent study conducted by the National Institute on Drug Abuse, the National Highway Traffic Safety Administration and the Office of National Drug Control Policy using the National Advanced Driving Simulator at the University of Iowa. Volunteer subjects were dosed on marijuana, alcohol or both marijuana and alcohol. They then drove a full motion driving simulator over a predetermined route. One of the effects of marijuana use was to cause an increase in the variability of their vehicle's lane position (the ability to maintain their vehicle in the center of the lane). Both alcohol and marijuana alone increased lane position variability and when combined the effects were additive. However, only alcohol increased lane departures (Hartman, et al 2015).

The same study looked at the speed at which the driver drove relative to the speed limit as a result of marijuana and alcohol use by the drivers. Subjects dosed on marijuana showed reduced mean speeds, increased time driving below the speed limit and increased following distance during a car following task. Alcohol, in contrast was associated with higher mean speeds (over the speed limit), greater variability in speed, and spent a greater percent of time driving above the speed limit. Marijuana had no effect on variability of speed. In the combined alcohol and marijuana condition it appeared that marijuana mitigated some of the effects found with alcohol by reducing the time spent above the speed limit (Hartman, et al., 2016).

It should also be noted that many studies have not shown impairment on these psychomotor tasks, cognitive and executive functions as have shown statistically significant impairments. It is not clear why this is the case. It may stem from different THC doses, different time lags between doses and testing or driving, differences in the tasks used to assess the effects, tolerance developed through frequent use, and the different dependent measurement employed and their relative sensitivity to small effects (Smiley, et al., 1986; Lenné, et al., 2010).

Despite the variability in results, this research has demonstrated the potential of marijuana to impair driving related skills. It does not show a relationship between THC levels and impairment. These

studies are conducted under carefully controlled conditions with precise measurements. Under these conditions even slight changes in performance are often statistically significant. Whether these often small changes in performance are practically significant (i.e., increase the risk of crash involvement) cannot be determined within this research framework.

An interesting finding from this research is that after smoking marijuana, subjects in most of the simulator and instrumented vehicle studies on marijuana and driving typically drive slower, follow other cars at greater distances, and take fewer risks than when sober (Stein, et al., 1983; Smiley, et al., 1981; Smiley, et al., 1986; Casswell, 1977; Robbe and O'Hanlon, 1993). These effects appear to suggest that the drivers are attempting to compensate for the subjective effects of using marijuana. In contrast, subjects dosed with alcohol typically drive faster, follow at closer distances, and take greater risks.

Given the large variety of driving related skills that are affected by THC, especially cognitive performance and judgment, the attempt by drivers who have ingested marijuana to compensate for the effects of marijuana is not likely to mitigate the detrimental effects on driving related skills.

Congress requested an assessment of methodologies and technologies for measuring driver impairment resulting from the use of marijuana, including the use of marijuana in combination with alcohol. The measurement of driver impairment is challenging since driver performance is a product of manual, cognitive, and perceptual skills, and the range of performance reflected in the normal driver population is large. Deficits in performance can arise from a variety of causes that include alcohol, marijuana and other drug use, distraction, drowsiness, emotional states (fear, excitement, anger), and other factors.

The DEC program includes a set of signs and symptoms (physiological, effects of the eyes, and behavior) that are indicative of marijuana use. They are used to determine if observed impairment is likely to be caused by marijuana. Almost all of these signs and symptoms are not based on driving impairment.

Current knowledge about the effects of marijuana on driving is insufficient to allow specification of a simple measure of driving impairment outside of controlled conditions. Other research methods can contribute to our understanding of the risk of driving after marijuana use and will be addressed later in this report.

The question of the combined use of alcohol and marijuana is definitely relevant to the issue of impaired driving. It is not uncommon to find people that have used both drugs. In a study of drug use by fatally injured drivers conducted in 1991, some 51.5 percent of the fatally injured drivers were found to be alcohol positive, while 6.7 percent were THC positive (Terhune, et. al. 1992). Of those who were THC positive over half were also positive for alcohol (the majority of which had high BAC levels).

In the 2013-2014 National Roadside Survey of Drug and Alcohol Use by Drivers, some 9.3 percent of all (daytime and nighttime) drug positive drivers also had a positive BrAC, while only 6.0 percent of drug negative drivers were positive for alcohol. Among daytime drivers, 2.5 percent of drug positive drivers were alcohol positive whereas 0.3 percent of drug negative drivers were alcohol positive.

Some studies have reported increased impairment on driving related skills when subjects are dosed on both alcohol and marijuana (Robbe and O'Hanlon, 1993; Smiley, et al., 1986). In other cases, no increased impairment is found. The relative amount of both drugs ingested may help explain this confusing result. In some cases, the effects of alcohol may be so dominant that the additions of low

doses of marijuana are not detectable. Further research may help clarify the effects of combined alcohol and marijuana use.

Thus, there are currently no evidence-based methods to detect marijuana-impaired driving. Marijuana has some regularly reported effects on driving related skills that might lend themselves to the development of marijuana-impaired driving detection techniques, similar to those that have been developed for alcohol-impaired driving (Harris, 1980 and Stuster, 1997). However, many of these effects can also be caused by alcohol, other drugs and driver conditions and activities like distraction, drowsiness, and illness. It is not possible to predict whether there might be a unique combination of cues that could be used by law enforcement to detect marijuana-impaired driving with a high degree of accuracy. Such a method would need to have an extremely low false positive rate (incorrectly identifying a driver as marijuana-impaired when they are not) to be useable by law enforcement.

Feasibility of Developing an Impairment Standard for Drivers under the Influence of Marijuana

Currently, there is no impairment standard for drivers under the influence of marijuana. Many of the reasons for this are discussed elsewhere in this report. They include the fact that there is no chemical test for marijuana impairment, like a BAC or BrAC test for alcohol that quantifies the amount of alcohol in their body, indicates the degree of impairment, and the risk of crash involvement that results from the use of alcohol. The psychoactive ingredient in marijuana, delta-9-tetrahydrocannabinal (THC), does not correlate well with impairment. While very high levels of THC do indicate recent consumption (by smoking marijuana) it is very unlikely a police officer would encounter a suspect and obtain a sample of blood or oral fluid within a short enough time for high THC levels to be detected. As was mentioned earlier, impairment is observed for two to three hours after smoking; whereas by an hour after smoking peak THC levels have declined 80% - 90%.

Without a chemical test, the alternative is to develop a psychomotor, behavioral or cognitive test that would indicate the degree of driving impairment and elevated risk of crash involvement due to marijuana use. As was described earlier in this report, marijuana has been show to impair critical driving related skills including psychomotor abilities like reaction time, tracking ability, and target detection, cognitive skills like judgment, anticipation, and divided attention, and executive functions like route planning and risk taking. However, available research does not support the development of such a psychomotor, behavioral or cognitive test that would be practical and feasible for law enforcement use at this time. It is certainly possible that when more research has been conducted on the impairing effects of marijuana use on driving, that can be shown to increase the risk of crash involvement, that it may be possible to develop such a test in the future.

NHTSA, and others, are currently conducting research toward that goal. We are funding a controlled dosing study of different ways to measure marijuana impairment in driving related skills in the hope that some of these measures will be amenable to use by law enforcement. The first step is to show that everyone dosed on marijuana shows an observable amount of impairment in a controlled laboratory setting. The next step would be to develop simplified versions of these measures that do not require sophisticated and expensive equipment that are suitable for field use by law enforcement. The last step would be to establish the relationship between the observed impairment on these tests and elevated risk of crash involvement. Success in the near term is not guaranteed, but possible.

Devices Capable of Measuring Marijuana Levels in Drivers

Conviction on a Driving Under the Influence of Drugs (DUID) charge, or evidence that marijuana played a role in a crash, typically requires evidence that the driver was impaired by marijuana at the time of arrest or the crash. While alcohol concentration (BAC or BrAC) is an accurate measurement of

alcohol impairment of driving, the presence of THC in the driver's body has not been shown to be a reliable measure of marijuana impairment of driving.

Traditionally, measurement of marijuana use by drivers has involved testing biological specimens for the presence of THC (typically blood samples, though urine and other substance have been used). As was stated previously, this testing can take days, weeks, or months before the results are available to law enforcement. The tests take a few hours or less to conduct, but large backlogs in many State laboratories conducting the testing can result in long delays before results are available. Such tests not only indicate whether THC was present in the sample tested, they also quantify the concentration or amount of THC detected. These toxicological tests confirm presence of THC but they do not indicate driver impairment or necessarily indicate recent marijuana use (when the THC levels are low).

Recent developments in testing technology have resulted in some companies offering oral fluid drug screening devices that could be used by law enforcement to provide a preliminary indication whether a laboratory test (e.g., GC/MS/MS) is likely to yield a positive result for THC. Examples of these types of oral fluid devices include the Alere DDS2©, which tests for five commonly abused drugs, and the Dräger DrugTest® 5000. See Table 1 for the drugs they are designed to detect and for the cutoff levels.

The use of onsite oral fluid screening devices might encourage law enforcement to pursue a drug-impaired driving charge when they otherwise might not. However, the accuracy and reliability of these devices has not yet been clearly established. While some studies of these devices have been conducted, many were funded by the manufacturers (Logan, Mohr, Talpins, 2014; Moore, Kelley-Baker, Lacey, 2013; Logan, Mohr, 2015). At this time, there is insufficient evidence on this subject to draw a firm conclusion. NHTSA is currently conducting research that is designed to provide some preliminary information on the accuracy, reliability, sensitivity and specificity of five of these devices.

Table 1
Oral Fluid Drug Screening Devices
Drug Categories and Analytic Cut-Off Levels

Device	Drug Category	Cut-Off Level (ng/ml)	Device	Drug Category	Cut-Off Level (ng/ml)
Alere DDS2			**Dräger DrugTest® 5000**		
	Cannabis (THC)	25		Cannabis (THC)	5
	Amphetamine	50		Amphetamine	50
	Methamphetamine	50		Methamphetamine	35
				(MDMA)	75
	Benzodiazepine	20		Benzodiazepine	15
	Opiates	40		Opiates	20
	Cocaine	30		Cocaine	20
	Methadone	15		Methadone	20

Downloaded from the Alere website (http://www.alere.com/en/home/product-details/dds2-mobile-test-system.html) and from the Dräger website (http://www.draeger.com/sites/enus_us/Pages/Alcohol-and-Drug-Detection/Law-Enforcement.aspx) on March 16, 2016

While the presence of THC in a driver (blood, oral fluid, etc.) does not establish impairment, it also does not distinguish been active use of marijuana and environmental exposure or contamination. Some studies have shown that people exposed to second-hand marijuana smoke can test positive for THC (Cone, et al, 2015; Moore et al, 2006).

Methods to Differentiate the Cause of a Driving Impairment between Alcohol and Marijuana

There are no evidence-based methods to differentiate the cause of driving impairment between alcohol and marijuana. Given the increasing use of marijuana by drivers in the U.S., there are a number of efforts underway, including work by NHTSA, to develop ways of differentiating impairment by alcohol from marijuana. These efforts will take a number of years and a successful outcome cannot be guaranteed at this time.

Description and Assessment of Current State Laws Relating to Marijuana-Impaired Driving

All States have laws prohibiting driving while impaired (under the influence or intoxicated) by alcohol and other drugs (which includes marijuana). These laws have existed for many decades. Under such statutes a State must prove that the drug "caused" the impaired driving (i.e., a prosecutor must show a connection between drug ingestion and the incapacity or impairment of the driver).

In addition, some States have what is known as a *per se* law, that make it a criminal offense for a driver to have a drug or metabolite in his/her body while operating a motor vehicle. These "zero tolerance" laws specify that it is illegal to drive with any or more than a specific concentration of the drugs in blood or urine. They typically cover some or all Schedule I drugs as identified under the Controlled Substance Act of 1970[1]). In some cases they cover only specific drugs listed in the statute. They also exclude categories of drugs, for example, drugs used by a doctor's order (prescription). In some cases they explicitly exclude marijuana.

Fifteen States have drug per se (zero tolerance) statutes. In seven States (AZ, DE, GA, IN, MN, PA, and UT) it is illegal to have any amount of a drug or its metabolite in the body while operating a motor vehicle (note: the Minnesota law exempts marijuana). In five States (IL, IA, MI, RI, and WI) it is illegal to have any amount of a prohibited drug in the body while operating a motor vehicle. Three States (NV, OH, and VA) make it illegal to have specific amounts of specified prohibited substances in the body while operating a motor vehicle. Two States (NC and SD) make it illegal for a person under age 21 to drive with any amount of a prohibited drug or substance in their bodies. Five States (CA, CO, ID, KS, and WV) make it illegal for any drug addict or habitual user of drugs to drive a vehicle.

Only a few States (HI, NY, and CA) have DUID statutes separate from their alcohol driving under the influence (DUI) laws. In all other States, a driver violates a DUI statute if he/she drives under the influence of alcohol, drugs or a combination of alcohol and drugs. The violation is the same, as are the penalties. The one exception is the State of Washington in which there are different penalties for only drug use, as opposed to alcohol use or a combination of alcohol and drug use.

[1] The Controlled Substances Act, Title II of the Comprehensive Drug Abuse Prevention and Control Act of 1970, is the federal U.S. drug policy under which the manufacture, importation, possession, use and distribution of certain narcotics, stimulants, depressants, hallucinogens, anabolic steroids and other chemicals is regulated.

Twenty States (AL, AZ, AR, DE, GA, ID, IL, KS, KY, MT, NC, OK, PA, RI, SD, TN, TX, VT, WA, and WV) and Puerto Rico specifically disallow legal entitlement to use the drug as a defense to a DUID charge. Use of a drug pursuant to a valid prescription and/or according to directions is a defense to a DUID charge in several States.

All but five States (AL, AK, MA, NJ, and WV) extend their implied consent laws (i.e., to provide a specimen if requested by law enforcement) to DUID. However, both Alabama and Alaska make a provision for compulsory testing in cases involving serious injury or fatal crashes. Of the remaining 45 States (plus DC and PR) that extend their implied consent laws to drugged driving, nine (AR, IN, LA, MD, MN, NE, NM, OH, and RI) provide criminal penalties for a refusal to take a test under the implied consent law.

Twenty-eight States and the District of Columbia and Puerto Rico allow for a forced taking of a specimen over the objection of the driver, but this is generally in cases of a serious injury or fatal crash, and there is probable cause that the driver is under the influence of a drug. Based on the recent Supreme Court case in (Missouri v. McNeely is: 133 S.Ct. 1552 (2013)) it would appear that law enforcement is required to obtain a search warrant for blood tests except in special circumstances.

Under implied consent provisions, most State laws stipulate the type of specimen that police officers are authorized to collect. Thirty-four States permit blood and/or urine; eight States only allow for blood collection; six States permit saliva; and eight States (plus Puerto Rico) permit "other bodily substances."

With respect to sanctions, some States have relatively light sentences for first offenders, while others are more severe in their handling of first offenders. Some States have made a second or third offense a felony, whereas in other States felony status is not reached until the fourth or subsequent offense. Penalties, including fines and incarceration, differ from State to State. Many States utilize community service, house arrest, electronic monitoring, work release, restitution and assessment of cost and fees to supplement the court's ability to sanction offenders. Approximately 35 States provide for court-ordered substance abuse treatment and/or education for offenders. A growing number of States require participation in a program or treatment as a condition of probation or as a pre-requisite to reinstatement of driving privileges.

Clearly, there is great variability among the States in how they approach driving under the influence of drugs. The absence of a separate offense for driving under the influence of drugs makes it difficult to distinguish between DUID and DWI-alcohol arrest and disposition. A recent attempt to investigate the effectiveness of drug per se laws was unable to draw conclusions due to the paucity of objective data and the inability of State data systems to distinguish between DUID and DWI-alcohol arrests and convictions (Lacey, Brainard, and Snitow, 2010). In addition, in cases where a driver shows evidence of multiple impairments, the lack of difference in sanctions between drug- and alcohol-impaired driving provides little incentive for criminal justice officials to pursue a drugged-driving charge in addition to an alcohol offense.

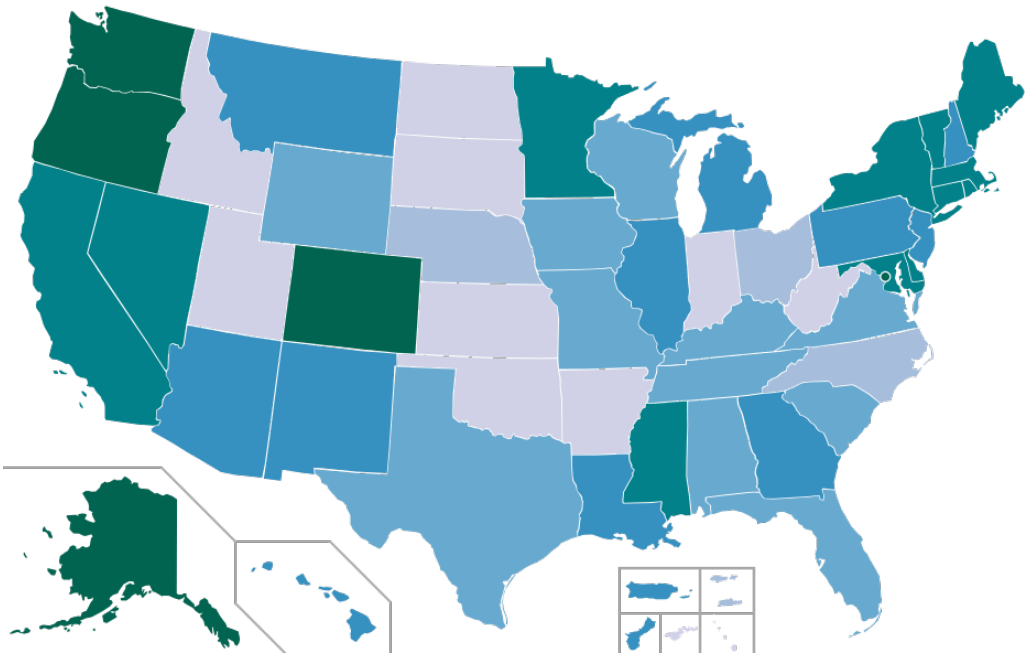
Other Relevant Marijuana Laws

Marijuana remains an illegal Schedule I drug from a federal perspective. However, due to the public's changing views of marijuana a majority of States have passed laws providing for some type of limited use of marijuana. These laws include outright legalization of personal recreational use, decriminalization

of personal use, State laws allowing therapeutic use ("medical marijuana"), and State laws allowing limited therapeutic marijuana use. The States that have passed these different laws are shown in Figure 5 below (note this information is accurate as of June 2016, many States have measures on their November ballots pertaining to marijuana use that will probably result in additional states legalizing recreational marijuana use and therapeutic use). Within these broad categories there are wide differences among individual statutes. Twenty-two States and two inhabited territories still conform to the federal position that marijuana possession and sales are illegal and prohibited entirely.

All of this State legislative activity may be sending a message to drivers that marijuana is not as dangerous as previously thought. However even if marijuana use is legal, that does not mean that driving impaired by marijuana is legal or safe. This is similar to the case for alcohol, which is a legal drug, but driving impaired by alcohol is illegal. This changing perception of the dangers of marijuana use is likely impacting personal choices regarding marijuana use. As more people choose to use marijuana it is likely more people will drive impaired by marijuana.

Figure 5
Marijuana Laws in the United States[1]



Jurisdiction with legalized cannabis.
Jurisdiction with both therapeutic use and decriminalization laws.[2]
Jurisdiction with legal psychoactive therapeutic cannabis use.
Jurisdiction with legal non-psychoactive therapeutic cannabis use.
Jurisdiction with decriminalized cannabis possession laws.
Jurisdiction with cannabis prohibition.

[1] Includes laws which have not yet gone into effect.
[2] Mississippi has only legal non-psychoactive therapeutic cannabis use.

Currently 25 States have passed therapeutic marijuana use laws (along with Washington, DC, Guam, and Puerto Rico). These States are shown in Table 2 below along with the year their therapeutic marijuana use laws were originally enacted (some have modified their therapeutic marijuana use laws one or more times since enactment). Some of the most recently passed measures have not gone into effect yet.

An additional ten States have a form of limited therapeutic marijuana use (with low THC and high CBD allowed). CBD is a cannabinoid that does not appear to be psychoactive and lacks most adverse side-effects but is believed to have potential for medical purposes.

Twenty-one States and the District of Columbia have decriminalized small amounts of marijuana. This generally means certain small personal-consumption amounts are a civil or local infraction, not a State crime (or are a misdemeanor with no possibility of jail time).

Decriminalization States are Alaska (which has subsequently legalized personal consumption and possession of small quantities), California, Colorado (also now has allowed legalization of personal consumption), Connecticut, Delaware (enacted in 2015), Illinois (enacted in 2016), Maine, Maryland,

Massachusetts, Minnesota, Mississippi, Missouri, Nebraska, Nevada, New York, North Carolina, Ohio, Oregon (also now with legalized personal consumption), Rhode Island, Vermont and Washington (now having legalized personal consumption), and the District of Columbia (also now with legal personal consumption). A number of cities and counties across the U.S. have also decriminalized personal use and possession of small quantities of marijuana.

Six of the States that have decriminalized possession or use of marijuana (Minnesota, Missouri, Nevada, North Carolina, Ohio and Oregon) have made it a low-level misdemeanor, with no possibility of jail for qualifying offenses. The other States that decriminalized marijuana use have specified small amounts of marijuana as a civil infraction. As noted above, four of the States that originally decriminalized personal use and possession of marijuana have subsequently legalized the personal recreational use of marijuana.

Table 2
States with Therapeutic Marijuana Use Laws and Date of Enactment

State	Date of Enactment	State	Date of Enactment
1. California	1996	2. Alaska	1998
3. Oregon	1998	4. Washington	1998
5. Colorado	2000	6. Hawaii	2000
7. Nevada	2000	8. Vermont	2004
9. New Mexico	2008	10. Michigan	2008
11. Rhode Island	2009	12. New Jersey	2009
13. Arizona	2010	14. Maine	2010
15. Delaware	2011	16. Montana	2011
17. Connecticut	2012	18. Maryland	2013
19. Massachusetts	2013	20. New Hampshire	2013
21. Illinois	2014	22. Minnesota	2014
23. New York	2014	24. Ohio	2016
25. Pennsylvania	2016		

Some States have passed more than one of these measures. The laws of the remaining twenty-two States and two inhabited territories follow the federal laws and prohibit marijuana possession and sales are illegal and prohibited entirely.

Table 3
States with Limited Therapeutic Marijuana Use Laws

State	Date Enacted	State	Date Enacted
Alabama	2014*	Iowa	2014
Kentucky	2014	Mississippi	2014
Missouri	2014	North Carolina	2014
South Carolina	2014	Tennessee	2014
Utah	2014	Wisconsin	2013

* Not yet effective

Table 4

States With Personalized Use Decriminalized

State	Date Enacted	State	Date Enacted
Alaska*	2014	California	1976
Colorado*	1975	Connecticut	2011
Delaware	2015	Illinois	2015
Maine	1976	Maryland	2014
Massachusetts	2008	Minnesota	1976
Mississippi	1977	Missouri	2014
Nebraska	1978	Nevada	2001
New York	1977	North Carolina	1977
South Carolina		Ohio	1975
Oregon*	1973	Rhode Island	2012
Vermont	2013	Washington*	2012
District of Columbia*	2014		

* Also has legalized personal possession and use of small amounts of marijuana

Table 5

States Legalizing Recreational Use[1]

State	Date of Enactment	Amount Allowed
Alaska	2015	1 oz.
Colorado	2014	1 oz.
Oregon	2015	8 oz.
Washington	2014	1 oz.
District of Columbia	2014	2 oz.

1 – For persons at least 21 years old

Description and Assessment of the Role of Marijuana as a Causal Factor in Traffic Crashes and the Extent of the Problem of Marijuana-Impaired Driving

The scope and magnitude of the marijuana-impaired driving problem in this country cannot be clearly specified at this time. However, there are a number of indicators that suggest that a problem exists. These include numerous cases of drivers involved in serious injury and fatal crashes who are held responsible, in part as a result of marijuana-impaired driving, along with a significant number of drivers arrested and convicted for marijuana-impaired driving. There is also clear evidence that an increasing number of people use marijuana, perhaps reflecting changing public attitudes toward marijuana use, possibly due, in part, to State medicinal marijuana laws, decriminalization of marijuana, and legalization of recreational use of marijuana (see the 2016 report from Monitoring the Future Annual Survey of Drug Use conducted by NIDA and the 2013-2014 National Roadside Survey). A series of nationally representative studies of driver use of alcohol and drugs conducted by the National Highway Traffic Safety Administration have found increased use of marijuana by drivers. These studies have provided the best empirical evidence regarding marijuana use by a wide swath of the American public (Lacey et al., 2009; Berning, Compton & Wochinger, 2015). Previous estimates of marijuana use have relied on self-report data, which likely included some underreporting. The NHTSA studies collected blood and oral fluid samples from paid volunteer drivers on the road and analyzed these samples for the presence of THC.

Prevalence of Marijuana Use by Drivers

Over the last five decades, NHTSA and/or the Insurance Institute for Highway Safety (IIHS) conducted five national surveys to estimate the prevalence of drinking and driving in the United States (Wolfe, 1974; Lund & Wolfe, 1991; Voas et al., 1998; Compton & Berning, 2009; Lacey et al., 2009). The first National Roadside Survey (NRS) was conducted in 1973, followed by national surveys of drivers in 1986, 1996, 2007, and 2013–2014. These surveys used a stratified random sample of weekend nighttime drivers in the contiguous 48 States and collected data directly from drivers on the road.

The 2007 NRS added procedures to the NRS for the first time to estimate the use by drivers of other potentially impairing drugs. Prior roadside surveys had only collected breath samples to determine breath alcohol concentration (BrAC). Due to developments in analytical toxicology, NHTSA determined it would be feasible in the 2007 and 2013–2014 surveys to determine driver use of a variety of potentially impairing drugs including illegal drugs as well as legal medications.

The National Roadside Surveys have shown a remarkable decreasing trend in alcohol use from the first survey in 1973 to the most recent one in 2013– 2014. Figure 6 shows the percentage of weekend nighttime drivers with BrACs across three categories: BrAC of .005 to .049 g/210L; BrACs of .050 to .079; and BrACs of .080 and higher. The surveys found a decline in each BrAC category. Further, there has been a large decrease in the percentage of drivers who were alcohol positive, from 35.9 percent in 1973 to 8.3 percent in 2013–2014. For BrACs of .08 and higher, there was a decrease from 7.5 percent in 1973 to 1.5 percent in 2013–2014, revealing an impressive 80 percent reduction in the percentage of alcohol-impaired drivers on the road on weekend nights (Berning, Compton, & Wochinger, 2015).

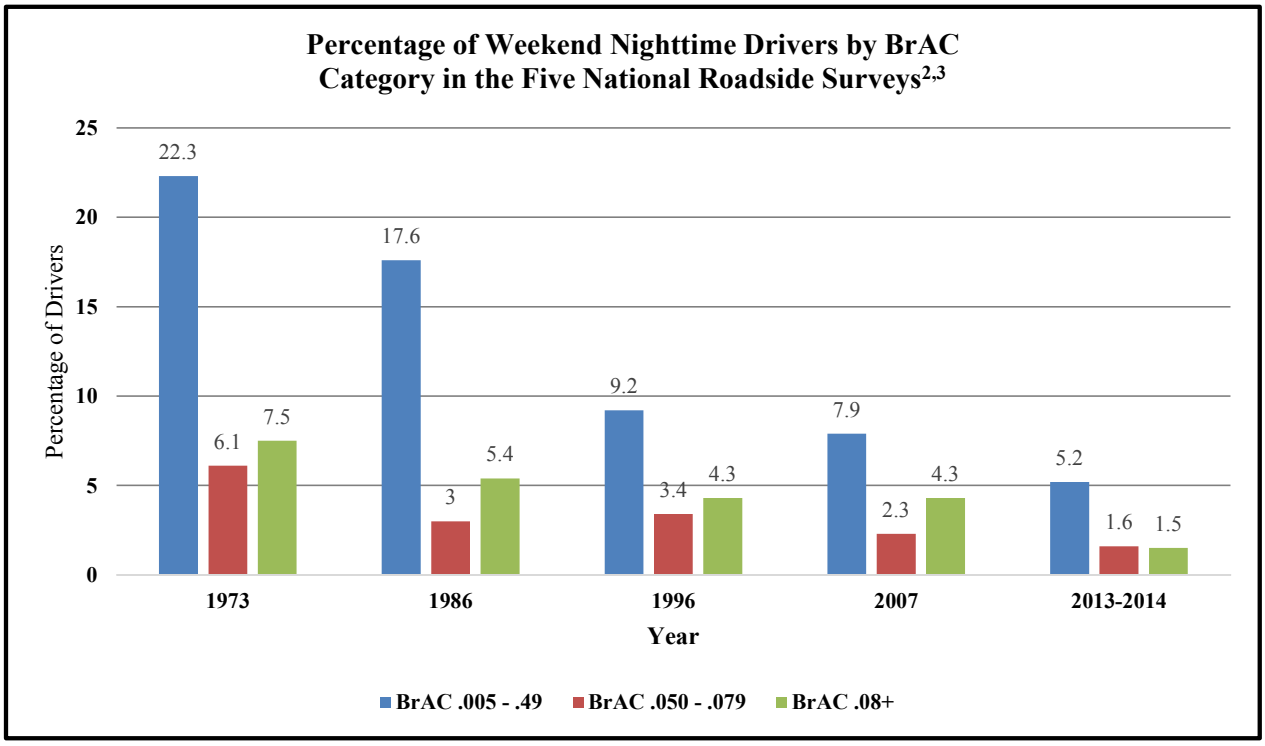
THC was by far the most prevalent drug detected in this representative sample of drivers. As shown in Table 6, 8.6 percent of the drivers tested positive for THC in 2007 and 12.6 percent tested positive for THC in 2013-2014. This represents a large 48 percent increase in the prevalence of drivers testing

positive for THC in just seven years. On the other hand, the percentage of drivers testing positive for alcohol declined from 12.4 percent in 2007 to 8.3 percent in 2013-2014, an approximately 33 percent decrease (Berning, Compton, & Wochinger, 2015).

This is the only reliable source of data on actual THC use by drivers (see Appendix 1 for a brief description of how this survey is conducted). NHTSA is not currently planning to update this information, as Congress has prohibited NHTSA from expending funds on this type of research (see the prohibition on using FY 2016 funds for this purpose per PL 114-113, Division L, Title 1, Section 142, dated 12-18-2015). Therefore, NHTSA, States, and law enforcement agencies will have to rely on increasingly outdated data to develop and evaluate measures to reduce drug-impaired driving. It is unlikely any other entity will have the capability and funding to undertake something of this complexity and magnitude.

In addition to these national roadside surveys, there have been two Statewide representative surveys of alcohol and drug use by drivers; one conducted in California in 2012 and the other designed to examine the effects of the legalization of recreational use of marijuana, specifically retail sales, in Washington in 2014 and 2015.

Figure 6



[2] .08 g/210 L = grams per 210 liters of breath. The illegal limit in all States is .08.
[3] From 1973 to 2004, the States had BrAC limits that ranged from .08 to .15.
After 2004, all States had BrAC limits of .08.

Table 6
Weekend Nighttime Prevalence of Alcohol and THC
in 2007 Compared to 2013-2014

Substance	2007	2013 - 2014
Alcohol	12.4%	8.3%
THC	8.6%	12.6%

The California Statewide Roadside Survey was the first such survey conducted in one State. It examined the prevalence of alcohol, marijuana and other drug use by drivers (Lacey J, et al., 2012). The survey was modeled on data collection procedures used in the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers, sponsored by NHTSA. The results showed that marijuana (THC) was the most frequently encountered drug with a prevalence rate of 7.4 percent of weekend nighttime drivers in California.

The study in Washington State was conducted jointly by the Washington Traffic Safety Commission and NHTSA. It followed the passage in 2012 of a citizen initiative to legalize personal recreational use of marijuana and was designed to assess whether the percentage of drivers who tested positive for THC increased after retail sales of marijuana became legal in July 2014.

Data was collected in three stages: 1) immediately before implementation of legal sales, 2) six months after implementation, and 3) one year after implementation. The results of the study showed an increase in THC positive drivers across the three waves: 14.6 percent, 19.4 percent, and 21.4 percent. These increases were not statistically significant. There was a statistically significant increase in daytime prevalence of THC-positive drivers between Wave 1 (7.8%) and Wave 3 (18.9%). While there was also an increase in drivers positive for THC at night across each successive wave (17.5%, 19.8%, and 22.2%), these were not statistically significant.

Estimating Crash Risk of Marijuana-Impaired Drivers

While the extent of use of alcohol by drivers and the risks posed by alcohol use have been well known for many decades, relatively little has been known about the use of other drugs by drivers and the associated risks. It is known that marijuana is the most frequently detected drug (other than alcohol) in crash-involved drivers as well as the general driving population (Terhune, 1982; Terhune et al., 1992; Lacey et al., 2009; Walsh et al., 2005; Berning, Compton & Wochinger, 2015), and drug-impaired driving is an issue of increasing public and governmental concern in the United States and in many other countries (Compton et al., 2009; Asbridge et al., 2012; ICADTS, 2007). While it is readily apparent that driving-related skills can be impaired by a wide variety of illegal substances and medications, the nature and scope of the drug-impaired driving problem has been difficult to define (Jones et al., 2003; DuPont et al., 2012; Houwing, 2013).

As previously discussed there is evidence that marijuana use impairs psychomotor skills, divided attention, lane tracking, and cognitive functions (Ramaekers, 2000; Robbe & O'Hanlon, 1993; Moskowitz, 1995; Hartman & Huestis, 2013). However, its role in contributing to the occurrence of

crashes remains less clear. Many studies, using a variety of methods, have attempted to estimate the risk of driving after use of marijuana (Li et al., 2012; Asbridge et al., 2012). The methods have included experimental studies, observational studies, and epidemiological studies. While useful in identifying how marijuana affects the performance of driving tasks, experimental and observational studies do not lend themselves to predicting real world crash risk.

Epidemiological Studies

Epidemiological studies differ in how they estimate risk. Culpability studies compare the rate at which crash involved, drug-positive drivers and drug-negative drivers are deemed to be at fault for their crashes. Case-control studies compare drug use by crash-involved drivers to drug use by non-crash involved drivers. In general, the case-control method is preferable since it can eliminate more sources of potential bias in estimating crash risk resulting from drug use (e.g., alcohol use is much higher at night and on weekends than during the day or on weekdays). The existing epidemiological research (both culpability and case-control studies) have produced contradictory estimates of risk for marijuana use. Some of these studies have suggested that marijuana use has minimal or no effect on the likelihood of crash involvement, while others have estimated a small increase in the risk of crash involvement.

Two recent population-based case control studies have estimated the crash risk of drug use by drivers by using NHTSA's Fatality Analysis Reporting System (FARS) 2007 data for the crash-involved driver population and the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers for the control drivers (Li, Brady, & Chen, 2013; Romano, Torres-Saavedra, Voas, & Lacey, 2014). The Li study estimated the increased risk of crash involvement for drivers using marijuana at 1.83 times that of drug-free drivers, while the Romano study found no increased risk of crash involvement for those drivers testing positive for THC. However, current limitations in the FARS dataset do not allow calculation of unbiased, reliable and valid estimates of the risk of crash involvement that results from drug use (Berning & Smither, 2014).

Challenges in Estimating Crash Risk from Drug Use

Conducting case-control studies to estimate the risk of crash involvement from drug use presents many difficulties. The first challenge is obtaining reliable and accurate estimates of drug use. Many studies rely on self-reporting (which have obvious inherent problems) rather than actual measurement of THC in blood or oral fluid. Also, the extent of care regarding the matching of crash-involved and control drivers varies to a large extent among studies. The more carefully controlled studies, that actually measured marijuana (THC) use by drivers rather than relying on self-reporting, and that had a high degree of control of covariates that could bias the results, generally show low risk estimates or in a few cases no risk associated with marijuana use (Elvik, 2013).

Recent Meta-Analyses

A recent meta-analysis by Li (2012) used nine studies, five of which were based on self-report; of the remaining four studies, marijuana use was inferred from a urine test in three of the studies (which indicates the drivers were marijuana users but not necessarily had used marijuana prior to driving). The studies that used self-reporting produced increased crash risk estimates that ranged from 1.7 to 7.16 times as a result of marijuana use by drivers. The two studies that used urine to determine marijuana use resulted in risk estimates of 0.85 to 3.43 times, while the two studies using blood analysis had risk estimates of 2.10 and 2.11 times. The overall pooled risk estimate was 2.66 times.

Similarly, a meta-analysis by Asbridge (2012) also used nine studies, but six were culpability studies with only three using a case-control approach. One of the culpability studies used only FARS data (with associated limitations). Of the three using case-control methods, two used self-report by the control drivers and one used non-drug positive crash-involved drivers (meaning the controls were drug-free, crash-involved drivers). The risk estimates resulting from marijuana use ranged from 0.82 to 7.16 (two studies showing marijuana use reduced the risk of crash involvement while seven studies showed an increased risk). The pooled odds ratio for all nine studies was 1.92.

Recently, a large-scale population-based case control study (in which an attempt was made to have the crash and non-crash control drivers represent all crash-involved drivers and all non-crash involved drivers in the same jurisdiction) was conducted by the European Union to estimate the crash risk of drug use by drivers. A population-based study can benefit from a large sample of drivers covering a wide geographic area, which may improve the generalizability of findings. However, the scale of such studies typically limits the control of subject selection. In a population-based case control study, the case and control drivers are selected from different sources. For example, the crash-involved drivers might be injured drivers taken to a hospital after a crash, while the control drivers might be selected from general traffic. This method lacks the careful matching (day of week, time of day, location, direction of travel, etc.) used in smaller-scale studies, so it involves some compromise of control for the benefit of a much larger sample size.

DRUID Study

The recent population-based study known as Driving Under the Influence of Drugs, Alcohol and Medicines (DRUID), is the largest study of this type (Hels et al., 2010). This study, conducted in nine European Union (EU) countries: Belgium, Denmark, Finland, Italy, Lithuania, and the Netherlands used seriously injured crash-involved drivers while Norway, Portugal, and Sweden used fatally injured drivers. The crash-involved fatally injured driver sample came from a group of drivers for whom a drug test had been conducted, over a period of two to three years. Seriously injured drivers came from a sample of drivers taken to a hospital. Controls came from a roadside survey conducted in each of the respective countries, around the same general time period (e.g., over a year) in each country and represented a sample of drivers, in some cases, from the same general area from which the fatally and seriously injured drivers' crashes occurred. However, in only two of the countries did the controls come from the exact same area of the country as the crash-involved drivers. The specific locations of the crashes were not matched to the sites used to obtain the non-crash involved control drivers. Also, drug presence was determined from blood samples for all the crash-involved drivers, but eight of the countries used oral fluid to determine drug presence in the non-crash involved drivers (four countries also used blood for some control drivers).

Odds ratios were used to estimate the risk of crash involvement after marijuana use in the fatally and seriously injured drivers. The results for the seriously injured drivers showed considerable national variability, ranging from 0.29 times (reduced crash involvement) to 25.38 times (increased crash involvement). The combined risk was 1.39 times that of drug-free drivers, but this was not statistically significant. For fatally injured drivers the estimated risk ranged from 3.91 to 28.88, while the combined risk was 1.33 times (also not statistically significant).

In a pooled analysis of the DRUID data, the highest risk of crash involvement was for drivers with high alcohol concentrations (above .12 BAC)—they had a crash risk 20–200 times that of sober drivers. Drivers with BACs between .08 and .12 were estimated to be 5–30 times more likely to crash than sober

drivers. Drivers positive for THC were estimated to be at elevated risk (1–3 times that of drivers not positive for THC), similar to drivers with BAC levels between .01 to < 0.05. The DRUID report noted that some of the risk estimates were based on few positive cases and/or controls which resulted in wide confidence intervals.

In order to further understand the risk of drug use by drivers, NHTSA, with funding support from the National Institute on Alcohol Abuse and Alcoholism (NIAAA), contracted with the Pacific Institute for Research and Evaluation (PIRE) to conduct the largest and most comprehensive study to address alcohol and drug crash risk in the United States through a case-control study, that employed a rigorous design involving a precise matching of cases and controls.

This case control study collected information from crash-involved and non-crash involved drivers for 20 months (2010 – 2012) in Virginia Beach, Virginia.

NHTSA's "Crash Risk" Study

This case control crash risk study is the first large-scale study in the United States to include drugs other than alcohol. It was designed to estimate the risk associated with alcohol- and drug-positive driving. Virginia Beach, Virginia, was selected for this study because of the outstanding cooperation of the Virginia Beach Police Department and other local agencies with our stringent research protocol. Another reason for selection was that Virginia Beach is large enough to provide a sufficient number of crashes for meaningful analysis. Data was collected from more than 3,000 crash-involved drivers and 6,000 control drivers (not involved in crashes). Breath alcohol measurements were obtained from a total of 10,221 drivers, oral fluid samples from 9,285 drivers, and blood samples from 1,764 drivers.

Research teams responded to crashes 24 hours a day, 7 days a week over a 20-month period. In order to maximize comparability, efforts were made to match control drivers to each crash-involved driver. One week after a driver involved in a crash provided data for the study, control drivers were selected at the same location, day of week, time of day, and direction of travel as the original crash. This allowed a comparison to be made between use of alcohol and other drugs by drivers involved in a crash with drivers not in a crash, resulting in an estimation of the relative risk of crash involvement associated with alcohol or drug use. In this study, the term marijuana is used to refer to drivers who tested positive for delta-9-tetrahydrocannabinal (THC). Drivers who tested positive for inactive cannabinoids were not considered positive for marijuana.

The drug most frequently detected in the oral fluid and blood of drivers was THC, detected in 7.6 percent (n = 234) of the crash-involved drivers and 6.1 percent (n = 379) of the control drivers. To estimate the risk of crashing associated with drug use, logistic regression was used to obtain odds ratios (that are close to relative risk estimates). Odds ratios estimate the probability of an event (i.e., crash) over the probability that such an event does not occur. If a variable (i.e., drug use) is not associated with a crash, the odds ratio of crash involvement associated with that variable will be 1.00. Odds ratios above 1.00 indicate a positive relationship, with stronger relationships reflected by higher odds ratios.

The unadjusted odds ratio for THC was 1.25, representing a significantly elevated risk of crashing by about 1.25 times or 25 percent. These unadjusted odds ratios must be interpreted with caution as they do not account for other factors that may contribute to increased crash risk. Other factors, such as demographic variables, have been shown to have a significant effect on crash risk. For example, male drivers have a higher crash rate than female drivers. Likewise, young drivers have a higher crash rate

than older drivers. To the extent that these demographic variables are correlated with specific types of drug use, they may account for some of the increased crash risk associated with drug use.

When the odds ratios were adjusted for demographic variable of age, gender, and race/ethnicity the significant increased risk of crash involvement associated with THC disappeared. The adjusted odds ratio for THC positive drivers was 1.05 (95% Confidence Limit of 0.86 – 1.27). This adjusted odds ratio was not statistically significant.

A final adjustment was made for the presence of alcohol. When both demographic variables and the presence of alcohol were taken into account, the odds ratio for THC declined further to 1.00 (95% Confidence Limit of 0.83 – 1.22). This means there was no increased risk of crash involvement found over alcohol or drug free drivers.

As was described above, there was no difference in crash risk for marijuana-positive drivers who were also positive for alcohol than for marijuana-positive drivers with no alcohol, beyond the risk attributable to alcohol. Further analyses examined the potential interaction between drug use and breath alcohol concentration. No statistically significant interaction effect on crash risk was found between for THC positive drivers and BrAC level.

More information on the methodology of this study is available in a Research Note (Compton and Berning, 2015 which can be downloaded at: http://www.nhtsa.gov/staticfiles/nti/pdf/812117-Drug_and_Alcohol_Crash_Risk.pdf

Recommendations

Increase the Use of Effective and Efficient Methods for Training Law Enforcement Personnel, Including Drug Recognition Experts, to Detect or Measure the Level of Impairment of a Motor Vehicle Operator who is Under the Influence of Marijuana by the Use of Technology or Otherwise.

Currently, training for law enforcement officers to detect and recognize marijuana impairment in drivers is available in three increasingly detailed levels. Officers at the highest level of training are capable of making determinations about which drug category (or categories) may be contributing to a driver's inability to operate a vehicle. Depending on the individual State and local requirements, not all officers may receive training in DUID prior to completing their basic training requirements or afterwards.

To improve consistency in training, NHTSA developed an 8-hour course, Drugs That Impair Driving, which can be used in conjunction with the Standardized Field Sobriety Test (SFST) training. NHTSA considers SFST training the foundation for all impaired driving detection training. The Drugs That Impair Driving course was developed to provide a general description of drugs, signs that may indicate drug use and medicinal conditions that show signs similar to drug use. The course was also developed to acquaint officers with the most common types of drugs that impair driving.

A second level course, the 16-hour Advanced Roadside Impaired Driving Enforcement Program (ARIDE), is designed to give officers the ability to apply information they have learned about DUID to make effective arrests based on probable cause that provides the necessary evidence for prosecution. In order to accomplish this goal, the program seeks to increase the officer's overall knowledge of the general manifestations of alcohol and drug impairment and to increase their ability to recognize these

indicators in the drivers they encounter during their enforcement duties. If these drivers are suspected to be impaired, then officers will be better informed in the arrest decision.

In order to expand the number of law enforcement officers who might take this training, NHTSA, along with the IACP, offers an online version of this training program that is available to law enforcement agencies.

The highest level of training comes in the form of the Drug Evaluation and Classification (DEC) program (NHTSA, 2007). In the early 1980s NHTSA started to take the DEC program, based on the Los Angeles Police Department's Drug Recognition Expert (DRE) program, nationwide. The DEC program trains officers to identify the signs and symptoms of drug use that could be used to determine whether a suspected impaired driver was impaired by drugs and to rule out other possible causes such as neurological deficits, diseases, and illness. The procedure was designed to aid the officer in determining what specific type of drug was the likely cause of the observed impairment. The program was intended to help develop evidence of impairment and guide the analyses of biological specimens when looking for the presence of drugs other than alcohol in impaired drivers. The DEC training requires 9 days in the classroom and additional days of field certification testing. The program is designed to provide a limited number of DREs in a jurisdiction. It is not designed for the routine patrol officer.

As was mentioned previously, the DEC program has expanded to all fifty States and the District of Columbia. There are currently over 8,000 certified DREs in the program. The ARIDE training is not designed to provide the same level of expertise as that demonstrated by DREs. An ARIDE trained officer who encounters a suspected marijuana-impaired driver, would likely summon a DRE to conduct the DEC program evaluation, if one is available.

In summary, training is currently available to law enforcement personnel in a tiered approach, ranging from basic information about the different types of drugs that can impair driving, signs and symptoms that may indicate drug use (including impaired driving cues), to a more detailed training program that equips officers to better recognize when a driver is likely to be impaired by alcohol, marijuana and other drugs and collect the necessary information to support an arrest and prosecution. Finally, there is the DEC program that provides officers with much more detailed information about different classes of drugs that can impair driving, trains them to use standardized examination and test procedures to build a convincing case of drug-impaired driving.

Impaired driving training is resource-intensive in terms of cost and time away from normal duties. Law enforcement agencies typically operate with limited funding and staff and face competing demands. Most patrol officers will not often encounter a marijuana-impaired driver, so the current tiered approach is a reasonable way of efficiently dealing with drug-impaired driving.

Continue Research to Enable Development of an Impairment Standard for Driving Under the Influence of Marijuana, and in the Meantime, Maintain Training and Other Support to Enable Law Enforcement Officers and Prosecutors to Pursue Cases Using Available Evidence.

As the previous sections of this report have indicated, the poor correlation of THC level in the blood or oral fluid with impairment precludes using THC blood or oral fluid levels as an indicator of driver impairment. The use of BAC or BrAC as an indicator of driving impairment has assisted law enforcement and prosecutors in being able to show that an alcohol-impaired driver has a BAC that has been demonstrated to increase crash risk. The use of THC level cannot serve this same role for marijuana-impaired driving (Dupont, Voas, Walsh, Shea, Talpins, & Neil, 2012).

Toxicologists are not able to provide expert testimony that a specific amount of THC present in a suspect's blood (or other specimen) is definitively associated with being impaired by marijuana and render the driver unable to drive safely.

It should be noted that the DEA has recently provided revised guidance in August of 2016, to researchers, that should make it easier to obtain and conduct studies using marijuana (21 CFR Part 1301 Docket Number DEA 447 Dated July 15,2016). This should spur more research that may help to address some of the issues that are currently unresolved about marijuana and driving.

Expert witness testimony by toxicologists that a BAC or BrAC level found in a suspect's blood or breath that was over the legal limit, indicates the suspect was too impaired to drive safely is fairly routine testimony in alcohol-impaired driving trials. However, the absence of BAC or BrAC evidence in an alcohol-impaired driving case is not a bar to successful prosecution. Drivers frequently refuse to take a BAC or BrAC test.

A 2012 NHTSA study of BAC test refusals estimated that approximately 21 percent of all suspected alcohol-impaired drivers requested to take a BAC or BrAC test refuse. That study did not find a consistent difference in conviction rates between drivers who took a BAC test and drivers who refused the test. Interestingly, those drivers who refused to take the requested BAC test received substantially higher penalties upon conviction (Jones & Nichols, 2012).

A properly trained officer who follows good investigatory techniques and carefully documents their observations can make a convincing case that a driver was too impaired by alcohol to drive safely. The same is true for suspected marijuana-impaired drivers. The lack of an "impairment standard" equivalent to BAC level does not prevent the successful prosecution of a marijuana-impaired driver. The lack of toxicological evidence simply means that the officer has to offer other evidence that the driver was under the influence of marijuana and too impaired to drive safely.

Whether there is some other more formal and standardized way to determine that a marijuana-impaired driver is too impaired to drive safely (a test that correlates with increased crash risk) remains to be determined. NHTSA has research underway that attempts to develop a relatively simple field test for law enforcement use that would indicate that a suspect is impaired by marijuana. This type of test would not indicate driving impairment (law enforcement observations would be required for that evidence), but would be a useful tool for law enforcement, nonetheless.

A number of States have set a THC limit in their laws indicating that if a suspect's THC concentration is above that level (typically 5 ng/ml of blood), then the suspect is to be considered impaired. This per se limit appears to have been based on something other than scientific evidence. Some recent studies demonstrate that such per se limits are not evidence-based.

A recent study looked at the THC levels in DUID cases in Washington State between August 2009 and June 2013 where blood samples were sent to the State toxicology laboratory for testing. All of these cases involved suspects believed to be impaired by marijuana by the arresting officer or DRE. All of the samples were screened positive by a cannabinoid ELISA immunoassay test. The blood was then analyzed for THC (cut off 1 ng/ml) using three dimensional gas chromatography mass spectrometry. A total of 3,814 cases tested positive for THC above 1 ng/ml.

These cases were then evaluated as to whether the THC concentrations exceeded certain thresholds, specifically, the 2 ng/ml per se threshold applied in Ohio and Nevada and the 5 ng/ml threshold applied in Colorado and Washington State. The results showed that a sizeable proportion (24.2%) of all drivers (who were suspected of marijuana-impaired driving), had blood THC concentrations below the per se

threshold in Ohio and Nevada, while an even larger proportion (62.8%) had concentrations below the per se threshold in Washington and Colorado.

The adoption of a 5 ng/ml per se law for THC would appear to result in the exclusion of a large number of drivers who law enforcement officers believe to be impaired by marijuana but whose blood THC concentrations will fall below this artificial per se threshold during the minimum 1 - 2 or more hours it will take to collect a blood sample following a stop, investigation and arrest. This will place a large burden of the officer to make the case through objective evidence of impairment along with signs and symptoms associated with marijuana use. The blood THC concentrations will often impede, rather than assist, in making the case to a judge or jury who has to determine whether a suspect is impaired (under the influence) as a result of their marijuana use (Logan, 2015).

Another recent study conducted using Washington State data was designed to examine whether the concentration of THC in a drivers blood was a reliable indicator of impairment. This study used 602 drivers arrested for impaired driving in which only THC was detected, with a sample of 349 drug-free control drivers, for which the subject's performance in the DRE exam were available. Results showed significant differences in the THC positive and negative drivers in terms of poorer performance on the psychophysical tests (walk-and-turn test, one-leg-stand test, and finger-to-nose test) along with indicators like red bloodshot and watery eyes, eyelid tremor, lack of convergence and rebound dilation. Having found differences between THC positive and THC negative drivers, the relationship between blood THC concentration and performance on tests for impairment was examined. Poor correlation between THC concentration and performance was found, which again indicates that blood THC level is not a reliable indicator of impairment.

Finally, an assessment of whether the combination of the physiological, cognitive and psychomotor indicators could reliably predict whether the driver's THC concentration was above or below 5 ng/ml threshold was conducted. No differences were found except for the finger-to-nose test. Some individual signs, symptoms, and tests had weak correlations with the THC concentration being above or below the threshold, but none of them met basic sensitivity levels for correctly predicting impairment status. The conclusion of the study was that "there is no evidence from the data collected, particularly from the subjects assessed through the DRE exam, that any objective threshold exists that establish impairment base on THC concentrations in suspects placed under arrest for impaired driving" (Logan, Kacninko, & Beirness, 2016).

A third study that also made use of Washington State data involved drivers in crashes and/or arrested for suspected driving under the influence, who were investigated by the Washington State Patrol in which blood samples were tested for the presence of alcohol and other drugs (including marijuana) during the time period 2005 – 2014. An interesting facet of this study was an estimate of time between the crash or arrest and when the blood draw occurred. Time to the blood draw was not always possible to calculate due to inadequacies in the records. The median time to draw blood was 165 minutes (almost three hours). The median estimated time to draw blood for THC-positive drivers was 139 minutes. Drivers negative for THC (but positive for a THC metabolite carboxy-THC) was 175 minutes. This study found a clear relationship between the time that is required to do a blood draw and THC concentration, where the longer time to the blood draw the lower the THC concentration (Banta-Green, Rowhani-Rahbar, Ebel, Andris, and Qiu, 2016).

Methods for Increasing Data Collection Regarding the Prevalence and Effects of Marijuana-Impaired Driving

Encourage States to Collect Data Regarding the Prevalence of Marijuana Use by Drivers and Among Those Arrested for Impaired Driving

There is a need to improve data collection regarding the prevalence and effects of marijuana-impaired driving. NHTSA has collected some data on the prevalence of marijuana use by drivers on a national basis, though NHTSA has been prohibited from continuing to collect this information.[1] In contrast, there is little State level data about the prevalence of use of marijuana by drivers being collected. As States continue to change their laws regarding marijuana use in general and as it relates to driving, this lack of State level data prevents evaluation of the effect of policy changes on driver behavior, including willingness to drive while under the influence of marijuana, as well as the effect of marijuana on crashes, deaths and injuries.

While assessing the number of people driving impaired by marijuana is not currently feasible, a first step is to measure the number of drivers positive for THC on our nation's roads or on a State's roads. As the number of THC positive driver's increases, it is likely that the number of marijuana-impaired drivers will also increase. Measuring the prevalence of THC positive drivers is currently feasible as shown by NHTSA's two most recent national roadside surveys of alcohol and drug prevalence conducted in 2007 and 2013-2014, and the two State surveys of the prevalence of alcohol and drug positive drivers.

Reliable trend data on the prevalence of marijuana positive drivers at the State level would allow for the evaluation of effects of marijuana laws such as:

- Therapeutic marijuana use laws
- *Per Se* limits for marijuana (THC)
- Decriminalization of personal use of marijuana
- Legalization of personal recreational use of marijuana

For example, State surveys could assess the effect of legalized recreational marijuana use on the number or percentage of people driving after using marijuana. However, such studies require both pre- and post-legalization data. Similarly, without consistent THC testing of impaired driving arrestees over time, reports that compare THC positive rates before and after a policy has gone into effect are very difficult to interpret, as they may simply reflect increased testing rates.

We recommend that States be encouraged to conduct prevalence studies of the number and proportion of drivers testing positive for THC. Due to the current Congressional prohibition[1] on NHTSA conducting national studies of alcohol and drug use by drivers, national data will not be available.

States that do not distinguish between drug-impaired and alcohol-impaired driving in arrest or disposition data significantly limit their ability to assess the extent of drug-impaired driving and evaluate the impact of countermeasures. Similarly, the lack of standardized and complete State record systems limits NHTSA's ability to make clear inferences about the scope of the national drug-impaired-driving problem.

[1] – PL 114-113, Division L, Title I, Sec. 142 (12/18/2015) prohibits NHTSA from using FY 2016 funds to conduct national roadside studies of alcohol and drug use by drivers.

Establishing and maintaining Statewide arrest data would allow States and others to evaluate the effectiveness of law enforcement programs on impaired driving, such as the impact of the DEC program on DUID arrest rates and convictions. Similarly, accurate and complete data about arrests and convictions for drug-impaired driving would allow documentation of the effects of drug per se statutes on arrest and convictions.

NHTSA recommends the following data and record system improvements:

- States should develop record systems that distinguish among alcohol, drugs, or both for impaired driving cases. These records should be integrated into computerized data systems of statewide arrest records, the court record systems, and motor vehicle records. One way to accomplish this would be to have separate offenses for driving impaired by alcohol and driving impaired by drugs.

- State records systems should document which drugs are used by drug-impaired drivers. This information would be helpful for law enforcement, toxicologists, and prosecutors.

- Standard toxicological screening and confirmation procedures should be developed for drug testing laboratories to use in identifying and confirming the presence of drugs that impair driving. These methods should include standard analytic procedures and minimum detection thresholds. There also should be training requirements for the personnel operating these tests.

In addition to these data and record system needs, NHTSA recommends the following change in State statutes:

- State statutes should be amended to provide separate and distinct offenses and sanctions for alcohol- and drug-impaired driving that could be applied individually or in combination to a single case. This would provide an incentive for law enforcement officers to pursue a possible drug-impaired driving charge even when a BAC equal to or above the limit of .08 g/dL has already been established.

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Appendix 1

Brief Description of the National Roadsides Survey Procedure

The National Roadside Survey is a nationally representative survey of driver alcohol and drug use. It uses a multi-stage sampling procedure to select survey locations in 60 Primary Sampling Units (PSU) across the continental U.S. At each PSU, five actual survey locations were selected at random based on roadway type and safety considerations.

The survey is conducted off of the roadway in an adjacent parking area.

As a driver approaches a survey site they will pass several large orange construction style signs that say "*Paid Volunteer Survey"* and one illuminated variable message board sign also saying they are approaching a paid volunteer survey site. As the drivers reached the survey site, there was another large orange sign saying "*Paid Volunteer Survey"* at the entrance to the survey site. In the survey site facing approaching traffic is a large banner that says *"National Roadside Survey"* (approximately three feet by five feet). Typically there are flares placed in the roadway as the motorist approached the survey site. For safety purposes, where there were multiple lanes of traffic approaching the survey site, traffic may have been diverted to a single curbside lane through use of large orange traffic cones.

The typical survey site accommodated approximately eight cars at a time. When the survey parking places were occupied, no additional vehicles were allowed into the survey site (approaching vehicles were waved on to continue down the street). When a survey team member was available, the next eligible car was allowed into the survey site (waved in at the curb cut entrance to the parking area). This was done so that someone was immediately available to speak to the driver of a car that pulled into the survey site. Drivers of trucks or commercial vehicles were not eligible to participate.

As soon as a driver pulled into the survey site a survey team member approached their vehicle, greeted them and briefly explained what the survey was all about. They were asked if they wished to participate, if they agreed they were directed into one of the parking places. If they were not interested in participating they were thanked for stopping by and directed out of the survey site back onto the street.

At each survey site there were two law enforcement officers, in uniform, with marked police vehicles. The officers and vehicles were not allowed in the survey site but were located adjacent to the survey site where they were clearly visible. Depending on the local law enforcement agency practices and procedures, the police vehicle might have had their emergency lights flashing. Some law enforcement agencies insisted that their officers (rather than a survey team member) direct traffic at the entrance to the survey site (either waving an eligible vehicle into the site or waving approaching vehicles to not stop or attempt to enter the survey site when all of the survey team members were busy). The officers were present for the safety of the survey team and participants.

After hearing a description of the study purpose and procedure, the driver had to provide verbal consent in order to participate. During the survey the drivers were asked a number of questions, to provide a breath sample, oral fluid sample and blood sample. At each stage they had to verbally acknowledge they understood what had been told to them and consented to continue. The driver was free to decline any part of the survey while completing the rest of the survey.

During the 2013-2014 National Roadside Survey a small number of drivers generated some sensational and inaccurate publicity about the survey. Unfortunately, these individuals garnered fairly extensive publicity. No attempt to discern the accuracy of these reports were made before they were recirculated through social media and as "news reports." In a subsequent study using essentially the same procedures, extensive publicity was generated in advance of the study in order to prevent misinformation being spread. State and local press were invited to attend a "mock" survey site and go through the study protocol themselves. During and after this subsequent roadside survey there were no complaints or inaccurate stories spread by the media.

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Review article

Cannabis use and the development of tolerance: a systematic review of human evidence

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ABSTRACT

Previous studies have reported conflicting results in terms of acute effects of cannabis in man. Independently of other factors, such discrepancy may be attributable to the different cannabis use history of study volunteers. It is thought that regular cannabis users may develop tolerance to the effects of acute cannabis administration. Here we systematically review all studies examining the effects of single or repeated cannabinoid administration in man as a function of previous cannabis exposure. Research evidence tends to suggest that the acute effects of single cannabinoid administration are less prominent in regular cannabis users compared to non-regular users. Studies of repeated cannabinoid administration more consistently suggest less prominent effects upon repeated exposure. Cognitive function is the domain showing the highest degree of tolerance, with some evidence of complete absence of acute effect (full tolerance). The acute intoxicating, psychotomimetic, and cardiac effects are also blunted upon regular exposure, but to a lesser extent (partial tolerance). Limited research also suggests development of tolerance to other behavioral, physiological, and neural effects of cannabis.

1. Introduction

Cannabis is the most widely used illicit drug all over the world. Population data suggests that approximately 200 million people use cannabis (National Academies of Sciences and Medicine, 2017) and an estimated 13 million individuals have a Cannabis Use Disorder (CUD, DSM-5, American Psychiatric Association, 2013) (Degenhardt et al., 2013). The prevalence of cannabis use is expected to increase following the current trend to decriminalize or legalize its use for therapeutic and recreational purposes (Hall and Lynskey, 2016; Hasin et al., 2017). However, the safety of recreational use of cannabis has been questioned by numerous epidemiological and clinical studies which have suggested an association between acute and chronic cannabis use on one hand, and development of a CUD as well as a number of adverse effects on physical and mental health, cognition, and psychomotor function on the other (Batalla et al., 2014; Bhattacharyya et al., 2012a; Blest-Hopley et al., 2018; Ford et al., 2017; Hall, 2015; Schoeler et al., 2016). Consistently, acute administration of delta-9-tetrahydrocannabinol (Δ9-THC), the main psychoactive ingredient of the *Cannabis sativa* plant, has been shown to induce physiological and psychiatric symptoms as well as neurocognitive and motor impairments (Batalla et al., 2014; Bhattacharyya et al., 2017, 2015; Colizzi and Bhattacharyya, 2017; Curran et al., 2002; D'Souza et al., 2004; Ramaekers et al., 2006). Therefore, the effects of cannabis on cognition and health remain an important public health concern, especially in light of regulatory trends worldwide.

To date, most experimental studies investigating the acute effects of cannabis or Δ9-THC have been conducted in otherwise healthy cannabis users with a relatively low average frequency of lifetime cannabis use. However, using different methodologies, a number of studies have provided evidence that tolerance may develop to most of the subjective and behavioral effects of cannabis. In particular, studies conducted in the last decade have indicated that a single acute administration of Δ9-THC induce less pronounced subjective, cognitive, behavioral, electrophysiological, neurochemical, and neuroendocrine effects in frequent cannabis users compared to occasional users (Cortes-Briones et al., 2015; D'Souza et al., 2008a, 2012; D'Souza et al., 2009, 2008b; Ramaekers et al., 2009; Ranganathan et al., 2009; Schoeler and Bhattacharyya, 2013). Also, early studies have suggested that repeated cannabis administration reduces the subjective and physiological responses to re-challenge with cannabis (Haney et al., 1999; Kirk and de Wit, 1999; Nowlan and Cohen, 1977).

Development of tolerance might explain why some studies conducted only in frequent cannabis users failed to show a clear effect of acute cannabis administration on cognitive performance (Hart et al., 2010, 2001; Ramaekers et al., 2011). Nevertheless, other similar studies

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Table 1
Summary of human studies investigating development of tolerance in cannabis users.

Study	Aim of study	Population	n	Outcome measure (test name or description)	Behavioral results	Laboratory and physiological results
Meyer et al., 1971	Effects of MJ on subjective effects, psychopathology, cognition, and cardiac parameters	1. RU (n = 6); 2. NRU (n = 6)	12	Sympathetic arousal (Finger sweat), "psychedelic experience" (DEQ), dependence (Hidden patterns), attention (CPT), psychomotor ability (DSST), time sense (TPT), focus and distraction (SCWT), hand-eye coordination (Pursuit rotor), mood states (POMS), "High" (PR)	1. Subjective effects, NS; 2. Mood states, NS (apart from **"vigor" factor, RU > NRU**); **3. Impaired attention, RU < NRU (MJ effect only in NRU)**; 4. Other cognitive performance, NS	**5. "High" by the end of experiment (PR at ~1 h), RU < NRU**
Renault et al., 1971	Effects of MJ on cardiac parameters	1. RU (n = 6); 2. NU (n = 4)	10	PR	NA	Tachycardia, NS
Cohen and Rickles, 1974	Effects of MJ on cognition	1. PLB NRU; 2. PLB RU; 3. MJ NRU; 4. MJ RU	30	Learning (a list of 9 word paired associate consisting of a CVC trigram – nonsense syllable – and a word)	**Learning, trend level significance, PLB NRU > other groups, MJ NRU < other groups**	NA
Babor et al., 1975	Effects of MJ on intoxication and cardiac parameters	1. RU (n = 11); 2. NRU (n = 7)	18	Intoxication (7-point bipolar adjective scale, "stoned" vs "straight"), PR	**1. Intoxication, trend level significant ↓ upon continuous MJ exposure only in RU**	**2. Tachycardia: duration (effect 25 min after use) ↓only in RU,** intensity (effect immediately after use) NS
Benowitz and Jones, 1975	Effects of Δ9-THC and MJ on cardiac parameters	CBSU	12	PR, supine BP, standing BP, BP after exercise, BP during Valsalva maneuver, BP in the supine position placing one hand to the wrist in ice water for 30 sec (Cold pressor test), ECG, plasma volume (Evans Blue dye method)	NA	1. Supine hypotension, NS; **2. Orthostatic hypotension, ↓ over study period**; **3. MJ-induced tachycardia, ↓ over Δ9-THC maintenance**
Jones et al., 1976	Effects of Δ9-THC, crude extract, and MJ on subjective effects, intoxication, psychopathology, cognition, cardiac parameters, sleep, and other physiological parameters	RU	53	Mood (POMS), subjective effects (SCL-90), cognitive and psychomotor function, "psychedelic experience" (DEQ),sleep, PR, BP, Salivary flow, intraocular pressure, skin and body temperature, EEG, weight, haematocrit, haemoglobin, bilirubin, testosterone	**1. High-dose intoxication, ↓ after 96 h of minimal but continuous intoxication; 2. Dose-dependent effect on intoxication no longer evident after 12 days; 3. Sedation, ↓ over study period;** 4. Good feelings, NS; 5. Withdrawal symptoms, NS; **6. Increase in sleep duration and quality, ↓ over study period; 7. Cognitive and psychomotor impairment, ↓ over study period; 8. Mood changes, ↓ over study period**	**9. Skin temperature decrease, 10. Salivary flow decrease, 11. Tachycardia, 12. Reduced BP** (supine, NS)**, 13. Intraocular pressure decrease, 14. Body temperature increase, and 15. EEG alpha slowing and auditory-evoked potential amplitude decreases, all ↓ over study period;** 16. Weight gain, NS; 17. Serum haematocrit and haemoglobin decrease, NS; 18. Bilirubin decrease, NS 19. Plasma testosterone decrease, NS; **20. MJ-induced tachycardia, ↓ in intensity and duration over Δ9-THC maintenance**
Nowlan and Cohen, 1977	Effects of MJ on intoxication and cardiac parameters	1. LU/ LMU (n = 14-16); 2. HMU (n = 7-8); 3. HU (n = 7-8)	30	"High" (7-point bipolar adjective scale, "straight" or non-intoxicated vs highest ever been on MJ), PR	**1. "High", ↓ over study period in whole group, partial recovery after 1-week abstinence; 2. "High", ↓ during 1st week in HU vs other groups combined; 3. "High", more rapid and sharp↓ in HU than other groups, 4. "High", ↓ duration in HU vs other groups**	**5. Tachycardia, ↓ over study period in whole group, partial recovery after 1-week abstinence; 6. Tachycardia, LU/ LMU > HM > HU during 1st week; 7. Tachycardia, more rapid ↓ in HU and MHU than LU**
Lindgren et al., 1981	Effects of Δ9-THC and MJ on intoxication and cardiac parameters	1. RU (n = 9); 2. NRU (n = 9)	18	"High" (10-point scale, no effect vs maximum effect the subject could imagine), PR	1. "High", NS	2. Tachycardia, NS
Lex et al., 1984	Effects of Δ9-THC on subjective effects, cardiac parameters, and psychopathology	1. RU (n = 9); 2. NRU (n = 10)	19	PR, intoxication (11-point scale, from "not high at all" to "highest ever"), confusion (POMS)	**1. Intoxication: duration (effect 90 min after use) ↓only in RU; 2. Confusion: ↑ only in NRU 30 min after use; 3. Correlations between PR, intoxication, and confusion only in NRU 15 and 30 min after use**	**4. Tachycardia: duration (effect 90 and 180 min after use) ↓only in RU**
Mendelson et al., 1984	Effects of Δ9-THC on the endocrine system	1. RU (n = 8); 2. IU (n = 7); 3. NRU (n = 8)	23	Prolactin	NA	Prolactin, NS
Marks and MacAvoy, 1989	Effects of MJ on cognition	1. NRU (n = 6); 2. NU (n = 6)	12	Divided attention (eight 5-min blocks, each containing 30 signals in random order but	**Divided attention: peripheral signal detection, dose-dependent impairment NRU < NU**; central signal detection, NS	NA

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Table 1 (*continued*)

Study	Aim of study	Population	n	Outcome measure (test name or description)	Behavioral results	Laboratory and physiological results
				with an equal probability of either central or peripheral signals occurring)		
Haney et al., 1999	Effects of Δ9-THC on subjective effects, cognition, food intake, and social behavior	RU	12	Drug effect and physical symptoms (50-item VAS, 100-mm line, "not at all" to "extremely"), "psychedelic experience" (DEQ), learning, memory, vigilance, and psychomotor ability (DSST, DAT, RIT, Immediate and Delayed DRT), food intake, verbal and non-verbal social behavior	**1. Subjective effects ↓ over study period; 2. Drug-effect (dose strength, dose liking, willingness to take the dose again) ↓ over study period;** 3. Food intake, NS; 4. Social behavior, NS; 5. **No effect on cognition** apart from DAT performance impaired on day 1 at high Δ9-THC dose	NA
Kirk and De Wit, 1999	Effects of Δ9-THC on subjective effects, cognition, and cardiac parameters	1. RU (n = 11); 2. NRU (n = 10)	21	MJ-like effects and sedation (53-item version of the ARCI), VAS ("not at all" to "very"); "psychedelic experience" (DEQ), overall experience (End-of-session questionnaire), psychomotor ability (DSST), PR	**1. Lower dose, "Feel" and "High" only in RU; 2. Higher dose, sedative-like effects, RU < NRU; 3. Higher dose, stimulant-like effects ↓ only in NRU; 4. Higher dose, liking effects↓ only in NRU;** 5. Psychomotor performance, NS; 6. Other subjective effects, NS; 7. Willing to take again, NS	8. Tachycardia, NS
Hart et al., 2002	Effects of Δ9-THC and MJ on subjective effects, cognition, sleep, and food intake	RU	12	Drug effect and physical symptoms (50-item VAS, 100-mm line, "not at all" to "extremely"), "psychedelic experience" (DEQ), learning, memory, vigilance, and psychomotor ability (DSST, RAT, DAT, RIT, Immediate and Delayed DRT)	1. **MJ-induced subjective effects ↓ over Δ9-THC maintenance; 2. MJ-induced impairment in DRT ↓over Δ9-THC maintenance and at higher dose,** but other psychomotor performance NS; 3. Reinforcing effects, NS; 4. Food intake, NS; 5. Sleep, NS	NA
Ponto et al., 2004	Effects of MJ on intoxication, cardiac parameters, pharmacokinetics, and other physiological parameters	1. RU (n = 12); 2. NRU (n = 24)	36	"High", PR, BP, arrival time of bolus, rCBF (pharmacokinetics of [^{15}O] water), Δ9-THC levels	**1. "High" and related duration, RU < NRU**	**2. Δ9-THC levels, RU > NRU, even correcting for baseline; 3. Tachycardia, related change, and duration, RU < NRU; 4. RPP, related change, and duration, RU < NRU;** 5. Systolic BP, NS; 6. Diastolic BP, NS; 7. Arrival time of bolus, NS; 8. rCBF, NS; **9. Correlations between "high" and cardiovascular function, significant only in NRU; 10. Correlations between bolus arrival time/ rCBF and cardiovascular function, NRU > RU**
D'Souza et al.,2008a	Effects of Δ9-THC on cognition and endocrine system	1. RU (n = 11); 2. NRU (n = 17)	28	Verbal learning and immediate and delayed recall (VLT), vigilance (CPT), executive function, spatial memory, and visual recognition memory (CANTAB), speed and accuracy (MOT), akathisia and drug-induced Parkinsonism (BARS), prolactin	**1. Impaired immediate recall (in combination with haloperidol), RU < NRU (effect only in NRU);** 2. Impaired attention, NS; **3. Impaired spatial working memory, RU < NRU;** 4. other performance, NS	5. Prolactin, NS **(RU < NRU at baseline)**
D'Souza et al.,2008b	Effects of Δ9-THC on intoxication, psychopathology, cognition, cardiac parameters, pharmacokinetics, and endocrine system	1. RU (n = 30); 2. NRU (n = 22)	52	Psychotomimetic symptoms (PANSS), perceptual alterations (CADSS), anxiety and intoxication (VAS), Verbal learning and immediate and delayed recall (VLT), vigilance (CPT); PR, Δ9-THC and THC-COOH levels, cortisol, prolactin	**1. Perceptual alterations, RU < NRU; 2. Psychotomimetic symptoms, RU < NRU;** 3. "High", NS; **4. Anxiety, RU < NRU;** 5. "Calm and relaxed", NS; **6. Impaired immediate recall and delayed free recall, RU < NRU** (RU > NRU at baseline); 7. Delayed recognition recall, NS; 8. Impaired attention, NS	9. Tachycardia, NS; 10. Δ9-THC levels, NS; 11. THC-COOH levels, NS (**RU > NRU at baseline**); **12. Cortisol increase, RU < NRU; 13. Prolactin (overall), RU < NRU**
D'Souza et al.,2009	Effects of Δ9-THC on psychopathology, cognition, and neurochemistry	1. RU (n = 9); 2. NRU (n = 14)	23	Psychotomimetic symptoms (PANSS), perceptual alterations (CADSS), "High" (VAS), spatial memory, BDNF	**1. Perceptual alterations, RU < NRU; 2. Psychotomimetic symptoms, RU < NRU; 3. Impaired spatial working memory, RU < NRU**	**4. Increased BDNF, RU < NRU (increase only in NRU)**
Ramaekers et al., 2009	Effects of Δ9-THC MJ on intoxication, cognition, cardiac parameters, and pharmacokinetics	1. RU (n = 12); 2. NRU (n = 12)	24	"High" (VAS, 100-mm line), psychomotor ability (CTT), attention (DAT), motor impulsivity (SST), executive function and planning (TOL), PR, BP, Δ9-THC, 11-OH-THC, and THC-COOH levels	**1. "High", RU < NRU; 2. CTT impaired performance, RU < NRU (effect only in NRU); 3. DAT impaired performance, ↑ during 1st h only in NRU;** 4. Other performance, NS; **5. Increase in the proportion of cognitive**	**6. PR, RU < NRU;** 7. BP, NS; **8. Δ9-THC, 11-OH-THC, and THC-COOH levels, RU > NRU**

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Table 1 (*continued*)

Study	Aim of study	Population	n	Outcome measure (test name or description)	Behavioral results	Laboratory and physiological results
					impairment observations in NRU for all domains, in RU only for SST at high Δ9-THC levels (> 10 ng/ml)	
Ranganathan et al., 2009	Effects of Δ9-THC on pharmacokinetics and endocrine system	1. RU (n = 40); 2. NRU (n = 36)	76	Δ9-THC and THC-COOH levels, cortisol, prolactin	NA	**1. Dose-dependent cortisol increase, RU < NRU; 2. Prolactin (overall), RU < NRU;** 3. Δ9-THC levels, NS; 4. THC-COOH levels, NS **(RU > NRU at baseline)**
Bedi et al., 2010	Effects of dronabinol on subjective effects, psychopathology, cognition, sleep, and food intake	RU	7	Food intake, weight, subjective hunger and satiety (HSQ), food cravings (FDQ), mood (VAS), "psychedelic experience" (DEQ), Sleep (Nightcap sleep monitor and sleep quality VAS), learning, memory, vigilance, and psychomotor ability (DSST, RAT, DAT, RIT, Immediate and Delayed DRT), verbal and non-verbal social behavior	**1. Increased caloric intake, ↓ over study period (not different from PLB in 2nd half of study period); 2. Sleep satisfaction, ↑ over 1st half of study period only;** 3. Subjective effects, NS, 4. Cognition, NS; 5. Social behavior, NS; **6. Satiety, ↑ over 1st half of study period only** (hunger ↑ over 2nd half of study period only, other parameters, NS); **7. Food craving, ↑ for protein/ fat over 1st half of study period only** (for carbohydrate over 2nd half of study period only)	**8. Sleep efficiency ↑ only over 1st half of study;** 9. Weight, NS
Böcker et al., 2010	Effects of Δ9-THC on electrophysiology	1. RU (n = 12); 2. NRU (n = 11)	23	EEG, ERP task (visual selective attention Task; SFD80, FSP, OSN)	NA	**1. SFD80, RU < NRU; 2. OSN, ↓ linearly with cannabis dose only in NRU; 3. FSP, RU < NRU**
Barkus et al., 2011	Effects of Δ9-THC on psychopathology, pharmacokinetics, and neurochemistry	CBSU	9	Psychotomimetic symptoms (PANSS), dopamine release ([123I]IBZM SPET scanning session, 185 MBq), Δ9-THC levels	**1. Positive symptoms, negative correlation with previous cannabis use**	2. Dopamine release, NS; 3. Δ9-THC levels (AUC), NS
Bosker et al., 2012	Effects of Δ9-THC on intoxication, pharmacokinetics, and driving	1. RU (n = 12); 2. NRU (n = 12)	24	Driving (Road-tracking test, SDLP, TSA), impairments during on-the-road driving (SFST), "high" (VAS, 100-mm line, "not at all" to "most ever"), Δ9-THC, 11-OH-THC, and THC-COOH levels	**1. SDLP impairment, RU < NRU** (however, 25% RU still displaying driving impairments ≥ Blood alcohol concentrations of 0.5 mg/ml (0.05 g%)**; 2. TSA impairment, RU < NRU;** 3. SFST, NS; 4. "high", NS	**5. Δ9-THC, 11-OH-THC, and THC-COOH levels, RU > NRU**
D'Souza et al.,2012	Effects of Δ9-THC on intoxication, psychopathology, and electrophysiology	1. RECU (n = 14); 2. NRECU (n = 12)	26	Psychotomimetic symptoms (PANSS), perceptual alterations (CADSS), "High" (VAS), EEG, ERP task (three-stimulus auditory "oddball" P300 task)	**1. Perceptual alterations, RECU < NRECU; 2. Psychotomimetic symptoms, RECU < NRECU;** 3. Behavioral measures, NS	4. P300b amplitude and latency, NS; 5. P300a amplitude, NS; **6. P300a peak latency, RECU < NRECU**
Theunissen et al., 2012	Effects of MJ on subjective effects, intoxication, cognition, pharmacokinetics, and electrophysiology	1. RU (n = 12); 2. NRU (n = 12)	24	"High" (VAS, 100-mm line, "not at all" to "maximally high"), EEG, ERP task (DAT, P100 and P300; SST, N200), Δ9-THC, 11-OH-THC, and THC-COOH levels	**1. "High" (immediately after smoking), RU < NRU; 2. DAT impaired performance, RU < NRU (effect specific to NRU);** 3. Behavioral measures, NS	**4. Δ9-THC, 11-OH-THC, and THC-COOH levels, RU > NRU; 5. P100 amplitude, ↓ in NRU (while trend level significant ↑ in RU);** 6. P100 latency, NS; 7. P300, NS; 8. N200, NS
Fabritius et al., 2013	Effects of Δ9-THC on intoxication, psychopathology, and pharmacokinetics	1. RU (n = 23); 2. NRU (n = 25)	48	Subjective effects (VAS, 100-mm line), Δ9-THC, 11-OH-THC, and THC-COOH levels	**1. Intoxication duration RU < NRU; 2. Confusion intensity and duration, RU < NRU**	**3. Δ9-THC, 11-OH-THC, and THC-COOH levels, RU > NRU at baseline for all, after administration for 11-OH-THC and THC-COOH** (however NS after correcting for baseline levels)
Gorelick et al., 2013	Effects of Δ9-THC on subjective effects, cardiac parameters, and pharmacokinetics	RU	13	Subjective effects (VAS, 100-mm line), PR, BP, Δ9-THC and 11-OH-THC	**1. Intoxication ("high" and "stoned") and "Good drug effect", ↓ over study period**	2. Hypotension, NS; 3. Tachycardia, NS; 4. Δ9-THC and 11-OH-THC levels, increasing over time
Sewell et al., 2013	Effects of Δ9-THC on cognition	1. RECU (n = 10); 2. NRECU (n = 34)	44	TET, TPT	**1. TET impairment, effect only in NRECU; 2. TPT impairment, effect only in NRECU**	NA
Vandrey et al., 2013	Effects of Δ9-THC and dronabinol on subjective effects and cardiac parameters	RU	13	Withdrawal (MWC), sleep (diary and VAS), craving (MCQ), drug effects (ARCI), PR	1. Subjective effects, NS	**2. Cannabis-induced tachycardia, ↓ over high-dose Δ9-THC maintenance**
Cortes-Briones et al., 2015	Effects of Δ9-THC on electrophysiology	1. RECU (n = 9); 2. NRECU (n = 11)	20	EEG, ASSR task (three-stimulus auditory "oddball" inter-trial coherence and evoked power task)	NA	**1. Inter-trial coherence, RECU < NRECU at trend level significance; 2. Evoked power, RECU < NRECU**

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Table 1 (*continued*)

Study	Aim of study	Population	n	Outcome measure (test name or description)	Behavioral results	Laboratory and physiological results
Desrosiers et al., 2015	Effects of Δ9-THC MJ on subjective effects, intoxication, psychopathology, cognition, cardiac parameters, and pharmacokinetics	1. RU (n = 14); 2. NRU (n = 11)	25	"High" (VAS, 100-mm line), psychomotor ability (CTT), attention (DAT), working memory (N-Back task), risk taking and impulsivity (BART, MDMQ, BIS, ZKPQ, RPQ), BP, PR, Δ9-THC levels	**1. "High" and anxiety, RU < NRU; 2. Duration of subjective effects ("difficulty concentrating", "altered sense of time", "feel hungry", "feel thirsty", "shakiness/ tremulousness", "dry mouth or throat"), RU < NRU; 3. CTT impaired performance, RU < NRU; 4. DAT, hits, RU > NRU; 5. DAT, ↑ tracking errors, false alarms, and reaction times only in NRU;** 6. N-Back performance, NS **(however, N-Back RT decrease, RU < NRU;** 7. BART, NS; **8. Positive correlations between BART, BIS, ZKPQ, and RPQ only in NRU (some at trend level significance)**	**9. Δ9-THC levels, RU > NRU; 10. Tachycardia, RU < NRU; 11. Increased systolic and diastolic BP, RU < NRU**
Farris and Metrik, 2016	Effects of Δ9-THC MJ on breath-holding duration	1. RU; 2. NRU	88	Breath-holding task (index of respiratory distress intolerance), puff count	1. Puff count, NS	**2. Post-smoking breath-holding duration, ↓ only in NRU**
Ramaekers et al., 2016	Effects of Δ9-THC on intoxication, cognition, and pharmacokinetics	1. LU (n = 33); 2. LMU (n = 41); 3. MHU (n = 23); 4. HU (n = 25)	122	Intoxication (VAS,100-mm line, "no intoxication" to "extremely intoxicated"), psychomotor ability (CTT), attention (DAT), motor impulsivity (SST), executive function and planning (TOL), Δ9-THC, 11-OH-THC, and THC-COOH levels	**1. CTT impaired performance, ↓ with increasing frequency of CBS use;** 2. Other performance, NS; **3. Intoxication, ↓ with increasing frequency of CBS use at trend level significance**	4. Δ9-THC, 11-OH-THC, and THC-COOH, NS
Newmeyer et al., 2017a	Effects of Δ9-THC on subjective effects, intoxication, cardiac parameters, pharmacokinetics, and other physiological parameters	1. RU (n = 11); 2. NRU (n = 9)	20	Subjective effects (VAS), PR, BP, respiration rate, expired CO (Breath CO monitor)	**1. "Good drug effect", "high", and "stoned", oral effects only in NRU; 2. Willingness to drive, ↓ only in NRU after oral dosing; 3. CBS craving, ↓ only in RU after smoking and/ vs vaporization (baseline-adjusted); 4. "Good drug effect" and "stoned", vaporization > oral only in RU; 5. "Good drug effect" positive correlation with Δ9-THC and 11-OH-THC levels after oral dosing only in NRU; 6. "High" positive correlation with Δ9-THC levels after oral dosing only in NRU**	**7. Δ9-THC and 11-OH-THC levels, RU > NRU; 8. 11-OH-THC levels, oral > vaporized in NRU only; 9. Tachycardia positive correlation with Δ9-THC levels after oral dosing only in NRU;** 10. BP, NS; 11. Respiration rate, NS; 12. Expired CO, NS
Newmeyer et al., 2017b	Effects of Δ9-THC on pharmacokinetics	1. RU (n = 11); 2. NRU (n = 9)	20	Impairments during on-the-road driving (SFST: OLS, WAT)	**1. OLS impairment, oral effect only in NRU; 2. WAT impairment, oral effect only in NRU; 3. OLS and WAT impairment positive correlation with Δ9-THC and 11-OH-THC levels after oral dosing only in NRU**	**4. Δ9-THC levels, RU > NRU; 5. Δ9-THC levels decrease, RU < NRU**

MJ, marijuana; Δ9-THC, delta-9-tetrahydrocannabinol; RU, regular users; NRU, non-regular users; IU, intermittent users; PLB, placebo; CBSU, cannabis users; LU, light users; LMU, low moderate users; HMU, high moderate users; HU, heavy users; RECU, recent users; NRECU, non-recent users; DEQ, Katz-Waskow subjective Drug Effects Questionnaire; CPT, Continuous Performance Test; DSST, Digit-Symbol Substitution Test; TPT, Time Perception Test; SCWT, Stroup Color-Word interference Test; POMS, Psychiatric Outpatient Mood Scale; PR, pulse rate; CVC trigram, consonant, vowel, and consonant trigram; BP, blood pressure; sec, seconds; ECG, electrocardiogram; EEG, electroencephalogram; SCL-90, Symptom Checklist-90; VAS, Visual Analogue Scale; DAT, Derived Attention Task; RIT, Rapid Information Task; DRT, Digit-Recall Task; SFD80, Spatial Frequency-Dependent potential at about 80 ms; OSN, Occipital Selection Negativity; FSP, Frontal Selection Positivity; TET, Time Estimation Task; TPT, Time Production Task; ARCI, Addiction Research Center Inventory; RAT, Repeated Acquisition Task; rCBF, regional Cerebral Blood Flow; PANSS, Positive and Negative Syndrome Scale; CADSS, Clinician Administered Dissociative Symptoms Scale; VLT, Verbal Learning Test; CANTAB, Cambridge Neuropsychological Test Automated Battery; MOT, Motor Screening Task; BARS, Barnes Akathisia Rating Scale; BDNF, Brain-Derived Neurotrophic Factor; CTT, Critical tracking task; SST, Stop-Signal Task; TOL, Tower of London; THC−COOH, 11-nor-9-carboxy-delta-9-tetrahydrocannabinol; HSQ, Hunger-Satiety Questionnaire; FDQ, Food Desirability Questionnaire; SDLP, TSA, Time to speed adaption; Standard Deviation of Lateral Position; SFST, Standardized Field Sobriety Test; 11−OH-THC, 11-hydroxy-delta-9-tetrahydrocannabinol; CBN, cannabinol; CBD, cannabidiol; ERP task, Event-related potential task; MWC, Marijuana Withdrawal Checklist; MCQ, Marijuana Craving Questionnaire; THC-glucuronide, delta-9-tetrahydrocannabinol glucuronide; THCCOO-glucuronide, 11-nor-9-carboxy-delta-9-tetrahydrocannabinol glucuronide; ASSR, Auditory Steady-State Response; BART, Balloon Analog Risk Task; MDMQ, Melbourne Decision Making Questionnaire; BIS, Barratt Impulsiveness Scale; ZKPQ, Zuckerman-Kuhlman Personality Questionnaire; RPQ, Risk Perception Questionnaire; CO, carbon monoxide; OLS, One Leg Stand; WAT, Walk And Turn; NS, not significant; NA, not assessed/ not applicable; > , higher/ better; < , lower/ poorer; ↓, reduction; ↑, increase; h, hour; RT, reaction time; min, minutes; RPP, Pulse rate x systolic blood pressure.

indicate that frequent cannabis users report impairments in a broad range of cognitive domains upon acute Δ9-THC administration (Metrik et al., 2012; van Wel et al., 2013). One potential explanation accounting for this discrepancy across studies could be that frequent cannabis users may not develop tolerance for every performance domain. Studies assessing a wider range of neuropsychological and physiological outcomes, only in frequent cannabis users (Hart et al., 2010) or in comparison to occasional users (Ramaekers et al., 2009), suggest the development of tolerance to the effects of Δ9-THC on certain cognitive indices but not on psychomotor function, subjective-effect ratings, and physiological measures. Therefore, the role of previous cannabis exposure as a predictor of blunted response to cannabis intoxication is still debated. Understanding this appears also to be relevant to public policy debates regarding reform of laws related to cannabis use. For instance, in light of the potential development of tolerance to the acute effects of cannabis among regular users, some concern has been raised about the imposition of criminal liability for drivers who test positive for Δ9-THC without additional demonstrable evidence of psychomotor impairment (Armentano, 2013).

The purpose of this review is to summarize all available data generated by studies that have investigated development of tolerance to the acute effects of cannabis and/ or Δ9-THC in man by carrying out a systematic literature search for all such data.

1.1. Objectives

Our main objective was to carry out a systematic review of all available literature concerning the development of tolerance to the effects of cannabis and Δ9-THC in humans. Our aim was twofold: 1) To review which domains show tolerance upon repeated cannabis administration; 2) To review the extent to which tolerance develops for these domains.

2. Methods

2.1. Inclusion/exclusion criteria

In order to summarize previous literature investigating the development of tolerance to the effects of cannabis and Δ9-THC in man, inclusion criteria for studies were: (1) human studies, (2) studies investigating the impact of a single administration of Δ9-THC or cannabis in 2 or more populations with different levels of previous cannabis exposure (i.e. frequent users, occasional users, naïve individuals), (3) studies investigating the impact of a single administration of Δ9-THC or cannabis in a single population with variation in the extent of previous cannabis exposure (i.e. correlating the acute effect of Δ9-THC or cannabis on the outcome measure with the extent of previous cannabis exposure), or (4) studies investigating the impact of repeated administration of Δ9-THC or cannabis in population(s) of cannabis users (i.e. (re)assessing the outcome measure after every administration). In order to offer a comprehensive evaluation of the association between cannabis use and development of tolerance, a wide range of different outcome measures that have been reported in the literature were considered, including, but not limited to, questionnaire data, laboratory tests, performance, physiological and neurobiological measures. Exclusion criteria were (1) studies where the effects of Δ9-THC or cannabis were not investigated under experimental conditions, (2) studies in which groups were not differentiated in terms of previous cannabis exposure, (3) studies which primarily assessed the effects of psychoactive substances other than cannabis, and (4) studies which primarily/ exclusively assessed cannabinoid pharmacokinetics without investigating other outcomes of interest.

2.2. Search strategy

A literature search was performed using electronic databases (MEDLINE, Web of Science and Scopus) for any published original English-language research, using a combination of search terms describing cannabis ("marijuana", "cannabis", "THC/ delta-9-tetrahydrocannabinol/ dronabinol"), its pattern of use ("heavy", "regular", "frequent", "light", "non-regular", "occasional"), the study design ("acute", "challenge", "administration"), and the outcome of interest ("tolerance", "sensitization"), with a first search done on December 21, 2017, and a final search done on June 18, 2018. Reference lists of eligible studies were also screened to identify additional relevant studies.

2.3. Risk of bias

Risk of bias and quality assessment of the methodologically heterogeneous group of studies reviewed here (Table 1) required a suitably inclusive and flexible approach. For this purpose, an adapted set of criteria suggested by the Agency for Healthcare Research and Quality (AHRQ) guidance (West et al., 2002), amended as appropriate for interventional studies in humans was used (Table 2). Risk of systematic bias across human studies was further identified by assessing all papers for possible confounding factors such as mental health comorbidity, tobacco, alcohol, and other substance use among study samples (Table 2).

2.4. Calculation of the degree of tolerance development

Whenever possible, development of tolerance was calculated in terms of percentage reduction. In light of methodological heterogeneity across studies (Table 1), a flexible approach was required to calculate this percentage according to the study design. In principle, the effect of cannabis during the "tolerance phase" (or in regular users as the "tolerant group") was subtracted from the effect of cannabis during the "non-tolerance phase" (or in non-regular users as the "non-tolerant group"), divided by the reference value (pre-drug value; non-regular users placebo value; "non-tolerance phase" placebo value), and multiplied by 100. Further information on how the percentage was calculated for each specific study is reported in the Supplementary Methods.

3. Results

3.1. Evidence at a glance

A number of studies have assessed the effects of Δ9-THC administration on subjective experiences, task performance on various cognitive and motor tasks, and physiological measures in volunteers with a previous history of frequent (Hart et al., 2010, 2001; Metrik et al., 2012; Ramaekers et al., 2011; van Wel et al., 2013) *or* occasional (Curran et al., 2002; Ramaekers et al., 2006) cannabis exposure, and have reported conflicting results. Some studies tend to confirm that the impairing effects of Δ9-THC observed in occasional cannabis users (Curran et al., 2002; Ramaekers et al., 2006) are absent in frequent cannabis users (Hart et al., 2001; Ramaekers et al., 2011). In contrast, other evidence from similar studies suggests that frequent cannabis users are still sensitive to the detrimental effects of Δ9-THC (Metrik et al., 2012; van Wel et al., 2013) or develop selective tolerance, i.e., showing tolerance to the cognitive effects of Δ9-THC while still remaining sensitive to its subjective and physiological effects (Hart et al., 2010).

In total 1252 records were identified. All abstracts of the records were screened against the inclusion and exclusion criteria (Fig. 1). A final list of 36 studies reporting on a total of 1047 study participants (male = 782, female = 225; not specified = 40; Table 1) were identified which specifically investigated in otherwise healthy cannabis users whether tolerance develops to the acute effects of cannabis. These studies have used different experimental designs and studied heterogeneous populations. Further information on methodological quality of

Table 2
Methodological quality of human studies investigating development of tolerance in cannabis users.

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
Meyer et al., 1971	✓/× Double-blind, counterbalanced; not randomized	✓ 1. RU, daily CBS use or nearly so; 2. NRU, CBS use ≤ 1 per week	×	×	✓250 mg of MJ leaf (0.9% Δ9-THC) or a self-selected known amount of MJ	✓Half h smk. at libitum from a pipe for 3 weekly sessions (420 mg by NRU, 380 mg by RU, NS)	×	✓	✓/×Exclusion criterion (by psychiatric interviews and psychological test); physical health not assessed	×	×	✓
Renault et al., 1971	✓/× Double blind; not randomized or counterbalanced	✓ 1. RU, current CBS use ≥ 1 per week; 2. NU, lifetime CBS use range: 0-3 times	✓ 24-45 (range)	✓Male	✓ 62.5, 125, 250, 435 mg of MJ (1.5% Δ9-THC)	✓smk. from a crucible or pipe	×	✓	✓Exclusion criterion (by routine medical history, physical examination, blood count, urinalysis, chest x-ray, and psychiatric evaluation)	✓/×All regular tobacco users; alcohol and other substance use not assessed	×	✓
Cohen and Rickles, 1974	✓/× Double blind, randomized; not counterbalanced	✓1. RU, CBS use ≥ 4 per week; 2. NRU, CBS use at weekend (over previous year)	×	✓Male	✓1 mg of MJ (1.4% Δ9-THC) per cig.	✓2 cig. on 2 occasions 7 days apart	✓/× Matched for WAIS IQ; not for other demographic characteristics	✓	×	×	✓ANOVA, Duncan's Extended Range test	✓
Babor et al., 1975	×	✓1. RU, daily CBS use; 2. NRU, CBS use > 5 per month but < daily (over previous year)	✓ 21-26 (range)	✓Male	✓ ~1 mg of MJ (~2.1% Δ9-THC) per cig.	✓ 21-day drug period of smk. MJ cig. on a free-choice basis	✓ Matched for demographic characteristics (age, years of education)	×	✓Exclusion criterion (by clinical and laboratory examinations)	✓/× NS difference in alcohol, hallucinogens, and amphetamine use; tobacco use not assessed	✓ Pearson correlation	✓
Benowitz and Jones, 1975	✓/× Double blind; not randomized or counterbalanced	✓CBS use range: 2-21 cig. per week (M: 9); 1. RU, 15.2 ± 5.3 joints per week; 2. NRU, 4.7 ± 2.2 joints per week (M ± SD)	✓ 20-27 (range), 25.1 ± 2.2 (M ± SD)	✓Male	✓1. 0 to 30 mg of Δ9-THC per caps.; 2. 20 mg of Δ9-THC per MJ cig.	✓18-20-day drug period of po. Δ9-THC maintenance (1 caps. every 4 h; up to 210 mg of Δ9-THC per day), with MJ cig. administered periodically	× However study participants evaluated as a whole group	✓	✓Exclusion criterion (by physical and neurological examination, screening blood and UDS, chest x-ray, ECG, and EEG)	✓Exclusion criterion for heroin, barbiturate, and amphetamine use; alcohol and tobacco use not assessed, however, subjects were asked not to use any drug for one week prior to study	✓ANOVA, Dunnet post test	✓
Jones et al., 1976	✓/× Double-blind, cross-over; not randomized or counterbalanced	✓ RU, CBS use ≥ 2 per week (most with daily use)	✓ 21-31 (range), 25 (M)	✓Male	✓1. 10-30 mg of pure Δ9-THC (96%) per caps.; 2. crude extract (29% Δ9-THC,	✓21-42-day drug period of po. Δ9-THC or crude extract (Δ9-THC + other	NA	✓	✓Exclusion criterion (by clinical and laboratory examinations);	✓/× alcohol 3-4 times per week; minimal involvement with other substances;	✓ANOVA	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
					1.5% CBN, 2.8% CBD) dissolved in 0.2-0.4 cm^3 of 95% ethanol solution; 3. 1 g of MJ (2.2% Δ9-THC) per cig.	cannabinoids) admin. every 4 h, with MJ cig. administered periodically			all in good physical and emotional health	tobacco use not assessed		
Nowlan and Cohen, 1977	×	✓ 1. L + LM, 2.1 to 4.3 cig. per day; 2. HM, 6.2 cig. per day; 3. H, 8.5 cig. per day (over study period)	✓ 21-35 (range)	✓Male	✓900 mg of MJ (2.2% i.e. 19.8 mg Δ9-THC) per cig.	✓64-day drug period of smk. at least 1 MJ cig. per day with a daily ad libitum period (from 4 pm to midnight)	× However study participants evaluated both separated and as a whole group	×	✓Exclusion criterion (by physical examination, laboratory tests, psychiatric interview, and MMPI)	✓/× Minimal involvement with other substances in at least previous 6 months; alcohol and tobacco use not assessed	×	✓
Lindgren et al., 1981	✓/×Counterbalanced, cross-over; not double-blind or randomized	✓ 1. RU, daily CBS use (CBS in urine and plasma); 2. NRU, CBS use ≤ 1 per month (no CBS in urine and plasma)	✓ 19-36 (range)	✓ Male (n = 16), Female (n = 2)	✓1. 19 mg Δ9-THC (1.64%) + 0.23% CBN per MJ cig.; 2. 2 mg/ml IV Δ9-THC (5.0 mg) in 95% ethanol solution	✓2 single admin. (1 MJ cig. and 1 IV Δ9-THC injection over 2 min) at least 4 days apart	×	✓	✓Exclusion criterion; all were in good physical and mental health, no one was on any psychoactive medication	✓No significant use of substances other than MJ; abstinent from alcohol for at least 24 h prior to experiment	×	✓
Lex et al., 1984	✓/× Double-blind; not randomized or counterbalanced	✓ 1. RU, CBS use ≥ 6 times per week in last 3 months, regular use for at least 2 years; 2. NRU, CBS > 2 per month but < 5 per week in last 3 months	✓ 21-36 (range), 26.1 ± 4.35 (M ± SD)	✓ Female	✓1.8% Δ9-THC) per cig.	✓1 single admin. of 1 MJ cig. (controlled inhalation: 1 puff/30 s, smoke retention: 2- 4 s).	✓ Matched for demographic characteristics (age, years of education)	✓	✓Exclusion criterion (by clinical and laboratory examinations); all in good physical and mental health	✓/× Matched for alcohol and substance use status; exclusion criterion for alcohol and other substance use disorders; tobacco use not assessed	✓ Correlation	✓
Mendelson et al., 1984	✓/× Double-blind; not randomized or counterbalanced	✓ 1. RU, daily CBS use (1-3 MJ cigarettes) for at least one year; 2. IU, weekly CBS use (1-3 MJ cigarettes) for at least one year; 3. NRU, monthly CBS use (1-3 MJ cigarettes) for at least one year	✓ 1. RU, 23-30 (range), 26.8 (M); 2. IU, 22-30 (range), 25.3 (M); 3. NRU, 22-28 (range), 24.4 (M)	✓ Male	✓1. 1 g of MJ (1.83% Δ9-THC) per cig.; 2. 2 mg of oral Nabilone; 3. 17.5 mg of Δ9-THC per caps.	✓5-day drug period of active drug admin (one dose of Nabilone, Δ9-THC, or MJ per day)	✓/× Age and weight reported; however differences in demographic characteristics not formally tested	✓	✓Exclusion criterion (by clinical and laboratory examinations); all in good physical and mental health	✓/× Exclusion criterion for alcohol and other substance use disorders; tobacco use not assessed	✓ *t*-test	✓
Marks and MacAvoy, 1989	✓/×Repeated measure; not double-blind or randomized	✓ 1. NRU, weekly CBS use (M: 3 joints per week,	✓ 23.4 ± 2.6 (M ± SD)	✓ Male (n = 6), Female (n = 6)	✓770 mg of MJ (1.31% Δ9-THC) + extra 70 mg and/or	✓9-day drug period of smk. 1 MJ cig. per day over a 10-min period at 3	✓/× Matched for gender; not for other demographic characteristics	✓	×	✓/×NS difference in alcohol use (all regular users, M: 13 drink units	✓ANOVA, multiple testing correction, Duncan' test	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		range: 1.5-6); 2. NU			detoxified plant material per cig.	different doses (0, 2.6, and 5.2 Δ9-THC mg), alone or combined with alcohol				per week); no use of other substances over the previous 24 h; tobacco use not assessed		
Haney et al., 1999	✓/×Repeated measure; not double-blind or randomized	✓ RU, CBS use: 6.4 ± 0.4 days per week (M ± SD), range: 1-8 cig. per occasion	✓ 21-29 (range), 24.7 ± 3.5 (M ± SD)	✓ Male (n = 6), Female (n = 6)	✓20 or 30 mg of Δ9-THC per caps.	✓20-day drug period of po. Δ9-THC admin., 4 times/ day	× However study participants evaluated as a whole group	✓	✓Exclusion criterion (by medical and psychiatric evaluations)	✓/×Most with weekly alcohol use (M: 1 day/ week, two drinks per occasion); 9 tobacco users (also during experiment); other substance use infrequent (only CBS in urine on study day)	✓ANOVA, Hunyh-Feldt correction	✓
Kirk and De Wit, 1999	✓/×Double-blind; not randomized or counterbalanced	✓1. RU, lifetime CBS use ≥ 100 times, current use ≥ 2 per month; 2. NRU, lifetime CBS use ≤ 10 times, no use in past 4 years	✓1. RU, 27.6 ± 5.2; 2. NRU, 25.1 ± 3.6 (M ± SD)	✓ Male (n = 12), Female (n = 9)	✓7.5 or 15 mg of Δ9-THC per caps.	✓3 evening sessions once per week	✓Matched for demographic characteristics (age, gender)	✓	✓Exclusion criterion (by DSM-IV psychiatric interview, SCL-90, ECG, and physical examination)	✓/×Asked not to use tobacco for 6 h and any substance for 24 h prior to study; alcohol free on study visit; however, RU > NRU on lifetime use of other substances, tobacco and alcohol	✓ANOVA	✓
Hart et al., 2002	✓/× Double-blind, within-participant; not randomized or counterbalanced	✓ RU, daily CBS use (M: 12 joints per day, range: 1-35)	✓ 21-45 (range), 31.7 (M)	✓ Male (n = 10), Female (n = 2)	✓1. 1.8% Δ9-THC per MJ cig.; 2. 0-20 mg of Δ9-THC per caps.	✓18-day drug period of smk. 1 MJ cig. on 5 occasions daily and receiving 4 Δ9-THC caps.	NA	✓	✓Exclusion criterion (by medical and psychological evaluations)	✓/×8 current alcohol users (range: 1-10 drinks per week); 7 current tobacco users (range: 2-20 cig. per day); negative UDS on study day	✓ANOVA	✓
Ponto et al., 2004	✓/×Randomized, cross-over; not double-blind or counterbalanced	✓1. RU, CBS use ≥ 7 times per week (M: 1.8 per day); 2. NRU, CBS use < 10 times per month (M: 1 per week)	✓ 1. RU, 20-36 (range), 21.7 (M); 2. NRU, 20-36 (range), 22.6 (M)	✓ Male (n = 18), Female (n = 18)	✓20 mg Δ9-THC per MJ cig.	✓1 single admin. of 1 MJ cig.	✓ Matched for demographic characteristics (age, gender)	✓	×	✓/× Negative UDS on study day; alcohol and tobacco use not assessed	✓ANOVA, *t*-test	✓
D'Souza et a-l.,2008a	✓ Double-blind, randomized, counterbalanced	✓1. RU, lifetime CBS use ≥ 100 times, last use	✓ 18-55 (range),	×	✓ 2 ml IV Δ9-THC (0.0286 mg/kg)	✓1 single IV admin. of Δ9-THC over 20 min	✓ Matched for demographic characteristics (age,	✓	✓Exclusion criterion (by DSM psychiatric	✓/× Exclusion criterion for alcohol and other	✓ Non-parametric mixed model,	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		within past week, recent use ≥ 10 per month (CBS in urine), CUD DSM-IV criteria; 2. NRU, lifetime CBS use from < 5 to > 100 times, no use in past week	25 ± 7 (M ± SD)		in 95% ethanol solution	on 2 occasions at least 7 days apart	IQ, race, weight); years of education, RU < NRU		interview for Axis I disorders + no family history of DSM Axis I disorder; and a general, physical, and neurological examination, ECG, and laboratory tests)	substance use disorders; asked to refrain from alcohol and substances for 2 weeks prior to study (apart from RU asked to refrain from CBS only for 24 h prior to study visits); tobacco use not assessed	Bonferroni correction	
D'Souza et a-l.,2008b	✓ Double-blind, randomized, counterbalanced	✓1. RU, lifetime CBS use > 50 times, last use ≥ 10 in past month (CBS in urine), CUD DSM-IV criteria; 2. NRU, lifetime CBS use from < 5 to > 100 times, no use in past week, use ≤ 1 in past month (no CBS in urine)	✓ 18-55 (range); 1. RU, 24.8 ± 5.5; 2. NRU, 29 ± 11.6 (M ± SD)	✓ Male (n = 35), Female (n = 17)	✓2 ml IV Δ9-THC (2.5 or 5.0 mg) in 95% ethanol solution	✓1 single IV admin. of Δ9-THC on 2 occasions at least 7 days apart, at 2 different doses	✓ Matched for demographic characteristics (age, gender, education, socio-economic status); age and IQ used as covariates (as IQ differed between RU and NRU)	✓	✓Exclusion criterion (by DSM-IIIR or IV psychiatric interview for Axis I disorders + no family history of DSM Axis I disorder; and a general, physical, and neurological examination, ECG, and laboratory tests)	✓ Matched for smk. status; exclusion criterion for nicotine and other substance use disorders; asked to refrain from alcohol and substances for 2 weeks prior to study (apart from RU asked to refrain from CBS only for 24 h prior to study visits)	✓ Non-parametric mixed model	✓
D'Souza et al.,2009	✓/×Double-blind; not randomized or counterbalanced	✓1. RU, lifetime CBS use > 50 times, last use within past week (CBS in urine), recent use ≥ 10 in past month, CUD DSM-IV criteria; 2. NRU, lifetime CBS use from < 5 to > 100 times, no use in past week (no CBS in urine), no CUD DSM-IV criteria	✓ 18-55 (range)	✓ Male (n = 20), Female (n = 3)	✓ 2 ml IV Δ9-THC (0.0286 mg/kg) in 95% ethanol solution	✓1 single IV admin. of Δ9-THC over 20 min	✓ Matched for demographic characteristics (age, IQ, race, weight); years of education, RU < NRU; female participants only in NRU, however reanalysis excluding these subjects did not change results	✓	✓Exclusion criterion (by DSM psychiatric interview for Axis I disorders + no family history of DSM Axis I disorder; and a general, physical, and neurological examination, ECG, and laboratory tests)	✓ Exclusion criterion for alcohol and other substance use disorders but not nicotine dependence, however only 1 current tobacco smoker (RU, ≥ 5 cig. per day); asked to refrain from alcohol and substances for 2 weeks prior to study (apart from RU asked to refrain from CBS only for 24 h prior to study visits)	✓ Non-parametric/ linear mixed model, Bonferroni correction	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
Ramaekers et al., 2009	✓Double-blind, randomized, balanced, two-way mixed model	✓1. RU, CBS use over previous year ≥ 4 per week (CBS in urine); 2. NRU, CBS use over previous year ≤ weekly (no CBS in urine)	✓ 1. RU, 23.2 ± 3.3; 2. NRU, 22.8 ± 2.3 (M ± SD)	✓ Male (n = 17), Female (n = 7)	✓500 μg/kg Δ9-THC (13%) per MJ cig.	✓10-min of MJ smk.	✓ Matched for demographic characteristics (age, gender, weight)	✓	✓Exclusion criterion (by medical examination and laboratory analyses); no endocrine, psychiatric, and neurological condition; normal weight and BMI; no hypertension; no non-cig. smk.	✓Exclusion criterion for substance abuse history (by questionnaires), excessive drinking (> 25 standard alcoholic consumptions per week); asked to refrain from alcohol on study day and from substances during all study (by UDS)	✓ANOVA, Binomial tests	✓
Ranganathan et al., 2009	✓/×Double-blind for both studies, randomized and counterbalanced only for 1 study	✓ 1. RU, lifetime CBS use > 50 times, last use within past week (CBS in urine), recent use ≥ 10 in past month, CUD DSM-IV criteria; 2. NRU, lifetime CBS use from < 5 to > 100 times, no use in past week (no CBS in urine), no CUD DSM-IV criteria	✓ 18-55 (range); 1. RU, 28.3 ± 10; 2. NRU, 24.6 ± 5 (M ± SD)	✓ Male (n = 57), Female (n = 19)	✓ 2 ml IV Δ9-THC (Study I: 0.0357 or 0.0714 mg/kg; Study II: 0.0286 mg/kg) in 95% ethanol solution	✓1 single IV admin. of Δ9-THC	✓/× Matched for some demographic characteristics (gender, education, socioeconomic status, contraception); not for age	✓	✓Exclusion criterion (by DSM psychiatric interview for Axis I disorders + no family history of DSM Axis I disorder; and a general, physical, and neurological examination, ECG, and laboratory tests)	✓ Exclusion criterion for alcohol and other substance use disorders but not nicotine dependence, however matched for smk. status and other substances/ alcohol use; asked to refrain from alcohol and substances for 2 weeks prior to study (apart from RU asked to refrain from CBS only for 24 h before the study visits)	✓ Linear mixed model, Tukey's multiple comparison	✓
Bedi et al., 2010	✓/×Double-blind, counterbalanced, within subject; not randomized	✓ RU, CBS use ≥ 2 per week	✓ 21-50 (range), 36.6 ± 1.3 (M ± SEM)	✓ Male	✓ 20-40 mg of Dronabinol per caps.	✓ 16-day drug period of Dronabinol caps. admin. (5 mg qid for 2 days, then 10 mg qid)	NA	✓	✓Exclusion criterion (by medical and psychiatric evaluation, ECG, and laboratory analyses)	✓/× Exclusion criterion for substance use disorders but not nicotine dependence	✓ ANOVA	✓
Böcker et al., 2010	✓ Double-blind, randomized, four way, cross-over	✓ CBS use, range: 2-18 cig. per month (median: 8), duration of use:	✓ 18-33 (range)	✓ Male	✓ 29.3, 49.2 mg, or 69.4 mg Δ9-THC per MJ cig.	✓ 4-day drug period of smk. 1 Δ9-THC cig. per day (inhalation cycle over	× however age did not change results	✓	✓Exclusion criterion (by medical health questionnaire); no one was on	✓ Exclusion criterion for substance use; asked to refrain from alcohol and	✓ MANOVA	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		2–18 years (median: 6.5)				22 min: getting ready, 3 s; inhalation, 2 s; breath-holding, 3 s; exhalation and rest, 32 s)			any medication from 15 days before until the end of the study	drug intake for at least 10 h prior to study (by staying in hospital overnight and UDS); alcohol and tobacco use did not change results		
Barkus et al., 2011	✓ Double-blind, randomized, counterbalanced, repeated measures	✓ lifetime CBS use: 153 ± 324 times (M ± SD), range: 1-1000; last use: 43 weeks ago, range: 2-288	✓ 26.3 ± 4.2 (M ± SD)	✓ Male	✓ 5 ml IV Δ9-THC (2.5 mg) in 2.5% ethanol solution	✓1 single IV admin. of Δ9-THC, 1 ml/min	NA	✓	✓Exclusion criterion (by General Health Questionnaire); no mental illness + no family history of mental illness, no ongoing or serious past physical illness	✓/× Exclusion criterion for substance use disorders but not nicotine dependence (by MAST and DAST); asked to refrain from alcohol and drugs for 24 h prior to study (by UDS)	✓ Friedman's test, Wilcoxon's test, Spearman's correlation	✓
Bosker et al., 2012	✓ Double-blind, randomized, balanced, three way, cross-over	✓ 1. RU, daily CBS use or nearly so (range: 7.7-23.1 joints per week), lifetime CBS use: 2442.2 ± 708.8 times (M ± SD), pattern of use > 160 times per year (CBS in urine); 2. NRU, lifetime CBS use: 274.1 ± 89.6 times (M ± SD), pattern of use range: 5-36 times per year (no CBS in urine)	✓ 23.6 ± 0.6 (M ± SD)	✓ Male (n = 14), Female (n = 10)	✓ 10-20 mg of Dronabinol per caps.	✓2 single admin. of dronabinol caps., at least 4 days apart	✓/× Matched for gender; not for other demographic characteristics	✓	✓Exclusion criterion; all free from psychotropic medication and in good physical health, no major medical condition, cardiovascular abnormalities, hypertension, or past/ current psychiatric disorder	✓/× Exclusion criterion for substance abuse or addiction to non-cannabinoids and excessive drinking; asked to refrain from alcohol and caffeine for 24 h prior to study (by ABT and UDS); tobacco used not assessed	✓ ANOVA, Chi-Square, Spearman's correlation	✓
D'Souza etal.,2012	✓ Double-blind, randomized, counterbalanced, cross-over	✓/× lifetime CBS use from < 10 to > 1000 times, last use: 415.02 days ago (range: 1-3650), recent use range: 0-29 days in past month, pattern of use from 1 per	✓ 18-35 (range), 25.9 ± 7.8 (M ± SD)	✓ Male (n = 17), Female (n = 9)	✓ IV Δ9-THC (0.015 or 0.03 mg/kg) in ethanol solution	✓1 single IV admin. of Δ9-THC on 2 occasions, at 2 different doses, and over 10 min, at least 3 days apart	×	✓	✓Exclusion criterion (by DSM psychiatric interview for Axis I disorders + no family history of DSM Axis I disorder; and a general,	✓ Exclusion criterion for substance use disorders but not nicotine dependence, however, tobacco use ≤ 10 per day, asked to refrain from	✓ ANOVA, *t*-test, non-parametric mixed model	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		year to 7 per week; 1. RECU, CBS use in last 30 days; 2. NRECU, no CBS use in last 30 days							physical, and neurological examination, ECG, and laboratory tests)	alcohol, caffeine, and substances for 2 weeks prior to study, apart from RU asked to refrain from CBS only for 24 h prior to study visits (by UDS)		
Theunissen et al., 2012	✓ Double-blind, randomized, balanced, two way, cross-over	✓1. RU, CBS use > 4 times per week, pattern of use: 340 ± 86 (M ± SD) per year (CBS in urine); 2. NRU, CBS use < 2 times per week, pattern of use: 55 ± 36 (M ± SD) per year (no CBS in urine)	✓ 1. RU, 23.2 ± 3.3; 2. NRU, 22.8 ± 2.3 (M ± SD)	✓ Male (n = 17), Female (n = 7)	✓500 μg/kg Δ9-THC (13%) per MJ cig. (0.8 g)	✓10-15-min of MJ smk. (RU, 0.256 g; NRU, 0.277 g)	✓ Matched for demographic characteristics (age, gender, and weight)	✓	✓Exclusion criterion (by medical screening and laboratory tests); all free from psychotropic medication and in good physical health; no major medical, endocrine, and neurological condition, hypertension, color blindness, dyslexia, or past/ current psychiatric disorder	✓Exclusion criterion for substance abuse or addiction to non-cannabinoids, excessive drinking (> 20 consumptions per week), excessive smk. (> 25 cig. per day); asked to refrain from alcohol for 24 h prior to study, caffeine on study day, and substances during all study (except CBS, only NRU asked to refrain for at least 5 days prior to study) (by ABT and UDS)	✓ ANOVA, Pearson correlation	✓
Fabritius et al., 2013	✓/× Cross-over; not double-blind, counterbalanced or randomized	✓1. RU, CBS use ≥ 10 joints per month (2.3 joint per week) in last 3 months (CBS in urine); 2. NRU, CBS use ≥ 1 joint per month but ≤ 1 joint per week in last 3 months	✓ 18-30 (range); 1. RU, 22.7 + 2.4 (M + SD); 2. NRU, 23.9 + 3 (M + SD)	✓ Male	✓11% Δ9-THC and < 1% CBD per MJ cig.	✓1 single admin. of 1 MJ cig. (inhalation cycle: getting ready and start signal, 3 s; inhalation, 2 s; breath-holding, 5 s; exhalation and rest, 50 s. Sequence repeated until 2/ 3 of the joint was consumed)	✓ Matched for demographic characteristics (age and ethnicity)	✓	✓Exclusion criterion (by structured interview conducted by a medical staff)	✓/×Exclusion criterion for substance use; alcohol and tobacco use not assessed	✓ Mann–Whitney U test	✓
Gorelick et al., 2013	×	✓RU, lifetime CBS use > 1000 times, daily	✓ 18-45 (range),	✓ Male	✓ 20 mg of Dronabinol per caps.	✓ 6-day drug period of Dronabinol caps.	NA	×	✓Exclusion criterion; no past/ present	✓/×Exclusion criterion for substance use	✓ ANOVA, Greenhouse-Geisser correction	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		pattern of use in past 3 months (5.5 ± 5.9 joints per day, M ± SD; range: 1-24), last use within 24 h (CBS in urine)	24.6 + 3.7 (M ± SD)			admin. every 3.5-6 h (day 1: 40 mg, day 2-4: 100 mg; day 5-6: 150 mg)			significant medical disease, no history of psychosis, no current DSM-IV Axis I disorder, normal cardiac function, IQ > 85, no previous adverse events related to CBS	disorders (by UDS) but not nicotine or caffeine dependence, ≥ 6 alcohol drinks/ day ≥4 times/ week in the month before study; 9 daily tobacco users (17.9 ± 18.8 cig. per day), others past users		
Sewell et al., 2013	✓ Double-blind, randomized, counterbalanced	✓/× 1. RECU, CBS ≥ 8 times in last 30 days; 2. NRECU, CBS ≤ 2 per week in last 30 days	✓ 18-35 (range); 1. RECU, 20.7 + 1.4 (M + SD); 2. NRECU, 23.1 + 3.6	✓ Male (n = 33), Female (n = 11)	✓ IV Δ9-THC (0.015 to 0.05 mg/kg) in ethanol solution	✓1 or 2 single IV admin. of Δ9-THC, at 3 different dose ranges, and at least 3 days apart	✓/× Matched for some demographic characteristics (gender, education, ethnicity, BMI, IQ, handedness); not for age (RECU < NRECU)	✓	✓Exclusion criterion (by DSM psychiatric interview for Axis I disorders and a general, physical, and neurological examination, ECG, and laboratory tests)	✓ Exclusion criterion for substance use disorders, asked to refrain from alcohol and substances for at least 1 week prior to study (for NRU by UDS), and matched for smk. status	✓ ANOVA, *t*-test, Chi-Square/ Fisher's test, Cohen's *d*, linear mixed model	✓
Vandrey et al., 2013	✓/× Counterbalanced, within-subjects, cross-over; not randomized	✓RU, pattern of CBS use: 25 days per month in past 3 months, 4 + 2 times (M ± SD) per day (CBS in urine), 11 subjects with CBS dependence	✓ 18-55 (range), 34 + 9 (M ± SD)	✓ Male (n = 12), Female (n = 1)	✓ 10, 20, 40 mg of Dronabinol per caps.	✓ 51-day drug period of Dronabinol caps. admin. (10, 20,or 40 mg tid) followed by a single CBS exposure (5.7% Δ9-THC, 0.8 g, 5 puffs)	NA	✓	✓Exclusion criterion (by DSM-IV-TR psychiatric interview for Axis I disorder and ECG); all free from psychotropic medication; no history of seizures, severe hepatic impairment, or conditions associated with cognitive impairment	✓/× Exclusion criterion for substance use disorders but not nicotine dependence; no acute drug or alcohol intoxication apart from CBS (by ABT and UDS)	✓ Regression, Student-Newman-Kuels multiple comparison test, correlation	✓
Cortes-Briones et al., 2015	✓ Double-blind, randomized, counterbalanced, cross-over	✓/× lifetime CBS use from ≤ 5 to > 1000 days, last use: 402.72 days ago (range: 1-3650), recent	✓ 18-35 (range), 25.7 ± 7.6 (M ± SD)	✓ Male (n = 14), Female (n = 6)	✓ IV Δ9-THC (0.015 or 0.03 mg/kg) in ethanol solution	✓1 single IV admin. of Δ9-THC on 2 occasions, at 2 different doses, and over 10 min,	×	✓	✓Exclusion criterion (by DSM psychiatric interview for Axis I disorders + no	✓ Exclusion criterion for substance use disorders but not nicotine dependence,	✓Generalized estimating equations, Holm–Bonferroni sequential procedure	✓

(*continued on next page*)

Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		use range: 1-29 days in past month, pattern of use from 1 per year to 7 per week; 1. RECU, CBS use in last 30 days; 2. NRECU, no CBS use in last 30 days				at least 3 days apart			family history of DSM Axis I disorder; and a general, physical, and neurological examination, ECG, and laboratory tests)	however, tobacco use ≤ 10 per day; asked to refrain from alcohol, caffeine, and substances for 2 weeks prior to study, apart from RU asked to refrain from CBS only for 24 h prior to study visits (by UDS)		
Desrosiers et al., 2015	×	✓1. RU, CBS use ≥ 4 times per week in past 3 months (CBS in urine); 2. NRU, CBS use < 2 times per week in past 3 months	✓ 18-45 (range); 1. RU, 25.7 ± 4.6; 2. NRU, 31.4 ± 6.3 (M ± SD)	✓ Male (n = 18), Female (n = 7)	✓54 mg Δ9-THC (6.8 ± 0.2%) per MJ cig.	✓10-min of MJ smk.	✓/× Matched for some demographic characteristics (gender, BMI); not for age and race/ ethnicity	×	✓/× Exclusion criterion; no medical condition, history of neurological illness, hypertension, tachycardia; psychiatric comorbidity not assessed	×	✓ ANOVA, *t*-test, Hunyh-Feldt correction	✓
Farris and Metrik, 2016	✓/×Double-blind, counterbalanced, within-subjects; not randomized	✓ CBS use ≥ 2 days per week in past month, and ≥ weekly in past 6 months (2.1 ± 1.2 times per day, M ± SD); CBS dependence: 13.6%, CBS abuse: 29.5%; 1. RU, CBS use on 94.4% of days (~ 6.6 days per week); 2. NRU, CBS use on 50.0% of days	✓ 18-44 (range), 21.5 ± 4.5 (M ± SD)	✓ Male (n = 58), Female (n = 30)	✓ 2.8-3.0% Δ9-THC per MJ cig.	✓smk. 1 MJ cig.	×	✓	✓Exclusion criterion (by DSM psychiatric interview for Axis I disorders and physical exam for contraindicated medical issues); no BMI > 30	✓ Exclusion criterion for substance use (by UDS) and tobacco use ≥ 20 cig. per day (46.6% smokers, 4.2 ± 3.8 cig. per day on smk. days); 29.5 % alcohol users (4.2 ± 2.4 drinks per drinking day); asked to refrain from alcohol for 24 h, caffeine for 1 h, and CBS and tobacco for 15 h prior to study (by ACMT and ABT)	✓*t*-test, refression	✓
Ramaekers et al., 2016	✓ Double-blind, randomized, counterbalanced, three way, cross-over	✓ CBS use ≥ 2 times in past 3 months, recent use: 44.8 times in past 3 months	✓ 18-39 (range), 22.8 (M)	✓ Male (n = 96), Female (n = 26) out of	✓300 μg/kg Δ9-THC (11-12%) vaporized CBS	✓ vap. dose over 2-3 min	× However study participants evaluated as a whole group	✓	✓Exclusion criterion (by medical examination, laboratory	✓/× Exclusion criterion for cocaine dependence, excessive alcohol	✓ ANOVA, Pearson correlation	✓

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Table 2 (*continued*)

Study	Study design	Defined study population	Age (years)	Gender	Cannabis/ Δ9-THC concentration	Adequate exposure	Comparability of subjects	Placebo controlled	Physical and mental health comorbidity	Excluded/ adjusted for tobacco, alcohol, and substance use	Statistical analyses	Funding or sponsorship
		(range: 2-100; clustered in 1. L use, 1-24 times; 2. LM use, 25-49 times; HM use, 50-74 times; H use, 75-100 times)		original cohort of 132					analyses, and ECG); all free from psychotropic medication and in good physical and mental health, normal weight (BMI, 18-28), no cardiovascular abnormalities, hypertension, or past/ current psychiatric or neurological disorder	use (> 20 units per week) or smk. (> 15 cig. per day); use of MDMA (88%), amphetamines (73%), mushrooms (61%), LSD (20%), and other drugs (60%, nitrous oxide, DMT, and ketamine); asked to refrain from drug and alcohol use (by ABT and UDS)		
Newmeyer et al., 2017a	✓ Double-blind, randomized, double-dummy, cross-over	✓1. RU, CBS use ≥ 5 times per week in past 3 months (CBS in urine); 2. NRU, CBS use ≥ 2 times per month but < 3 times per week in past 3 months (no CBS in urine)	✓ 18-46 (range)	✓ Male (n = 15), Female (n = 5)	✓1. 0.734 ± 0.05 g Δ9-THC (6.9 ± 0.95%) per MJ cig.; 2. CBS-containing brownie; 3. Vaporized CBS	✓po., smk., or vap. dose ad libitum over 10 min	✓/× Matched for some demographic characteristics (age, gender, BMI); not for race/ ethnicity	✓	✓Exclusion criterion (by medical and psychological evaluation)	×, tobacco use allowed while on the research unit	✓ *t*-test, ANOVA, planned Helmert contrasts, Bonferroni correction	✓
Newmeyer et al., 2017b	✓ Double-blind, randomized, double-dummy, cross-over	✓1. RU, CBS use ≥ 5 times per week in past 3 months (CBS in urine); 2. NRU, CBS use ≥ 2 times per month but < 3 times per week in past 3 months (no CBS in urine)	✓ 18-46 (range)	✓ Male (n = 15), Female (n = 5)	✓1. 0.734 ± 0.05 g Δ9-THC (6.9 ± 0.95%) per MJ cig.; 2. CBS-containing brownie; 3. Vaporized CBS	✓po., smk., or vap. dose ad libitum over 10 min	✓/× Matched for some demographic characteristics (age, gender, BMI); not for race/ ethnicity	✓	✓Exclusion criterion (by medical and psychological evaluation)	✓/× Exclusion criterion for substance, caffeine, or nicotine dependence	✓ *t*-test, ANOVA, Greenhouse–Geisser correction	✓

RU, regular users; CBS, CBS; NRU, non-regular users; IU, intermittent users; M, mean; SD, standard deviation; L, light; LM, low moderate; HM, high moderate; H, heavy; NU, non-users; CUD, CBS use disorder; DSM, Diagnostic and Statistical Manual of Mental Disorders; RECU, recent users; NRECU non recent users; mg, milligrams; Δ9-THC, Delta-9-tetrahydrocannabinol; MJ, marijuana; CBN, cannabinol; CBD, Cannabidiol; ml, milliliter; IV, intravenous; kg, kilogram; μg, micrograms; g, grams; h, hour; smoking, smk.; NS, not significant; cigarette(s), cig.; capsule(s), caps.(s); po., per os; min, minute(s); administration(s), admin.; qid, four times per day; tid, three times per day; vap., vaporized; WAIS, Wechsler Adult Intelligence Scale; IQ, Intelligence quotient; NA, not applicable; UDS, urine drug screen; ECG, electrocardiogram; EEG, electroencephalogram; MMPI, Minnesota Multiphasic Personality Inventories; SCL-90, Symptom Checklist-90; BMI, body mass index; MAST, Michigan Alcohol Screening Test; DAST, Drug Abuse Screening Test; ABT, Alcohol Breath Test; ACMT, Alveolar Carbon Monoxide Test; MDMA, 3,4-Methylenedioxymethamphetamine; LSD, Lysergic acid diethylamide; DMT, N,*N*-Dimethyltryptamine; ANOVA, analysis of variance; MANOVA, multivariate analysis of variance.

studies is reported in Table 2. These studies investigated whether the acute effects of cannabis vary: (i) between groups with different levels of previous cannabis exposure; (ii) within a group of individuals with different levels of previous cannabis exposure; (iii) upon repeated exposure; and (iv) upon concomitant treatment ('maintenance') with Δ9-THC. For the purpose of this review, in order to have a consistent nomenclature across studies, groups of "frequent" or "heavy" cannabis users were subsumed under the "regular" cannabis user group (RU). Similarly, groups of "infrequent" or "occasional" cannabis users were considered as "non-regular" cannabis users (NRU; Table 2). In general, RU had: (i) a pattern of daily or weekly cannabis use; (ii) a history of recent cannabis use and/ or a urine drug screen (UDS) positive for cannabis at the time of the study; and (iii) a diagnosis of Cannabis Use Disorder and/ or a history of chronic exposure lifetime (often ≥ 100 times). Conversely, NRU had: (i) a pattern of weekly cannabis use or less; (ii) a negative history of recent cannabis use and/ or a urine drug screen (UDS) negative for cannabis at the time of the study; and (iii) a history of lifetime occasional or experimental exposure (often from < 5 to 100 times).

The most commonly investigated domains were subjective effects and intoxication, cognitive function, psychopathology, cardiac function, and pharmacokinetics. Other behavioral parameters less frequently studied involved food intake, social behavior, sleep quality, and driving skills. Finally, a number of studies investigated other physiological and neurophysiological parameters, including neurochemical, electrophysiological, and laboratory markers (Table 3).

3.2. Intoxication and other subjective effects

Intoxication and other subjective effects represent the outcome measure most commonly investigated in studies of tolerance to the effects of cannabinoids, with 22 studies conducted over the last 50 years. Single administration of marijuana cigarettes and/ or intravenous Δ9-THC didn't induce different levels of intoxication in regular users (RU) and non-regular users (NRU) in four studies (Bosker et al., 2012; D'Souza et al., 2012, 2008b; Lindgren et al., 1981) [N (M ± SD, range): RU = 11.7 ± 2.6, 9–14; NRU = 11 ± 1.7, 9–12]. Conversely, marijuana administration produced less pronounced and shorter intoxication in RU compared to NRU in 3 other studies conducted in larger samples (Lex et al., 1984; Ponto et al., 2004 (degree of tolerance observed: "High", 89.5%; Cohen's *d*: 0.98); Fabritius et al., 2013) [N (M ± SD, range): RU = 14.7 ± 7.4, 9–23; NRU = 19.7 ± 8.4, 10–25]. Studies of repeated Δ9-THC or cannabis administration have more consistently demonstrated the development of tolerance to its intoxicating effects. In 1975, the first study with this experimental design comparing intoxication between RU and NRU indicated a trend level decrease in subjective intoxication upon continued marijuana exposure only in RU (Babor et al., 1975). A similar study involving repeated administration of Δ9-THC and crude cannabis extract in RU indicated a significant decrease in self-reported intoxication and sedation over the study period, but no significant changes in other subjective reports such as "Good feelings" and "Withdrawal" (Jones et al., 1976 (degree of tolerance observed: "Sedation", 267.5%)). Other studies indicated that repeated Δ9-THC administration in RU result in a significant decrease in intoxication as well as other subjective effects (e.g. ratings of "Good drug effect" and "Stimulated") (Gorelick et al., 2013 (degree of tolerance observed: "Good drug effect", 633.3%; "High", 276.5%); Haney et al., 1999) including ratings of strength, liking, and willingness to take the dose again (Haney et al., 1999). Another study indicated that intoxication reduces upon repeated marijuana administration in cannabis users, showing partial recovery after 1 week of abstinence (Nowlan and Cohen, 1977), with intoxicating effects fading away more rapidly in RU with a heavier pattern of cannabis use compared to other groups with light to moderate cannabis use (Nowlan and Cohen, 1977). Interestingly, three studies found that 10–15 min of marijuana smoking was sufficient to detect tolerance to the intoxicating effects of Δ9-THC, with RU showing less intoxication than NRU (Ramaekers et al., 2009; Theunissen et al., 2012 (degree of tolerance observed: "High", 29.1%); Desrosiers et al., 2015). Similarly, 2–3 min of vaporized cannabis induced less intoxicating effects with increasing frequency of past cannabis use (Ramaekers et al., 2016). Finally, a study comparing different routes of administration indicated that oral cannabis elicit intoxicating and subjective effects only in NRU, whereas vaporization and smoking had similar effects in RU and NRU. Also, "Good drug effect" and "Stoned" effect were higher under vaporized cannabis compared to oral cannabis only in RU (Newmeyer et al., 2017a (degree of tolerance observed: "Good drug effect", 245.4%; "Stoned", 1166.7%)).

Meyer et al. reported a number of subjective experiences acutely induced by marijuana smoking, including changes in feeling, thinking, bodily sensation, perception, and general awareness. However, there was no difference between the responses of RU and NRU (Meyer et al., 1971). In other studies, RU didn't show any significant change in identical (Bedi et al., 2010) or comparable (Vandrey et al., 2013) subjective measures upon repeated Δ9-THC administration. Kirk and De Wit found that NRU report greater sedative effects than RU at higher Δ9-THC doses, also reporting less stimulant and liking effects compared to a lower dose. Interestingly, the lower dose increased ratings of "Feel drug," and "High" only in RU (Kirk and de Wit, 1999). Another study indicated attenuated marijuana-induced subjective effects during active maintenance with Δ9-THC in RU (Hart et al., 2002).

3.3. Cognitive function

Sixteen studies were identified specifically investigating the development of tolerance to the cognitive effects experienced upon acute intoxication with cannabis. The first study was performed in 1971 by Meyer et al. who compared the effect of marijuana smoking on several cognitive domains in RU and NRU. Upon acute intoxication, only NRU showed impairment in sustained attention. In contrast, groups did not differ significantly in their psychomotor ability, time sense, distractibility, and hand-eye coordination, even though impairments in these cognitive domains were evident to a greater extent in NRU than RU (Meyer et al., 1971). A more recent study indicated that the detrimental effects of marijuana smoking on divided attention are specific to NRU (Theunissen et al., 2012 (degree of tolerance observed: "DAT hits", 9.8%)). Similar findings on attention were reported in another study which compared NRU and non-users (NU), wherein they reported that upon acute intoxication NRU were less impaired than NU while performing a divided attention task (Marks and MacAvoy, 1989).

A second study investigating psychomotor ability with the same task used by Meyer et al (Meyer et al., 1971), the Digit-Symbol Substitution Test (DSST), indicated a dose-dependent detrimental effect of Δ9-THC administration on this cognitive domain and confirmed that the decrease in performance doesn't differ between RU and NRU (Kirk and de Wit, 1999). However, in recent years Ramaekers et al. have indicated that Δ9-THC marijuana smoking impairs psychomotor ability, divided attention, and motor impulsivity in NRU, while impairing only motor impulsivity in RU at high Δ9-THC concentrations (Ramaekers et al., 2009), suggesting that RU develop tolerance also to the effect of Δ9-THC on psychomotor ability (Ramaekers et al., 2009). It is worth mentioning that this study used a different task, the Critical Tracking Test (CTT), which specifically assesses psychomotor coordination rather than a wider range of psychomotor functions at the same time as for the DSST (Jongen et al., 2015). Similar findings were reported in 2015 by Desrosiers et al. who showed that the Δ9-THC marijuana impairs CTT psychomotor ability and divided attention more prominently in NRU than RU, also increasing the number of tracking errors and false alarms as well as prolonging reaction times during divided attention only in NRU (Desrosiers et al., 2015). However, RU and NRU didn't differ in terms of working memory or risk-taking and impulsivity (Desrosiers et al., 2015). Another study by Ramaekers and colleagues

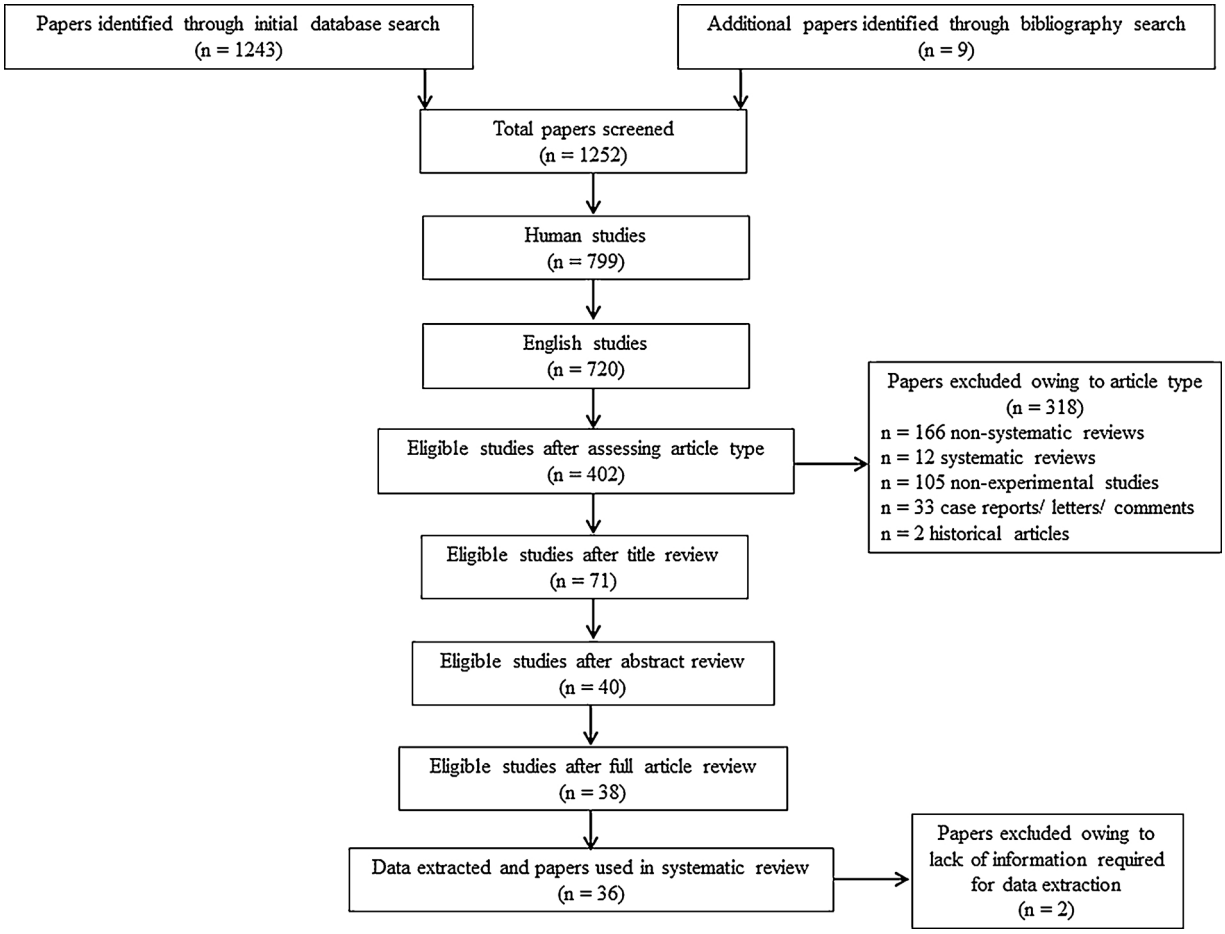

Fig. 1. PRISMA flowchart of search strategy for systematic review.

confirmed that Δ9-THC-induced CTT psychomotor ability impairment decreases with increasing frequency of past cannabis use, while Δ9-THC effects on executive function, impulse control, and divided attention are not affected by previous cannabis use (Ramaekers et al., 2016). Interestingly, in 2002 Hart et al. showed that marijuana smoking doesn't markedly impair DSST psychomotor performance in RU during active maintenance with Δ9-THC. Also, while acutely intoxicated with marijuana, RU performed better during active maintenance at the higher Δ9-THC dose compared to the lower dose or placebo (Hart et al., 2002).

A study in 1974 investigated the effect of marijuana smoking on verbal learning, indicating that RU performed similarly on a paired associate task whether intoxicated or not, while NRU tended to have a worse performance under the effect of marijuana (Cohen and Rickles, 1974). Also, NRU tended to perform better than RU under placebo, but worse under the effect of marijuana (Cohen and Rickles, 1974 (degree of tolerance observed: "Learning", 82.1%)). In more recent years, a number of studies conducted by D'Souza and colleagues confirmed and extended these findings. In particular, intravenous administration of Δ9-THC appeared to impair immediate and delayed free recall at a verbal learning task more markedly (D'Souza et al., 2008b) or only (D'Souza et al., 2008a) in NRU compared to RU, despite worse baseline performance in RU compared to NRU (D'Souza et al., 2008b). Interestingly, during the delayed recall RU performed significantly better under Δ9-THC than placebo (D'Souza et al., 2008b). Also, detrimental effects of acute Δ9-THC challenge on spatial working memory were more prominent in NRU than RU (D'Souza et al., 2008a, 2009). However, these studies found that sustained attention performance during a Continuous Performance Task didn't differ between RU and NRU (D'Souza et al., 2008a, b). Along with previous evidence of absent or less marked impairment in divided attention with increasing frequency of past cannabis use (Desrosiers et al., 2015; Marks and MacAvoy, 1989; Ramaekers et al., 2009; Theunissen et al., 2012), these studies suggest selective development of tolerance for the effects of cannabis on divided attention but not on sustained attention.

A single study specifically assessed the effect of intravenous administration of Δ9-THC on time perception, indicating that Δ9-THC transiently impairs time estimation and production (Sewell et al., 2013). However, RU experienced less temporal distortion from Δ9-THC than NRU (Sewell et al., 2013; degree of tolerance observed: "Time estimation", 11.2%; "Time production", 8.9%).

Studies of repeated Δ9-THC or cannabis administration have more consistently demonstrated the development of tolerance to its impairing effects on cognition. In 1976, an early study of repeated administration of Δ9-THC and cannabis crude extract in RU indicated that the ability to visually track a moving target and to perform cognitive and psychomotor tasks shows initial impairments and then returns to baseline or even better than pre-drug performance levels, despite continuous drug administration (Jones et al., 1976). Another study indicated relatively minor disruptive effects of repeated Δ9-THC administration in RU on a number of cognitive domains including learning, memory, vigilance, and psychomotor ability, despite 4 days of abstinence preceding the drug challenge (Haney et al., 1999) while a more recent study reported no significant effects of repeated dronabinol (synthetic form of Δ9-THC) administration on similar cognitive tasks in RU (Bedi et al., 2010).

3.4. Psychopathology

Tolerance to the psychopathological effects of cannabis has received relatively less attention compared to other outcome measures, with the majority of the studies conducted in recent years. In 2008 a study by

Table 3
Summary of the effects of cannabis on development of tolerance in man.

Domain	Number of subjects per study (M ± SD)	Total number of subjects (n)	Evidence
Intoxication and subjective effects	28.6 ± 24.5	629	15 +; 7 −
Cardiac parameters			
Increase in heart rate	23.5 ± 13.3	376	11 +; 5 −
Hypotension	26.1 ± 14.3	183	3 +; 4 −
Cognition			
Memory and learning	23.6 ± 14.2	189	6 +; 2 −
Attention	30 ± 33	330	7 +; 4 −
Psychomotor ability	31.6 ± 34.3	316	6 +; 4 −
Impulsivity	57 ± 56.3	171	3 −
Time perception		44	+
Psychopathological symptoms			
Psychotomimetic symptoms	27.5 ± 17.9	110	4 +
Perceptual alterations	33.7 ± 15.9	101	3 +
Mood changes	24 ± 25.2	72	1+; 2 −
Anxiety	38.5 ± 19.1	77	2 +
Confusion	33.5 ± 20.6	67	2 +
Cannabinoid levels	39.4 ± 32.1	473	8 +; 4 −
EEG signals	29.2 ± 13.5	146	5 +
Other behavioral measures			
Driving skills	22 ± 2.8	44	2 +
Sleep quality	24 ± 25.2	72	2 +; 1 −
Weight	30 ± 32.5	60	2 -
Food-related behavior	10.3 ± 2.9	31	1 +; 2 −
Social behavior	9.5 ± 3.5	19	2 -
Other physiological measures			
Cortisol	64 ± 17	128	2 +
Prolactin	44.75 ± 24.3	179	3 +; 1 −
BDNF		23	+
Dopamine release		9	−
Breath holding		88	+
Respiration rate/ CO		20	−
Other body response		53	+

EEG, electroencephalogram; BDNF, brain-derived neurotrophic factor; CO, carbon monoxide; '+' refers to positive evidence of tolerance; '−' refers to negative evidence of tolerance.

D'Souza et al. indicated blunted perceptual alterations, psychotomimetic symptoms, and anxiety in RU compared to NRU following a single intravenous administration of Δ9-THC (D'Souza et al., 2008b). Using the same assessment instruments, similar findings indicating less pronounced perceptual alterations and psychotomimetic symptoms in RU compared to NRU (D'Souza et al., 2009) as well as in recent cannabis users compared to non-recent users (D'Souza et al., 2012) were reported by the same group in subsequent studies conducted in non-overlapping samples. Using a similar methodology, Barkus et al. replicated these findings in 2011, indicating that the higher the previous use of cannabis the lower is the induction of psychotomimetic symptoms following acute challenge with Δ9-THC (Barkus et al., 2011). Further evidence indicated less anxiety in RU than NRU following 10 min of marijuana smoking (Desrosiers et al., 2015). Other evidence indicated less intense (Fabritius et al., 2013) and shorter confusion (Lex et al., 1984; Fabritius et al., 2013) in RU compared to NRU following Δ9-THC marijuana smoking.

Only three studies of repeated Δ9-THC or cannabis administration were identified which specifically investigated the development of tolerance to the psychoactive effects of cannabis. These studies focused on mood changes and reported conflicting results. Meyer et al. in 1971 didn't find any difference in mood states between RU and NRU after marijuana smoking, apart from the "vigor" factor. In particular, under marijuana RU tended to become more vigorous while NRU less vigorous (Meyer et al., 1971). However, Jones et al in 1976 found that upon repeated administration of Δ9-THC and cannabis crude extract there is a progressive lessening of the intensity of the mood changes experienced while intoxicated (Jones et al., 1976 (degree of tolerance observed: "Anxiety", 80%). This finding was not confirmed by a study of repeated Δ9-THC administration conducted in 2010, indicating sustained self-reported positive mood effects of Δ9-THC, which do not decrease over time (Bedi et al., 2010).

3.5. Cardiac function

Cardiac parameters have been frequently investigated in studies of tolerance to the effects of cannabinoids. Meyer et al. indicated that about 1 h after smoking marijuana RU had a lower pulse rate compared to NRU (Meyer et al., 1971). Four subsequent studies conducted in larger samples confirmed that after smoking marijuana tachycardia is lower or less prolonged in RU compared to NRU (Lex et al., 1984; Desrosiers et al., 2015; Ponto et al., 2004 (degree of tolerance observed: "Pulse rate", 13.2%; Cohen's *d*: 0.79); Ramaekers et al., 2009) [N (M ± SD, range): RU = 10.6 ± 3.1, 6–14; NRU = 12.6 ± 6.8, 6–24]. However, three other studies involving single or limited exposure to Δ9-THC or marijuana didn't replicate this finding (Kirk and de Wit, 1999; Lindgren et al., 1981; Renault et al., 1971) [N (M ± SD, range): RU = 8.7 ± 2.5, 6–11; NRU = 7.7 ± 3.2, 4–10]. Another study also indicated that oral cannabis-induced tachycardia occurs at higher Δ9-THC blood levels only in NRU (Newmeyer et al., 2017a). Three of these studies suggested no difference in the effects of cannabis on blood pressure between RU and NRU (Newmeyer et al., 2017a; Ponto et al., 2004; Ramaekers et al., 2009), while a fourth study indicated a blunted increase in systolic and diastolic blood pressure in RU compared to NRU (Desrosiers et al., 2015).

Studies of repeated exposure to cannabis indicated that tachycardia lessens upon repeated administration of Δ9-THC or marijuana (Jones et al., 1976; Nowlan and Cohen, 1977), cannabis-induced tachycardia is less pronounced during active maintenance with Δ9-THC (Benowitz and Jones, 1975 (degree of tolerance observed: "Pulse rate", 11.3%); Jones et al., 1976; Vandrey et al., 2013), and tolerance develops for the orthostatic but not supine hypotensive effects of Δ9-THC (Benowitz and Jones, 1975 (degree of tolerance observed: "Hypotension", 44.8%); Jones et al., 1976).

Another study suggested that the intensity of the marijuana-induced tachycardia doesn't differ between RU and NRU, while the duration of the effect is shorter in RU (Babor et al., 1975). Finally, only a study of repeated administration of Δ9-THC in a small sample of RU and over a short period failed to indicate less pronounced effects on pulse rate and blood pressure over time (Gorelick et al., 2013 (degree of tolerance observed: "Pulse rate", 9.9%)).

3.6. Pharmacokinetics

A number of studies in recent years have investigated the pharmacokinetics of Δ9-THC and its major metabolites, with particular attention to cannabinoid plasma concentrations. Δ9-THC hydroxylation results in 11-hydroxy-delta-9-tetrahydrocannabinol (11-OH-THC) and further oxidation in 11-nor-9-carboxy-delta-9-tetrahydrocannabinol (THC-COOH), which may be glucuronidated to 11-nor-9-carboxy-delta-9-tetrahydrocannabinol glucuronide (THCCOO-glucuronide) (Grotenhermen, 2003). Research evidence indicates that RU with a history of recent cannabis exposure (Fabritius et al., 2013) or after a brief period of abstinence of 24 h (D'Souza et al., 2008b; Ranganathan et al., 2009) have higher THC-COOH levels than NRU at baseline. However, consistent findings suggest that after a single intravenous administration of Δ9-THC RU and NRU do not differ in terms of Δ9-THC (Barkus et al., 2011; D'Souza et al., 2008b; Ranganathan et al., 2009) and THC-COOH levels (D'Souza et al., 2008b; Ranganathan et al., 2009). Similarly, RU and NRU do not differ in Δ9-THC, 11-OH-THC, and THC-COOH levels after administration of vaporized Δ9-THC (Ramaekers et al., 2016). In contrast, other studies indicate that after both marijuana smoking (Desrosiers et al., 2015; Ramaekers et al., 2009; Theunissen et al., 2012; Fabritius et al., 2013) and oral Δ9-THC

administration (Bosker et al., 2012) RU have higher Δ9-THC, 11-OH-THC, and THC-COOH levels than NRU. However, after accounting for baseline levels, this difference remains significant only for some studies (Ponto et al., 2004) but not for others (Fabritius et al., 2013). A very recent study highlighted how differences in cannabinoid levels between RU and NRU may depend on the route of administration (Newmeyer et al., 2017a). In particular, this study indicated that, compared to vaporized Δ9-THC, oral administration of Δ9-THC is associated with higher 11-OH-THC levels only in NRU. Also, the higher the Δ9-THC levels after oral dosing, the higher is the intoxication experienced by NRU (Newmeyer et al., 2017a). Finally, a study conducting multiple evaluations of cannabinoid concentrations in RU suggested that Δ9-THC and 11-OH-THC levels steadily increase over 6 days of repeated dronabinol administration (Gorelick et al., 2013).

3.7. Other behavioral measures

Only a limited number of studies have focused on other behavioral effects of cannabis. A study of repeated dronabinol administration conducted in a small sample of RU indicated that Δ9-THC increases caloric intake, satiety, sleep satisfaction and efficiency, food craving for proteins and fats, but that these effects were reduced or no longer distinguishable from placebo in the 2nd half of the study (Bedi et al., 2010; degree of tolerance observed: “Total daily caloric intake”, 11.7%; “Sleep satisfaction”, 15%). Also, RU in this study reported increased hunger and craving for carbohydrates only in the 2nd half of the study, with no significant effect on social behavior (Bedi et al., 2010). However, other studies in larger samples indicated that no tolerance develops to the effect of Δ9-THC on food intake (Haney et al., 1999; Hart et al., 2002) or sleep quality (Hart et al., 2002) over a period of repeated Δ9-THC administration (Haney et al., 1999) or during active maintenance with Δ9-THC (Hart et al., 2002). Also, one of these studies confirmed previous evidence that social behavior in RU doesn’t change upon repeated exposure to Δ9-THC (Haney et al., 1999). Other evidence indicated that after a single administration of oral Δ9-THC RU exhibited less impairment in their driving skills compared to NRU (Bosker et al., 2012) or their performance was not significantly impaired (Newmeyer et al., 2017b).

3.8. Physiological and neurophysiological measures

A number of studies specifically investigated development of tolerance to the physiological (other than cardiac) and neurophysiological effects of cannabis. Jones et al. in 1976 indicated that administration of Δ9-THC and crude cannabis extract induce several responses in RU which lessen in magnitude upon repeated exposure including body temperature increase, skin temperature decrease, salivary flow decrease, intraocular pressure decrease as well as EEG alpha slowing and auditory-evoked potential amplitude decreases (Jones et al., 1976). Instead, in this study no tolerance developed to the decrease in serum haematocrit, haemoglobin, bilirubin, and plasma testosterone induced by repeated exposure to Δ9-THC and cannabis crude extract (Jones et al., 1976). Four subsequent studies confirmed tolerance to the acute effect of intravenous Δ9-THC administration (Cortes-Briones et al., 2015; D’Souza et al., 2012) or marijuana smoking (Böcker et al., 2010; Theunissen et al., 2012 (degree of tolerance observed: “P100 targets”, 6.7%)) on specific electrophysiological measures in RU. In particular, while performing a task, RU showed reduced P300a peak latency (D’Souza et al., 2012), increased P100 amplitude (Theunissen et al., 2012), and lower inter-trial coherence and evoked power (Cortes-Briones et al., 2015) compared to NRU.

Studies by D’Souza and colleagues indicated that a single intravenous administration of Δ9-THC induced an increase in cortisol (D’Souza et al., 2008b; Ranganathan et al., 2009) and brain-derived neurotrophic factor (D’Souza et al., 2009) which was less pronounced in RU compared to NRU. Other evidence from the same group indicated that prolactin levels were lower in RU compared to NRU both before (D’Souza et al., 2008a, b; Ranganathan et al., 2009) and after acute challenge with Δ9-THC (D’Souza et al., 2008b; Ranganathan et al., 2009). A previous study conducted in a smaller sample (Mendelson et al., 1984) had reported that acute administration of cannabis compounds, either orally or via smoking, did not significantly affect plasma prolactin levels in both RU and NRU (Cohen's *d*: 0.26).

Studies have also reported that marijuana smoking was associated with a reduction in breath-holding duration only in NRU (Farris and Metrik, 2016) while respiration rate and expired carbon monoxide did not differ between RU and NRU acutely exposed to Δ9-THC (Newmeyer et al., 2017a). Another study indicated that regional cerebral blood flow did not differ between RU and NRU after smoking marijuana (Ponto et al., 2004). Barkus et al. found that previous cannabis use did not modulate dopamine release following intravenous administration of Δ9-THC (Barkus et al., 2011).

Repeated Δ9-THC exposure had no effect on body weight in a study (Bedi et al., 2010). In contrast, repeated Δ9-THC exposure induced weight gain in a longer study, although no tolerance developed to weight gain over the study period (Jones et al., 1976).

4. Discussion

To our knowledge, this is the first systematic review of all human studies examining whether tolerance develops to the acute effects of cannabis or its main psychoactive ingredient, Δ9-THC. Previous human studies have reported conflicting results in terms of acute effects of cannabis, especially on cognitive function (Hart et al., 2001; Ramaekers et al., 2006). Some authors have suggested that the apparent discrepancy was attributable to the different Δ9-THC content of the preparations study volunteers have been exposed to (Ramaekers et al., 2006). Although it is plausible that higher Δ9-THC content preparations would have a greater detrimental effect on neuropsychological performance, in line with the warnings about the potential health risk of increasing cannabis potency (higher Δ9-THC content) (Freeman and Swift, 2016), factors other than Δ9-THC content have been suggested to account for the apparent discrepant findings across studies (Nordstrom and Hart, 2006). In particular, Nordstrom and Hart have highlighted the importance of taking into account the cannabis use history of study volunteers when drawing conclusions regarding the acute effects of cannabis in man (Nordstrom and Hart, 2006). Of course, the two explanations are not mutually exclusive, as it has been suggested that among cannabis-naïve individuals higher Δ9-THC content may increase the likelihood of adverse psychological effects, such as anxiety, depression and psychotic symptoms (Hall, 2009). It is also worth noting that differing individual sensitivity to the effects of Δ9-THC and cannabis (Bhattacharyya et al., 2012b, 2014) as well as previous exposure to different cannabis strains with varying ratio of different cannabinoids, with opposing effects (Bhattacharyya et al., 2015, 2010) may also underlie these discrepant findings.

Overall, this review demonstrates that cannabis has less prominent or no effects on a number of behavioral and physiological measures in regular users (RU) compared to non-regular users (NRU). Also, the behavioral and physiological effects of cannabis lessen over repeated exposure and often become no longer distinguishable from placebo. Moreover, the acute effects of cannabis are less prominent during active maintenance with Δ9-THC. These effects are discussed in detail below.

4.1. Studies of single Δ9-THC or cannabis administration

Studies of acute cannabis-induced behavioral and physiological effects have differed widely in methodology, administering marijuana or Δ9-THC at differing doses, in various ways (e.g. in a cigarette to be smoked, as “brownie” to be eaten, as a preparation to be injected or inhaled) and assessing effects at varying time points post-administration. Also, they have investigated these effects in people with varying

levels of previous cannabis use and potential tolerance to its effects, and who have used the drug more or less recently before testing. Thus, it is not surprising that such studies have often produced a mixed pattern of results.

Studies of a single dose of Δ9-THC or cannabis included in this review have specifically investigated if their acute effects differ as a function of previous cannabis exposure. In some of the studies there was no evidence to support the development of tolerance to the intoxicating effects of the drug (Bosker et al., 2012; D'Souza et al., 2012, 2008b; Lindgren et al., 1981). However, these studies recruited relatively small samples (Bosker et al., 2012; D'Souza et al., 2012; Lindgren et al., 1981) and/ or non-regular users (NRU) with a wide range of previous cannabis exposure (Bosker et al., 2012; D'Souza et al., 2012, 2008b). Studies conducted in larger samples and on individuals well differentiated in their pattern of regular or non-regular cannabis use found less pronounced and shorter intoxication in regular users (RU) compared to NRU (Lex et al., 1984; Fabritius et al., 2013; Ponto et al., 2004).

Studies examining the effects of a single dose of Δ9-THC or cannabis on cognitive function reported less pronounced impairments as a function of previous cannabis exposure in the domains of divided but not sustained attention (Desrosiers et al., 2015; Marks and MacAvoy, 1989; Ramaekers et al., 2009; Theunissen et al., 2012), verbal memory (Cohen and Rickles, 1974; D'Souza et al., 2008a, b), and time perception (Sewell et al., 2013). Less clear is the effect of previous cannabis use on psychomotor ability over time, with studies suggesting development of tolerance to the detrimental effect of cannabis on psychomotor coordination (Desrosiers et al., 2015; Hart et al., 2002; Ramaekers et al., 2009, 2016) but not on other psychomotor processes such as response speed, sustained attention, visual spatial skills and set shifting (Kirk and de Wit, 1999; Meyer et al., 1971). Also, two studies suggested that driving skills are less (Bosker et al., 2012) or not affected (Newmeyer et al., 2017b) in RU compared to NRU following a single oral dose of Δ9-THC. Finally, limited evidence suggests that tolerance doesn't develop to the effects of cannabis on working memory, risk-taking, impulse control, and executive functioning (Desrosiers et al., 2015; Ramaekers et al., 2016).

Over the last 10 years, studies have consistently shown that following acute intravenous administration of Δ9-THC (D'Souza et al., 2012, 2009; D'Souza et al., 2008b) or marijuana smoking (Desrosiers et al., 2015; Fabritius et al., 2013; Lex et al., 1984) the transient induction of perceptual alterations, psychotomimetic (D'Souza et al., 2012, 2009; D'Souza et al., 2008b) and anxiety symptoms (Desrosiers et al., 2015) as well as symptoms of confusion (Fabritius et al., 2013; Lex et al., 1984) is less pronounced in RU than NRU. Also, the more individuals have used cannabis in the past, the greater has been the tolerance to the acute psychotomimetic effects of Δ9-THC (Barkus et al., 2011).

Single or limited exposure to Δ9-THC or marijuana has been associated with lower tachycardia in RU compared to NRU in some (Desrosiers et al., 2015; Meyer et al., 1971; Ponto et al., 2004; Ramaekers et al., 2009; Lex et al., 1984) but not all studies (Kirk and de Wit, 1999; Lindgren et al., 1981; Renault et al., 1971). This discrepancy could be attributable to the low statistical power of studies failing to report development of tolerance to the cannabis-induced tachycardia. Also, limited evidence suggests that at higher Δ9-THC blood levels RU are more tolerant to the oral cannabis-associated tachycardia compared to NRU (Newmeyer et al., 2017a). Less clear is the effect on blood pressure, with only one (Desrosiers et al., 2015) out of four studies (Newmeyer et al., 2017a; Ponto et al., 2004; Ramaekers et al., 2009) suggesting a less prominent increase in systolic and diastolic blood pressure in RU compared to NRU.

Other studies of single Δ9-THC administration or limited exposure to marijuana suggest that RU develop tolerance to the effect of cannabis on electrophysiological function (Cortes-Briones et al., 2015; D'Souza et al., 2012; Theunissen et al., 2012; Böcker et al., 2010), cortisol (D'Souza et al., 2008b; Ranganathan et al., 2009), prolactin (D'Souza et al., 2008a, b; Ranganathan et al., 2009), Brain-derived neurotrophic factor (D'Souza et al., 2009), and breath-holding duration (Farris and Metrik, 2016). Instead, respiration rate (Newmeyer et al., 2017a), regional cerebral blood flow (Ponto et al., 2004), and dopamine release (Barkus et al., 2011) didn't differ following acute administration of Δ9-THC as a function of previous cannabis exposure. However, the study by Barkus et al. was conducted in a small sample and was not designed explicitly to test the development of tolerance as a function of previous cannabis exposure (Barkus et al., 2011). Therefore, whether tolerance develops to the potential Δ9-THC-induced acute release of dopamine remains unclear.

4.2. Studies of repeated Δ9-THC or cannabis administration

For understandable reasons, monitoring the behavioral and physiological effects of Δ9-THC or cannabis upon repeated administration represents the best suitable research paradigm to investigate development of tolerance. Consistently, there is much more agreement between studies of repeated Δ9-THC or cannabis administration compared to studies of single Δ9-THC or cannabis administration with reference to the association between cannabis use and tolerance development. In particular, all such studies have shown development of tolerance to the intoxicating effects of cannabis in RU compared to NRU upon continuous exposure (Babor et al., 1975; Gorelick et al., 2013; Haney et al., 1999; Jones et al., 1976). Also, the intoxicating effect of Δ9-THC is greater at higher Δ9-THC plasma concentrations only in NRU (Newmeyer et al., 2017a). In contrast, the greater the extent to which RU have used cannabis in the past, the faster has been the decline in the intoxicating effects of cannabis (Nowlan and Cohen, 1977). Tolerance to the intoxicating effects of cannabis has been reported with both marijuana smoking (Desrosiers et al., 2015; Ramaekers et al., 2009; Theunissen et al., 2012) and vaporized cannabis (Ramaekers et al., 2016). However, limited evidence suggests that RU may display greater tolerance to the intoxicating effects of cannabis when it is administered orally compared to the vaporized route of administration (Newmeyer et al., 2017a).

Studies indicated relatively minor or no effects of repeated Δ9-THC administration in RU on a number of cognitive domains including learning, memory, vigilance, and psychomotor ability (Bedi et al., 2010; Haney et al., 1999; Jones et al., 1976). This absence of effect in RU might indicate the development of full tolerance. Intriguingly, tolerance to the cognitive effects of Δ9-THC was still evident even after a brief period of abstinence (Haney et al., 1999).

Repeated Δ9-THC or cannabis administration has been shown to blunt the mood changes associated with use of the drug only in one (Jones et al., 1976) out of three studies (Bedi et al., 2010; Meyer et al., 1971). However, evidence is too limited to draw any conclusion. Further research is needed to investigate whether upon repeated cannabis exposure tolerance develops to cannabis-associated psychosis-like symptoms and anxiety.

All (Babor et al., 1975; Benowitz and Jones, 1975; Jones et al., 1976; Nowlan and Cohen, 1977; Vandrey et al., 2013) but one study conducted in a small sample and over a short follow-up period (Gorelick et al., 2013) indicated less pronounced effects of repeated administration of Δ9-THC or marijuana on tachycardia (Babor et al., 1975; Benowitz and Jones, 1975; Jones et al., 1976; Nowlan and Cohen, 1977; Vandrey et al., 2013), and orthostatic hypotension (Benowitz and Jones, 1975; Jones et al., 1976). Also, repeated Δ9-THC administration has been associated with progressive tolerance to the effects of cannabis on body temperature, skin temperature, salivary flow, intraocular pressure, and electrophysiological function (Jones et al., 1976). Moreover, progressive tolerance has been shown to the effects of repeated Δ9-THC administration on food intake and sleep only in one (Bedi et al., 2010) out of three studies (Haney et al., 1999; Hart et al., 2002). Finally, other studies have indicated that repeated exposure to Δ9-THC

has no effect on social behavior (Bedi et al., 2010; Haney et al., 1999) and body weight (Bedi et al., 2010) and no tolerance develops to its effects on haematocrit, haemoglobin, bilirubin, plasma testosterone, and body weight (Jones et al., 1976).

4.3. Neurobiological mechanisms underlying development of tolerance

Studies seem to indicate that after a brief period of abstinence of 24 h, RU in the non-intoxicated state have higher levels of Δ9-THC metabolites compared to NRU (D'Souza et al., 2008b; Ranganathan et al., 2009). What is less clear is whether cannabinoid plasma concentrations differ after acute administration of Δ9-THC depending on the extent of previous cannabis use (Fabritius et al., 2013), with some studies indicating higher levels of Δ9-THC and its metabolites in RU compared to NRU (Bosker et al., 2012; Desrosiers et al., 2014a, 2015; Ramaekers et al., 2009; Theunissen et al., 2012), and other studies reporting no difference (Barkus et al., 2011; D'Souza et al., 2008b; Ramaekers et al., 2016; Ranganathan et al., 2009). The discrepancy might be due to the different routes of Δ9-THC administration used in these studies, with only oral and smoke routes leading to higher cannabinoids levels in RU compared to NRU (Bosker et al., 2012; Desrosiers et al., 2014a, 2015; Ramaekers et al., 2009; Theunissen et al., 2012), and not intravenous or vaporized exposure (Barkus et al., 2011; D'Souza et al., 2008b; Ramaekers et al., 2016; Ranganathan et al., 2009). The potential higher cannabinoid levels in RU are not surprising given Δ9-THC highly lipophilic nature and extended excretion in chronic or frequent cannabis users (Desrosiers et al., 2014a).

Some studies have indicated that the higher concentrations of Δ9-THC (Newmeyer et al., 2017c) and its metabolites (Fabritius et al., 2013) observed in RU compared to NRU following acute exposure were potentially due to the already higher cannabinoid levels in RU at baseline (Newmeyer et al., 2017c; Fabritius et al., 2013) and reflected recent exposure (Toennes et al., 2010). This was in line with evidence that Δ9-THC concentrations declined rapidly over the first few hours following cannabis use (Toennes et al., 2008, 2010). Also, the co-occurrence of higher concentrations of other cannabinoids in RU, such as cannabinol or cannabigerol (Swortwood et al., 2017), might be indicative of recent cannabis use independent of the experimental drug challenge (Newmeyer et al., 2016). Moreover, it has been suggested that the longer cannabinoid detection windows observed in RU compared to NRU following Δ9-THC smoking (Desrosiers et al., 2014b; Anizan et al., 2013; Himes et al., 2013) might suggest that RU smoked more efficiently (Toennes et al., 2008) rather than indicating significant changes in Δ9-THC pharmacokinetics.

The question arising is whether the higher cannabinoid levels in RU may be at least in part a consequence of modified biotransformation activities and be ultimately accountable for the development of tolerance observed following repeated exposure. Limited preclinical evidence indicates that repeated exposure to synthetic cannabinoids leads to tolerance through an alteration of the drug metabolizing enzyme system (Costa et al., 1996). Conversely, a large body of research seems to indicate that tolerance may develop also in the absence of pharmacokinetic changes and be attributable to pharmacodynamic events such as cannabinoid receptor type 1 (CB1) down regulation, receptor conformational change, and receptor internalization, with a subsequent decreased interaction of ligand and receptor (Ameri, 1999). However, CB1 receptor downregulation and related desensitization varies in rate and magnitude across the brain. For instance, CB1 receptor downregulation has been observed in the striatum, cerebellum and limbic forebrain, but not in the ventral mesencephalon, and some areas such as the hippocampus show faster and greater CB1 receptor downregulation and desensitization than other brain areas such as the basal ganglia (Ameri, 1999). In line with evidence from animal models (Rubino et al., 1997), this difference might explain why the development of tolerance follows different time courses and occurs to different extent in human studies reviewed here, with potential full tolerance developing for cognitive impairments whereas only partial tolerance develops for some physiological functions. For instance, regular users seem to show blunted responses to the amnestic but not to the euphoric effects of Δ9-THC, which may be mediated by different regions, the hippocampus and basal ganglia respectively (D'Souza et al., 2008b). Recent studies have indicated that RU may show blunted responses to the neurophysiological alterations induced by Δ9-THC in brain areas relevant to the manifestation of psychosis-like symptoms as well as verbal memory, response inhibition, attentional salience, and emotional processing (Colizzi et al., 2018a; Colizzi et al., 2018b).

4.4. Other substance use and tolerance

Psychostimulants such as cocaine and amphetamine induce a variety of behavioral and physiological effects, including psychoactive and cardiovascular effects as well as changes in appetite and body temperature (Kiyatkin, 2013; Frazer et al., 2018; Mladěnka et al., 2018). Preclinical evidence suggests that following sustained exposure to these drugs, tolerance develops for most of their effects (Zernig et al., 2007)). Similarly, evidence from human studies suggests that tolerance to cocaine (Mendelson et al., 1998) and methamphetamine (Strakowski et al., 2001) physiologic, neuroendocrine, and subjective effects may occur as a function of repeated exposure. Pharmacodynamic mechanisms have been suggested to explain the development of tolerance to the effects of psychostimulant drugs, such as alterations in dopamine release, uptake, transporter, and corresponding tone (Ferris et al., 2012). However, as for cannabis, although the accumulation from regular exposure might account for the higher plasma levels of cocaine and amphetamine observed in some experimental studies, the possibility of pharmacokinetic alterations cannot be ruled out (McMillan, 1991).

Studies included in this review have tried to take into account the confounding effects of other psychostimulant use. However, the possible synergistic effects of cannabis and other psychostimulant drugs on tolerance development deserve further study. Preclinical studies have shown how repeated cannabinoid administration blunts the meso-accumbens dopamine response to an acute challenge with cannabinoid agonists but also to an acute challenge with cocaine and amphetamine, suggesting that tolerance to the effects of Δ9-THC may lead to cross-tolerance for the effects of other psychostimulant drugs (Pistis et al., 2004).

4.5. Implications for psychosis and cannabis use disorder

What does this mean in terms of the development of a Cannabis Use Disorder (CUD) or psychosis in response to regular cannabis use? Development of tolerance to the intoxicating effects of cannabis, especially effects that are pleasurable, is consistent with a need to use progressively greater amounts of cannabis recreationally in order to get the same enjoyable effects, leading in turn to the development of a CUD. In those who end up developing a CUD but not a psychotic disorder, it is also likely that a similar progressive attenuation of the negative effects, in particular the psychotomimetic effects of cannabis would have occurred, thereby supporting continued use. This is consistent with a growing body of evidence that the risk of a CUD is higher among individuals experiencing early positive reactions to cannabis, possibly reflecting individual differences in the responsiveness of the mesolimbic dopamine system to the reinforcing effects of substance administration (Fergusson et al., 2003), while negative reactions are more likely to predict cessation of use (Sami et al., 2018). However, in those who end up developing a psychotic disorder or experiencing its relapse following continued cannabis use, independent, replicated evidence suggests that the risk of onset of psychosis (Colizzi and Murray, 2018; Moore et al., 2007; Sami and Bhattacharyya, 2018) or its relapse (Schoeler et al., 2016; Colizzi et al., 2016a) is linked to regular, frequent use, arguing against the development of tolerance to the

psychotomimetic effects in these individuals. Whether this means that in such individuals, tolerance may selectively be developing to certain effects of cannabis and not to the psychotomimetic effects remains to be tested. Further studies are also needed to clarify potential biological differences between cannabis users who develop tolerance to the effects of the drug and cannabis users who develop psychotic or cannabis use disorders. The possibility that cannabis users who develop tolerance to the acute psychotomimetic effects of Δ9-THC are still at increased risk of psychosis cannot be ruled out.

4.6. Methodological limitations

Groups of regular (RU) and non-regular cannabis users (NRU) differed considerably across studies in terms of their pattern and frequency of cannabis use prior to assessment as well as dose and route of administration during the experiment (see methodological quality of studies in Table 2), limiting the comparison of the findings across the domains investigated. These aspects were partially mitigated in studies of repeated Δ9-THC or cannabis exposure, as the tolerance phenomenon was investigated in a controlled environment where subjects received standardized amounts of cannabis or its main active ingredient over a time period. Conversely, it represented a substantial limitation in studies of single Δ9-THC or cannabis exposure, where the tolerance manifestation, if present, followed a single administration and was modulated by previous cannabis exposure itself of study participants. This would explain the higher consistency and evidence of tolerance among studies of repeated Δ9-THC or cannabis exposure, potentially accounting for discrepancies among studies of single Δ9-THC or cannabis exposure. Independent of these explanations, differences in sample size across studies might also explain the inconsistent evidence for the development of tolerance to the intoxicating and cardiac effects of cannabis in studies of single Δ9-THC or cannabis exposure. The largest of these studies (Ponto et al., 2004) indicated tolerance development for both domains with a large effect size. However, the available data didn't allow a systematic power calculation across studies. Moreover, very limited evidence seems to suggest that the development of tolerance differed according to the route of administration, with higher tolerance when cannabis is administered orally compared to other routes of administration (Newmeyer et al., 2017a). However, data was too limited to draw any conclusion.

Also, the large majority of the studies reviewed here recruited a group of RU presenting with recent cannabis use and often a urine drug screen positive for Δ9-THC, as this represented an inclusion criterion to differentiate participants with regular versus non-regular cannabis use. Thus, as stated before, this limits the possibility of disentangling whether the higher levels of Δ9-THC and its metabolites observed among RU in some of these studies represent an alteration in pharmacokinetic processes such as distribution, metabolism and elimination, or just the consequence of Δ9-THC accumulation within the organism. Both phenomena may coexist, as indicated by cellular studies suggesting complex relationship between Δ9-THC accumulation and its metabolism in the brain (Monnet-Tschudi et al., 2008). Likewise, it is not clear whether tolerance to the effects of Δ9-THC would persist after an adequate period of abstinence. Limited evidence reviewed here suggests that RU are still tolerant to the cognitive effects of Δ9-THC on cognitive processes after 4 days of abstinence preceding the drug challenge (Haney et al., 1999). Also, other evidence suggests that tolerance to the intoxicating effects of cannabis upon repeated exposure shows only partial recovery after 1 week of abstinence (Nowlan and Cohen, 1977). However, despite being identified as a crucial pharmacodynamic mechanism underlying tolerance development following sustained cannabis exposure (Ameri, 1999), CB1 receptor downregulation has been shown to be selective and rapidly reversed after just two days of monitored abstinence from cannabis (D'Souza et al., 2016). Future studies need to examine whether tolerance persists after longer periods of abstinence preceding the acute challenge and its relationship with downregulation of CB1 receptor across different brain areas.

An alternative explanation for the blunted effects of Δ9-THC in RU is that RU, especially when not developing psychosis-like symptoms, may be innately protected from some of the detrimental effects of cannabis. It has been shown that monozygotic twins are more likely to report similar experiences when exposed to cannabis compared to dizygotic twins (Lyons et al., 1997). Also, inter-individual variation in the availability of cannabinoid receptors (Bhattacharyya et al., 2017) as well as genetic variation in cannabinoid (Colizzi et al., 2015a; Taurisano et al., 2016) and dopamine signalling (Bhattacharyya et al., 2014; Colizzi et al., 2015b, c) have been linked to variation in the extent of psychotomimetic and neurocognitive effects of cannabis and Δ9-THC. However, the higher concordance within studies of repeated Δ9-THC or cannabis administration compared to studies of single Δ9-THC or cannabis administration in reporting an association between regular cannabis use and development of tolerance argues against the possibility that tolerance in RU may be explained by genetically determined differences.

4.7. Future directions and conclusions

Available evidence suggests that the effects of acute marijuana or Δ9-THC administration are less prominent in individuals with a regular pattern of cannabis use compared to non-regular users. Cognitive function appears to be the domain most likely to demonstrate tolerance upon repeated exposure, with some evidence of full tolerance indicating a complete absence of acute effect. The acute intoxicating and cardiac effects of Δ9-THC are also blunted upon regular exposure. Similar but limited evidence also suggests blunted acute psychotomimetic effects of Δ9-THC in individuals using cannabis regularly. The degree of tolerance in these domains varies, with generally an evidence of partial tolerance that is presence of some, albeit attenuated acute effects. Less clear or very limited is the evidence supporting the development of tolerance for other behavioral, physiological, and neural effects of cannabis.

The adverse effects of repeated Δ9-THC administration on neurons may occur through a combination of pathways involving cannabinoid receptor activation (Colizzi et al., 2016b), accumulation of cannabinoids and their metabolites, and upregulation of neuroinflammatory cytokines (Monnet-Tschudi et al., 2008). Thus, tolerance may play a relevant role in the cascade of neurobiological events leading to disorders affecting brain chemistry and circuitry. Further studies are needed to better understand the neurobiological mechanisms underlying the development of tolerance upon repeated cannabis exposure in man.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.neubiorev.2018.07.014.

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Creative Motions Practice in District Court

Rex Marvel

Mecklenburg County Public Defenders

Board Certified Criminal Law Specialist

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What?

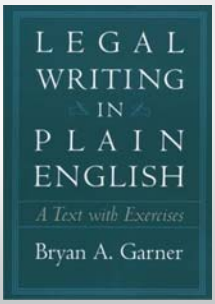
- Cover different types of written motions you can use in District Court

Why?

- You have an advantage in District Court
- Element of Surprise
- Element of Intimidation
- Tool to be used not just in litigation but also for negotiation/mitigation

Tips Generally

- Know your audience (judge or DA)
- Organize your writing
- Write simply
- Avoid a passive tone
- Do not give away too much
- Review before filling



MOTIONS

- Capacity
- Statue of Limitations
- Severance/Joinder
- Brady/Giglio/Motions to Compel
- Motions to Suppress
- Undue Delay
- DWI
- Other Motions to Dismiss
- Thompson
- Equal Protection
- Waive/Strike Fees

QUESTIONING CAPACITY (§15A-1001); HEARING (1002); VD and VD/WL (1008 & 1009)

- Notice for intent to use defense of insanity
- Diminished Capacity
- Automatism

Defense of Insanity

- § 15A-959. Notice of defense of insanity requires "reasonable" notice to state
- I have used this a number of times for Mitigation
- Beware of the consequences if you are successful

Automatism and Diminished Capacity

- Likely better alternative to "Defense of Insanity"
- Still notice is required: "if a defendant intends to introduce expert testimony relating to a mental disease, defect, or other condition bearing upon the issue of whether the defendant had the mental state required for the offense charged, the defendant must within a reasonable time prior to trial file a notice of that intention."

Diminished Capacity

- Differs from Defense of Insanity
- Is a defense to Specific Intent but not General Intent Crimes
  - Think Assault vs Sexual Battery
- Notice Required
- Defendant has the Burden of Production

Automatism

- Voluntary/involuntary intoxication
- "absence of consciousness[, which] not only precludes the existence of any specific mental state, but also excludes the possibility of a voluntary act without which there can be no criminal liability." State v. Fields, 324 N.C. 204 (1989).
- Can be a defense to ALL crimes general and specific.

MOTION TO WITHDRAWAL (§15A-141-144)

Probably everyone's favorite motion.

Tip: confirm with counsel

Motion for Bill of Particulars

- Can be used as a means to get discovery in District Court
- However, this may cause the DA to look into warrant language or research case further

§ 15A-925. Bill of particulars.

(a) Upon motion of a defendant under G.S. 15A-952, the court in which a charge is pending may order the State to file a bill of particulars with the court and to serve a copy upon the defendant.

(b) A motion for a bill of particulars must request and specify items of factual information desired by the defendant which pertain to the charge and which are not recited in the pleading, and must allege that the defendant cannot adequately prepare or conduct his defense without such information.

(c) If any or all of the items of information requested are necessary to enable the defendant adequately to prepare or conduct his defense, the court must order the State to file and serve a bill of particulars. Nothing contained in this section authorizes an order for a bill of particulars which requires the State to recite matters of evidence.

(d) The bill of particulars must be filed with the court and must recite every item of information required in the order. A copy must be served upon the defendant, or his attorney. The proceedings are stayed pending the filing and service.

(e) A bill of particulars may not supply an omission or cure a defect in a criminal pleading. The evidence of the State, as to those matters within the scope of the motion, is limited to the items set out in the bill of particulars. The court may permit amendment of a bill of particulars at any time prior to trial. (1973, c. 1286, s. 1.)

MOTION TO DISMISS OR SUPPRESS DWI (§20-38.6)

- Knoll
- Other Fragrant Violation of Rights (Think Rodriguez)

Tip: MAY be required pre-trial under §20-38.6 BUT if foundation, LIKE Chain of Custody of blood, mid-trial and why (advantages to mid-trail)

STATUTE OF LIMITATIONS (§15-1) (post Turner)

- G.S. 15-1 requires that misdemeanors (other than malicious misdemeanors, whatever those are) be charged within two years of their commission, there is no corresponding statute of limitations for felonies.
- Magistrate Orders Toll (post Turner)

STATUTE OF LIMITATIONS (§15-1) (post Turner)

- Objection to Trial on Citation G.S. 15A-922(C) Allows you to object to being tried on a citation. If you combine this with the new statute of limitations under G.S. 15-1 it is possible that once an offense is more than two years old the citation is dismissed and a statement of charges is filed that the Statute of Limitations would demand a dismissal.

MOTION TO QUASH PROCESS (§15A-301); CITATION (302); SUMMONS (303); WARRANT (304); OFA (305); STATEMENT OF CHARGES (§15A-922(b)); PLEADINGS (§15A-924) SEQUESTER (RULE §8C-615 & §15A-1225)

Motions to Suppress

MOTION TO SUPPRESS EVIDENCE (§15A-971-980)

- In misdemeanor prosecutions in the district court, motions to suppress evidence should ordinarily be made during the course of the trial. A motion to suppress may be made prior to trial. With the consent of the prosecutor and the district court judge, the motion may be heard prior to trial.

Warrantless Misdemeanor Arrest

(b) Arrest by Officer Without a Warrant. -
(1) Offense in Presence of Officer. - An officer may arrest without a warrant any person who the officer has probable cause to believe has committed a criminal offense, or has violated a pretrial release order entered under G.S. 15A-534 or G.S. 15A-534.1(a)(2), in the officer's presence.
(2) Offense Out of Presence of Officer. - An officer may arrest without a warrant any person who the officer has probable cause to believe:
a. Has committed a felony; or
b. Has committed a misdemeanor, and:
1. Will not be apprehended unless immediately arrested, or
2. May cause physical injury to himself or others, or damage to property unless immediately arrested; or
c. Has committed a misdemeanor under G.S. 14-72.1, 14-134.3, 20-138.1, or 20-138.2; or
d. Has committed a misdemeanor under G.S. 14-33(a), 14-33(c)(1), 14-33(c)(2), or 14-34 when the offense was committed by a person with whom the alleged victim has a personal relationship as defined in G.S. 50B-1; or
e. Has committed a misdemeanor under G.S. 50B-4.1(a); or
f. Has violated a pretrial release order entered under G.S. 15A-534 or G.S. 15A-534.1(a)(2).

- §15A-401(b)(2).
  - Remedy= suppression under §15A-974
    - Things to suppress?
      - Items found in a larceny case (remember UC is an exception under §15A-401(b)(2)(c).
      - Confession/admission

MOTION TO SUPPRESS ID (§15A-284.50-.53)

- This includes line-up, show-up and photo line-up

Remedies. - All of the following shall be available as consequences of compliance or noncompliance with the requirements of this section:

- Failure to comply with any of the requirements can suppress eyewitness identification.

SEARCH AND SEIZURE (§15A-221-231); SEARCH WARRANTS (§15A-241-259)

Motions to Dismiss

MOTION TO DISMISS (§15A-954)

- **15A-954. Motion to dismiss - Grounds applicable to all criminal pleadings; dismissal of proceedings upon death of defendant.**
- (a) The court on motion of the defendant must dismiss the charges stated in a criminal pleading if it determines that:
  - (1) The statute alleged to have been violated is unconstitutional on its face or as applied to the defendant.
  - (2) The statute of limitations has run.
  - (3) The defendant has been denied a speedy trial as required by the Constitution of the United States and the Constitution of North Carolina.
  - (4) The defendant's constitutional rights have been flagrantly violated and there is such irreparable prejudice to the defendant's preparation of his case that there is no remedy but to dismiss the prosecution.
  - (5) The defendant has previously been placed in jeopardy of the same offense.
  - (6) The defendant has previously been charged with the same offense in another North Carolina court of competent jurisdiction, and the criminal pleading charging the offense is still pending and valid.
  - (7) An issue of fact or law essential to a successful prosecution has been previously adjudicated in favor of the defendant in a prior action between the parties.
  - (8) The court has no jurisdiction of the offense charged.
  - (9) The defendant has been granted immunity by law from prosecution.
  - (10) The pleading fails to charge an offense as provided in G.S. 15A-924(e).
- (b) Upon suggestion to the court that the defendant has died, the court upon determining that the defendant is dead must dismiss the charges.

Undue Delay: Rodriguez Motion

- In Rodriguez v. United States, 135 S. Ct. 1609 (2015), the United States Supreme Court significantly limited the scope of a traffic stop.
- State v. Reed (2018), the Friendly Pit Bull Case.
- Tips: Look for any cause for delay (calling for backup, calling insurance provider, checking computers)
- Listen to the audio and decipher what codes are called and why

BRADY

- *Brady v. Maryland*
- Look for destroyed BWC's and DMVR's
- Much more in-depth training from Brian Wood and Carson Smith

Motion to Compel and Giglio

- No Discovery in District Court
- However, Giglio v. United States, 405 U.S. 150 (1972). Whether the officer's prior dishonesty or misconduct is material

Motion to Dismiss with Prejudice/Demand for Trial

- States Motion to Continue denied, State takes a voluntary dismissal than refiles! *See* State v. Friend 724 S.E.2d 85 (2012)
- Remedy: File a motion to dismiss with prejudice
  - Other alternatives…

MOTION TO DISMISS DWI

- Chain of Custody
- Checkpoint
- Knoll
- Ferguson
- Delay or other?

Chain of Custody

N.C.G.S. 20-139.1

"at least five business days before the proceeding at which the testimony will be presented that the defendant objects to the introduction of the remote testimony.

If the defendant's attorney of record, or the defendant if that person has no attorney, fails to file a written objection as provided in this subsection, then the objection shall be deemed waived and the analyst shall be allowed to testify by remote testimony."

Checkpoint

- Constitutionality and Purpose "the public's interest and an individual's privacy interest." This balancing requires the consideration of three factors: "(1) the gravity of the public concerns served by the seizure, (2) the degree to which the seizure advances the public interest, and (3) the severity of the interference with individual liberty." State v. Rose, 170 N.C. App. 284(2005)

- Checkpoint Plan G.S. 20-16.3A(a), a law enforcement agency conducting a checkpoint "must operate under a written policy."

- Location G.S. 20-16.3A(d), the "placement of checkpoints should be random or statistically indicated, and agencies shall avoid placing checkpoints repeatedly in the same location or proximity."

  - Could this trigger a Fourth Amendment Challenge?

- Notification to the Public G.S. 20-16.3A(a)(3).

Knoll

- State v. Knoll, 322 N.C. 535 (1988), denied the right to communicate with counsel and friends the court held that this denial resulted in substantial prejudice. The defendant specifically complained that the magistrate ordered him held under a $1,000 secured bond without justification, prior to meeting with him, and without making written findings as to why that condition was necessary. The trial court denied the defendant's motion, and the court of appeals affirmed.
- Tips:
  - Check on witnesses, family, friends
  - Pull Jail Records
  - Check timings and look for delays

Ferguson

DENIAL OF ACCESS TO A WITNESS TO A BREATH TEST

That the North Carolina Court of Appeals in Ferguson held that, "[t]he denial of access to a witness in this case -- when the State's sole evidence of the offense is the personal observations of the authorities -- would constitute a flagrant violation of defendant's constitutional right under N.C. Const. Art. I Sec. 23 as a matter of law and would require that the charges be dismissed." Ferguson at 519.

Tips: Check Body Worn Camera, See if Intox Room has a camera that can be subpoenaed.

JOINDER AND SEVERANCE (§15A-926 & 927)

- Co-Defendant Trials
  - Strategize when this can hurt or help
- Pending Felonies
  - Can you bar the state from trying the attached felony?

MOTION TO SUPPRESS PRIOR CONVICTION (§15A-980)

- (a) A defendant has the right to suppress the use of a prior conviction that was obtained in violation of his right to counsel if its use by the State is to impeach the defendant or if its use will: (1) Increase the degree of crime of which the defendant would be guilty; or (2) Result in a sentence of imprisonment that otherwise would not be imposed; or (3) Result in a lengthened sentence of imprisonment.
- DWI Convictions in Tennessee and South Carolina

Also: Suppression of DWI Priors under §20-179(o)
- o Burden on Defense
- o Preponderance of the Evidence
  - Indigent
  - No counsel
  - No waiver

Thompson

- Under G.S. 15A-534.1, With DV cases a judge, rather than a magistrate, must set the defendant's bond.
- First, the rule is sometimes called a "48 hour hold." but it suggests that the defendant should always be held without bond for 48 hours. However, the rule doesn't authorize a hold for any reason other than the unavailability of a judge. If a judge is available — then the defendant should not be held. He or she should be taken promptly before the judge. If a defendant is held for 48 hours even though a judge has been available in the interim, dismissal of the charges is warranted.

Thompson

Tips:
- Pull jail records
- Argue on facts alone do not let the DA sway sympathy

Equal Protection

- https://opendatapolicing.com/nc/

Waiver/Strike Fees

- Mecklenburg County has a form for waivers

Closing

Hot Topics: Hemp and Marijuana Identification

Belal Elrahal, APD (Meck) belal.elrahal@mecklenburgcountync.gov

In 2015, North Carolina Department of Agriculture and Consumer Services created the Industrial Hemp Commission, in response to growing demand for CBD products. But, according to the US Department of Agriculture:

> Marijuana and industrial hemp are different varieties of the same plant species, *Cannabis sativa* . . . [A] study of 97 Cannabis strains concluded that short of chemical analysis of the THC content, there was no way to distinguish between marijuana and hemp varieties.

Industrial Hemp in the United States: Status and Market Potential (2000)
https://www.ers.usda.gov/publications/pub-details/?pubid=41757

So the legislature quietly amends the *definition* of marijuana in N.C.G.S. 90-87(16) and adds:

> The term does not include industrial hemp as defined in G.S. 106-568.51, when the industrial hemp is produced and used in compliance with rules issued by the North Carolina Industrial Hemp Commission.

(The rules it refers to are rules governing the growth, processing, and movement to market of products, and nothing beyond that)

And N.C.G.S. 106-568.51(7) defines Industrial Hemp as:

> All parts and varieties of the plant Cannabis sativa (L.), cultivated or possessed by a grower licensed by the Commission, whether growing or not, that contain a delta-9 tetrahydrocannabinol concentration of not more than three-tenths of one percent (0.3%) on a dry weight basis.

State v. Ward, 364 N.C. 133 (2010), required chemical analysis of controlled substances based on the existence of counterfeit powders/pills which can't otherwise be distinguished without chemical analysis. Chemical analysis as the *only* way to distinguish two substances is the basis for later cases that do not apply *Ward* to marijuana. Post-*Ward* cases rely on *State v. Fletcher*, 92 N.C. App. 50 (1988), where an officer was admitted as an expert based on training and experience and testified to the identity of a substance as marijuana without chemical analysis.

Three distinctions now support requiring chemical analysis to identify marijuana:

1. Marijuana is now defined by its chemical composition in the statute.
2. In *Fletcher*, identification of the substance by the witness was permitted as expert testimony because "they were better qualified than the jury to form an opinion as to the contents of the clear plastic bag." Now, they're not. Their ability to see and smell the substance is as useful as any fact-finder in identifying the substance. *Ward* specifically warns that the expert's remarkable credentials presented a compelling need to halt his testimony, because it would cause the jury to be unduly persuaded and for his testimony to be "shrouded with an aura of near infallibility" when based on a insufficient method of proof.
3. *Ward* and *Fletcher* were decided before *State v. McGrady*, 368 N.C. 880 (2016). *McGrady* raised the requirements of Rule 702 from the "decidedly less . . . rigorous" *Howerton* standard to the *Daubert* standard. See *McGrady* for a thorough application of the more strenuous requirements.

Identifying/Litigating Suppression Issues in Traffic Stops

Jordan Duhe Willetts-Duhe Willetts Law

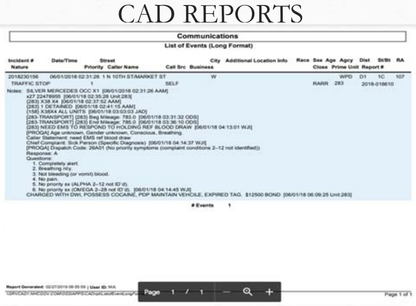
Sources of Information

- Client
- Officer
- Reports
- CAD reports/audio/911 calls
- Dash/body cam
- Google Maps (seriously)

Questions to Consider

- What is the "mission" of the stop?
- Was the "mission" completed? If so, when?
- Was the officer diligently pursuing the "mission"?
- Did the investigation not in pursuit of the "mission" extend the stop?
- Was additional reasonable suspicion developed at any point? When?

CAD REPORTS



Communications

List of Events (Long Format)

Incident # / Nature	Date/Time	Street / Priority	Caller Name	Call Src	City	Business	Additional Location Info	Race	Sex / Close	Age / Prime Unit	Agcy	Dist / Report #	St/Bt	RA
2018230156	06/01/2018 02:31:26	1 N 10TH ST/MARKET ST			W						WPD	D1	1C	107
TRAFFIC STOP		1		SELF					RARR	283		2018-018610		

Notes: SILVER MERCEDES OCC X1 [06/01/2018 02:31:26 AAM]
x27 22478955 [06/01/18 02:35:28 Unit:283]
(283) X38 X4 [06/01/18 02:37:52 AAM]
(283) 1 DETAINED [06/01/18 02:41:15 AAM]
(158) X38X4 ALL UNITS [06/01/18 03:03:03 JAD]
[283-TRANSPORT] (283) Beg Mileage: 783.0 [06/01/18 03:31:32 ODS]
[283-TRANSPORT] (283) End Mileage: 785.0 [06/01/18 03:36:10 ODS]
(283) NEED EMS TO RESPOND TO HOLDING REF BLOOD DRAW [06/01/18 04:13:01 WJI]
[PROQA] Age unknown, Gender unknown, Conscious, Breathing.
Caller Statement: need EMS ref blood draw
Chief Complaint: Sick Person (Specific Diagnosis) [06/01/18 04:14:37 WJI]
[PROQA] Dispatch Code: 26A01 (No priority symptoms (complaint conditions 2-12 not identified))
Response: A
Questions:
1. Completely alert.
2. Breathing nily.
3. Not bleeding (or vomit) blood.
4. No pain.
5. No priority sx (ALPHA 2-12 not ID'd).
6. No priority sx (OMEGA 2-28 not ID'd). [06/01/18 04:14:45 WJI]
CHARGED WITH DWI, POSSESS COCAINE, PDP MAINTAIN VEHCILE, EXPIRED TAG. $12500 BOND [06/01/18 06:09:25 Unit:283]

 # Events 1

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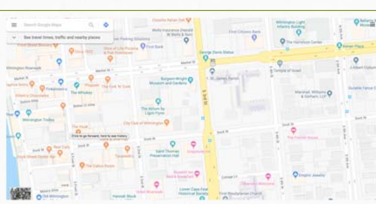
Page 1 of 1

CALL SIGNS CHEAT SHEET

- 10-4 –acknowledgment
- 10-7 out of service
- 10-8 - in service
- 10-17 en route
- 10-23 arrived on scene
- 10-25- report to
- 10-27- request license info
- 10-29 records check
- 10-48 detaining suspect
- 10-57 request breathalyser
- 10-61 stopping suspicious vehicle
- 10-72 have prisoner in custody

How Maps Can Help



What's the point?!

PITFALLS OF MISDEMEANOR SENTENCING

Tabitha Bingham, Attorney
Bingham Law, PLLC
Misdemeanor Panel
Spring 2019 Public Defender & Investigator Conference
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MODERN SENTENCING

- G.S. 15A-1340.14(c)
- If the offense class of the prior conviction has increased between the time of the prior and present offenses, the prior counts for points according to the higher offense class. If the offense class has decreased, the prior counts at its new, reduced level.

POSSESSION OF DRUG PARAPHERNALIA

- G.S. 90-113.22A effective December 1, 2014
- Possession of drug paraphernalia related to marijuana was created as a Class 3 misdemeanor.
- The existing PDP offense, G.S. 90-113.22(a), remained a Class 1 misdemeanor, but was amended to say that it applied to possession of paraphernalia related to controlled substances other than marijuana.

STATE V. MCNEIL

- The State failed to prove **Defendant's** 2012 conviction for possession of drug paraphernalia was a Class 1 misdemeanor.
- Case was remanded for resentencing.
- "The State bears the burden of proving, by a preponderance of the evidence, that a prior conviction exists ...." N.C.G.S. § 15A-1340.14(f) (2017).

STATE V. ARRINGTON, LAW V. FACT

- A divided panel of the **Court of Appeals** vacated the trial court's judgment and set aside defendant's guilty plea.
- Holding that defendant improperly stipulated to a matter of "pure legal interpretation."
- Dissent…sends us to Supreme Court

STATE V. ARRINGTON, LAW V. FACT

- It is well settled that a defendant can stipulate to a prior conviction, even though the prior conviction itself involved a mixed question of fact and law. While the statutory classification of this prior conviction is a legal determination, its classification is fact driven.
- Defendant's stipulation here is stipulation to the facts of his prior offense and that those facts supported its B1 classification.
- The trial court duly accepted the stipulation. Court of Appeals is reversed and reinstated the trial courts judgment.

DON'T BE A PROSECUTOR'S DREAM, THINGS TO PONDER!

- Count only a single conviction from each calendar week of superior court, or session (generally, one day) of district court. 15A-1340.21(d).
- We are in a hurry!!! H&I court considerations
- Ask for draft sentencing worksheet early and review it!
- Ask your client if any PDP involved marijuana or some other drug?
- How is this issue arising in your counties?
- Do we really have to stipulate?
- Moral of the story---Misdemeanors matter! This group knows that more than anyone.

IN THE COURT OF APPEALS OF NORTH CAROLINA

No. COA16-761

Filed: 1 August 2017

Buncombe County, Nos. 13 CRS 63727, 14 CRS 196, 267

STATE OF NORTH CAROLINA

v.

JAMES EDWARD ARRINGTON

Appeal by defendant from judgment entered 14 September 2015 by Judge Alan Z. Thornburg in Buncombe County Superior Court. Heard in the Court of Appeals 26 January 2017.

Attorney General Joshua H. Stein, by Assistant Attorney General Tracy Nayer, for the State.

Appellate Defender Glenn Gerding, by Assistant Appellate Defender James R. Grant, for defendant-appellant.

DAVIS, Judge.

This case requires us to revisit the question of which types of issues may be the subject of a valid stipulation by a defendant in connection with a plea agreement. James Edward Arrington ("Defendant") appeals from his convictions for assault with a deadly weapon inflicting serious injury, felony failure to appear, and attaining the status of a habitual felon. Because we conclude that the trial court improperly accepted Defendant's stipulation as to an issue of law, we vacate its judgment and remand for further proceedings.

Factual and Procedural Background

On 5 May 2014, Defendant was indicted for assault with a deadly weapon inflicting serious injury and attaining the status of a habitual felon. On 3 November 2014, he was also charged with felony failure to appear in connection with that assault charge. He was subsequently charged on 3 August 2015 with an additional count of attaining the status of a habitual felon.

Defendant and the State entered into a plea agreement whereby it was agreed that (1) he would plead guilty to assault with a deadly weapon inflicting serious injury, felony failure to appear, and attaining the status of a habitual felon; and (2) the State would dismiss the second habitual felon charge. The plea agreement also reflected that Defendant would be sentenced as a habitual felon in the mitigated range and that he "stipulated that he ha[d] 16 points and [was] a Level V for Habitual Felon sentencing purposes."

In connection with this plea agreement, the parties submitted to the trial court a prior record level worksheet for Defendant containing a stipulation as to the existence of six prior convictions generating prior record level points. One of the convictions listed was a second-degree murder conviction from 1994 (the "1994 Conviction"), which was designated in the worksheet as a Class B1 offense. The 1994 Conviction gave rise to 9 of the 16 total prior record level points reflected on the worksheet pursuant to N.C. Gen. Stat. § 15A-1340.14(b)(1a).

A plea hearing was held in Buncombe County Superior Court before the Honorable Alan Z. Thornburg on 14 September 2015. During the hearing, Defendant's counsel stipulated to Defendant's designation as a Level V offender as stated on the prior record level worksheet. Defendant then pled guilty to assault with a deadly weapon inflicting serious injury, felony failure to appear, and attaining the status of a habitual felon. The second habitual felon charge was dismissed. The trial court consolidated Defendant's convictions and sentenced him as a habitual felon to 96 to 128 months imprisonment.

Analysis

I. Appellate Jurisdiction

As an initial matter, we must address whether we have jurisdiction over the present appeal. Defendant's sole argument is that the trial court erred by accepting his plea agreement because it was based upon an invalid stipulation of law that resulted in an incorrect calculation of his prior record level. As a result, Defendant argues, he was improperly sentenced as a Level V offender rather than a Level IV offender. Pursuant to N.C. Gen. Stat. § 15A-1444, a defendant who pleads guilty to a criminal offense in superior court is entitled to an appeal as a matter of right regarding the issue of whether the sentence imposed "[r]esult[ed] from an incorrect finding of the defendant's prior record level . . . ." N.C. Gen. Stat. § 15A-1444(a2)(1) (2015).

Defendant, however, did not file a notice of appeal that strictly conformed to Rule 4 of the North Carolina Rules of Appellate Procedure. He instead submitted a letter to the Buncombe County Clerk of Court on 21 September 2015 expressing his dissatisfaction with his plea agreement. Because of his failure to comply with Rule 4, Defendant's appeal is subject to dismissal. However, Defendant has filed a petition for writ of *certiorari* requesting that we consider his appeal notwithstanding his violation of Rule 4.

Pursuant to Rule 21 of the North Carolina Rules of Appellate Procedure, this Court may, in its discretion, grant a petition for writ of *certiorari* and review an order or judgment entered by the trial court "when the right to prosecute an appeal has been lost by failure to take timely action[.]" N.C. R. App. P. 21(a)(1). In our discretion, we elect to grant Defendant's petition for writ of *certiorari* and reach the merits of his appeal.

II. Validity of Defendant's Stipulation

Before imposing a sentence for a felony conviction, the trial court must determine the defendant's prior record level, N.C. Gen. Stat. § 15A-1340.13(b) (2015), which is calculated by adding together the points assigned to each of the defendant's qualifying prior convictions, N.C. Gen. Stat. § 15A-1340.14(a). Points are assessed based upon the classification of the prior offense, and "the classification of a prior offense is the classification assigned to that offense *at the time the offense for which*

the offender is being sentenced is committed[,]" N.C. Gen. Stat. § 15A-1340.14(c) (emphasis added), rather than at the time the prior offense was committed.

"The State bears the burden of proving, by a preponderance of the evidence, that a prior conviction exists[,]" *State v. Alexander*, 359 N.C. 824, 827, 616 S.E.2d 914, 917 (2005) (citation and quotation marks omitted), and may — as a general matter — establish the existence of the defendant's prior convictions through any of the following means:

> (1) Stipulation of the parties.
>
> (2) An original or copy of the court record of the prior conviction.
>
> (3) A copy of records maintained by the Department of Public Safety, the Division of Motor Vehicles, or of the Administrative Office of the Courts.
>
> (4) Any other method found by the court to be reliable.

N.C. Gen. Stat. § 15A-1340.14(f).

While a sentencing worksheet alone is insufficient to satisfy the State's burden of establishing a defendant's prior record level, "a sentencing worksheet coupled with statements by counsel may constitute a stipulation by the parties to the prior convictions listed therein." *State v. Hinton*, 196 N.C. App. 750, 752, 675 S.E.2d 672, 674 (2009). Notably, however, we have held that

> [w]hile a stipulation by a defendant is sufficient to prove the *existence* of the defendant's prior convictions, which may be used to determine the defendant's prior record level

> for sentencing purposes, the trial court's assignment of defendant's prior record level is a question of law. *Stipulations as to questions of law are generally held invalid and ineffective, and not binding upon the courts, either trial or appellate*.

State v. Wingate, 213 N.C. App. 419, 420, 713 S.E.2d 188, 189 (2011) (internal citation and quotation marks omitted and emphasis added). This principle is premised upon the longstanding doctrine in North Carolina that, "[g]enerally, stipulations as to matters of law are not binding upon courts." *State v. McLaughlin*, 341 N.C. 426, 441, 462 S.E.2d 1, 8 (1995); *see also Quick v. United Benefit Life Ins. Co.*, 287 N.C. 47, 56, 213 S.E.2d 563, 569 (1975) ("[T]he stipulation was one of law and therefore not binding upon the court." (citation omitted)).

Here, Defendant purported to stipulate in his prior record level worksheet and during his plea colloquy both to the existence of several prior convictions, which resulted in the assessment of 16 prior record level points, and to his designation as a Level V offender. *See* N.C. Gen. Stat. § 15A-1340.14(c)(5) (providing that defendant with between 14 and 17 prior record level points is a Level V offender). As reflected in his prior record level worksheet, one of the convictions contributing to his total of 16 prior record level points was the 1994 Conviction, which Defendant stipulated was a Class B1 felony.

On appeal, Defendant argues that the calculation of his prior record level was incorrect because the 1994 Conviction should have instead been counted as a Class

B2 felony, for which only six prior record level points would have been assessed, *see* N.C. Gen. Stat. § 15A-1340.14(b)(2).[1] He contends his stipulation that the 1994 Conviction was a Class B1 felony was invalid because it concerned a *legal* issue and thus should not have been accepted by the trial court. The State, conversely, argues that Defendant's stipulation pertained to a *factual* issue and was therefore valid. For the reasons set out below, we agree with Defendant that the stipulation was invalid.

At the time of Defendant's 1994 Conviction, North Carolina's murder statute, N.C. Gen. Stat. § 14-17, placed *all* second-degree murder convictions in the same felony class. *See* 1981 N.C. Sess. Laws 957, 957, ch. 662, § 1 (designating second-degree murder as Class C felony). However, between 1994 and the date on which the Defendant committed the offenses giving rise to the present appeal, the General Assembly amended this statute by dividing the offense of second-degree murder into two classes — B1 and B2 — which were distinguished based upon the type of malice present in the commission of the offense. *See* N.C. Gen. Stat. § 14-17(b) (2015).[2]

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[1] Had the 1994 Conviction been classified as a Class B2 felony, this would have resulted in Defendant having a total of only 13 prior record level points and thus being designated as a Level IV offender rather than a Level V offender. *See* N.C. Gen. Stat. § 15A-1340.14(c)(4) (providing that defendant possessing between 10 and 13 prior record level points is Level IV offender).

[2] The revised statute provides that all second-degree murders are now designated as Class B1 felonies *except* that they are Class B2 felonies in the following two circumstances:

> (1) The malice necessary to prove second degree murder is based on an inherently dangerous act or omission, done in such a reckless and wanton manner as to manifest a mind utterly without regard for human life and social duty and deliberately bent on mischief.

Therefore, at the time Defendant committed the offenses from which the current appeal arises, the amended version of N.C. Gen. Stat. § 14-17, which created two classes of second-degree murder, controlled the classification of the 1994 Conviction for prior record level purposes.

Accordingly, Defendant's stipulation in connection with his guilty plea went beyond a factual admission that the 1994 Conviction existed. Instead, it constituted a stipulation as to the issue of whether the 1994 Conviction should be treated as a Class B1 or Class B2 felony — a question that required the retroactive application of a distinction in classifications that *did not exist* at the time of Defendant's conviction in 1994 and thus required a legal analysis as to how the 1994 Conviction would be classified under the new statutory scheme. Therefore, because Defendant's stipulation involved a question of law, it should not have been accepted by the trial court and is not binding on appeal. *See State v. Hanton*, 175 N.C. App. 250, 253, 623 S.E.2d 600, 603 (2006) ("Stipulations as to questions of law are generally held invalid and ineffective, and not binding upon the courts, either trial or appellate[.]" (citation and quotation marks omitted)).

> (2) The murder is one that was proximately caused by the unlawful distribution of opium or any synthetic or natural salt, compound, derivative, or preparation of opium, or cocaine or other substance described in G.S. 90-90(1)d., or methamphetamine, and the ingestion of such substance caused the death of the user.

N.C. Gen. Stat. § 14-17(b).

Although our Supreme Court has yet to address this precise issue, our conclusion is consistent with the Court's decisions in this general context. *Alexander* articulates the basic rule that a defendant may stipulate to the existence of a prior conviction. In that case, the defendant pled guilty to assault with a deadly weapon with intent to kill inflicting serious injury. *Alexander*, 359 N.C. at 825, 616 S.E.2d at 915. In connection with his plea, the defendant submitted a prior record level worksheet that contained a conviction described as "Class A1 or 1 Misdemeanor Conviction" next to which appeared the numeral one to represent the number of prior record level points to be assessed for that conviction. *Id.* at 826, 616 S.E.2d at 916. During sentencing, the defendant's counsel stated that "up until this particular case [the defendant] had no felony convictions, as you can see from his worksheet." *Id.* (quotation marks omitted). The trial court proceeded to sentence the defendant as a Level II offender because he possessed one prior record level point. *Id.*

On appeal, the defendant argued that the State had failed to carry its burden of establishing his prior record level because "the State offered no court records or other official records in support of its assertion that defendant had one prior Class A1 misdemeanor conviction." *Id.* at 827, 616 S.E.2d at 917 (quotation marks and brackets omitted). The Supreme Court rejected the defendant's challenge, explaining that his prior record level worksheet, in conjunction with his counsel having "specifically directed the trial court to refer to the worksheet . . ." constituted a valid

stipulation as to the existence of the prior conviction on the worksheet, thus satisfying the State's burden under N.C. Gen. Stat. § 15A-1340.14(f). *Id.* at 830, 616 S.E.2d at 918.

Accordingly, *Alexander* stands for the proposition — which Defendant here does not contest — that the State may establish a prior conviction by the defendant's stipulation to the existence of that conviction through (1) the presentation of a prior record level worksheet (2) that his counsel in some manner references or adopts at sentencing. As we stated in *Hinton*, "a sentencing worksheet coupled with statements by counsel may constitute a stipulation by the parties *to the prior convictions* listed therein." *Hinton*, 196 N.C. App. at 752, 675 S.E.2d at 674 (emphasis added).

Thus, the principal issue in *Alexander* was whether the particular statement of counsel regarding the worksheet was sufficient to constitute a stipulation as to the existence of a prior conviction. There was no legal ambiguity — as there is in the present case — regarding the *classification* of the prior conviction. Moreover, the defendant in *Alexander* never challenged the accuracy of the information (including the offense classification) contained in the worksheet, whereas Defendant makes such a challenge here.

The Supreme Court's recent decision in *State v. Sanders*, 367 N.C. 716, 766 S.E.2d 331 (2014), illustrates how *legal* questions related to the determination of a prior record level are for the trial court to resolve. *Sanders* dealt with the issue of

whether an out-of-state conviction was "substantially similar" to a North Carolina offense for purposes of assessing prior record level points under N.C. Gen. Stat. § 15A-1340.14(e). The Court explained that the "determination of whether the out-of-state conviction is substantially similar to a North Carolina offense is a question of law involving comparison of the elements of the out-of-state offense to those of the North Carolina offense." *Id.* at 720, 766 S.E.2d at 334.

The Supreme Court cited the *Hanton* line of cases for this proposition. *Id.* In *Hanton*, we concluded that a defendant could not stipulate to the substantial similarity of two offenses because such a comparison presents legal questions, and "[s]tipulations as to questions of law are generally held invalid and ineffective, and not binding upon the courts, either trial or appellate. This rule is more important in criminal cases, where the interests of the public are involved." *Hanton*, 175 N.C. App. at 253, 623 S.E.2d at 603.

Given our Supreme Court's determination in *Sanders* that a comparison of the elements of an out-of-state offense to the corresponding elements of a North Carolina offense for purposes of determining substantial similarity is a question of law, we can discern no logical basis for reaching a contrary conclusion regarding how a prior conviction would be classified under a statute *that was not in existence* at the time the prior offense was committed. Both situations involve matters of pure legal

interpretation that must be addressed by the trial court rather than resolved through a stipulation between the parties.

In reaching a contrary conclusion, the dissent seeks to rely on *Wingate*. In *Wingate* the defendant stipulated in connection with his guilty plea that he had previously been convicted of "one count of conspiracy to *sell or deliver* cocaine and two counts of *selling or delivering* cocaine" and that these three convictions were Class G felonies. *Wingate*, 213 N.C. App. at 420, 713 S.E.2d at 189 (emphasis added).

On appeal, the defendant argued that "there was insufficient proof to establish whether he had previously been convicted of one count of conspiracy to *sell* cocaine and two counts of *selling* cocaine, which are Class G felonies, *or* whether he was convicted of one count of conspiracy to *deliver* cocaine and two counts of *delivery* of cocaine, which are Class H felonies." *Id.* The defendant contended that the ambiguity regarding whether these prior convictions involved selling offenses or delivering offenses involved an issue of law rather than of fact. Thus, he contended, the trial court erred by accepting his stipulation that these prior convictions were Class G felonies. *Id.* at 419, 713 S.E.2d at 189.

We disagreed, holding that because the defendant had "stipulated that the three convictions at issue were Class G felonies[, t]he trial court could, therefore, rely on this factual stipulation in making its calculations and the State's burden of proof was met." *Id.* at 421, 713 S.E.2d at 190. We emphasized that the "defendant does

not assert that he was, in fact, convicted of one count of conspiring to *deliver* cocaine and two counts of *delivering* cocaine, as opposed to one count of conspiring to *sell* cocaine and two counts of *selling* cocaine. In other words, defendant does not dispute the accuracy of his prior conviction level or his prior record level." *Id.* We summarized our holding by characterizing the defendant's stipulation as constituting "sufficient proof *of his prior convictions*." *Id.* (emphasis added).

It is important to note that in *Wingate* (unlike in the present case) there was no relevant change in the statute at issue — N.C. Gen. Stat. § 90-95(b) — between the time of the defendant's prior convictions and the commission of the offense giving rise to his sentencing. Rather, the statute at all relevant times placed the sale of cocaine and the delivery of cocaine into two distinct classes. Therefore, when the defendant in *Wingate* stipulated to having been convicted of "one count of conspiracy to *sell* or *deliver* cocaine and two counts of *selling* or *delivering* cocaine" and then stipulated that these were, in fact, Class G offenses, he was simply resolving the *factual* question of whether he been convicted of the selling offenses or the delivering offenses.

The dissent's overly broad characterization of *Wingate* as holding that the classification assigned to a prior conviction is always a factual determination is at odds with the actual language of that decision. We held in *Wingate* that "*in this case*, the class of felony for which defendant was previously convicted was a question of

fact, to which defendant could stipulate, and was not a question of law requiring resolution by the trial court." *Id.* at 420, 713 S.E.2d at 190 (emphasis added). This was so because under the particular facts of *Wingate* the defendant's stipulation that the prior convictions were Class G felonies was related to a factual determination — i.e., that the defendant actually had been convicted of one count of conspiracy to sell cocaine and two counts of selling cocaine. No legal analysis was required to make that determination. Accordingly, *Wingate* stands for the proposition that a stipulation regarding the offense class of a prior conviction is permissible when the stipulation resolves a *factual* ambiguity regarding the specific prior offense for which the defendant had actually been convicted. That is simply not the case here.

We wish to emphasize that the present case constitutes a narrow exception to the general rule regarding a defendant's ability to stipulate to matters in connection with his prior record level. A stipulation as to the classification of a prior conviction is permissible so long as it does not attempt to resolve a question of law. In the great majority of cases in which a defendant makes such a stipulation, the stipulation will be valid because it does not concern an issue requiring legal analysis.

The present case falls within a small minority of cases in which the stipulation did concern a question of law. Here, because Defendant's purported stipulation that his prior conviction was a B1 felony went beyond a factual admission that the 1994 Conviction existed and instead constituted a stipulation as to the legal issue of how

that conviction should be treated under the current version of N.C. Gen. Stat. § 14-17, the stipulation should not have been accepted by the trial court and is not binding on appeal. The dissent does not (and cannot) explain how the proper classification of the 1994 Conviction under the new version of the statute could be retroactively ascertained without engaging in a legal analysis — absent the type of invalid stipulation that occurred here.

Having determined that Defendant's stipulation was invalid, the only remaining question is the effect of our holding on Defendant's guilty plea. Both the State and Defendant agree in their briefs that in the event we determine the trial court erred in accepting Defendant's stipulation, we should vacate the judgment and set aside his plea agreement. We agree. *See, e.g.*, *State v. Rico*, 218 N.C. App. 109, 122, 720 S.E.2d 801, 809 (Steelman, J., dissenting) (concluding that judgment should be vacated and guilty plea set aside and that case must be remanded for disposition of original charges where trial court erroneously imposed aggravated sentence based solely on defendant's guilty plea and stipulation as to aggravating factor), *rev'd per curiam for reasons stated in dissent*, 366 N.C. 327, 734 S.E.2d 571 (2012).

Accordingly, the judgment entered by the trial court upon Defendant's guilty plea must be vacated and his plea agreement set aside. We remand to the trial court for disposition of the charges against him.

Conclusion

For the reasons stated above, we vacate the trial court's judgment, set aside Defendant's plea agreement, and remand for further proceedings not inconsistent with this opinion.

VACATED AND REMANDED.

Chief Judge McGEE concurs.

Judge BERGER dissents by separate opinion.

BERGER, Judge, dissenting.

Defendant contends in his brief that he was "sentenced as a Level V offender when his prior record supported only a Level IV sentence." The majority agrees with Defendant and vacates his guilty plea and sentence. I respectfully dissent from the majority opinion.

On September 14, 2015, Defendant pleaded guilty in Buncombe County Superior Court to assault with a deadly weapon inflicting serious injury, felony failure to appear, and having attained habitual felon status. Pursuant to a plea arrangement, the State dismissed a separate habitual felon indictment against Defendant. The parties agreed to the following terms:

> The defendant stipulates that he has 16 points and is a Level V for Habitual Felon sentencing purposes.
>
> The State agrees that [the felony failure to appear charge] will be consolidated for sentencing purposes into [the assault with a deadly weapon inflicting serious injury charge]. The defendant will be sentenced as an Habitual Felon in the mitigated range.

In conjunction with his plea of guilty, Defendant stipulated to his prior convictions and their classifications on his "Worksheet Prior Record Level for Felony Sentencing," which included a 1994 North Carolina conviction for second degree murder. Defendant stipulated that the murder conviction should be classified as a B1 felony. Defendant further stipulated, and the trial court found, that Defendant had sixteen prior record points and was a prior record level V for sentencing purposes.

Pursuant to the terms and conditions of the plea agreement, the trial court sentenced Defendant as an habitual felon to an active term of imprisonment for 96 to 128 months.

During sentencing, the State is required to prove a defendant's prior convictions by a preponderance of the evidence, and one method of proof is a "[s]tipulation of the parties." N.C. Gen. Stat. § 15A-1340.14(f) (2015). As this Court has stated, "[t]he existence of a prior conviction . . . requires a factual finding" which may be proven through a stipulation. *State v. Powell*, 223 N.C. App. 77, 80, 732 S.E.2d 491, 493-94 (2012) (citation omitted).

Proof of a prior conviction is necessary for the proper classification of the prior offense. This Court has previously held that the classification assigned to a prior conviction is a factual determination. In *State v. Wingate*, 213 N.C. App. 419, 713 S.E.2d 188 (2011), the defendant stipulated that his prior convictions for one count of conspiracy to sell or deliver cocaine and two counts of selling or delivering cocaine were class G felonies. *Id*. at 420, 713 S.E.2d at 189. On appeal, that defendant argued the State failed to prove whether his convictions were for the class G felonies listed above or the class H felonies of delivery of cocaine. *Id*. at 420, 713 S.E.2d at 189-90. This Court held:

> in this case, *the class of felony* for which defendant was previously convicted was a question of fact, to which defendant could stipulate, and was not a question of law requiring resolution by the trial court. . . . The prior

> conviction worksheet expressly sets forth the class of offense to which a defendant stipulates and defendant in this case has not cited to any authority, nor have we found any, that requires the trial court to ascertain, as a matter of law, the class of each offense listed.

Id. at 420-21, 713 S.E.2d at 190 (emphasis added). *See also State v. Wilson*, 232 N.C. App. 523, 757 S.E.2d 526 (2014) (unpublished) (holding that the labeling of a criminal conviction and its punishment classification is a question of fact); *State v. Edgar*, ___ N.C. App. ___, ___, 777 S.E.2d 766, 769 (2015) (defendant's stipulation to prior offense and out-of-state classification "did not implicate any conclusions or questions of law")[3]; and *State v. Brown*, 221 N.C. App. 670, 729 S.E.2d 127 (2012) (unpublished) (holding no error in assignment of points based upon parties' stipulations).

The majority correctly states that prior to imposing a sentence, the trial court determines a defendant's prior record level pursuant to N.C. Gen. Stat. § 15A-1340.13. Determination of a defendant's prior record level, however, differs from determination of the existence of prior convictions and classification thereof. A defendant's "*prior record level* . . . is determined by calculating the sum of the points assigned to each of the offender's prior convictions." N.C. Gen. Stat. § 15A-1340.14(a) (2015) (emphasis added). Thus, the calculation of the sum of points used to determine

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[3] *State v. Edgar* addressed a question of the substantial similarity of an out-of-state conviction pursuant to N.C. Gen. Stat. § 15A-1340.14(e). The defendant in *Edgar* stipulated to the default Class I classification for out-of-state felonies, so the legal question of substantial similarity under the statute was not implicated.

Here, however, there is no statute or controlling authority that requires any such comparison of prior in-state convictions for which the parties have stipulated. Certainly, a hearing could be held, and the State put to its proof, if a defendant objected to a prior conviction or its classification.

a defendant's prior record level is a legal question undertaken by the trial court. *See Wingate*, 213 N.C. App. at 420, 713 S.E.2d at 189 ("[T]he trial court's assignment of defendant's prior record level is a question of law." (citation omitted)); *State v. Williams*, 200 N.C. App. 767, 771, 684 S.E.2d 898, 901 (2009) ("[T]he trial court's assignment of a prior record level is a conclusion of law . . . ." (citation and quotation marks omitted)); *State v. Bohler*, 198 N.C. App. 631, 633, 681 S.E.2d 801, 804 (2009) ("The determination of an offender's prior record level is a conclusion of law that is subject to *de novo* review on appeal." (citation omitted)).

Here, Defendant stipulated to the 1994 North Carolina conviction for second-degree murder listed on his prior record level worksheet. In addition, defense counsel was asked in open court during the sentencing hearing if Defendant stipulated "to the contents of the sentencing worksheet." Defendant did not question any item set forth on the worksheet, nor did he or his counsel object to the offenses or classifications set forth thereon. Instead, defense counsel responded, "We will stipulate to the sentencing sheet." Defense counsel also informed the court during sentencing, "There's nothing I can deny about [Defendant's] record, absolutely nothing."

Classification of prior offenses is determined "at the time the offense for which the offender is being sentenced is committed." N.C. Gen. Stat. § 15A-1340.14(c) (2015). When Defendant was convicted of second degree murder, that offense was

classified as a B2 felony. Based upon a change to N.C. Gen. Stat. § 14-17 in 2012, however, second degree murder can now be classified as either a B1 or B2 felony. *See* 2012 N.C. Sess. Laws 781, 782, ch. 165, § 1. Defendant expressly stipulated to the classification of his second degree murder conviction as a B1 felony, consistent with N.C. Gen. Stat. § 14-17(b) (2015).

Prior convictions which are classified as B1 felonies are assigned nine prior record points. N.C. Gen. Stat. § 15A-1340.14(b)(1a) (2015). The sentencing worksheet, to which Defendant stipulated, properly assigned nine points to Defendant's B1 felony classification. The trial court accurately calculated Defendant's assigned points and specifically found, "the prior convictions, prior record points[,] and the prior record level of the defendant to be as shown herein."

The trial court designated Defendant as having a prior record level V. The assignment of nine points based upon the classification of the prior offense as a B1 felony is not inconsistent with N.C. Gen. Stat. § 15A-1340.14(b), and the calculations involved in designating Defendant as a prior record level V offender for sentencing are not inconsistent with N.C. Gen. Stat. § 15A-1340.14(c). It cannot be said that the trial court incorrectly calculated Defendant's prior record level.

Defendant entered into a valid stipulation regarding the classification of his prior murder conviction and was properly sentenced as a level V offender. I would affirm the trial court's judgment.

IN THE COURT OF APPEALS OF NORTH CAROLINA

No. COA18-175

Filed: 6 November 2018

Wake County, No. 16-CRS-203096

STATE OF NORTH CAROLINA

v.

TEMAN TAVOI MCNEIL, Defendant.

Appeal by Defendant from judgments entered 21 August 2017 by Judge A. Graham Shirley in Wake County Superior Court. Heard in the Court of Appeals 19 September 2018.

Attorney General Joshua H. Stein, by Assistant Attorney General John H. Schaeffer, for the State.

Vitrano Law Offices, PLLC, by Sean P. Vitrano, for defendant-appellant.

MURPHY, Judge.

In criminal prosecutions, the State bears the burden of proving a defendant's prior record level. Since 2014, our General Assembly has distinguished possession of *marijuana* paraphernalia, a Class 3 misdemeanor, from possession of paraphernalia related to other drugs, a Class 1 misdemeanor. Where the State fails to prove a pre-2014 possession of paraphernalia conviction was for non-marijuana paraphernalia, a trial court errs in treating the conviction as a Class 1 misdemeanor. Upon careful review, we conclude the State failed to meet its burden to prove Defendant Teman Tavoi McNeil's 2012 "possession of drug paraphernalia" conviction was related to a

drug other than marijuana, and remand this case for resentencing at the appropriate prior record level.

BACKGROUND

On 21 August 2017, Defendant, Teman Tavoi McNeil, was convicted of Non-Felonious Breaking or Entering, Felonious Larceny, and Felonious Possession of Goods Stolen Pursuant to a Breaking or Entering. During sentencing, the State argued Defendant was a prior record Level V with 14 points for felony sentencing purposes. Defendant did not stipulate to any of the underlying convictions or to his prior record level. The sole evidence the State presented at Defendant's sentencing hearing was a certified copy of his DCI Computerized Criminal History Report. The DCI Report lists all of Defendant's prior convictions, including the date, disposition, and docket number for each of Defendant's previous offenses. One listed offense is a 2012 conviction for Possession of Drug Paraphernalia in violation of N.C.G.S. § 90-113.22.

After hearing from both parties and reviewing Defendant's DCI Report, the Superior Court determined Defendant had 14 prior record points. This calculus included one point for Defendant's 2012 paraphernalia conviction, which the court calculated as a Class 1 misdemeanor. Consequently, the trial court assigned Defendant a prior record Level V, and sentenced him to an active sentence at the top of the aggravated range of 19 to 32 months imprisonment for felonious larceny. Had

Defendant been sentenced with only 13 points, he would have been assigned a prior record Level IV and his maximum sentence for this class of felony would have been an active sentence of 14 to 26 months. N.C.G.S. § 15A-1340.17(c)-(d) (2017).

ANALYSIS

The specific issue that we address for the first time in a published opinion[1] here is whether Defendant's 2012 conviction for possession of drug paraphernalia was correctly treated as a Class 1 misdemeanor for prior record level purposes. "The determination of an offender's prior record level is a conclusion of law that is subject to *de novo* review on appeal." *State v. Bohler*, 198 N.C. App. 631, 633, 681 S.E.2d 801, 804 (2009), *disc. review denied*, 28 January 2010 Order (not published), 691 S.E.2d 414 (Mem) (2010). Additionally, "it is not necessary that an objection be lodged at the sentencing hearing" in order for the claim to be preserved for appeal. *Id.* The paraphernalia charge in question was counted as a Class 1 misdemeanor, but Defendant argues it should have been counted as a Class 3 misdemeanor and therefore excluded from his prior record level calculus. N.C.G.S. § 15A-1340.14(b)(5) (2017). We find Defendant's argument persuasive and remand for a new sentencing hearing with a prior record Level IV.

[1] *See State v. Dent*, No. COA17-857, 811 S.E.2d 247, 2018 WL 1386605, *6-*7 (N.C. Ct. App. Mar. 20, 2018) (unpublished); *State v. McCurry*, No. COA17-169, 806 S.E.2d 703, 2017 WL 5586601, *9-*10 (N.C. Ct. App. Nov. 21, 2017) (unpublished).

Defendant's prior offenses must be calculated according to their assigned classification as of February 2016, the date of Defendant's offenses in the immediate case. N.C.G.S. § 15A-1340.14(c) (2017) ("In determining [a defendant's] prior record level, the classification of a prior offense is the classification assigned to that offense at the time the offense for which the offender is being sentenced is committed."). Defendant was convicted for possession of drug paraphernalia in violation of N.C.G.S. § 90-113.22 on 13 March 2012. As of that date, N.C.G.S. § 90-113.22 was the sole criminal statute regarding all drug paraphernalia possession. However, in 2014 our General Assembly enacted N.C.G.S. § 90-113.22A, Possession of Marijuana Paraphernalia. N.C.G.S. § 90-113.22A (2017). As of the date of Defendant's offenses in this case, possession of *marijuana* paraphernalia was a Class 3 misdemeanor while possession of other drug paraphernalia remained a Class 1 misdemeanor. *Compare* N.C.G.S. § 90-113.22A *with* § 90-113.22. Thus, our determination of whether the trial court correctly calculated Defendant's prior record level is dependent upon whether Defendant's 2012 possession of paraphernalia conviction was related to marijuana or another drug, and whether the State met its burden of proving Defendant's prior record level.

"The State bears the burden of proving, by a preponderance of the evidence, that a prior conviction exists . . . ." N.C.G.S. § 15A-1340.14(f) (2017). The existence of a prior conviction can be proven by stipulation, production of relevant records, or

through "any other method found by the court to be reliable." *Id.* During the sentencing hearing, Defendant did not stipulate to his prior convictions, there was no specific mention of the paraphernalia charge, and the only evidence proffered by the State was a certified copy of Defendant's DCI Computerized Criminal History Report. The DCI Report is included in the Addendum to the Record on Appeal but sheds no light on whether Defendant's paraphernalia charge was related to marijuana or another drug. The DCI Report simply shows that Defendant was arrested and convicted for possession of drug paraphernalia in 2012. In sum, the State proved Defendant's record included a conviction for possession of drug paraphernalia, but failed to prove whether that charge was related to marijuana or another drug, and therefore whether the conviction was for a Class 1 or Class 3 misdemeanor.

Reviewing the determination of Defendant's prior record level *de novo*, it is apparent the State failed to meet its burden of proving at the sentencing hearing that Defendant's prior conviction for possession of drug paraphernalia was a Class 1 misdemeanor. When the trial court fails to properly determine a defendant's prior sentencing level, the matter must be remanded for resentencing at the correct sentencing level. *See State v. Jeffery*, 167 N.C. App. 575, 582, 605 S.E.2d 672, 676 (2004) (remanding for resentencing where the State failed to prove the defendant's prior record level by a preponderance of the evidence). Therefore, this matter must be remanded and Defendant resentenced at the appropriate prior record level, IV.

CONCLUSION

The State failed to prove Defendant's 2012 conviction for possession of drug paraphernalia was a Class 1 misdemeanor, but the trial court assigned one point to Defendant's prior record level for that conviction. That error resulted in Defendant being sentenced more harshly than he would have been under his proven prior record level. Therefore, this case must be remanded and Defendant resentenced as a prior record Level IV.

REMANDED FOR RESENTENCING.

Judges STROUD and ZACHARY concur.

Prior Convictions for Possession of Drug Paraphernalia

Author : Jamie Markham

Categories : Sentencing, Uncategorized

Tagged as : PDP, possession of drug paraphernalia, prior record level, structured sentencing

Date : November 14, 2018

A recent case from the court of appeals answers a question we've been wondering about for four years: How should a person's prior conviction for possession of drug paraphernalia (PDP) count toward his or her prior record level after the General Assembly created a new offenses of possession of marijuana paraphernalia?

I wrote about this general issue back in 2014 (here), when G.S. 90-113.22A first came into effect. Under that law, effective December 1, 2014, possession of drug paraphernalia related to marijuana was created as a Class 3 misdemeanor. The existing PDP offense, G.S. 90-113.22(a), remained a Class 1 misdemeanor, but was amended to say that it applied to possession of paraphernalia related to controlled substances other than marijuana.

In State v. McNeil, the defendant was convicted in 2017 for a felony committed in 2016. He had a prior PDP conviction from 2012—back when the only version of the offense was the Class 1 misdemeanor. It was treated as a Class 1 misdemeanor, counting for 1 point. That point gave him 14 total points, making him Prior Record Level V.

4	LARCENY	10CR202416	03/04/2010	WAKE	1
4	LARCENY	10CR202417	03/04/2010	WAKE	1
4	ASSAULT ON A FEMALE	10CR218894	12/23/2010	WAKE	A1
4	POSSESS DRUG PARAPHERNALIA	12CR204006	03/13/2012	WAKE	1
4	OBTAIN PROPERTY BY FALSE PRETENSE	12CRS209938	10/15/2012	WAKE	H
4	RESIST PUBLIC OFFICER	14CR223270	11/06/2014	WAKE	m
4	LARCENY	16CR212731	12/19/2016	WAKE	1

On appeal, the defendant argued that his 2012 PDP conviction ought to have been treated as a Class 3 misdemeanor. Under G.S. 15A-1340.14(c), the classification of a prior offense is the classification assigned to it as of the offense date of the crime now being sentenced. Because McNeil's present offense was committed in February 2016, he maintained that his prior PDP should be updated to a Class 3 misdemeanor in the absence of any proof by the State that it did not involve marijuana.

The court of appeals agreed. There was no proof in the record indicating whether the PDP conviction involved marijuana or some other drug, and the defendant didn't stipulate one way or the other. With that in mind, the unanimous panel concluded that "the State failed to prove whether that charge was related to marijuana or another drug," slip op. at 5, and therefore the trial court erred by treating it as a Class 1 misdemeanor. The court remanded the case to the trial court for the defendant to be resentenced at Prior Record Level IV.

McNeil will likely lead to resentencing for many felony defendants sentenced for offenses committed on or after December 1, 2014, who had PDP convictions from before that date on their record. The case doesn't have any impact on defendants presently sentenced for misdemeanors, since all convictions count the same for misdemeanor prior conviction level purposes.

Going forward, if the State wants a pre–12/1/2014 PDP conviction to count for a felony sentencing point, it will

apparently need to present information to the court sufficient for the judge to find that the crime was not related to marijuana. It seems to me that will sometimes be a difficult negative to prove given the records readily available for a low-level crime of that vintage. Even if records were available, the paraphernalia in question might not always be tied to a specific drug, or at least any single drug.

It also appears to be permissible to resolve the issue by stipulation of the defendant. That's essentially what happened in *State v. Arrington*, a case recently decided by the Supreme Court of North Carolina on how prior second-degree murders should count for points in light of the 2012 bifurcation of that offense into Class B1 and Class B2 varieties. I'll write more about *Arrington* in a future post.

Stipulating to Prior Convictions for Second-Degree Murder

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In a previous post I wrote about State v. McNeil, a case that resolved the question of how to count prior convictions for possession of drug paraphernalia, in light of that crime's 2014 division into Class 1 (non-marijuana) and Class 3 (marijuana) offenses. Today's post is about prior convictions for second-degree murder—split into Class B1 and Class B2 varieties in 2012—in light of *State v. Arrington*, a case recently decided by the supreme court.

I wrote about *Arrington* here when the court of appeals issued its decision in the case. In *Arrington*, a defendant being sentenced for a crime committed in 2013 had a prior conviction for second-degree murder from July of 1994. Second-degree murder was a Class C felony under Fair Sentencing when the defendant committed the crime. But, under G.S. 15A-1340.14(c), a person's prior convictions are generally "modernized" and counted for points according to their offense class as of the offense date of the crime now being sentenced.

The issue in Mr. Arrington's case was that by the time he committed his present offense (in 2013), the General Assembly had created two possible offense classifications for second-degree murder. Effective December 1, 2012, second-degree murder became a Class B1 felony, except it is punished as a Class B2 felony in two circumstances: (1) when malice is based on an inherently dangerous act or omission, done in such a reckless and wanton manner as to manifest a mind utterly without regard for human life and social duty and deliberately bent on mischief, and (2) when the murder is proximately caused by the unlawful distribution and ingestion of certain controlled substances. Given that subsequent bifurcation, it was unclear how to apply G.S. 15A-1340.14(c) for a prior conviction committed back when there was only one type of second-degree murder.

In the trial court, the parties resolved the question by stipulation. The defendant stipulated to a prior record level worksheet that treated the prior second-degree murder as a Class B1 felony, and thus counted it for 9 points. The defendant appealed.

V. PRIOR CONVICTION

NOTE: *Federal law precludes making computer printout of DCI-CCH (rap sheet) part of permanent public court record.*

NOTE: *The only misdemeanor offenses under Chapter 20 that are assigned points for determining prior record level for felony sentencing are misdemeanor death by vehicle [G.S. 20-141.4(a2)] and, for sentencing for felony offenses committed on or after December 1, 1997, impaired driving [G.S. 20-138.1] and commercial impaired driving [G.S. 20-138.2]. First Degree Rape and First Degree Sexual Offense convictions prior to October 1, 1994, are Class B1 convictions.*

Source Code	Offenses	File No.	Date Of Conviction	County (Name of State if not NC)	Class
	(2) (F) BREAKING & ENTERING & LARCENY	78CRS014547	11/27/1978	BUNCOMBE	H
	(4) (M) POSSESS DRUG PARAPH.	88CR002329	02/19/1988	BUNCOMBE	C1M
	(4) (M) ASSAULT ON FEMALE	89CR016293	11/02/1989	BUNCOMBE	A1M
	(4) (F) SECOND DEGREE MURDER	90CRS006949	07/01/1994	BUNCOMBE	B1
	(4) (M) DWI	90CR000462	02/28/1990	HALIFAX	C1M
	(6)B&E MOTOR VEHICLE (ALSO F LARCENY)	77CRS10856	06/30/1977	BUNCOMBE	H

The court of appeals concluded over a dissent that the stipulation was improper to the extent that it purported to resolve the *legal* question of whether the defendant's prior second-degree murder would be Class B1 or B2 under the revised law. As noted in many appellate cases, a defendant can stipulate to questions of fact, but stipulations to questions of law are generally ineffective. (The most common subject of improper stipulations in recent years is the question of "substantial similarity" of out-of-state prior convictions for prior record level purposes.) The State filed notice of appeal based on the dissent.

In a divided opinion, the supreme court reversed the court of appeals, concluding that the defendant's stipulation to the B1 classification was valid. While the ultimate classification of a prior conviction is a legal determination, that classification is, the court reasoned, "fact driven." Slip op. at 5. The defendant's stipulation was an admission that certain past conduct constituted a criminal offense. And by stipulating to the second-degree murder as a Class B1 felony, the defendant "simply agreed that the facts underlying his second-degree murder conviction, of which he was well aware, fell within the general B1 category because the offense did not involve either of the two factual exceptions recognized for the B2 classification." *Id.* at 10.

Having accepted the validity of the defendant's stipulation, the court sent the case back down for reinstatement of the original trial court judgment.

Justice Ervin, joined by Justice Hudson and Justice Beasley, dissented. They would have concluded that the ultimate question of offense classification is indeed a question of law to which the defendant may not stipulate.

After *Arrington*, defendants with pre-2012 prior convictions for second-degree murder can validly stipulate to whether those convictions would be of the Class B1 or B2 variety today, and thus whether they should count for 9 or 6 prior record points. But of course they do not have to do that. And if they don't, it's not really clear how the sentencing judge should treat them. The State bears the burden of proving the defendant's prior convictions. And if it doesn't establish that the second-degree murder wasn't one of the Class B2 varieties (apologies for the double negative), I would think a defendant would have a decent argument that the court should count it for Class B2 points. That is essentially what happened in *McNeil*, where the court of appeals said pre-2014 prior convictions for possession of drug paraphernalia are presumed to be Class 3 unless the State establishes that they didn't involve marijuana. (Note, however, that the supreme court allowed the State's motion for a temporary stay in *McNeil* last week.)