Investigation and Prosecution of

Cannabis-Impaired Driving Cases

NATIONAL TRAFFIC LAW CENTER

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Joanne E. Thomka, *Director*
M. Kimberly Brown, *Senior Attorney*
Erin Inman, *Staff Attorney*
Tiffany Watson, *(Former) Staff Attorney*

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Sgt. Don Decker (ret.)
DEC Coordinator, Eastern Region, International Association Chiefs of Police's Technical Advisory Panel, (Nahant, MA, Police Department)
Kevin Deichsel
(Former) Traffic Safety Resource Investigator, Colorado District Attorneys' Council
Chuck Hayes,
Project Manager—DEC Program Western Region, International Association of Chiefs of Police
Jennifer R. Knudsen
Traffic Safety Resource Prosecutor, Colorado District Attorneys' Council
Ashley Schluck
Traffic Safety Resource Prosecutor, Wyoming Highway Safety
Jeff Sifers
Traffic Safety Resource Prosecutor, Oklahoma District Attorneys Council
Kenneth Stecker
Michigan Traffic Safety Resource Prosecutor
Lieutenant Eric J. Sweden
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National Traffic Law Center

The National District Attorneys Association's National Traffic Law Center (NTLC) is a resource designed to benefit prosecutors, law enforcement, judges, and criminal justice professionals. The mission of NTLC is to improve the quality of justice in traffic safety adjudications by increasing the awareness of highway safety issues through the compilation, creation and dissemination of legal and technical information and by providing training and reference services.

When prosecutors deal with challenges to the use of breath test instruments, blood tests, horizontal gaze nystagmus, crash reconstruction, and other evidence, the NTLC can assist with technical and case law research. Likewise, when faced with inquiries from traffic safety professionals about getting impaired drivers off the road, the NTLC can provide research and statistics concerning the effectiveness of administrative license revocation, ignition interlock systems, sobriety checkpoints and much more.

The NTLC has a clearinghouse of resources including case law, legislation, research studies, training materials, trial documents and a directory of expert professionals who work in the fields of crash reconstruction, toxicology, drug recognition and many others. The information catalogued by the Center covers a wide range of topics with emphasis on impaired driving and vehicular homicide issues.

The professional staff at the NTLC includes experienced trial attorneys and research staff. Assistance is specifically provided in all areas of trial preparation, including methods to counter specific defenses. The NTLC facilitates the direct exchange of information among prosecutors, judges and other criminal justice professionals in the field.

The NTLC was created in cooperation with the National Highway Traffic Safety Administration (NHTSA) and works closely with NHTSA and the National Association of Prosecutor Coordinators to develop and deliver prosecutor training programs, including: *Prosecution of Driving While Under the Influence*, *Prosecuting the Drugged Driver*, and *Lethal Weapon: DUI Homicide*. Each course incorporates substantive legal presentations by

faculty with skill building sessions where participants participate in a mock trial. The participants are critiqued and videotaped to assist in improving their trial skills.

NTLC is a program of the National District Attorneys Association. NDAA's mission is to be the voice of America's prosecutors and to support their efforts to protect the rights and safety of the people. NDAA was formed in 1950 by local prosecutors to give a focal point to advance their causes and issues at the national level. NDAA representatives regularly meet with the Department of Justice, members of Congress and other national associations to represent the views of prosecutors to influence federal and national policies and programs that affect law enforcement and prosecution.

For additional information contact NDAA or NTLC, 1400 Crystal Drive, Suite 330, Arlington, Virginia, 22202 (phone) 703-549-9222, (fax) 703-836-3195, www.ndaa.org.

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Introduction

The use of marijuana has seen a steady increase throughout the United States.[1] A growing number of Americans report they use it, and numerous states now allow the use of marijuana for treatment of medical conditions.[2] As of the printing of this report, eleven states and the District of Columbia, representing a quarter of the U.S. population, have decriminalized the recreational use of marijuana, and other states are considering similar actions.[3] For the purposes of this monograph, the word marijuana refers to cannabis and other associated terms, for the example, weed, pot, grass, dope, reefer, ganja, and herb.[4]

As the opportunity for legal use of marijuana increases, the concerns related to the impact of usage on highway safety also are growing. Highway safety offices across the country consider "drugged driving an issue at least as important as driving while impaired by alcohol . . . ."[5] Many states have enacted per se marijuana DUI laws.[6] These laws make it illegal for a driver to have a particular amount of marijuana's primary psychoactive compound, delta-9 tetrahydrocannabinol (THC[7]) in his body.[8] Research studies, however, have been unable to consistently correlate levels of marijuana consumption, or THC in a

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[1] Hasin, D. S., Saha, T. D., Kerridge, B. T., Goldstein, R. B., Chou, S. P., Zhang, H., . . . Grant, B. F. (2015). Prevalence of Marijuana Use Disorders in the United States Between 2001-2002 and 2012-2013. *JAMA Psychiatry*,72(12), 1235.

[2] "Marijuana Use and Highway Safety," by David Randall Peterman, Congressional Research Service, May 14, 2019, R45719.

[3] *See* https://www.governing.com/gov-data/safety-justice/state-marijuana-laws-map-medical-recreational.html.

[4] *See* https://americanaddictioncenters.org/marijuana-rehab/slang-names.

[5] "Marijuana Use and Highway Safety," by David Randall Peterman, Congressional Research Service, May 14, 2019, R45719.

[6] *Id.*

[7] "THC" refers to tetrahydrocannabinol. There are many forms of THC. "Δ-9-THC" and "d-9 THC" both refer to delta-9 tetrahydrocannabinol.

[8] "Marijuana Use and Highway Safety," by David Randall Peterman, Congressional Research Service, May 14, 2019, R45719.

With the proliferation of legalized marijuana in this country, cannabis-impaired driving is becoming more prevalent.

person's body, to levels of impairment.[9] "Thus, some researchers, and the National Highway Traffic Safety Administration, have observed that using a measure of THC as evidence of a driver's impairment is not supported by scientific evidence to date."[10] What most research does support is that THC affects people differently than alcohol or other drugs.[11]

Additional information has become available with the increase in recreational legalization. Nearly 70 percent of marijuana consumers surveyed in Colorado reported driving high in 2017.[12] Overall insurance claims related to crashes increased six percent in Colorado, Nevada, Oregon, and Washington after retail sales of recreational marijuana began.[13] The state of Washington also noted an increase in the percentage of crashes that found toxicological evidence of marijuana, from 20 percent to 30 percent.[14] Finally, according to the Governors Highway Safety Association,[15] marijuana-related traffic deaths increased in both Washington and Colorado after legalization. It is clear marijuana legalization has impacted highway safety.

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[9] *Id.*
[10] *Id.*
[11] Sewell, R. A., Poling, J., & Sofuoglu, M. (2009). The Effect of Cannabis Compared with Alcohol on Driving. *American Journal on Addictions*, 18(3), 185-193.
[12] *Driving Under the Influence of Drugs and Alcohol, A Report Pursuant to House Bill 17-1315*, Colorado Division of Criminal Justice, July 2018.
[13] IIHS-HDLI "Data Show Car Accidents Up in States That First Legalized Marijuana" December 18, 2018, https://www.insurancejournal.com/news/national/2018/12/28/512201.htm.
[14] *Id.*
[15] GHSA, "Traffic safety impacts of marijuana legalization," October 2018 (excluding crashes where any alcohol was present).

What is Marijuana / Cannabis?

Marijuana is "the psychoactive dried resinous flower buds and leaves of the female hemp or cannabis plant . . . that contain high levels of THC and are smoked, vaped, or ingested (as in baked goods) especially for their intoxicating effect."[16] THC is found in the stems, leaves, seeds, and flowers of the cannabis plant. The plant has been hybridized over the years to maximize (or in the case of hemp to minimize) the concentration of certain chemicals, such as THC.

Figure 1—*Sativa leaf*

The term "cannabis" is used interchangeably with "marijuana," but it also has a scientific meaning. Cannabis is a taxonomic term used in plant classification. Cannabis L. is the genus in which all marijuana-producing plants belong.[17] The marijuana industry fo-

[16] Merriam-Webster Dictionary, https://www.merriam-webster.com/dictionary/marijuana, October 2019.
[17] USDA NRCS https://plants.usda.gov/java/ClassificationServlet?source=display&classid=CANNA, October 2019.

Figure 2—*Indica leaf*

cuses on two subspecies within the Cannabis L. genus — indica and sativa.[18] These two subspecies are often referred to as two different "strains."[19] Products derived from plants belonging to the sativa subspecies are reputed to effectuate a "stimulating cerebral high."[20] On the other hand, products derived from plants belonging to the indicia subspecies are reputed to effectuate a "powerful, sedating body high."[21] These generalizations are not always true, but they are commonly referred to by end-users.[22] More significant are the specific chemicals contained in the product consumed by the end-user.[23]

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[18] *See e.g.*, "What are Cannabis Strains? Easy to Understand Cannabis Taxonomy" by Krisztian Panczel, Greendorphin, June 28, 2016; *See also* "The Cannabis Taxonomy Debate: Where Do Indicia and Sativa Classifications Come From?" by *Leafly* Staff, February 28, 2016 (citing "Cannabis Evolution and Ethnobotany" by Clarke and Merlin, U of CA Press 1st ed. June, 2016).

[19] *Id.*

[20] "The Cannabis Taxonomy Debate: Where Do Indicia and Sativa Classifications Come From?" by *Leafly* Staff, February 28, 2016 (citing "Cannabis Evolution and Ethnobotany" by Clarke and Merlin, U of CA Press 1st ed. June 2016).

[21] *Id.*

[22] "Indicia vs. sativa: What is the difference between cannabis types?" by Bailey Rahn https://www.leafly.com/news/cannabis-101/sativa-indica-and-hybrid-differences-between-cannabis-types, September 20, 2018.

[23] *Id.*

Delta-9-tetrahydrocanabinol and Cannabidiol

The cannabis plant contains hundreds of chemicals.[24] The main psychoactive compound found in cannabis plants is delta-9-tetrahydrocannabinol (Δ-9-THC).[25] Cannabidiol (CBD) is also an important compound found in the plant.[26] Though not psychoactive, one CBD study suggests it may "[potentiate] the pharmacological effects of Δ-9-THC."[27] CBD research also indicates it has an "almost opposite [effect]" on the human body in some ways as compared to Δ-9-THC.[28] Thus, the marijuana industry references and researches both compounds. This publication, however, will focus primarily on Δ-9-THC, because it is the compound most frequently associated to driving impairment. Intake of Δ-9-THC can cause the following symptoms: "Dizziness, bloodshot eyes, dry mouth, increased heart rate, increased pulse, increased (or decreased) blood pressure, loss of inhibitions, elation, increased confidence, increased sociability, state of relaxation (or 'chilled')."[29]

Consumable Forms of Marijuana / Cannabis

There are many ways to consume marijuana. The most traditional method is to smoke (inhale) dried flower buds, leaves, or stems of the cannabis plant. Sometimes, the plant is dried and ground for use. The plant is also processed in a variety of ways to create products with a higher concentration of THC. Some of these concentrates are created with solvents, and others are created by simple physical extraction methods. Any form of marijuana can be used to make an edible. Below are more details about common forms of marijuana.

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[24] "Cannabis, a complex plant: different compounds and different effects on individuals" by Zerrin Atakan, December 2012 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3736954/).
[25] *Id.*
[26] *Id.*
[27] *Id.*
[28] *Id.*
[29] www.medic8.com/healthguide/marijuana/effects-of-marijuana.html.

Traditional / Dried Plant Material

For centuries, people have dried cannabis plants and smoked the dried plant material. Leaves have higher THC concentrations than the stalk of the plant, and flowers have higher THC concentrations yet. Thus, it is the flower bud that is most commonly smoked.[30] It may be ground to various consistencies and then smoked.[31] Some methods used to smoke buds include joints, blunts, pipes, and bongs.[32]

Figure 3—*Marijuana flowers*

Hash / Hashish

Hashish, also referred to as hash, is made from the resin of the cannabis plant.[33] The resin is a naturally occurring sticky substance found on the plant. That resin is higher in THC concentration than what is found in the rest of the plant. In the case of hashish, the resin is collected and compressed into balls, cakes, block, and sheets.[34]

Figure 4—*Hash brick*

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[30] "Can you Smoke Weed Leaves and Get High?" https://maryjanesdiary.com/smoke-weed-leaves/, last accessed October 31, 2019.

[31] https://weedmaps.com/learn/products-and-how-to-consume/cannabis-flower/ last accessed October 31, 2019.

[32] *Id.*

[33] https://www.drugrehab.com/addiction/drugs/marijuana/forms/, last accesses October 31, 2019.

[34] *Id.*

Hashish is extracted without using a solvent. It is much stronger than leafy marijuana.[35] It is typically smoked (in bongs, hookahs, pipes, or vaporizers) or ingested.[36]

Solvent Extracted Concentrates

THC can be extracted by using solvents such as butane, carbon dioxide, alcohol, propane or CO2.[37] The result is product with high THC concentration, and there are a variety of products derived from solvent-based extraction. Wax, shatter, and oils are just a few examples. These extracts are typically ingested via inhalation.[38]

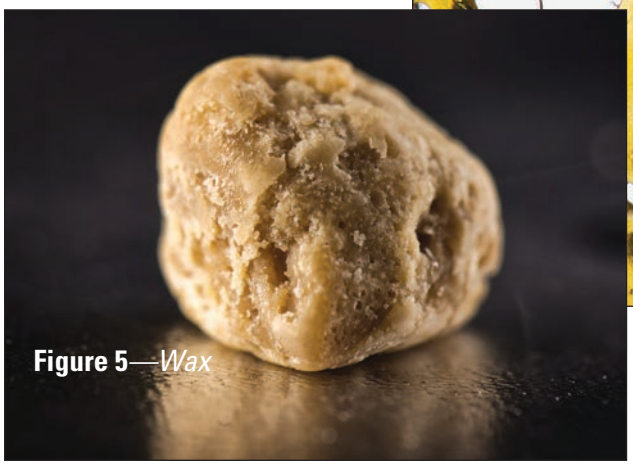

Figure 5—*Wax*

Figure 6—*Shatter*

[35] https://www.deamuseum.org/ccp/cannabis/history.html, last accessed August 29, 2019.
[36] https://www.sunriserecoveryranch.com/addiction/articles/hashish-treatment/, last accessed October 31, 2019.
[37] "Rosin vs. Shatter: What is the difference?" https://www.rosintech.com/rosin-vs-shatter/, last accessed October 31, 2019.
[38] *Id.*

Edibles

Edible forms of cannabis are popular. They are any foods infused with any form of marijuana. Brownies, cookies, sauces, juices, and candies are common edibles available today.

Figure 7—*Marijuana edibles*

Cookies and coconut brownies made with cannabis

Cannabis infused gummies

Honey infused with CBD or THC Cannabis

CBD infused soft drinks

Methods of Intake and Paraphernalia

It is very important to know how the drug was consumed. During the investigation, at a minimum, an officer should try to find out what was used (*e.g.*, dried cannabis leaves,

budder, wax, etc.), how it was consumed (*e.g.*, smoke, vaped, eaten, and so on), and whether the user is a novice, frequent, or chronic user. This will best aid the person performing the interpretation and rendering an opinion.

Ingestion

Marijuana is typically inhaled or ingested.[39] Edibles, such as those discussed above, are one mode of ingestion. When eaten, Δ-9-THC enters the bloodstream at a more gradual rate than when inhaled. The Δ-9-THC measurement in the blood eventually plateaus and remains at a relatively constant level for a while before decreasing. Ingesting marijuana is a preferred method for many medicinal users with chronic diseases.

Inhalation

Inhaling marijuana smoke is another method of consumption. When inhaled, marijuana enters the bloodstream quickly. Δ-9-THC levels spike within minutes of inhalation, and the level is higher than when ingesting. Levels of Δ-9-THC also drop much more quickly when inhaled than ingesting. Inhalation remains a method of intake today, and various ways to inhale are discussed below.

Dried cannabis plant material rolled in paper is often referred to as a joint.[40] Consumers will often grind the plant material to the desired consistency before rolling it in the paper.[41] A common grinder looks like a cylinder spice tin.[42] When opened, the top cham-

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[39] Injection of marijuana would cause severe side effects, and topical application does not produce impairment. "Can You Inject Marijuana?" https://www.medical-marijuana.news/blog/can-inject-marijuana/, Medical Marijuana News, June 13, 2017; "Do Cannabis Topicals Get You High?" https://potguide.com/blog/article/do-cannabis-topicals-get-you-high/, PotGuide.Com, September 13, 2019.

[40] https://weedmaps.com/learn/products-and-how-to-consume/cannabis-flower/, last accessed October 31, 2019.

[41] *Id.*

[42] "What is a Grinder and How Do You Use It?" https://www.leafly.com/news/cannabis-101/what-is-grinder-how-to-use-for-cannabis, Leafly.com, November 3, 2016.

ber and the lid have teeth.[43] When closed and rotated, those teeth grind the plant material into smaller bits.[44] The ground cannabis is then rolled into a joint, which is smoked in a similar fashion to cigarettes.[45]

Blunts are like joints. Instead of rolling the cannabis in rolling paper, however, it is rolled in an emptied cigar wrapper.

Marijuana pipes are much like tobacco pipes in that there is a bowl, which holds the product, and a pipe, through which the person inhales smoke.[46] Marijuana pipes can be made of various materials, but glass is the most common.[47]

A bong is a pipe that uses water as a filter through which the smoke travels prior to inhalation. Bongs are typically made of glass. As with a pipe, a bong has a small bowl that holds the product, and it has a mouthpiece from which to inhale.[48] After the product is lit, the smoke travels through a chamber

Figure 8—*Bong*

[43] *Id.*
[44] *Id.*
[45] *See id.*
[46] "How To Smoke Weed From a Pipe" https://cannasos.com/news/cannabis-101/how-to-smoke-weed-from-a-pipe, January 28, 2019.
[47] *Id.*
[48] "How Does a Bong Work and How to Use It (Stoned Science)" https://greencamp.com/how-does-a-bong-work/, September 26, 2019.

that holds water.[49] The smoke is filtered—eliminating much of the tar and ash from the smoke—and the filtered smoke travels toward the mouthpiece.[50] From there the smoke is inhaled.[51] A hookah is a version of a water pipe that has a long flexible hose leading to the mouthpiece.

Vape pens are used to inhale cannabis concentrates. They are shaped like a pen, and are battery operated. A small amount of concentrate is placed in the atomizer.[52] The atomizer has a heating coil that heats the product and vaporizes it.[53] While inhaling, the user presses the on-button, which heats the coil in the atomizer.[54] The vapor is then inhaled through the mouthpiece.

Figure 9 and 10—*Vape pens*

[49] *Id.*
[50] *Id.*
[51] *Id.*
[52] "Visual Guide: How to Use a Vape Pent" https://keytocannabis.com/blogs/cannabis/how-to-smoke-dabs-with-a-vaporizer-pen, last accessed November 1, 2019.
[53] *Id.*
[54] *Id.*

A dab rig is like a bong, but it is designed to use with cannabis concentrates.[55] Instead of a bowl in which to place the product, a "nail" is used to hold the concentrate.[56] The nail is a metal (sometimes ceramic or other material) bowl with a tubular hole in the middle of it. The nail is super-heated with a torch. The concentrate is then place in the nail, where it melts and vaporizes. The user inhales through the mouthpiece. The vapor travels through the tubular hole in the nail, through the water chamber, and finally through the mouthpiece.

Figure 11—*Dab rig*

Cannabis Impairment

Cannabis use can impair individuals differently depending on the product used, the method of intake, and the person using it. Various THC compounds can remain in the body for up to four weeks.[57] Thus, the presence of a THC compound in a person may merely indicate use within the last 30 days. Therefore, familiarization with the different

[55] "Dab Rig Explained," https://grasschief.com/dab-rig-explained/, February 24, 2019.
[56] "How To Dab: A Step-By-Step guide" High Times, https://www.youtube.com/watch?v=f7ulvmBH4jQ, last accessed November 1, 2019.
[57] *See* https://www.verywellmind.com/what-is-thc-in-marijuana-4080556.

THC compounds, including metabolites, is important in understanding a toxicology report. Toxicology is discussed below. Unlike blood alcohol concentration levels, THC levels have not been definitively linked to corresponding impairment levels. In other words, unlike alcohol, it is not possible to accurately predict a person's level of impairment based on THC levels found in her system. For this reason, investigating then articulating facts gathered during the investigation is key to proving a DUI marijuana case.

Cannabis Cognitive Impairment

Cognition refers to the ability to acquire, process, store, and retrieve information. Much information is known about alcohol and how it impairs cognitive behaviors in a variety of ways. Much of the available evidence regarding cognitive impairment due to cannabis suggests that, for most individuals, chronic cannabis use does not always produce severe or grossly debilitating impairment. The effects of chronic use appear to be subtle and may not be detectable after a few days to weeks of abstinence.[58] There is ongoing debate about whether heavy cannabis use (*e.g.*, daily use) results in permanent changes in cognition or whether cognitive deficits are reversible after extended abstinence from the substance.[59]

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[58] Scott, J. C., Slomiak, S. T., Jones, J. D., Rosen, A. F., Moore, T. M., & Gur, R. C. (2018). Association of Cannabis With Cognitive Functioning in Adolescents and Young Adults. *JAMA Psychiatry*, 75(6), 585; *see also* Mathias, R. (1996). Studies Show Cognitive Impairments Linger in Heavy Marijuana Users. *PsycEXTRA* Dataset.

[59] Jackson, N. J., Isen, J. D., Khoddam, R., Irons, D., Tuvblad, C., Iacono, W. G., . . . Baker, L. A. (2016). Impact of adolescent marijuana use on intelligence: Results from two longitudinal twin studies. *Proceedings of the National Academy of Sciences*, 113(5); *see also* Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S., . . . Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proceedings of the National Academy of Sciences*, 109(40); *see also* Meier, M. H., Caspi, A., Danese, A., Fisher, H. L., Houts, R., Arseneault, L., & Moffitt, T. E. (2018). Associations between adolescent cannabis use and neuropsychological decline: a longitudinal co-twin control study. *Addiction* (Abingdon, England), 113(2), 257–265; *see also* Morin, J. G., Afzali, M. H., Bourque, J., Stewart, S. H., Séguin, J. R., O'Leary-Barrett, M., & Conrod, P. J. (2019). A Population-Based Analysis of the Relationship Between Substance Use and Adolescent Cognitive Development. *American Journal of Psychiatry*, 176(2), 98-106; and *see also* Volkow, N. D., Baler, R. D., Compton, W. M., & Weiss, S. R. (2014). Adverse health effects of marijuana use. *The New England Journal of Medicine*, 370(23), 2219–2227.

Learning and memory functions are commonly studied aspects of cognitive functioning among individuals engaging in regular cannabis use.[60] Long-term cannabis use has been shown to contribute to a progressive decline in learning and memory capacity over time.[61] Some experts have concluded that difficulties in learning and memory and frequent cannabis use are strongest among individuals who engage in heavy cannabis use and in those who initiate use early in life.[62]

Chronic use of cannabis has also been associated with difficulties with attention and concentration, often referred to as "Divided Attention." People who initiate regular cannabis use early in life, or have heavy cannabis usage, or those with long lifetime exposure to cannabis are most likely to display attention deficits.[63]

Executive functions refer to a pattern of cognitive processes that have an important role in the ability to adapt to continuously changing environments and in controlling behavior.[64] These include working memory, inhibition, and cognitive flexibility (each discussed more fully below). Executive functions are important for skills such as problem solving, reasoning, planning, and multi-tasking, all of which are extremely important for the safe operation of a motor vehicle.

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[60] Scott, J. C., Slomiak, S. T., Jones, J. D., Rosen, A. F., Moore, T. M., & Gur, R. C. (2018). Association of Cannabis With Cognitive Functioning in Adolescents and Young Adults. *JAMA Psychiatry*, 75(6), 585.

[61] Mary P. Becker, Paul F. Collins, Ashley Schultz, Snežana Uroševi ć, Brittany Schmaling & Monica Luciana (2018) Longitudinal changes in cognition in young adult cannabis users, *Journal of Clinical and Experimental Neuropsychology*, 40:6, 529-543; *see also* Meier, M. H., Caspi, A., Ambler, A., Harrington, H., Houts, R., Keefe, R. S., . . . Moffitt, T. E. (2012). Persistent cannabis users show neuropsychological decline from childhood to midlife. *Proceedings of the National Academy of Sciences*, 109(40).

[62] Gruber, S. A., Sagar, K. A., Dahlgren, M. K., Racine, M., & Lukas, S. E. (2012). Age of onset of marijuana use and executive function. *Psychology of Addictive Behaviors*, 26(3), 496-506.

[63] Ehrenreich, H., Kunert, H. J., Moeller, M. R., Poser, W., Schilling, L., Gigerenzer, G., . . . Rinn, T. (1999). Specific attentional dysfunction in adults following early start of cannabis use. *Psychopharmacology*, 142(3), 295-301; *see also* Scott, J. C., Wolf, D. H., Calkins, M. E., Bach, E. C., Weidner, J., Ruparel, K., . . . Gur, R. C. (2017). Cognitive functioning of adolescent and young adult cannabis users in the Philadelphia Neurodevelopmental Cohort. *Psychology of Addictive Behaviors*, 31(4), 423-434; *see also* Volkow, N. D., Baler, R. D., Compton, W. M., & Weiss, S. R. (2014). Adverse health effects of marijuana use. *The New England Journal of Medicine*, 370(23), 2219–2227.

[64] Diamond A. (2013). Executive functions. *Annual Review of Psychology*, *64*, 135–168.

Working memory refers to a form of short-term memory that lets a person gather and use information in his mind for a short period of time (seconds to minutes), normally long enough to carry out or accomplish various tasks or functions.[65] Cannabis use has been shown to impair this aspect of executive functioning. This is frequently observed in impaired subjects attempting to complete roadside field sobriety tests or when asked to perform tests as part of the DRE evaluation.

Another area affected by cannabis use is inhibition, also referred to as inhibitory control. This plays an important role in the regulation of thoughts and behavior. There are generally two types of inhibition: cognitive inhibition and response inhibition.[66] Cognitive inhibition refers to the ability to prevent irrelevant or intrusive information from entering one's mind and can be viewed as a type of mental filter. Difficulties in cognitive inhibition can make it difficult to ignore distracting information (*e.g.*, thoughts) and concentrate on a certain task. Response inhibition is the ability to suppress actions or behaviors that are no longer appropriate in a situation. Chronic cannabis use among adolescents and adults has been associated with difficulties in both forms of inhibition.[67] In addition, people who engage in heavy cannabis use tend to show the most distinct deficits in inhibition.[68]

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[65] *Id.*

[66] Porath-Waller, A. (2014). Clearing the smoke on Canadian youths' perceptions of cannabis. *Drug and Alcohol Dependence*, 140.

[67] Behan, B., Connolly, C., Datwani, S., Doucet, M., Ivanovic, J., Morioka, R., . . . Garavan, H. (2014). Response inhibition and elevated parietal-cerebellar correlations in chronic adolescent cannabis users. *Neuropharmacology*, 84, 131-137; *see also* Cousijn, J., Watson, P., Koenders, L., Vingerhoets, W., Goudriaan, A., & Wiers, R. (2013). Cannabis dependence, cognitive control and attentional bias for cannabis words. *Addictive Behaviors*, 38(12), 2825-2832; *see also* Dahlgren, M. K., Sagar, K. A., Racine, M. T., Dreman, M. W., & Gruber, S. A. (2016). Marijuana Use Predicts Cognitive Performance on Tasks of Executive Function. *Journal of Studies on Alcohol and Drugs*, 77(2), 298–308; *see also* Dougherty, D. M., Mathias, C. W., Dawes, M. A., Furr, R. M., Charles, N. E., Liguori, A., … Acheson, A. (2013). Impulsivity, attention, memory, and decision-making among adolescent marijuana users. *Psychopharmacology*, 226(2), 307–319; *see also* Behan, B., Connolly, C., Datwani, S., Doucet, M., Ivanovic, J., Morioka, R., . . . Garavan, H. (2014). Response inhibition and elevated parietal-cerebellar correlations in chronic adolescent cannabis users. *Neuropharmacology*, 84, 131-137.

[68] Dahlgren, M. K., Sagar, K. A., Racine, M. T., Dreman, M. W., & Gruber, S. A. (2016). Marijuana Use Predicts Cognitive Performance on Tasks of Executive Function. *Journal of Studies on Alcohol and Drugs*, 77(2), 298–308; s*ee also* Gruber, S. A., Sagar, K. A., Dahlgren, M. K., Racine, M., & Lukas, S. E. (2012). Age of onset of marijuana use and executive function. *Psychology of Addictive Behaviors*, 26(3), 496-506.

Cognitive flexibility refers to being able to adjust cognitive processes (*e.g.*, attention, thoughts) and behavior in response to unexpected and changing environments.[69] This adjustment flexibility can be expressed as being able to quickly formulate a new solution to an issue when the first approach was not effective. Another common expression of cognitive flexibility is multi-tasking, such as when a driver divides her attention between the various complexities of vehicle operation. It is not fully understood why, for some individuals but not others, chronic cannabis use might be accompanied by difficulties in this cognitive ability. Based on the current research, however, chronic cannabis use initiated early in life may be associated with difficulties in complex forms of cognitive flexibility.[70]

Decision-making is a complex process that involves several cognitive abilities operating at the same time and is understandably important for the safe operation of a motor vehicle. Research has only recently begun to examine aspects of decision making among individuals who frequently use cannabis to see whether they differ from individuals who do not use cannabis.[71] The available data, even though limited, suggests that heavy cannabis use and cannabis use disorder are associated with decision making and with altered brain activity in regions that govern decision-making processes.[72]

Individuals who frequently use cannabis also often use other substances, such as tobacco and alcohol.[73] It is increasingly evident that the impact of chronic cannabis use on certain aspects of cognition might be intensified by the co-use of other substances. For instance, in a three-year study, individuals who used cannabis and alcohol frequently dis-

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[69] Diamond A. (2013). Executive functions. *Annual Review of Psychology*, 64, 135–168.

[70] Mathias, R. (1996). Studies Show Cognitive Impairments Linger in Heavy Marijuana Users. *PsycEXTRA Dataset*.

[71] Research that has not yet been published.

[72] Diagnostic and Statistical Manual (DSM) on Mental Disorders, 5th Edition. *See also* https://www.theravive.com/therapedia/cannabis-use-disorder-dsm--5%2c-305.20%2c-304.30.

[73] Hindocha, C., Shaban, N. D., Freeman, T. P., Das, R. K., Gale, G., Schafer, G., … Curran, H. V. (2015). Associations between cigarette smoking and cannabis dependence: a longitudinal study of young cannabis users in the United Kingdom. *Drug and Alcohol Dependence*, 148, 165–171; *see also* Subbaraman, M. S., Metrik, J., Patterson, D., & Swift, R. (2017). Cannabis use during treatment for alcohol use disorders predicts alcohol treatment outcomes. *Addiction* (Abingdon, England), 112(4), 685–694.

played deficits across several aspects of cognition, including attention and memory,[74] and in another study, the combination of cannabis and alcohol use was associated with lower memory performance than cannabis use alone among adolescents.[75]

In conclusion, much of the available evidence suggests that regular cannabis use impacts cognitive functioning. The degree to which it impacts cognitive functioning and the duration of the impact, however, substantially varies from one individual to another.

Cognitive Dysfunction Commonly Affected by Cannabis Use

Individuals under the influence of alcohol may take bigger risks, experience short-term memory loss (or "blackouts" where an individual is unable to remember things from a certain period of time), make poor decisions, and be unable to think clearly. Alcohol impairs coordination, executive learning functions, reflexes, and the ability to properly discern and react to danger. It also impedes complex thought patterns on a short-term basis. Less is known, however, about how cannabis can cause cognitive dysfunction, sometimes referred to as "brain fog."

The general impression, which is supported by many studies, is that cannabis also causes cognitive dysfunction particularly with long-term usage.[76] Certain specific neuropsychological parameters have been found to be affected from cannabis use.[77] Most commonly and consistently reported are response time, prolongation of word viewing time, basic oculomotor deficit, residual verbal memory, and executive functioning.[78] Numerous recent studies have revealed rather long-lasting effects on basic oculomotor control, es-

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[74] Jacobus, J., Squeglia, L. M., Infante, M. A., Castro, N., Brumback, T., Meruelo, A. D., & Tapert, S. F. (2015). Neuropsychological performance in adolescent marijuana users with co-occurring alcohol use: A three-year longitudinal study. *Neuropsychology*, 29(6), 829–843.

[75] Winward, J. L., Hanson, K. L., Tapert, S. F., & Brown, S. A. (2014). Heavy alcohol use, marijuana use, and concomitant use by adolescents are associated with unique and shared cognitive decrements. *Journal of the International Neuropsychological Society: JINS*, 20(8), 784–795.

[76] Shrivastava, A., Johnston, M., & Tsuang, M. (2011). Cannabis use and cognitive dysfunction. *Indian Journal of Psychiatry*, *53*(3), 187–191.

[77] *Id.*

[78] *Id.*

pecially after chronic use.[79]

There is some evidence that the cognitive dysfunction or decline is dose related.[80] It is also reported to be associated with the amount of consumption.[81] Very heavy use of marijuana is associated with persistent decrements in neurocognitive performance.[82] Such things as attention, memory and learning are impaired among heavy marijuana users, even after users discontinued its use for at least 24 hours.[83]

Impaired memory for recent events, difficulty concentrating, dreamlike states, impaired motor coordination, impaired driving and other psychomotor skills, slowed reaction time, impaired goal-directed mental activity, and altered peripheral vision are common associated cognitive dysfunction effects.[84]

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[79] Huestegge, L., Kunert, H., & Radach, R. (2010). Long-term effects of cannabis on eye movement control in reading. *Psychopharmacology*, 209(1), 77-84.

[80] Bolla, K., Brown, K., Eldreth, D., Tate, K., & Cadet, J. (2002). Dose-related neurocognitive effects of marijuana use. *Neurology*, 59(9), 1337-1343.

[81] Linszen, D., Korver, N., Nieman, D., Becker, H., Fliert, J. V., Dingemans, P., . . . Schmitz, N. (2010). Symptomatology And Neuropsychological Functioning In Cannabis Using Subjects At Ultra High Risk For Developing Psychosis And Healthy Controls. *Schizophrenia Research*, 117(2-3), 164-165.

[82] *Id.*

[83] *Id.*

[84] Adams, I. B., & Martin, B. R. (1996). Cannabis: Pharmacology and toxicology in animals and humans. *Addiction*, 91(11), 1585-1614; *see also* Stiglick, A., & Kalant, H. (1985). Residual effects of chronic cannabis treatment on behavior in mature rats. *Psychopharmacology*, 85(4), 436–439; *see also* Hollister, L. E. (2007). Cannabis — 1988. *Acta Psychiatrica Scandinavica*,78(S345), 108-118.; *see also* Institute of Medicine 1982. Marijuana and Health. Washington, DC: The National Academies Press; and *see also* Tart, Charles T. On Being Stoned: A Psychological Study of Marijuana Intoxication. Palo Alto, Calif.: Science and Behavior Books, 1971.

Investigation Tools and Techniques

In 2016, more than 1 million drivers were arrested for driving under the influence of alcohol or drugs.[85] That's one percent of the 111 million self-reported episodes of alcohol-impaired driving among U.S. adults each year.[86] This does not account for the number of people on our roadways who ingest cannabis and drive impaired. Some self-reported studies indicate that 84 percent of illicit drug users use cannabis.[87]

Police officers cannot possibly detect and arrest all cannabis-impaired violators. Officers can improve, however, the skills necessary to increase the chances of detecting, gathering, recording, and articulating enough evidence to arrest and sustain a conviction.

Currently, thirty-three states and the District of Columbia have broadly legalized marijuana in some form or another. The District of Columbia and 11 states—Alaska, California, Colorado, Illinois, Maine, Massachusetts, Michigan, Nevada, Oregon, Vermont, and Washington—have adopted the most expansive laws legalizing marijuana for recreational use. Cannabis-impaired driving training should ensure all officers are currently trained with the National Highway Traffic Safety Administration (NHTSA) and the International Association of Chiefs of Police (IACP) DWI Detection and Standardized Field Sobriety Testing (SFST). Agencies should also strive to bridge the gap between SFST training and the Drug Evaluation and Classification Program (DECP) by seeking out training in Advanced Roadside Impaired Driving Enforcement (ARIDE). The ARIDE program was developed by NHTSA with input from IACP's Technical Advisory Panel

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[85] Federal Bureau of Investigation (FBI). Department of Justice (U.S.). Crime in the United States, 2016: Uniform Crime Reports. Washington (D.C.): FBI; 2017. Available at https://ucr.fbi.gov/crime-in-the-u.s/2016/crime-in-the-u.s.-2016/tables/table-18.

[86] Impaired Driving: Get the Facts. (March 22, 2019). Retrieved from https://www.cdc.gov/motorvehiclesafety/impaired_driving/impaired-drv_factsheet.html.

[87] Center for Behavioral Health Statistics and Quality. (2017). *2016 National Survey on Drug Use and Health: Methodological Summary and Definitions.* Rockville, MD: Substance Abuse and Mental Health Services Administration.

(TAP) and the Virginia Association of Chiefs of Police. Other training programs include *DUI/DWI Cases Trial Advocacy Course*, *Prosecuting the Drugged Driver Trial Advocacy Course*, *Protecting Lives/Saving Futures*, *Drug-Impaired Training for Educational Professionals (DITEP)*, *Lethal Weapon*, *Crash Reconstruction for Prosecutors* and *Cops in Court*. For more information about any of these courses, contact the National Traffic Law Center (https://ndaa.org/programs/ntlc/) or the Traffic Safety Resource Prosecutor (TSRP) in each state. A TSRP will frequently co-host or co-teach one of these courses, or a portion of a course, along with a DRE.

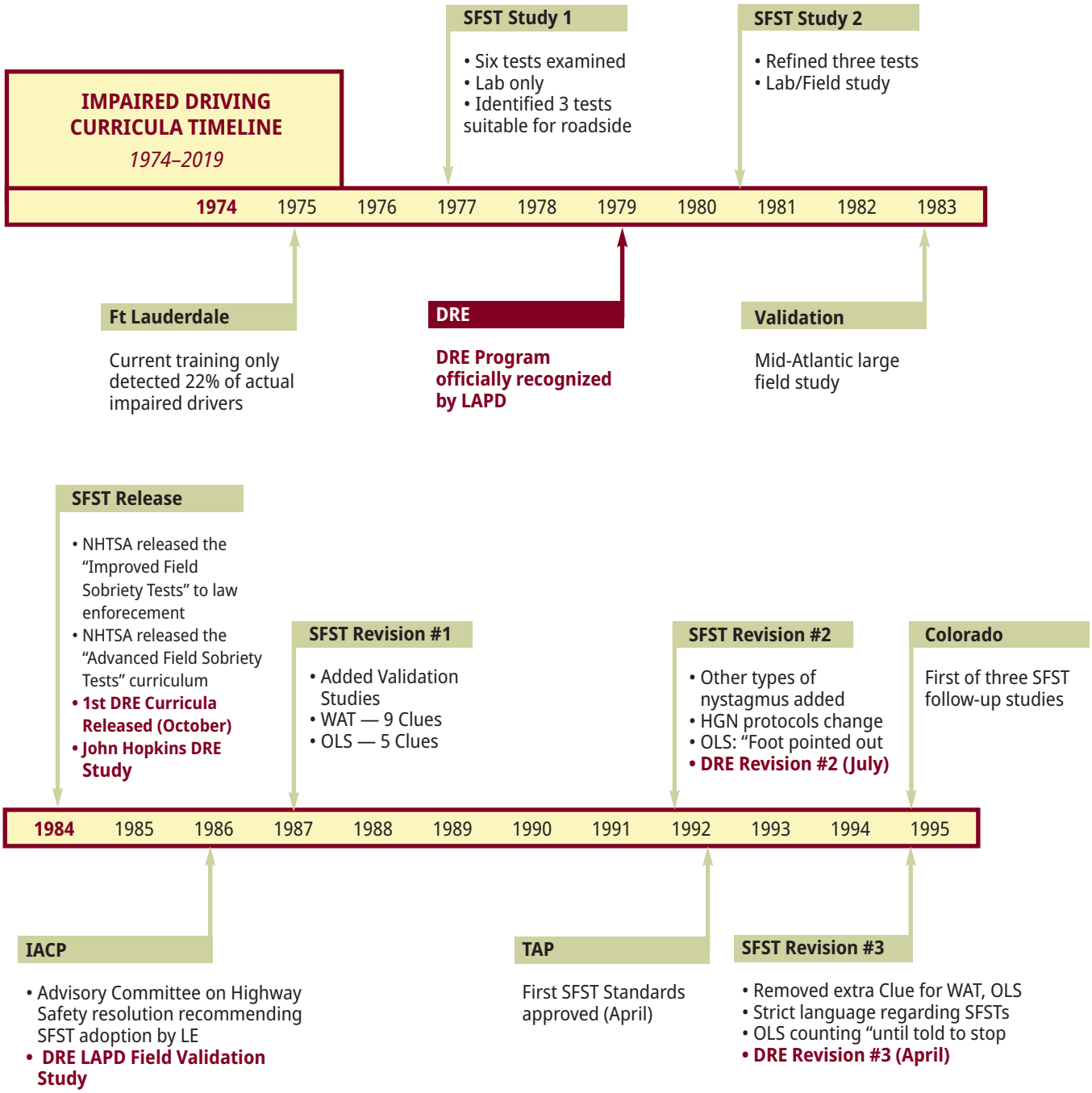
The Importance of Training (SFST, ARIDE, and DECP)

As an officer is trained to detect and apprehend impaired drivers, it is vital he adheres to the training he has received. Remember the old phrase, "Stay in your lane." An SFST-trained law enforcement officer should not be administering a field sobriety test that is not published in the NHTSA/IACP *DWI Detection and Standardized Field Sobriety Testing* manual. If an officer administers a field sobriety test, the officer should administer the entire standardized test battery per the manual on which she was trained. A drug recognition expert (DRE), in turn, should be conducting full evaluations when a driver is suspected to be impaired by drugs whenever possible. Conducting cannabis-impaired driving investigations outside of the scope of each of the impaired driving training manuals can create severe issues during the prosecution phase. By "staying in your lane" and following the training an officer received not only results in a cleaner arrest the day of the incident, but also results in a cleaner case several months down the road in court.

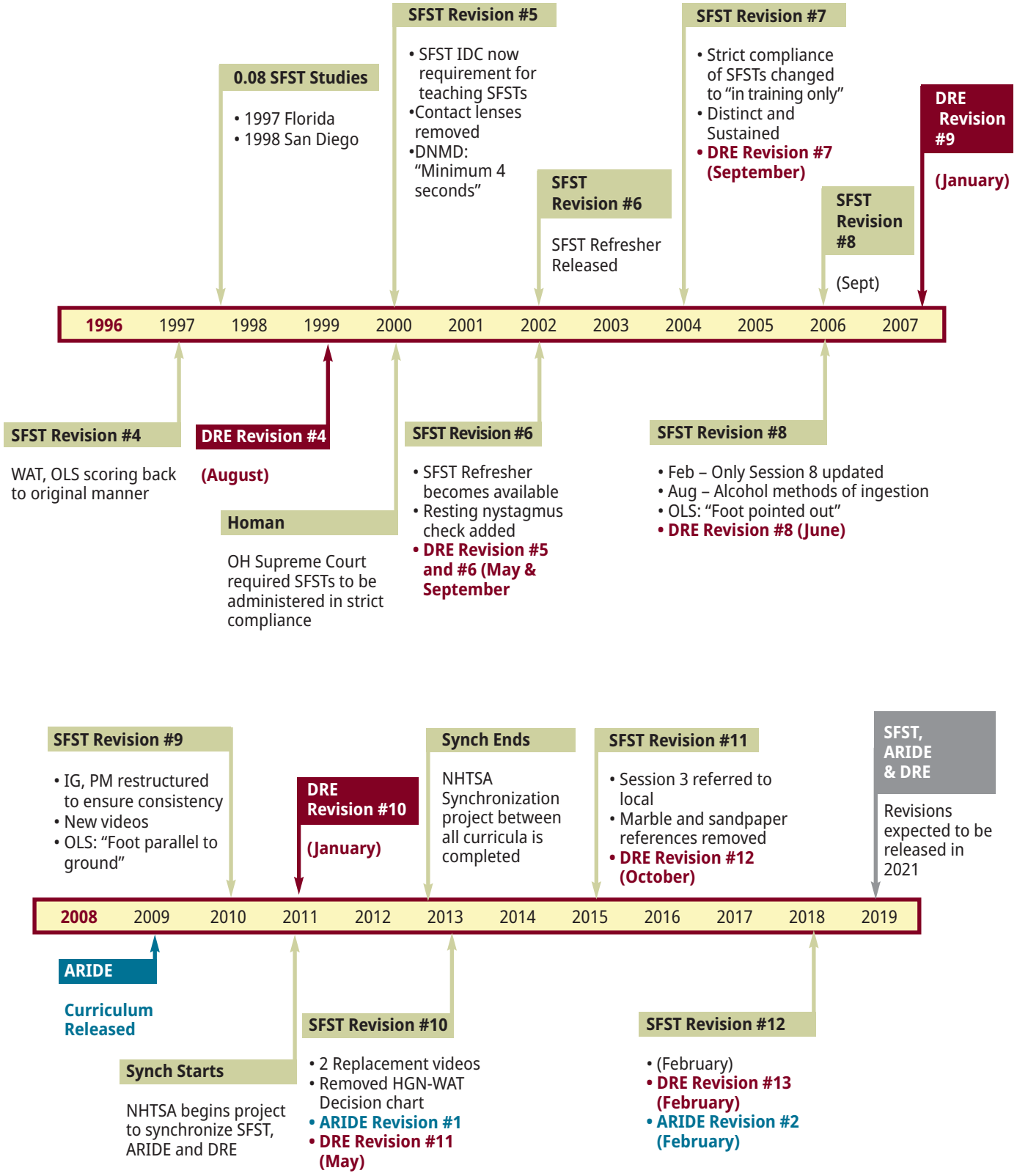
SFST and DECP Curriculum History

The importance of using and being familiar with the SFST, ARIDE, and DECP curricula cannot be overstated. It is incumbent on officers and prosecutors to know from which manual they were trained and to also be aware of any updates or revisions since being trained. The first SFST and DRE curricula were developed in the early 1980s (Refer

to Impaired Driving Curricula Timeline Charts[88]) and, since that time, there have been a series of updates and revisions. SFST and DECP training manuals are available through NHTSA and the states' Highway Safety Offices.



[88] IACP DRE In-Service presentation, K. Clark and C. Hayes, 2019.


SFST Revision #5
• SFST IDC now requirement for teaching SFSTs
•Contact lenses removed
•DNMD: "Minimum 4 seconds"
SFST Revision #7
• Strict compliance of SFSTs changed to "in training only"
• Distinct and Sustained
• DRE Revision #7 (September)
DRE Revision #9
(January)
0.08 SFST Studies
• 1997 Florida
• 1998 San Diego
SFST Revision #6
SFST Refresher Released
SFST Revision #8
(Sept)
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007
SFST Revision #4
WAT, OLS scoring back to original manner
DRE Revision #4
(August)
Homan
OH Supreme Court required SFSTs to be administered in strict compliance
SFST Revision #6
• SFST Refresher becomes available
• Resting nystagmus check added
• DRE Revision #5 and #6 (May & September
SFST Revision #8
• Feb – Only Session 8 updated
• Aug – Alcohol methods of ingestion
• OLS: "Foot pointed out"
• DRE Revision #8 (June)
SFST Revision #9
• IG, PM restructured to ensure consistency
• New videos
• OLS: "Foot parallel to ground"
DRE Revision #10
(January)
Synch Ends
NHTSA Synchronization project between all curricula is completed
SFST Revision #11
• Session 3 referred to local
• Marble and sandpaper references removed
• DRE Revision #12 (October)
SFST, ARIDE & DRE
Revisions expected to be released in 2021
2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
ARIDE
Curriculum Released
Synch Starts
NHTSA begins project to synchronize SFST, ARIDE and DRE
SFST Revision #10
• 2 Replacement videos
• Removed HGN-WAT Decision chart
• ARIDE Revision #1
• DRE Revision #11 (May)
SFST Revision #12
• (February)
• DRE Revision #13 (February)
• ARIDE Revision #2 (February)

The NHTSA/IACP impaired driving training curricula teaches and reinforces the "3-phases of detection:" 1) Vehicle in Motion, 2) Personal Contact, and 3) Pre-Arrest Screening.[89] In the DRE training curriculum,[90] various impairment indicators for cannabis are listed within each of the three phases. They include:

Phase 1: ***Vehicle in Motion*** — Interferes with divided attention, short attention span, varying speeds, failure to maintain a single lane, and difficulty with depth perception.

Phase 2: ***Personal Contact*** — Odor of marijuana, marijuana debris in mouth, red/bloodshot eyes, body tremors, eyelid tremors, possible green coating on tongue, relaxed inhibitions, disoriented, altered time and distance perception, lack of concentration, impaired memory, alterations of thought process, drowsiness, sedation and mood changes and dilated pupils.

Phase 3: ***Pre-Arrest Screening*** — No horizontal gaze nystagmus, no vertical nystagmus, a lack of convergence (LOC), poor performance on psychophysical tests such as Modified Romberg Balance (MRB), Finger-to-Nose (FTN), Walk and Turn and One Leg Stand.

One research study explored various aspects of cannabis impairment.[91] The study supported a conclusion that there are common driving indicators of cannabis impairment; speeding was the most common reason for cannabis-impaired drivers being stopped by police and failure to maintain a single lane of travel was the second. The study also

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[89] *DWI Detection and Standardized Field Sobriety Testing (SFST) Refresher: Participant Guide*. U.S. Dept. of Transportation, National Highway Traffic Safety Administration, 2018.

[90] *Drug Evaluation and Classification Training: the Drug Recognition Expert School*. U.S. Dept. of Transportation, Transportation Safety Institute, National Highway Traffic Safety Administration, February 2018.

[91] Hartman, Rebecca L., et al. "Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment." *Accident Analysis & Prevention*, vol. 92, 2016, pp. 219–229.

revealed a high percentage of cannabis-impaired subjects displayed Rebound Dilation[92] (70.9 percent).[93]

Two other research studies also examined driving indicators and psychophysical tests of drivers arrested for cannabis-impaired driving.[94] In each of these studies, researchers once again identified speeding and inability to maintain lane position as the top two impaired driving indicators of cannabis impairment.[95]

Given the country's current trend toward cannabis legalization, coupled with the lack of understanding by many courts of the correlation between SFSTs and cannabis impairment, it is important for prosecutors and law enforcement officers to provide a solid foundation for SFST admissibility as it relates to cannabis. Many courts have concluded there is not a scientific consensus on cannabis impairment and performance on the SFSTs, utilizing the relatively minimal discord between defense and prosecution cited studies leading to inconsistent rulings on SFST admissibility for cannabis impairment and the way the SFSTs should be presented to the jury in these types of cases. Law enforcement officers need to be prepared to testify about the merits of the studies supporting the correlation between SFSTs and cannabis-impairment in order to provide the appropriate foundation for the admissibility of evidence about a defendant's performance on the tests. Likewise, prosecutors need to be prepared to discuss the scientific studies in detail, along with the differences between the studies with scientific merit (*e.g.*, peer reviewed, journal published, acknowledgement on limitations, methodology, etc.), and those that lack scientific significance. It is also incumbent on prosecutors to review and understand the

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[92] A period of pupil constriction followed by a period of dilation where pupil steadily increases and does not return to original constricted size. Source: Drug Recognition Expert manual, Feb 2018.

[93] Hartman, Rebecca L., et al. "Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment." *Accident Analysis & Prevention*, vol. 92, 2016, pp. 219–229.

[94] Declues, K., Perez, S., & Figueroa, A. (2016). A 2-Year Study of Δ 9-tetrahydrocannabinol Concentrations in Drivers: Examining Driving and Field Sobriety Test Performance. *Journal of Forensic Sciences*, 61(6), 1664-1670; *see also* Declues, K., Perez, S., & Figueroa, A. (2017). A Two-Year Study of Δ 9 Tetrahydrocannabinol Concentrations in Drivers; Part 2: Physiological Signs on Drug Recognition Expert (DRE) and non-DRE Examinations. *Journal of Forensic Sciences*, 63(2), 583-587.

[95] *Id.*

studies cited by the defense as often they are misinterpreted or taken out of context. For further discussion about the SFST studies, please see Appendix 4.

Some courts have placed limitations on SFST testimony as it relates to cannabis impairment. These courts have allowed law enforcement officers to testify as to the defendant's performance on the SFSTs, however, they have not allowed opinion testimony that cannabis caused the observed impairment. In these jurisdictions, an officer may not testify or suggest performance on the SFSTs established the individual was under the influence of cannabis. Furthermore, some courts have determined the administered tests need to be described in terms other than SFSTs such as "roadside assessments." These jurisdictions have opined the alternative phrasing is necessary to ensure there is no suggestion the SFSTs function as scientific validation of defendant's impairment on cannabis. Even though the semantics have changed in these jurisdictions, law enforcement officers are still able to testify regarding the purpose of the "roadside assessments," for what the "roadside assessments" are designed to reveal (*i.e.*, divided attention, balance, coordination, following directions, memory etc.), and the defendant's performance on the "roadside assessments."

SFSTs are designed to assess balance, coordination, dexterity, ability to follow instructions, and ability to focus attention on multiple subjects at the same time. These and other factors are used to assist law enforcement officers in making an arrest decision based largely on observations of impairment.

SFSTs are used to evaluate a person's ability to perform tasks correlated to skills required to drive safely – physical balance and coordination, mental ability to understand and follow directions, information processing, short-term memory, judgment and decision making, and the ability to perform divided attention tasks. In addition to initial impaired driving investigations, SFSTs are administered and help build the foundation for a DRE evaluation by eliminating alcohol as the cause of the impairment. This concept is recognized by the Florida Study stating "[t]he three tests have been incorporated into Drug Influence Evaluations (DIEs) which are conducted by certified Drug Recognition Experts (DREs) whenever an individual is suspected of being drug-impaired. As part of a DRE evaluation, the SFSTs provide important evidence of drug impairment and contribute to

the DRE's three-part opinion…"[96] Furthermore, "[t]he Colorado and California studies provide relevant and current field data. The validity of the tests when they are administered in the context of drug evaluations was examined in a retrospective analysis of the records of the Phoenix DRE Unit (Adler and Burns, 1994). It was found that a suspect's performance of the tests provides valid cues of drug impairment."[97]

SFSTs are relevant to a defendant's impairment and, therefore, an officer should be able to testify to observations of the defendant's performance regardless of the substance impairing him. The SFSTs have value beyond alcohol intoxication; they are relevant to establish a driver's balance, coordination, mental acuity, and other skills required to safely operate a motor vehicle. It is important to remember SFSTs are one tool among many to assist law enforcement officers in determining impairment. SFSTs are an important part of an impaired driving investigation and are utilized in conjunction with all other evidence and observations made in the course of an encounter. As such, the SFSTs are not considered in a vacuum; the SFSTs along with all other relevant evidence are considered when determining an individual's impairment.

As described previously, cannabis is known to impact several functions of the brain relevant to driving ability. The impact of cannabis impairment can be observed in those functions assessed by performance on the SFSTs, including the capacity to divide one's attention, the ability to focus on more than one thing at the same time, balance, reaction time, and information processing. These mental and physical abilities are necessary for the complex tasks associated with the safe operation of a vehicle.

HGN Testing and Cannabis

"Nystagmus" is the involuntary jerking of the eye. Alcohol consumption causes dis-

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[96] Burns, M., & Dioquino, T. (1997). A Florida Validation Study of the Standardized Field Sobriety Test (S.F.S.T.) Battery. *PsycEXTRA Dataset*.

[97] Adler, Eugene V. and Burns, Marcelline (1994). Drug Recognition Expert (DRE) Validation Study. Final Report to Governor's Office of Highway Safety, State of Arizona.

tinct nystagmus in the "horizontal" or "lateral" gaze.[98] Scientists demonstrated the phenomenon in animals as early as 1842 and in human beings in the early 1900's.[99] Physicians have recognized nystagmus as an accurate and reliable indicator of alcohol and/or drug influence and impairment for nearly a century.

The Horizontal Gaze Nystagmus (HGN) tests used as part of the Standardized Field Sobriety Tests (SFSTs) were originally designed to detect impairment in individuals under the influence alcohol.[100] Further research in the 1980's determined HGN can reliably be an indicator of impairment for not only alcohol, but also for Central Nervous System (CNS) Depressants, Dissociative Anesthetics, and Inhalants.[101] As seen with Alcohol, CNS Depressants, Dissociative Anesthetics, and Inhalants, HGN is a specific type of nystagmus. It is regular, rhythmic, and sustained.

In the Drug Evaluation and Classification Program, cannabis is one of the drug categories that does not cause HGN. Cannabis includes marijuana, hash, synthetic medications such as dronabinol, synthetic cannabinoids (K2/Spice) and other products that contain Delta-9 Tetrahydrocannabinol (THC).

Cannabis does cause attention problems. It is possible, therefore, that officers reporting the appearance of HGN in subjects under the influence of cannabis are actually mistaking inattentive eye movements for HGN.

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[98] Nystagmus, 72 Poisindex (R) Toxicologic Management (Micromedex, Inc. 1974-1992); R. Adams, and M. Victor, Principles of Neurology (4th Ed. 1991); Burns, M., The Use of Horizontal Gaze Nystagmus as a Field Sobriety Test, presented at the 35th International Congress on Alcoholism and Drug Dependence, Oslo, Norway (July 31 to August 6, 1988); Fregly, A., Bergstedt, M., and Graybiel, A., Relationships between Blood Alcohol, Positive Alcohol Nystagmus and Postural Equilibrium, 28 *Q. J. Stud. Alc.* 11 (1967).

[99] Murphee, H.B., Price, L., and Greenberg, L., Effect of Congeners in Alcoholic Beverages on the Incidence of Nystagmus, 27 *Q. J. Stud. Alc.*

[100] NHTSA/SCRI SFST Studies — SCRI published the following three reports: California: 1977 (Lab); California: 1981 (Lab and Field); and Maryland, District of Columbia, Virginia, North Carolina, 1983 (Field).

[101] Bigelow, G, et al. (1985) Identifying Types of Drug Intoxication — Laboratory Examination of Subject-Examination Procedure. Johns Hopkins University; Compton, Richard. (February 1986). "Field Evaluation of the Los Angeles Police Department Drug Detection Procedure (173 case study)" NHTSA Technical Report.

When checking for HGN, an officer should pay particular attention to the way it presents:

- Is it regular? Does it have a constant pattern?
- Is it rhythmical? Does it have a rhythm to it, or does it present in an uneven arbitrary type pattern?
- Is it sustained? Does it continue in the same manner during the entire test?

An officer should ensure to check for these above items when administering HGN to determine if it is HGN or if it is abnormal eye movements that have little, if any, regularity to them. If the HGN observed is regular, rhythmical, and sustained, it is most likely caused by Alcohol, CNS Depressants, Dissociative Anesthetics and/or Inhalants. If not, the abnormal eye movements observed may be from inattentiveness or a medical issue.

To view a video of a side-by-side comparison of Alcohol induced HGN, and eye movements of a subject under the influence of only Cannabis, contact the National Traffic Law Center at https://ndaa.org/programs/ntlc/.

Advanced Roadside Impaired Driving Enforcement — ARIDE — Bridging the Gap

ARIDE training does not make a law enforcement officer a drug recognition expert, just as taking one's own temperature also does not make one a doctor. ARIDE 'bridges the gap' for the SFST certified officer when the alcohol concentration is inconsistent with the impairment he observes roadside. This 16-hour program provides the officer with the knowledge, skills, and ability to continue the impaired driving investigation through the utilization of additional sobriety tests.

ARIDE teaches that an officer should attempt to observe a suspected impaired driving suspect's pupil size. The average range for pupil size in room light is between 2.5-5.0 mm. Pupils which are greater in size are considered dilated and smaller are considered constricted. An officer should estimate the suspect's pupil size to determine if they are normal, dilated, or constricted. Cannabis, as a clinical indicator of impairment, causes

pupils to dilate; however, it is possible they may be normal.[102]

ARIDE also teaches an officer to observe a suspect's eyes for what is known as lack of convergence (LOC). LOC is the inability of the eye to converge, or cross. Certain drug categories may cause LOC. The Standardized Field Sobriety Test program and the studies upon which the tests are based have proven that Horizontal Gaze Nystagmus (HGN) is caused by alcohol and some categories of drugs, as described above. The categories of drugs that cause HGN include Central Nervous System Depressants, Inhalants, and Dissociative Anesthetics — the "DID" drugs. LOC may be seen in the DID-C drugs, the DID drugs plus Cannabis. This test is performed by presenting a stimulus in the same fashion as is done in HGN. The officer should move the stimulus slowly in a circular manner and bring it in to within two inches from the bridge of the suspect's nose, holding it in that location for approximately one second. LOC is considered present when the eyes do not converge.

Cannabis can cause LOC, but not HGN. Thus, officers investigating a suspected impaired driver and observe LOC without HGN have valuable evidence of possible cannabis use.

Another test an officer may perform in an ARIDE investigation is the Modified Romberg Balance (MRB) Test. This test is performed by instructing the suspected impaired driver to tilt her head back slightly, close her eyes, and estimate the passage of 30 seconds. The officer times the test, allowing no more than 90 seconds should the suspect's estimate of time exceed that amount. Since some drugs impair a person's perception of time, an officer can gain valuable information should the suspect estimate 30 seconds unusually slow, fast, or not at all. An officer should also note any sway or tremors of the suspect's eyes or body while the driver is performing MRB. Since cannabis can cause altered perception of time and distance, body and eyelid tremors, sedation, impaired memory and lack of concentration, an officer employing the MRB test on a suspect are in an

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[102] DRE Drug Category Matrix exception 6, Pupil Size Possibly Normal, *Drug Evaluation and Classification Training: the Drug Recognition Expert School.* U.S. Dept. of Transportation, National Highway Traffic Safety Administration, February 2018.

excellent position to make these observations.

The Finger to Nose (FTN) Test involves an officer directing an impaired driving suspect to tilt his head back slightly and close his eyes. Following specific instructions by the officer, the suspect is directed to touch the tip of his nose with the tip of his finger and immediately return his hand to his side. The officer will direct the suspect in a specific pattern of left, right, left, right, right, left and record how the suspect performs this test. A AAA Foundation for Safety Study[103] reports the finger-to-nose test was the only indicator for which performance differed according to whether subjects were in the higher (>5ng/ml) or lower (<5ng/ml) THC group. The number of misses on the finger-to-nose test was greater in the higher THC group. As described above, cannabis may cause altered time and distance perception, body and eyelid tremors, impaired memory and lack of concentration. Any or all of these general indicators may be observed during the FTN test.

When evaluating the results of the SFSTs and the additional tests conducted by an ARIDE-trained officer, a significant number of validated clues and other indicators of impairment may eliminate alcohol impairment or show limited impairment due to alcohol. These observations place the officer in a position where he can articulate impairment and arrest the driver for drug-impaired driving. While HGN will not be observed with the cannabis-only driver, an officer will still have the WAT, OLS, MRB, FTN as well as the observation of the suspect's pupil size to provide valuable evidence for probable cause of impairment. The decision is based on the totality of the circumstances.

Once the arrest has been made, an officer should enlist the help of a Drug Recognition Expert (DRE) for additional testing and evidence. A DRE can provide valuable insight, including confirmation of the category or categories of drug(s) causing im-

[103] Logan, B.; Kacinko, S.L.; and Beirness, D.J. (2016). An Evaluation of Data from Drivers Arrested for Driving Under the Influence in Relation to Per se Limits for Cannabis. *AAA Foundation for Traffic Safety*.

pairment, which will assist both the officer and the prosecutor in trial.

Drug Recognition Experts (DREs) in Determining Cannabis Impairment

The Drug Evaluation and Classification (DEC) Program is a transportation safety program that focuses on the detection and apprehension of drug-impaired drivers. The program is managed and coordinated by the International Association of Chiefs of Police (IACP) with support from the National Highway Traffic Safety Administration (NHTSA) of the U.S. Department of Transportation.

The DEC Program (also referred to as the Drug Recognition Expert Program) began in the early 1970s in Los Angeles, California, by the Los Angeles Police Department.[104] Due to the program's success in identifying drug-impaired drivers, it soon became an international program expanding to other states and eventually into Canada and other countries. All 50 states and the District of Columbia participate in the program in the United States.

The program trains police officers and other public safety officials as drug recognition experts or drug recognition evaluators (DREs) through a three-phase training curriculum:

- Drug Recognition Expert Pre-School (16 hours)
- Drug Recognition Expert School (56 hours) and
- Drug Recognition Expert Field Certification (Approximately 40 hours)

The training relies heavily upon the SFSTs, which provide the foundation for the DEC Program. Once trained and certified, a DRE becomes a highly effective officer, skilled in the detection and identification of persons impaired or affected by alcohol and/or drugs. DREs are trained to conduct a systematic and standardized 12-step evaluation consisting of physical, mental, and medical components. A DRE conducts a detailed exami-

[104] *Drug Evaluation and Classification Training: the Drug Recognition Expert School.* U.S. Dept. of Transportation, National Highway Traffic Safety Administration, February 2018.

nation of persons arrested or suspected of drug-impaired driving or similar offenses. Based on the results of the drug influence evaluation, a DRE forms an expert opinion on the following:

1. Is the person impaired? If so, is the person able to operate a vehicle safely? If the DRE concludes that the person is impaired…
2. Is the impairment due to an injury, illness, or other medical complication, or is it drug-related? If the DRE concludes that the impairment is due to drugs…
3. The DRE determines which category or combination of categories of drugs is the most likely source of the impairment.

A DRE typically conducts her evaluations in a controlled environment, such as at a police precinct, intake center, troop headquarters, or other location where impaired drivers are transported after arrest. The drug influence evaluation is not normally done at roadside and is a "post-arrest" procedure.

In some cases, the person evaluated will be a driver the DRE personally arrested. In many cases, however, the DRE will be called upon to conduct the evaluation after another officer has arrested the driver. The DRE is requested to assist in the investigation because of her special expertise and skills in identifying drug impairment.

The DRE drug influence evaluation takes approximately 30 to 60 minutes to complete. The DRE evaluates and assesses the person's appearance and behavior. The DRE also carefully measures and records vital signs and makes precise observations of the person's automatic responses and reactions. Different drugs affect the human body differently; these measurements provide information about what classification of drug may be impairing an individual. The DRE also administers carefully designed psychophysical tests to evaluate the person's judgment, information processing ability, coordination, and various other characteristics. The DRE will systematically consider everything about the person that could indicate the influence of drugs.

12-Step Evaluation

The DRE drug influence evaluation includes twelve major components or steps:

1. Breath Alcohol Test

The DRE determines the result of the suspect's breath alcohol test, if taken. This is important to the DRE because it must be determined whether alcohol accounts for the observed impairment.

2. Interview of the Arresting Officer

If the DRE did not make the arrest, the arresting officer must be interviewed prior to the evaluation. This allows the DRE to gain an insight on the suspect's driving, conduct at roadside, and performance of the Standardized Field Sobriety Tests (SFSTs).

3. Preliminary Examination

The DRE will perform a preliminary examination checking for any evidence of a medical complication that would warrant terminating the evaluation and requesting medical assistance. The suspect is asked a series of questions and the DRE conducts a series of eye examinations that assist in making the decision whether the suspect is under the influence of alcohol and/or drugs or if the impairment may be medically related. If drug impairment is suspected, the DRE proceeds with the evaluation.

4. Examinations of the Eyes

In this step, the DRE administers three tests of the suspect's eyes: (1) Horizontal Gaze Nystagmus (HGN) (previously described), (2) Vertical Gaze Nystagmus (VGN)[105] and (3) Lack of Convergence (LOC) (previously described).

5. Divided Attention Psychophysical Tests

The DRE conducts a series of psychophysical tests that assist in determining

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[105] Vertical Gaze Nystagmus is an involuntary jerking of the eyes (up and down) which occurs when the eyes gaze upward at maximum elevation. The jerking should be distinct and sustained. *See DWI Detection and Standardized Field Sobriety Testing (SFST) Refresher: Participant Guide*. U.S. Dept. of Transportation, National Highway Traffic Safety Administration, 2018.

the suspect's condition and whether he can operate a vehicle safely. The DRE administers four divided attention psychophysical tests: (1) Modified Romberg Balance (previously described), (2) Walk and Turn, (3) One Leg Stand, and (4) Finger to Nose (previously described).

6. Examination of Vital Signs

In this step, the DRE conducts measurements of the suspect's pulse rate, blood pressure, and body temperature. The suspect's pulse rate is measured three different times during the evaluation. During this step of the evaluation, the DRE will use medical instruments, including a stethoscope, sphygmomanometer (blood pressure cuff), and a digital thermometer.

7. Dark Room Examinations

The DRE will take the suspect into a separate room where the DRE can obtain an estimate of the suspect's pupil size in three different lighting conditions (*i.e.*, room light, near-total darkness, and direct light) with a device called a pupilometer and a penlight.

8. Examination for Muscle Tone

The DRE inspects the suspect's arm muscles checking for muscle tone.

9. Examination for Injection Sites

The DRE then carefully inspects the suspect's arms, hands, fingers, and neck for evidence of recent or past hypodermic needle injections.

10. Suspect's Statements and Other Observations

In this step of the evaluation, the DRE questions the suspect about specific evidence and observations made during the evaluation. If *Miranda*[106] rights have not yet been provided, the DRE does so during this step.

11. Opinions of the Evaluator

The DRE documents his conclusions and renders an expert opinion about

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[106] An in-custody defendant must be advised of his right to an attorney and against self-incrimination prior to police interrogation. *See Miranda v. Arizona*, 86 S.Ct. 1602 (1966).

the condition of the suspect and the category(s) of drugs causing the impairment.

12. Toxicological Examination

As part of the evaluation process, either the arresting officer or the DRE requests a blood or urine specimen that, if collected, is sent to the laboratory for chemical analysis. The forensic toxicology lab analyzes the specimen and reports the findings to the DRE and/or the arresting officer. (There may be situations when this step is taken out of order. Examples may include the cooperation of the suspect, type of specimen collected, lab policies, etc.)

Once the drug influence evaluation is completed, the DRE submits a detailed report documenting the evaluation, the evidence obtained, and his opinion as to whether the suspect was impaired and, if so, the category(s) of drugs causing the impairment.

DREs are trained to identify indicators of impairment in seven drug categories: [107]

1. Central Nervous System (CNS) Depressants

CNS depressants slow down the operations of the brain and the body. Examples of CNS depressants include alcohol, barbiturates, anti-anxiety tranquilizers (*e.g.*, diazepam, chlordiazepoxide, alprazolam, fluoxetine, and chlorpromazine), GHB (gamma hydroxybutyrate), flunitrazepam and many other anti-depressants (*e.g.*, sertraline, paroxetine).

2. CNS Stimulants

CNS stimulants accelerate the heart rate and elevate the blood pressure and "speed-up" or over-stimulate the body. Examples of CNS stimulants include cocaine, "crack," amphetamines and methamphetamine ("crank").

3. Hallucinogens

Hallucinogens cause the user to perceive things differently than they actually

[107] See Appendix 7—DRE Drug Symptom Matrix, *Drug Evaluation and Classification Training: the Drug Recognition Expert School.* U.S. Dept. of Transportation, National Highway Traffic Safety Administration, February 2018.

are. Examples include LSD, mescaline, psilocybin and MDMA (*i.e.*, ecstasy).

4. Dissociative Anesthetics

Dissociative anesthetics are a category of drugs that inhibits pain by cutting off or "disassociating" the brain's perception of pain. Drugs such as PCP and its analogs (*e.g.*, ketamine) and dextromethorphan are included in this category.

5. Narcotic Analgesics

Narcotic analgesics relieve pain, induce euphoria, and create mood changes in the user. Examples of narcotic analgesics include morphine, codeine, heroin, fentanyl, meperidine, propoxyphene, methadone, hydrocodone and oxycodone.

6. Inhalants

Inhalants include a wide variety of breathable substances that produce mind-altering results and effects. Examples of inhalants include plastic cement, paint, gasoline, paint thinners, hair sprays and various anesthetic gases.

7. Cannabis

Cannabis (DRE drug category definition: substances containing delta-9 tetrahydrocannabinol, Δ-9 THC) interferes with a person's ability or willingness to divide attention, which is necessary to operate a vehicle safely. Examples include marijuana, hashish and dronabinol (synthetic THC).

Poly-drugs

"Poly-use," "poly-abuse," and "poly-drug use" are terms referring to the mixing of drugs, such as alcohol with other drugs, whether illicit drugs, prescription, or over-the-counter drugs. Poly-drug use is becoming a serious problem, especially on the roadways, and is identified in over 60 percent of all DRE evaluations entered into the DRE National Tracking System (NTS).[108]

Polydrug or polycategory cases are often hardest to prove due to the complex dy-

[108] *Drug Evaluation and Classification Training: the Drug Recognition Expert School.* U.S. Dept. of Transportation, National Highway Traffic Safety Administration, February 2018.

namics between signs of impairment and pharmacology, with which the fact finders may not be familiar. In multiple drug cases, the effect of one drug may begin to dominate the effect of the other.

Poly-drug use can cause serious side effects, even when using prescription medications as prescribed. Poly-drug use often carries with it more risk than use of a single drug, due to an increase in side effects and/or drug interactions. The effect of one drug on another is sometimes considerable and can potentiate impairment. In many instances, the risk level will depend on the dosage level of both substances. Some drug combinations can have various effects, such as:

- An "additive effect," also referred to as a "synergistic effect." When two or more drugs are combined that have similar effects, the effects could be intensified resulting in reinforced action.
- An "overlapping effect" which can result in effects caused by one drug wearing off and another stronger drug intensifying an effect.
- A "null effect" occurs if neither drug affects a particular indicator of impairment, their combination also will not affect that indicator.
- An "antagonistic effect" occurs when two drugs affect some indicator in exactly opposite ways, their use in combination could affect that indicator in any possible way.[109]

Mixing cannabis and alcohol has an additive effect, for example. In other words, a little bit of alcohol and a little bit of cannabis results in considerable impairment. If other drugs are found with cannabinoids, consult a toxicologist or pharmacologist for more information.

Three phases of DWI Detection

Reasonable suspicion for the stop and probable cause for arrest are, for good reason, greatly scrutinized during an impaired driving investigation. The Standardized Field

[109] *Id.*

Sobriety Test curriculum goes into detail to teach an officer how to thoroughly investigate a potential impaired driving case. There are three phases of DWI Detection that assist the officer in determining the sobriety of the driver. Properly administered standardized tests, administrative procedures, and arrest criteria are an officer's greatest tools in finding and arresting impaired drivers while sending the sober, unimpaired, attentive driver safely to her destination.

Vehicle in Motion

Phase One, vehicle in motion, begins when the officer observes the vehicle. What drew the officer's attention to the vehicle? It could have been a regulatory or statutory violation, or it could have been some combination of driving behaviors. During this phase, several driving cues may be observed which are consistent with impaired driving. Research has identified several driving cues that may be related to impaired driving and are broken down into several categories, including:

- Problems maintaining proper lane position
- Speed and braking problems
- Vigilance problems
- Judgment problems[110]

Driving is a complex task and observation of these driving cues during Phase One can help the officer identify an impaired driver. Phase One also assists the officer in providing the court with the reasonable, articulable suspicion for the traffic stop.

Personal contact

Like Phases One and Three, Phase Two, Personal Contact, comprises two significant evidence-gathering tasks and one major decision. The first task is to approach, ob-

[110] Anacapa Sciences, Inc. *Visual Detection of Driving While Intoxicated*, 1980; *see also* NHTSA, *The Visual Detection of DWI Motorists*, DOT HS 808 677, March 2010.

serve, and interview the driver while she is still in the vehicle to note any evidence of impairment. During this face-to-face contact, the officer may administer some simple pre–exit sobriety tests to gain additional information to evaluate whether the driver is impaired. For example, the officer may ask the driver his date of birth while the driver is locating his vehicle registration. After this evaluation, the officer must decide whether to request the driver exit the vehicle for further field sobriety testing. In some jurisdictions, departmental policy may dictate all drivers stopped on suspicion of impaired driving be instructed to exit. It is important to note by instructing the driver to exit the vehicle, the officer is not committed to an arrest; this is simply another step in the impaired driving detection process. Once the officer has requested the driver to exit the vehicle, the second task is to observe how the driver exits and to note any additional evidence of impairment.

Like alcohol-impaired drivers, the initial face–to–face contact with the driver usually provides the first indications the driver is impaired by cannabis. Face–to–face observation and interview of the driver allows the officer to use his three senses to gather evidence of cannabis impairment: the senses of sight, hearing, and smell.

What does the officer see? Does the driver have bloodshot watery eyes, droopy eyelids, body tremors, relaxed inhibitions, unusual pupil size, clothing soiled with vomit or urine, fumbling fingers, drug paraphernalia, vaping devices, medicinal cannabis prescription containers, medical cannabis paperwork, receipts from marijuana dispensaries, cannabis publications, eye drops, dry mouth, bruises, bumps or scratches, drowsiness, eyelid tremor, or any other unusual actions? What does the officer see while the person exits the vehicle? Can the driver follow instructions, open the door, and leave the vehicle in park? How does she climb out of vehicle? Does the driver have to lean against the vehicle or keep her hands on the vehicle for balance? Does she forget to remove the seatbelt? What does her clothing look like? Does she drop items?

What does the officer hear? Does the driver have slurred, thick speech? Does he admit to cannabis use? Are the responses inconsistent, panicked, carefree, or unusual? Does he use abusive language? Is there an altered perception of time and distance, a short

attention span, lack of concentration, or an impaired memory? Are there comments of medical cannabis use? Anything else noteworthy?

What does the officer smell? Did the officer smell raw or burnt cannabis? What about air fresheners or other cover-up odors? Did he smell various vaping flavoring or any other unusual odors?

Seeing, hearing, or smelling, just one of these items by itself does not necessarily determine that a person is impaired by cannabis. When these observations are made and added to the police report, they add to the totality of the incident and enhance the case.

Pre-Arrest Screening

Based on all the information obtained during Phases One and Two, is there a reason to suspect the driver is impaired? If not, continue the traffic stop for the sober, non-impaired driver. If so, what are the facts? Facts will lead the officer into Phase Three, pre-arrest screening.

Phase Three is based on the Standardized Field Sobriety Tests and is designed to assess the sobriety of the driver. "[T]he Standardized Field Sobriety Tests (SFSTs) is a battery of three tests administered and evaluated in a standardized manner to obtain validated indicators of impairment and establish probable cause for arrest."[111]

The three tests in this phase of detection include Horizontal Gaze Nystagmus, Walk and Turn, and One Leg Stand tests. These three validated tests each have observable clues of impairment. These criteria will greatly help the officer make an arrest decision and provide the court with testimony as to the driver's impairment.

For sample predicate questions for the arresting officer and the SFST officer, see Appendix 1. For further information about the Standardized Field Sobriety Tests in cannabis-impaired driving cases and the studies that support them, see Appendix 4-STST Studies.

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[111] Stuster, J., & Burns, M.M. (1998). Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent. National Highway Traffic Safety Administration, Washington, DC. DOT HS 808 839.

Alcohol Screening Test Device

The use of an alcohol screening test device (ASTD) may also be beneficial to the law enforcement officer. Most officers feel confident with the results of the SFSTs when an odor of an alcoholic beverage is present or the results of the ASTD yield an alcohol concentration of 0.08 g/dL or higher. What happens, however, when the ASTD results are not consistent with the impairment the officer observes? An officer should feel just as confident with his arrest decision and understand that the ASTD is confirming that the impairment is a substance other than alcohol.

Oral Fluid Testing

Compared to whole blood, oral fluid has several advantages in drug impaired driving cases including that it is quicker and less invasive to collect at the roadside. This easy collection means that the amount of drug measured more closely reflects a true snapshot of cannabis exposure at the time of suspected impairment. This is important because it may take up to 90 minutes or more for an impaired driving suspect to have her blood drawn after a traffic stop. In that time, cannabinoids in whole blood can decrease by as much as 90 percent.[112] The rapid disappearance of THC in whole blood, combined with the problems of obtaining this sample in an appropriate time frame, makes oral fluid testing attractive.

Oral fluid testing provides other advantages over blood and urine testing. As stated, the collection of a blood or urine sample may take place hours after the traffic stop, and that time gap allows cannabis in an individual to dissipate.[113] On the other hand, the use of oral fluid drug testing devices offers the ability to rapidly obtain a drug screening result

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[112] Sobolesky, P. (May 1, 2018). Testing for Cannabis in Oral Fluid: The State of the Art. Clinical Laboratory News. Retrieved from https://www.aacc.org/publications/cln/articles/2018/may/testing-for-cannabis-in-oral-fluid-the-state-of-the-art on March 31, 2020.

[113] Stuster, J., & Burns, M.M. (1998). Validation of the Standardized Field Sobriety Test Battery at BACs Below 0.10 Percent. National Highway Traffic Safety Administration, Washington, DC. DOT HS 808 839.

at the time of a traffic stop.[114] Oral fluid is essentially a reflection of free drugs in the blood. It can be collected under the observation and supervision of an officer quickly following a traffic incident. It is, therefore, a more reliable indicator of drugs present in the body at the time of the stop. Active drugs detected in saliva are indicative of recent intake, not historical use.[115] Roadside testing must be validated via laboratory testing to be used as evidence.

Oral fluid is excreted from three major glands—the parotid, submaxillary and sublingual—and may contain other cellular constituents and bacteria. Sample collection can be affected by factors such as decreased salivary flow and dry mouth, which may be attributed to a lack of proper hydration or drug use. Oral fluid sample collection is quick, straightforward, noninvasive, and does not require use of a collection facility. Another advantage is that technology is available to test the samples on-site. This allows officers to obtain a drug screen result in the field to aid with the investigation of the case. Additionally, if oral fluid is used as a confirmatory sample for subsequent laboratory analysis, both the screen and confirmatory samples can be collected at the same time. Oral fluid is difficult to adulterate, and there is a lower chance of the sample becoming contaminated, all of which help to save time and resources. A limitation of oral fluid is that drug concentrations cannot be related to a specific degree of impairment in the driver, nor can they be used to predict blood drug concentrations.[116]

Many jurisdictions have concluded that the best use of oral fluid testing is as a corroborative test for drug ingestion in situations where a trained police officer has made observations of cognitive and psychomotor impairment in a suspected impaired driver.[117] Using oral fluid results in conjunction with a driver's driving, behavior, appearance, de-

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[114] Logan, Barry et. al. (2014). Detection and Prevalence of Drug Use in Arrested Drivers Using the Drager Drug Test 5000 and Affiniton DrugWipe Oral Fluid Drug Screening Devices, *Journal of Analytical Toxicology*.
[115] Flanagan, John et. al. "Oral Fluid Testing for Impaired Driving Enforcement." *The Police Chief*. January 2017.
[116] Logan, Barry et. al. (2015) Final Report: Vermont Oral Fluid Drug Testing Study 2015, *The Center for Forensic Science Research and Education*.
[117] *Id.*

meanor, and performance in field sobriety tests provides a more objective basis to relate these observations to drug use.[118]This makes oral fluid testing a useful complement to investigative information from Standardized Field Sobriety Tests (SFSTs), the Drug Evaluation and Classification Program (DECP), and the Advanced Roadside Impaired Driving Enforcement (ARIDE) program.[119]

Oral fluid testing is relatively new when compared to blood and urine testing. Although relatively new, laboratory testing of oral fluid specimens incorporates validated protocols similar to currently accepted practices for blood testing. When the samples are obtained by a qualified witness using appropriate methodology, the results are likely admissible under *Frye* and *Daubert*.[120]

On-site devices, however, are a different matter because the quality varies widely. Most jurisdictions use these kits as screening devices to identify drivers from whom additional biological specimens are to be collected for laboratory testing. In these cases, the admissibility of the results is not a significant issue.

"It is important to note that no research has established the minimum concentration of cannabinoids present in any matrix that can be used to determine impaired driving, and any cutoff set in the future will likely be controversial. Moreover, a single sample, whether oral fluid or blood, is neither able to determine chronic versus acute exposure nor recent versus remote use."[121] No published research has demonstrated a significant association between oral fluid and whole blood cannabinoid concentrations. This reinforces the need to establish separate means for identifying impairment, such as the Drug Evaluation and Classification (DEC) Program.

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[118] Logan, Barry et. al. (2014) Detection and Prevalence of Drug Use in Arrested Drivers Using the Drager Drug Test 5000 and Affiniton DrugWipe Oral Fluid Drug Screening Devices, *Journal of Analytical Toxicology*.

[119] Logan, Barry et. al. (2015) Final Report: Vermont Oral Fluid Drug Testing Study 2015, *The Center for Forensic Science Research and Education*.

[120] Flanagan, John et. al. "Oral Fluid Testing for Impaired Driving Enforcement." *The Police Chief*. January 2017.

[121] Sobolesky, P. (May 1, 2018). Testing for Cannabis in Oral Fluid: The State of the Art. Clinical Laboratory News. Retrieved from https://www.aacc.org/publications/cln/articles/2018/may/testing-for-cannabis-in-oral-fluid-the-state-of-the-art on March 31, 2020.

A false positive result is one where the test incorrectly detects the presence of a drug where, in fact, no drug is present. In an enforcement setting, it is desirable to have the false positive rate be as low as possible to avoid imposing penalties or additional testing on individuals who have not ingested drugs.

A 2016 study conducted by the Royal Canadian Mounted Police, the National Drug Evaluation and Classification Program, and the Ontario Ministry of Transportation evaluated three oral fluid screening devices to see how often they produced false positive rates, also referred to as false alarm rates.[122] The screening devices tested for the presence of THC, cocaine (benzoylecgonine), amphetamine, methamphetamine, opioids, and benzodiazepines. A total of 646 paired oral fluid samples were collected. One sample was analyzed on site with one of the three oral fluid screening devices; the other was sent to a laboratory for confirmatory analysis. The results of the oral fluid screening were compared to those of the confirmatory laboratory analysis. The results demonstrated an overall false alarm rate of approximately 7 percent, indicating that in only a small percentage of cases did the screening device indicate the presence of a drug that was not confirmed by the laboratory.[123]

These results were similar to a previous study conducted in 2015 by the Vermont Department of Public Safety, which evaluated 58 subjects using two different oral fluid screening devices.[124] False positive rates were less than 1 percent for one of the devices and less than 4 percent for the other one. The study found that the overall performance of the devices met the immediate need of providing useful supplemental investigative information to officers in the field. It recommended that the totality of the circumstances must be considered in addition to laboratory–based confirmation of any results generated in the field to ensure accurate data is presented in the criminal prosecution of drug impaired driving cases.[125]

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[122] Beirness, Douglas J. & Smith, D'Arcy R. (2017) An assessment of oral fluid drug screening devices, *Canadian Society of Forensic Science Journal*, 50:2, 55-63.

[123] *Id.*

[124] Logan, Barry et. al. (2015) Final Report: Vermont Oral Fluid Drug Testing Study 2015, *The Center for Forensic Science Research and Education.*

[125] *Id.*

Blood Search Warrants/Warrantless Searches

When an officer has probable cause to believe that a person has been driving under the influence of drugs such as cannabis, she will want to secure a blood draw from that person that can later be used in court to prove the charge. The Fourth Amendment to the U.S. Constitution requires that blood draws following impaired driving arrests be obtained pursuant to either a blood search warrant or one of the exceptions to the search warrant requirement (*e.g.*, consent or exigent circumstances, for example).

United States Supreme Court Decisions

In *Missouri v. McNeely*,[126] the United States Supreme Court decided whether the natural dissipation of alcohol in a body created a per se exigency exception in all impaired driving cases. Police arrested McNeely for driving while intoxicated after an officer observed him speed, cross over the centerline, and perform poorly on field sobriety tests during a roadside investigation. After McNeely refused to submit to a preliminary breath test and indicated he would also refuse to consent to a breath at the station, the officer drove him to a medical center for a blood draw. The officer did not seek a search warrant for his blood. Despite McNeely's refusal, the officer directed the medical staff to draw McNeely's blood. The toxicology results of McNeely's blood revealed a blood alcohol concentration of .0154 g/dL and he was charged with driving while intoxicated. McNeely moved to suppress the blood results, arguing the officer violated his Fourth Amendment right to be free from an unreasonable seizure when his blood was drawn in the absence of a search warrant. The Court rejected the prosecution's argument that the warrantless blood draw was justified as McNeely's blood alcohol concentration would be metabolized with time, and a delay in obtaining a warrant would amount to destruction of evidence. The Court held that, because McNeely's "case was unquestionably a routine DWI case" in which no factors other than the natural dissipation of blood-alcohol suggested that there

[126] *Missouri v. McNeely*, 133 S.Ct. 1552 (2013).

was an emergency, the nonconsensual warrantless blood draw violated McNeely's Fourth Amendment right to be free from unreasonable searches of his person. The Court left open the possibility, however, that the exigent circumstances exception might apply in some impaired driving cases.

Where *McNeely* dealt with the exigent circumstances exception, *Birchfield v. North Dakota*[127] dealt with the criminalization of a refusal and examined how the search incident to arrest exception to the search warrant requirement applied to evidential breath and blood draws in impaired driving cases. The Court held that a warrantless blood draw, unlike a breath test, is not permitted under the search incident to arrest exception. In making this determination, the Court engaged in a balancing test, weighing the extent to which the law infringes on an individual's privacy rights versus the extent to which the evidence is needed to promote a legitimate government interest. As to the first prong, the Court ruled that breath tests do not implicate significant privacy concerns (*i.e.*, minimal physical intrusion), humans do not have a possessory interest in the air in their lungs, and the tests are only capable of revealing one bit of information—the amount of alcohol in the subject's breath. The Court concluded that breath tests were no more intrusive than swabbing the inside of a suspect's cheek for a DNA sample or scraping underneath a suspect's fingernails to find evidence of a crime, both procedures having been upheld as constitutional warrantless searches. The Court reached a different conclusion, however, with respect to blood tests. Because blood tests implicate significant privacy concerns (*i.e.*, significant physical intrusion, preservation of a sample, etc.), the Court determined it was unreasonable to search incident to arrest without a search warrant.[128]

In *Mitchell v. Wisconsin*,[129] the Court decided whether a statute authorizing a blood draw from an unconscious motorist provided an exception to the Fourth Amendment warrant requirement. In this case, officers observed a visibly intoxicated Mitchell near his

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[127] *Birchfield v. North Dakota*, 136 S.Ct. 2160 (2016).

[128] The *Birchfield* Court further determined it permissible for a state to criminalize the refusal to submit to a breath test, but not for a blood test.

[129] *Mitchell v. Wisconsin*, 139 S.Ct. 2525 (2019).

car. Mitchell submitted to a preliminary breath test that indicated Mitchell's blood alcohol concentration exceeded the legal limit. The officer arrested Mitchell for impaired driving and drove him to the station for an evidential breath test. At the station, Mitchell was too intoxicated to submit to the breath test, so the officer drove Mitchell to the hospital for a blood draw. By that time, Mitchell was unconscious and unable to provide explicit, verbal consent for the blood draw. Pursuant to the officer's request, hospital staff took Mitchell's blood. Forensic toxicology results of the blood sample indicated a blood alcohol concentration of .222 g/dL. A Wisconsin statute authorized the taking of Mitchell's blood because there was probable cause he had driven impaired and he was unconscious and unable to verbally consent. The Court ruled that, pursuant to the exigent circumstances exception to the search warrant requirement, an officer can "almost always" direct hospital staff to conduct a blood test on an unconscious person when the officer has probable cause to arrest the person for impaired driving and where no evidential breath test has been given. The plurality opined "exigency exists when (1) BAC evidence is dissipating and (2) some other factor creates pressing health, safety, or law enforcement needs that would take priority over a warrant application. Both conditions are met when a drunk-driving suspect is unconscious, so *Schmerber* controls: With such suspects, too, a warrantless blood draw is lawful."

Crash Cases—What are we missing?

In 2018, there were 36,560 fatal traffic crashes with 10,511 of those crashes involving at least one alcohol-impaired driver.[130] Are law enforcement officers missing cannabis impairment in traffic crash investigations? When an officer arrives at the scene of a traffic collision, is the driver leaning against the car? Does he have the odor of cannabis coming from his person? Does she have red bloodshot, watery eyes? A flushed face? Is there cannabis paraphernalia in the vehicle? Are the driver's pupils dilated? Does he have body

[130] "Traffic Safety Facts—Research Note, 2018 Fatal Motor Vehicle Crashes: Overview," National Highway Traffic Safety Administration, DOT HS 812 826, October 2019.

Figure 12—*Crash scene*

tremors and eyelid flutter? How about relaxed inhibitions after a vehicle crash? Did the driver hand the officer her medical marijuana card? Did he fumble through his documents that the officer requested? Does she have an impaired perception of time and distance? Each of these may mean absolutely nothing by itself, especially after the person is involved in a traffic crash. But when analyzing the totality of the circumstances and the vehicle movement before the crash, this may lead the officer to form an opinion that the driver is impaired by cannabis, caused the crash, leading to an arrest and later a successful prosecution of the driver.

Whether it is a traffic crash that requires a full reconstruction or a simple investigation, a DRE should be utilized if there are serious or fatal injuries. Every fatal and serious injury traffic crash requires the completion of a thorough investigation.

Many officers, supervisors, command staff, courts, and media notice the amount of effort that is put into a traffic crash investigation involving a serious injury or fatality. Most importantly, the victim and his or her family notice. If law enforcement does not do a complete and thorough investigation, it reflects negatively on everyone involved. Most traffic crash reconstructionists are not drug recognition experts and most drug recognition experts are not traffic crash reconstructionists. Even in the instance the law enforcement

officer is both, it is nearly impossible for that single officer to perform both functions at the scene of a serious traffic crash. A crash reconstructionist cannot complete these investigations alone and will depend on other experts as part of the investigation. A reconstructionist may know what an impaired person looks like but could not testify to what drug category caused the driver's impairment. A crash reconstructionist, therefore, depends on the DRE.

Agencies are encouraged to develop policies and procedures to include a DRE assigned to the crash investigation team or, at a minimum, direct a DRE to respond to these types of incidents. There are many advantages to having a DRE involved in a fatal or serious injury traffic crash investigation. Both DREs and crash reconstructionists are experts in their respective fields; both have knowledge and expertise valuable to the other.

Consuming cannabis has been shown to affect several driving-related skills. Laboratory, simulator, and instrumented vehicle studies have shown that cannabis can impair critical abilities necessary for safe driving, such as slow reaction time and, for example, responding to unexpected events or emergency braking.[131] This example could possibly change the information a crash reconstructionist uses to determine mathematical calculations such as time distance.

Traffic crash reconstructions are typically not completed at the scene and determining "who caused the crash" is usually not determined right away. Depending on the complexity of the crash, the reconstruction can take several weeks. If the DRE evaluates all the surviving drivers, or at least makes observations at the time of the incident, it may help to explain things at the scene that originally did not make sense, assist with gathering perishable evidence, assist in determining if there was more than one driver contributing to the collision, and show that a driver was not impaired.

The community expects and deserves a thorough and complete investigation. Hav-

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[131] *Marijuana-Impaired Driving A Report to Congress* DOT HS 812 440 July 2017 (Casswell, 1977; Smiley et. al., 1981; Lenné, M.G., et al., 2010) https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/812440-marijuana-impaired-driving-report-to-congress.pdf.

ing a DRE involved in these complex investigations demonstrates a complete and thorough investigation and provides the prosecution with an additional expert witness for trial.

Report Writing

When an officer begins to pen his impaired driving report, he needs to tell the story, express major plot points, and compare evidence he finds to elements of law to construct an event that has already happened. This provides the state's evidence and the ability to survive a defense lawyer who is ready to 'zealously represent' her client.

The officer's report should be as detailed as possible, in chronological order, and easy to read. For simplicity and accuracy, the officer should think about following the three phases of DWI Detection as taught in the SFST curriculum. What drew the officer's attention to the vehicle? With so many vehicles traveling on the highway what was it about this one? Why was the behavior different from others as to cause a traffic stop? An officer should document the NHTSA Visual Indicators for vehicle in motion as well as regulatory and safe movement violations. Once the decision was made to stop the vehicle, what happened next? How long did the vehicle travel? How and where did the vehicle come to a stop? Was there anything unusual about this stopping sequence versus other traffic stops the officer has made?

On approach to the vehicle, what did the officer see, hear, or smell coming from the vehicle or from its occupants? Was there an odor of an alcoholic beverage, burnt marijuana, cologne, cigarettes, or no odor at all? It is also just as important for an officer to document pertinent negatives in an impaired driving case as it is to document tangible evidence. Did the driver roll the window completely down? If not, is that unusual and something an officer would mention in a report? Was there eye contact with the driver? Was the driver easily understood when he spoke? Were his responses to the officer's questions appropriate for the stop? All this information will be important to both the State and the defense when the officer decides to ask the driver to step from his vehicle to conduct roadside sobriety tests.

For the three standardized field sobriety tests, did the officer give the driver the instructions and demonstrate the test? Did the driver understand? Where did the officer have the driver perform the tests? Was the area lighted? Was it level? Flat? Was there a line present for the walk and turn? The officer should be aware these questions will be asked in court, so he should document it in his report. How many, if any, clues of impairment did the driver display in each test? What were they? What step did the driver step off-line? Which steps did the driver miss heel-to-toe? On what count did the driver put her foot down on the one leg stand?

In completing the report, the officer should use plain language. The reader may not understand an officer's abbreviations or "10-codes"[132] and that may cause confusion. A well-written and detailed report may avoid a trial altogether since the defense lawyer will have all her questions answered and be in a better position to advise the defendant. Alternatively, it is far more likely a sloppy report or a nonexistent report will result in a trial.

An officer should always review his report. Specifically, an officer should review the cues and clues he observed of the driver and determine how he would describe them in court. How are these indicators consistent with his training and experience and how do they show impairment? How is the absence of some indicators consistent with impairment? For example, cannabis does not cause HGN, so the absence of these clues would be consistent with the indicators for cannabis impairment. An officer should forecast his testimony with his report.

There is always the potential for mistakes or omissions. An officer should not try to hide these; any mistakes, errors, or later-discovered omissions should be included in the officer's report or a supplemental report. Doing this first may avoid unnecessary questions later. For example, did the officer administer the SFSTs out of order? If so, the officer should document it and explain why the tests were administered out of order. Perhaps

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[132] "Police 10 codes are signals used by police officers, law enforcement officials, and government agencies to talk in two-way radio communications. The codes are numbers that correspond to words, phrases, and messages that are frequently used in law enforcement work." https://www.Einvestigator.com/police-ten-codes/ last accessed October 18, 2019.

it was done based on safety concerns or it could be the officer just forgot — she should explain it in her report. Does the police agency use cameras? Technology is wonderful when it works, but sometimes recordings do not save or disappear in 'the cloud.' If it happens, it should be included in the officer's report. In such instance, a report should include a statement such as "My camera on this date failed to capture the incident" and why, if known. The state has the burden of proof and the officer is likely the state's only witness; complete documentation is more likely to result in complete answers.

With almost certainty, questions will be asked about information that is not contained in the officer's report. Most officers have a great ability to recall information from incidents. Officers are taught, "If you didn't write it down, it didn't happen." This maxim should more accurately be phrased "if you didn't write it down, you might not recall it a year from the event." Report writing, and testifying are important skills, without which the arrest may not have mattered.

Many officers take a great deal of notes and write a several page report on what is often considered a 'violent' crime or a 'complicated' case. Impaired driving is just that — a violent, complicated case. It is likely and often a case that will go to trial. An officer should approach every case as though it will be a trial, so she should be prepared with a detailed investigation and report.

DWI NARRATIVE REPORT

Impaired Driving Report

Raleigh Police Department,
Raleigh, Wake County, North Carolina

Officer: **Agency:**
Code # **Case #**

Subject's Name: Birth Date:
Date and time of Incident: Age at arrest:

1. Observation of Vehicle
2. Identification of Vehicle and Driver
3. Interview with Driver at Roadside
4. Standardized Field Sobriety Tests
   - A. HGN —
   - B. Walk and Turn Test
   - C. One Leg Stand Test —
5. Alcohol Screening Test Device
6. Arrest and Transport
7. EC/TR II Testing
8. Miscellaneous

Figure 13—*Sample police narrative report*

Prosecution Topics and Issues

Cannabis impaired driving cases are arguably some of the most difficult cases a prosecutor will handle in his career. The public perception that most cannabis users drive better when they are high creates barriers to effective prosecution and the general lack of knowledge about cannabis impairment creates additional hurdles for the prosecutor to overcome. Most judges and jurors have had personal experience with alcohol, allowing them to make a strong correlation between alcohol impairment and dangerous driving. Unlike alcohol, however, cannabis impairment does not present the same correlation in the minds of judges and juries. Most of the general public does not fully comprehend how cannabis impairs an individual and makes it unsafe for her to operate a vehicle. Given the lack of understanding about cannabis impairment, many judges are unaware of the dangers of cannabis impairment behind the wheel. These public misconceptions and myths behind cannabis-impaired driving may make it necessary for the prosecutor to serve as a judicial educator on cannabis impairment and the dangers of cannabis-impaired driving. It is therefore crucial for the prosecutor to become a subject matter expert on cannabis impairment by thoroughly understanding such impairment and how it impacts driving and divided attention.

One of the best ways for a prosecutor to educate himself is to talk to a DRE at length and let her teach everything she has learned and experienced regarding cannabis impairment. It is also important for a prosecutor to attend law enforcement trainings such as *DWI Detection and Standardized Field Sobriety Testing*, *Advanced Roadside Impaired Driving Enforcement (ARIDE)*, and the *Drug Evaluation and Classification Program* (also known as DRE). Attending the same trainings that law enforcement attends can give a prosecutor the necessary knowledge base to address SFST issues effectively in the courtroom. Additionally, a prosecutor should use the toxicologist as another resource to gain a deeper understanding of cannabis impairment.

A prosecutor should not be afraid of a case that either has no toxicology report or

one in which the toxicology results reflected "none detected" as to cannabis (or any other drugs). There are several possibilities for a none detected chemical test result, all of which have nothing to do with an individual's actual impairment or cannabis use. By addressing issues related to cannabis impairment and directly confronting defense challenges, a prosecutor will become more proficient in explaining such impairment to a jury. This process will also guide defendants, defense attorneys, and judges to respect the seriousness of cannabis-impaired driving charges, leading to reducing dismissals of these charges.

A prosecutor needs to remember to consider the totality of circumstances. The totality of circumstances is key to demonstrating and proving impairment to the jury. It may be easy for a defendant to isolate each observation made by a law enforcement officer and offer an alternate explanation for each. A prosecutor needs to remind the fact finder, however, the evidence cannot be considered in isolation. When all the facts and observations are contemplated together, the defendant's alternative explanations do not make sense and the only common-sense explanation is impairment by cannabis.

The New "Equation" of Drug Impaired Driving Cases

A prosecutor will often hear that drugs affect people very differently from alcohol. This is because each human body generally reacts to alcohol the same way. It is well documented from years of alcohol research that most humans will be impaired at certain blood-alcohol concentrations and impaired driving laws have been designed to prevent drivers from operating motor vehicles when they are unsafe to drive. When a defendant operates a vehicle with a blood alcohol concentration "BAC" at a higher concentration than allowed by law a prosecutor can offer a chemical test result to a jury as proof there was a convictable violation of the law.

Drugs are very different from alcohol and each other and may have multiple and varied effects on each human body. For example, diphenhydramine, an antihistamine typically used to treat allergies and hay fever, may cause drowsiness in some users while others to become wide-awake. It is because of these wide variances that many prosecutors

will not have a quantitated toxicological result as proof of impairment in a cannabis-impaired driving case. Even if a quantitation is available, most toxicologists are reluctant to testify that a driver is impaired at any given level of drug because of the aforementioned variables.

Without a chemical test quantitation, a prosecutor will be required to focus on the observable signs of impairment demonstrated by the defendant. A toxicologist is a scientist who not only tests a sample and works in a lab, but also studies chemicals and their effects on the human body. Experienced toxicologists can help prosecutors learn how to introduce toxicology evidence, assist with demonstrating chain of custody of a biological specimen, and to educate a jury about how drugs and alcohol affect the body. Toxicologists may also be able to corroborate roadside behaviors observed by an arresting officer or DRE.

Likewise, a local scientist is a great resource to help a prosecutor build cannabis-impaired driving cases and prepare for court testimony by providing education, help with questions about the analysis, and interpretation of results (with or without facts from a case, depending on personal preference). An analyst can be a technician or a scientist who tests a sample and works in a lab. A good lab analyst can be particularly valuable in convincing a jury of the effectiveness of the testing method both generally and as applied to the defendant. Many times, a toxicologist provides interpretation of results from other lab analysts. A pharmacologist is typically a PhD scientist who studies the science of drugs, their effects on the body, and can also include the field of toxicology. A scientist may also help review sample testimony questions that work for him (based on his own training and experience) and assist a prosecutor in court. Local rules may require the appearance of one or more of these scientists in court.

If the defendant endorses a forensic toxicologist as a witness for trial, it is always a good idea for a prosecutor to contact her own forensic toxicologist and have that person review the defense expert's opinion. If not already a witness for the prosecutor's case-in-chief, a prosecutor should then consider endorsing her forensic toxicologist as a possible

rebuttal witness (asking the court to allow the prosecutor's expert to see the defense expert(s) testify, if it is not always allowed).

It is very important to know the testing capabilities, limitations, and potential resources of local labs and national partners. Likewise, a prosecutor must understand what scientists can testify about and what they cannot. Among other reasons, forensic practices vary greatly by jurisdiction depending on available resources, accreditation standards, and local law. To help each better understand the role of the other, the *Prosecutor and Toxicologist Guide to Effective Communication in Impaired Driving Cases* is an excellent course for both prosecutors and toxicologists. For more information on this course, visit the National Traffic Law Center at https://ndaa.org/training-courses/national-traffic-law-center-trainings/.

DRE as a Resource

Evidence of impairment in impaired driving investigations is short-lived and constantly changing. While an arresting officer may call a DRE officer to conduct an evaluation at the time of the arrest, often a prosecutor's case file will not have the benefit of these real-time assessments. In cases where a prosecutor anticipates difficulty in communicating the facts of drug-impairment to a jury, consideration should be given to a process referred to as a "DRE Reconstruction." A DRE officer may be called upon to review, collect, analyze, and interpret evidence such as police and toxicology reports to determine and corroborate an officer's opinion of a driver's condition at the time of the arrest. Certainly, this practice will require the DRE to work with evidence collected by others and, perhaps, with less information than what may have been obtained during his own investigation. Nonetheless, a DRE is often able to render a reliable opinion based upon advanced training and experience.

A DRE who prepares a reconstruction opinion at the request of a prosecutor will likely be required to qualify as an Federal Rule of Evidence (FRE) 702 expert witness, and a prosecutor should consider local statutes and case law for guidance on admitting this

evidence. If reconstruction evidence is to be offered, the DRE should be prepared to offer testimony about how her specialized knowledge, skill, experience, training, and education assisted her in forming her opinion. A prosecutor should also be prepared for the defense to claim that the testimony is not based upon facts and data prepared by the DRE.

Notwithstanding establishing impairment via a DRE reconstruction, the specialized knowledge of a DRE can assist a prosecutor in exposing any potential damaging evidence, stopping potential defenses, informing and educating the prosecutor about cannabis impairment signs and behaviors, and preparing to rebut adverse testimony from defense experts. Closing potential defense challenges to impairment pre-trial, or during direct testimony, will only benefit the prosecutor's case and likely lead to a conviction.

Expert Witness / Testimony Considerations

Rule 702 Considerations

The forensic toxicologist, the drug recognition expert, and in some jurisdictions, the officer who administers the HGN test are considered expert witnesses. An expert witness must be qualified according to FRE 702 to testify in the form of an opinion. The Rule states:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

A prosecutor should first consider the opinion the expert intends to offer the fact finder.

Minimally, the expert witness must know underlying methodology and procedures employed and relied upon as a basis for the opinion. A prosecutor is required to provide

disclosure of his witness's opinions and reports pre-trial. A prosecutor should consider his state's discovery laws and request a court order for reciprocal discovery if the information is available. If a prosecutor's state does not allow for reciprocal discovery, the NTLC has excellent resources that may assist with the background of potential witness. Pay close attention to the qualifications of the proffered witness as an expert may overstate her qualifications on her curriculum vitae. A prosecutor should use his own witness to review and confirm the defense expert's background, offered studies, certifications and memberships, treatises, or methods that form the basis of the opinion.

There is a defense expert available to testify on virtually every aspect of an impaired driving case if a defendant is willing to pay for her services. There are witnesses who will testify about SFST, DRE, Police Procedures, Chemical Testing, and Forensic Laboratory standards just to name a few. The National Traffic Law Center manages an expert witness project dedicated to providing prosecutors with resources to assist their preparation for cross-examination of potential defense experts. Prosecutors can gain access to the entire witness file complete with past transcripts, curriculum vitaes and cross-examination outlines. The National Traffic Law Center also has a wealth of resources to help you prepare including:

- The Predicate Question Manual
- Admissibility of Horizontal Gaze Nystagmus Evidence
- Alcohol Toxicology for Prosecutors
- Basic Trial Techniques for Prosecutors in Impaired Driving Case
- Cross-Examination for Prosecutors
- The Drug Evaluation and Classification (DEC) Program
- Drug Toxicology for Prosecutors

Daubert/Frye

U.S. courts determine the admissibly of new or novel scientific evidence pursuant to either the *Frye* or *Daubert* standard.

The *Frye* standard derives from the 1923 U.S. Supreme Court case of *Frye v. United*

States[133] involving the admissibility of the systolic blood pressure deception test, an early version of the lie detector test. The systolic blood pressure deception test was predicated on the theory that "truth is spontaneous, and comes without conscious effort, while the utterance of a falsehood requires a conscious effort, which is reflected in the blood pressure." The court ruled that scientific evidence is admissible only if its underlying theories and procedures are generally accepted in the relevant scientific community or if they have passed from the stage of experimentation and uncertainty to that of reasonable demonstrability.

While some states continue to apply the *Frye* standard or a modified version, U.S. federal courts and most states apply a "relevancy standard." This standard often is referred to as the *Daubert* standard after the U.S. Supreme Court case that first employed it—*Daubert v. Merrill Dow*.[134] In that case, the court ruled that scientific testimony and evidence may be admitted only when it is reliable and relevant. The court held that the proponent of expert testimony may establish reliability and relevancy by proving that (1) the expert is qualified; (2) the expert employed reliable methods to reach his or her conclusions; and (3) the expert's testimony would help the fact finders understand the evidence or to determine a fact in issue. The *Daubert* court laid out a non-exhaustive list of five factors to consider in determining the reliability of scientific evidence: (1) whether the methods can be tested; (2) whether the methods have been peer reviewed; (3) whether there are known error rates; (4) whether there are established standards for applying the method; and (5) whether the methods are generally accepted. Since then, courts have considered additional factors, including whether the expert accounted for alternative explanations or inappropriately extrapolated an accepted premise. Law enforcement officers and others have relied on blood and urine testing for drugs for decades, and courts routinely admit blood and urine test results under the *Frye* and *Daubert* standards when the samples are obtained by a qualified witness using appropriate methodology.

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[133] *Frye v. United States*, 293 F. 1013 (D.C. Cir 1923).
[134] *Daubert v. Merrill Dow*, 113 S. Ct. 2786 (1993).

Initial Case Review

Preparation and case review are necessary to properly evaluate the strength of a cannabis-impaired driving case. Often the key to a successful trial of a cannabis-impaired driver is the behavior observed by the law enforcement officer. Trial preparation is the best time to detail this impairment and begin to articulate the facts that demonstrate impairment throughout the case for presentation at trial.

Pre-trial preparation is also an appropriate time to review applicable laws and evidentiary foundations to ensure such elements are met by the evidence. Initial case review is a key time for a prosecutor to decide the theory of his case. In order to develop a theory to a case, a prosecutor must review elements of the cannabis-impaired driving crime and decide how best to prove each element. A prosecutor can begin to anticipate the evidence that will be presented, research all evidentiary issues, and determine the strengths and weaknesses of both his case and the defendant's. By reviewing the case in this manner, a prosecutor can pinpoint issues and inconsistencies with the theory thus identifying potential defenses and developing strategies to combat those defenses appropriately at trial. Rather than focusing on the ultimate issue of the defendant's impairment, it is these inconsistencies that often lead to reasonable doubt as jurors begin to concentrate on the defendant's issue. A significant amount of time and effort can be reduced if a prosecutor is able to address these matters early in the case by preparing to address these issues and avert the defenses at trial.

Often a prosecutor is not familiar with the intricacies of cannabis-impaired driving cases. As such, it is important to develop a prosecution team that includes the arresting law enforcement officer and the DRE to assist with case and trial preparation. This team can also include the toxicologist and/or any other professional who has the knowledge and expertise to assist with preparation. It is important for the prosecutor to understand law enforcement officers are trained observers. Given an officer's innate ability to make key observations, her assistance in the various aspects of trial and trial preparation is highly suggested. Law enforcement officers can provide a prosecutor with detailed information regarding their education, training, and experience, impaired driving investigations, and

the SFSTs. Furthermore, the DRE can provide detailed information to the prosecutor regarding observations, the signs and symptoms of impairment, the DRE protocol, medical condition rule out, and behavior consistent with particular drug categories. The prosecution team will lend itself to a collaborative effort to come up with a strategy to present the theory of the case, to address weaknesses or concerns about the case, to discuss absent or incompatible signs and symptoms for the cannabis drug category, and to discuss defense theories and determine approaches to combat them. Additionally, the prosecution team is a useful resource in reviewing and discussing inconsistencies between toxicology results and the observations.

Document and Evidence Review

Police Report

It is imperative for a prosecutor to know the specifics of the police report better than the defense attorney. Reviewing the report in its entirety and documenting all the facts and evidence will assist in anticipating the issues the defense will likely bring up. While reviewing the report, a prosecutor should also be checking for inconsistencies and omissions that may lead to a defense argument. After an initial review of the police report, a prosecutor must make sure to follow-up with the police officer to ensure all evidence and any supplemental reports filed after the initial case review have been obtained.

Physical and demonstrative evidence involved

A prosecutor must know who possesses what evidence and request such evidence for case review. Typical evidence in a cannabis-impaired driving case may include videos, photos, evidence found in the vehicle (*e.g.*, paraphernalia), booking information and booking photo, implied consent advisements, law enforcement checklists, toxicology results, documents from the toxicology lab (*e.g.*, litigation support packet, calibration records, etc.), search warrant affidavits and search warrants, *Miranda* advisement, DRE face sheet, DRE narrative and evaluation, law enforcement training materials (*e.g.*, SFST training manual), and records of any prior convictions. Charts, diagrams, maps, etc., should be prepared

prior to trial to avoid any unanticipated issues. While reviewing and preparing physical and demonstrative evidence, a prosecutor should take the time to contact the appropriate person if there are questions or concerns regarding the evidence.

911 calls and detention videos

A prosecutor needs to make sure he requests this evidence immediately as many departments may have a small window for retention of such evidence. The last thing a prosecutor wants to do is lose evidence valuable to his case or be accused of losing exculpatory evidence which would assist in the defendant's theory of the case.[135]

Witness list

A prosecutor must identify witnesses and subsequently order their testimony strategically for case presentation. It is important to identify what type of evidence and testimony each witness can provide, identify strengths and weakness of the testimony, and note any follow-up that may need to be conducted. A prosecutor should ascertain what each witness observed and what information the witness can provide to the jury to correlate observations to impairment. Witness preparation is a time to prepare the witness for potential cross-examination questions and plan evidence presentation accordingly. It is also necessary for the prosecutor to discuss any limitations the court has imposed on a witness's testimony to avoid issues at trial.

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[135] A prosecutor must always keep in mind his ethical and legal obligations of discovery. The ABA Model Rules of Professional Conduct, Rule 3.8 Special Responsibilities Of A Prosecutor, paragraph (d) provides that the prosecutor in a criminal case shall: "make timely disclosure to the defense of all evidence or information known to the prosecutor that tends to negate the guilt of the accused or mitigates the offense, and, in connection with sentencing, disclose to the defense and to the tribunal all unprivileged mitigating information known to the prosecutor, except when the prosecutor is relieved of this responsibility by a protective order of the tribunal…." Also, the suppression by the prosecution of evidence favorable to and requested by an accused violates due process where the evidence is material either to guilt or to punishment, irrespective of the good faith or bad faith of the prosecution. *Brady v. Maryland*, 83 S. Ct. 1194 (1963).

Chain of custody

A prosecutor should make sure to have all evidence present for trial and the necessary documentation and witnesses to establish chain of custody to avoid potentially inadmissible evidence.

Forensic / Toxicology Topics & Issues

As previously stated, a prosecutor should not be stumped by the number (*i.e.*, the number reflecting the concentration of a drug or alcohol) in the toxicology report alone; because everyone is affected by cannabis differently, the amount in the sample does not directly correlate to impairment. A low level of any drug, including cannabis, is not always enough to plead a case to a non-alcohol or non-drug offense. Furthermore, "none detected" toxicology findings do not disprove impairment; testimony regarding the scope of testing may be useful when impairment is observed by an officer. It may be that the prosecutor can expect to get a "none detected" result based upon the facts (*e.g.*, blood draw taken several hours after cannabis was smoked), which an expert may explain. There are ways to overcome what may seem like less than favorable results.

The prosecutor should consider, but not be alarmed, when the results do not show a delta-9 THC or hydroxy or the report indicates, "none detected." Because of the pharmacology of cannabis, and especially if blood is not drawn until hours after use, the impairing substances may fall below the limits of quantitation and/or detection (LOD) (*i.e.*, there could be such a low concentration that a particular method did not detect the drug or the amounts detected are below accepted limits for reporting) and the laboratory may not be able to detect the cannabinoids that were present a short time before the draw. Some labs may not be able to detect cannabinoids or confirm delta-9, hydroxy, and/or carboxy in one or more types of samples.

It is critical that an officer obtain a blood sample as soon as possible. Additionally, it is key to focus on observations of impairment and tie in science (*i.e.*, to include why the results are what they are).

Costs of Testing

The cost of testing may include money for a collection kit (*e.g.*, blood kits are approximately $5.00 each), submission to lab (*e.g.*, postage, courier, or other delivery type), any associated costs of phlebotomy (*e.g.*, the blood draw), and testing. A urine specimen costs approximately $30-60 to analyze whereas blood may cost approximately $200 or more depending on how many screens and/or confirmations are performed. Further, the cost of a screen may depend on the confirmation panel (*e.g.*, how many groups of substances the scientist looks for in a sample); the confirmation may have higher costs depending on the number of extractions are required to complete the analysis (*e.g.*, $200 for first and $100 for each thereafter), staff time to provide interpretation, staff time to provide pre-trial discovery (*e.g.*, possibly an expert opinion letter, if required), and/or courtroom testimony (which may be included in cost of analysis or might be capped at an hourly rate by the court or law).

Depending on the jurisdiction, the law enforcement agency collecting the sample may be required to pay for the testing or it may be the responsibility of the lab or other local or state agency. A prosecutor should know how costs are borne and how to recover costs of prosecution or through restitution if possible.

An analysis of a specimen for drug(s) of abuse is generally costlier than an analysis for alcohol. Some policies, therefore, dictate that scientists should not screen for drug(s) of abuse if the amount of alcohol found is a certain amount (*i.e.*, an illegal level and is usually tied to a per se limit). A prosecutor should know her local rules, regulations, and the policies applicable in her jurisdiction.

Abilities of Labs to Test

The ability of a lab to test for drugs and metabolites depends on its instrumentation, staffing, experience, and knowledge. Biological samples for cannabis-impaired driving include urine, blood, and oral fluid. Additionally, research is currently being conducted on breath samples and the ability to test for cannabis. A prosecutor should be familiar with what her lab can do, how to read results, and best practices for using this evidence in court.

Since blood may not be drawn until many minutes or hours after driving, it is critical to understand basic pharmacology and lab procedures, because what drug a scientist may find in a sample may decrease rapidly after its use even though the drug is still impacting the user (*i.e.*, affecting the brain causing impairment even though it cannot be seen in a sample).

Types of Samples

Urine

Some states mandate for urine collection and testing in impaired driving cases. It may be because of a state's per se law and/or the ease in analyzing urine for drugs, the longer period of detection for metabolites (which can also be a disadvantage because the presence of a metabolite found indicates historical use, not necessarily what impairment was present while the person was driving), and the ability to retest because of a typically larger quantity of sample (as compared to other matrices). Since the drug and metabolite concentrations are higher in urine than blood, the analysis is easier to do and, therefore, less expensive. Also, urine as a matrix is easier to deal with than blood, contributing to the ease of testing. One significant disadvantage is that urine is typically "dirtier" in analysis because urine contains more interferences (*e.g.*, creatine) observed in the instruments during testing. As stated previously, cannabis is fat-soluble; THC rapidly passes from the blood to body fat and is then slowly released over time. Given this, urine is not the best specimen to test for anything other than historical use of cannabis.[136]

Blood

Blood is considered, by most, to be the gold standard of biological samples in drug-impaired driving cases. Scientists can find parent drugs and metabolites and analyze the sample more than once. A blood sample also provides the best evidence of what is hap-

[136] See https://www.labcorp.com/test-menu/21831/cannabinoid-thc-screen-and-confirmation-urine#.

pening in a body at the time of draw. Due to the invasive nature of the search, however, law enforcement may face more challenges. Some challenges include higher costs associated with the collection and analysis of the specimen, the length of time required to process or to analyze the specimen may be longer, and any delay in collection may impact the interpretation of results. Remember no cannabis result translates directly to impairment in a specific person.

Concentrations of cannabinoids in the blood may decrease after time (*i.e.*, as the sample is stored). If a prosecutor has a case where a sample is tested more than once and the level of cannabinoids is different, consult an expert for possible reasons, for example, a difference in the lab's measurement of uncertainty (MOU), storage conditions, or changes to the sample given the drug(s) involved. The explanation may have a reliable, scientific basis so a prosecutor should not assume the worst.

In general, the advantage of a blood specimen is the ingested drug will be at its highest blood concentration when the person is impaired.

Oral Fluid

There are roadside screening devices testing oral fluid for delta-9 and carboxy and some labs test oral fluid and report quantitative results. Obtaining these samples from the subject should be easier compared to other biological matrices. Because of a shorter drug detection time, one advantage to oral fluid is that its results reflect recent consumption as compared to urine, especially, and it is gender neutral. Disadvantages include the available sample size is small (consider defense request for their own sample to be tested), collection may be difficult if the person has taken a drug causing diminished salivation, and some drugs are present in low concentration requiring testing with high sensitivity. Many labs, however, do not have a validated method to test oral fluid.

Samples Note

The analysis results of one type of sample does not equate to the analysis of another

type of sample (*i.e.*, 5 ng/mL delta-9 THC in oral fluid does not mean the same as 5ng/mL delta-9 in blood). A jurisdiction's law may dictate what types of samples may be collected and regulate what labs may test. A prosecutor should always review toxicology test results with a toxicologist.

Cutoff Levels & How to Read Results

A prosecutor needs to know the cutoff levels (or the point where a test result is positive or negative) for each type of sample tested at his lab(s). A prosecutor should always engage the toxicologist for specific info for testing and testing protocols. Regarding cutoff levels and results for drugs, like cannabis, cut off levels are determined at a level where drug detection is reliable and false positives are minimal. It is very important for a prosecutor to know for what drugs scientists screen and quantify in the different biological samples. For example, in blood, a lab may do a cannabinoid (*i.e.*, group of active compounds found in cannabis) screen and confirm the parent drug and/or metabolites. Some labs may not report values for everything found.

Limit of Detection (LOD) —

The limit of detection (LOD) is usually defined as the lowest quantity or concentration of a component that can be reliably detected with a given analytical method.[137]

Limit of Quantitation (LOQ) —

The lowest amount of a drug in a sample that can be quantitatively determined on a consistent basis (day in and day out). It is possible for a lab's LOD and LOQ to be one and the same.[138]

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[137] Vander Heyden, Yvan and Boqué, Richard (February 1, 2009). The Limit of Detection. *LCGC Europe* Vol. 22, Issue 2, pg 82-85.

[138] https://medical-dictionary.thefreedictionary.com/limit+of+quantitation, last accessed June 17, 2020.

Cutoff Values in Cannabis Cases

The following values[139] are published best practices for cutoff values in cannabis cases:

Table II. 2017 Recommended scope and cutoffs in ng/mL for screening and confirmation in blood, urine, and oral fluid for tier I compounds (all concentrations are in ng/mL)

Drug	Blood		Urine		Oral Fluid	
	Screen	Confirm	Screen	Confirm	Screen	Confirm
DRE category; cannabis						
THC	–	1	–	–	4	2
Carboxy-THC	10	5	20	5	–	–
11-OH-THC	–	1	–	–	–	–

Substances Found via Forensic Analysis

The following substances may be reported through the forensic analysis:

Delta-9-THC

The main psychoactive substance found in marijuana. Other names include delta-9-tetrahydrocannabinol (Δ9-THC) and dronabinol.[140]

11-nor-9-Carboxy-THC

The main secondary metabolite of THC formed after marijuana is consumed. It is not active but indicates historical use. Other names include THC-COOH (most often seen this way), 11-nor-9-carboxy-delta-9-tetrahydrocannabinol (11-nor-9-carboxy-Δ9-THC).[141]

11- hydroxy-THC

The main psychoactive metabolite of THC formed in the body after marijuana consumption. Other names include 11-Hydroxy-Δ9-

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[139] Logan, B. K., et al. (2018). Recommendations for Toxicological Investigation of Drug-Impaired Driving and Motor Vehicle Fatalities-2017 Update. *Journal of Analytical Toxicology*, 42, 63–68.

[140] https://pubchem.ncbi.nlm.nih.gov/compound/16078#section=MeSH-Entry-Terms, last accessed June 17, 2020.

[141] https://pubchem.ncbi.nlm.nih.gov/compound/11-nor-9-carboxy-THC#section=Depositor-Supplied-Synonyms, last accessed June 17, 2020.

tetrahydrocannabinol (11-Hydroxy-Δ9-THC), 11-OH-THC.[142]

Some labs will also quantify (with or without including amounts on test result documents) the following:

Cannabidiol (CBD)

The non-psychoactive (a/k/a not impairing) cannabinoid found in cannabis and hemp.[143]

Cannabinol (CBN)

Cannabinoid found in cannabis and is a metabolite of tetrahydrocannabinol (THC) with potential immunosuppressie and anit-flammatory activities.[144]

Other helpful terminology a prosecutor should understand when handling a cannabis-impaired driving case:

Chronic vs. Occasional

Terms denoting frequency of use.

Chronic — Continuing for a long time or recurring frequently.

Occasional — Happening infrequently and irregularly.[145]

Naïve — Little or few experiences using.[146]

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[142] Karschner, E. L., Schwilke, E. W., Lowe, R. H., Darwin, W. D., Herning, R. I., Cadet, J. L., & Huestis, M. A. (2009). Implications of Plasma Δ9-Tetrahydrocannabinol, 11-Hydroxy-THC, and 11-nor-9-Carboxy-THC Concentrations in Chronic Cannabis Smokers. *Journal of Analytical Toxicology*, 33(October), 469–477; *See also* https://pubchem.ncbi.nlm.nih.gov/compound/37482#section=MeSH-Entry-Terms, last accessed June 17, 2020.

[143] https://pubchem.ncbi.nlm.nih.gov/compound/644019, last accessed June 17, 2020; *see also* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3570572/, last accessed June 17, 2020.

[144] https://pubchem.ncbi.nlm.nih.gov/compound/2543#section=Pharmacology-and-Biochemistry, last accessed June 17, 2020.

[145] Cary, Paul L. Drug Court Practitioner Fact Sheet, The Marijuana Detection Window: Determining the Length of Time Cannabinoids Will Remain Detectable in Urine Following Smoking, A Critical Review of Relevant Research and Cannabinoid Detection Guidance for Drug Courts. *National Drug Court Institute*, Vol. IV, No. 2 (April 2006).

[146] Armentano, P., *Marijuana: A Primer*, available at https://norml.org/aboutmarijuana/marijuana-a-primer, last accessed June 17, 2020.

Psychoactive or Active

Causes euphoric and impairing effects (*e.g.*, THC and 11-OH-THC).[147]

Not active or inactive

Does NOT cause euphoric or impairing effects (*e.g.*, THC-COOH).[148]

There may be a +/- next to the test results. For example, a report might read:

Drug	**Result**
Delta-9-tetrahydrocannabinol (THC)	6.2 +/- 0.9 ng/mL

The number after the +/- is the measurement of uncertainty (MOU). This is not the same as error. Every measurement is subject to some uncertainty due to instruments and/or process. A prosecutor should work with her scientist if any issues arise concerning the MOU. Also, it may be a good idea for a prosecutor to work with her scientist to develop an analogy for use in court to explain the measurement of uncertainty to the judge or jury. For example, part of a dinner recipe may indicate, "make rice." One person may use brown rice, another white rice, and another instant rice. One person may make it on the stove-top whereas another may make it in the microwave oven or a rice cooker. In the end, they all have rice, but the variations in each amount to the measurement of uncertainty.

There may be a "Present less than" or "Present greater than" results. For example, a report might read:

Drug	**Result**
Delta-9-tetrahydrocannabinol (THC)	Present less than 1.0 ng/mL

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[147] Sharma, P., Murthy, P., and Bharath, M.M. Chemistry, Metabolism, and Toxicology of Cannabis: Clinical Implications. *Iran J Psychiatry*, Fall 2012, 7(4): 149-156.

[148] *Limitations of Workplace Drug Testing Methods for Proving THC Impairment*, December 5, 2016, available at https://www.cannabisatwork.com/, last accessed June 17, 2020.

Drug	Result
Benzoylecgonine (Cocaine metabolite)	Present greater than 1000 ng/mL

These results mean that the presence of drug was confirmed, and it met the lab's criteria for acceptance, however, was below (LOQ) or above the reporting limits of the method.

Testing protocols

These are common methods used for testing blood:

- Head Space Gas Chromatography with Flame Ionization Detector (HS GC/FID), used for alcohol or volatile (huffing agents, acetone, isopropanol) analysis
- Gas Chromatography/Mass Spectrometry (GC/MS), used for drug confirmations
- Enzyme Linked Immunosorbent Assay (E.L.I.S.A.), used for drug screens
- Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS), used for drug confirmations
- Liquid Chromatography Time-of-Flight Mass Spectrometry (LC-TOF), used for drug screening and confirmations

A prosecutor should consult with his lab staff to see what method(s) are used and how to address any related concerns. Optimally, a result will be comprised of two separate chemical tests, also known as a screen and a confirmation.

Measurement of Uncertainty

Measurement of uncertainty refers to the concept that all measurements are approximations. There are various factors (random and fixed) that can influence a particular measurement result. A lab can quantify the effect of these factors. The quantified sum of all these possible factors is referred to as "measurement uncertainty." All measurement

results have some degree of uncertainty.

Measurement of uncertainty comes up in impaired driving cases in the form of defense challenges to chemical test results. Defense attorneys who wish to raise doubt that a breath or blood test result is what it purports to be will usually hire a defense expert who can testify to measurement uncertainty in lab methodology. The best way to handle these challenges when they arise in court is to be prepared to cross-examine the defense expert and to be ready to call your own expert to rebut the defense expert.

Back extrapolation

Sometimes in impaired driving cases, back extrapolation or Widmark's formula may be used to estimate the amount of alcohol in a person's system at the time of driving. Back extrapolation, however, is not possible for cannabis. For various reasons, toxicological results cannot pinpoint the time a person was under the influence of or impaired by a drug. Unlike with alcohol, there are no established levels or quantities for drugs in a person's blood or urine that correlate to the legal definition of impairment or being under the influence.

Chain of Custody

For the admissibility of laboratory reports in cannabis-impaired driving cases, there are three important United States Supreme Court cases to consider.

In *Crawford v. Washington*,[149] the Court decided that out-of-court statements made in anticipation of litigation violated the Sixth Amendment Confrontation Clause. No longer could out-of-court statements be used against a defendant without first providing an opportunity to cross-examine the witness. This impacted the ability of the prosecutor to admit toxicological results without the testing scientist present in court.[150] Before *Crawford*, the Supreme Court held that out-of-court statements did not violate the confronta-

[149] *Crawford v. Washington*, 124 S.Ct. 1354 (2004).
[150] *Id.*

tion clause if they were adequately reliable.

The Court extended its rule in *Crawford* to cover forensic analysts in *Melendez-Diaz v. Massachusetts.*[151] In this case, the Court held it was a violation of the right of confrontation for a prosecutor to submit a chemical drug test report without the testimony of the person who performed the test. In its decision, however, the Court also stated that "…[w]e do not hold, and it is not the case, that anyone whose testimony may be relevant in establishing the chain of custody, authenticity of the sample, or accuracy of the testing device, must appear in person as part of the prosecution's case. While…it is the obligation of the prosecution to establish the chain of custody, … this does not mean that everyone who laid hands on the evidence must be called."[152] Finally, the Court also ruled that so called "notice-and-demand" statutes—a statute that both puts a defendant on notice that the prosecution intends to submit a chemical drug test report without the testimony of the scientist and gives a defendant sufficient time to object—are constitutional.[153]

In *Bullcoming v. New Mexico*,[154] the Court considered the issue of whether a supervisor can testify in place of the actual forensic analyst who performed the lab test. The Court held that the Confrontation Clause requires that the actual analyst who performed the analysis testify to its results. The Court also held, however, that a lab supervisor or other analyst may be an acceptable substitute if the original analyst is unavailable to testify and the defendant had a prior opportunity to cross-examine him or her.[155]

Discovery and Motion Issues

Discovery is the general process of a prosecutor and defense attorney exchanging information about the defendant's case. The intention of the discovery period is to provide a better criminal process, and prosecutors should make every effort to produce in-

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[151] *Melendez-Diaz v. Massachusetts*, 129 S.Ct. 2527 (2009).
[152] *Id.* at fn 1.
[153] *Id.*
[154] *Bullcoming v. New Mexico*, 131 S.Ct. 2705 (2011).
[155] *Id.*

formation that ensures a fair trial for the defendant. A prosecutor may likely encounter defense attorneys who will file multiple motions, sometimes requesting extremely detailed documentation that goes well beyond the items contained within the prosecutor's file. It is important for the prosecutor to be able to distinguish potentially exculpatory evidence from defense requests intended to push the boundaries of the information to which a prosecutor may have access.

Motions practice in cannabis-impaired driving cases can often be very confusing for prosecutors and law enforcement. Prosecutors should expect the defense to file multiple pre-trial and in limine motions in cannabis-impaired driving cases, and early identification of the various motions can help prosecutors prepare to address them early in the case. Some of these motions may require an evidentiary hearing to overcome defense challenges to the evidence. Prosecutors should make time before these hearings to consult with law enforcement regarding their role in the hearing and how to effectively prepare for testimony.

Pre-trial motion practice is commonly and predominately utilized by the defendant in criminal cases. Even though a prosecutor has the same ability to file pre-trail motions (*e.g.*, motion for exclusion of evidence), many do not participate in this practice as often as they should. Frequently, a defendant may argue case theories that have absolutely no relevance or foundation to the facts of the case to keep the jury's or judge's focus off the evidence that hurts him. If a prosecutor can suppress this evidence or argument, the jury will be unable to hear it and, therefore, unable to consider it.

Motion for Discovery

A prosecutor should expect very detailed discovery motions in cases involving a DRE opinion. A defense attorney may likely seek an exhaustive amount of material from the prosecutor that goes well beyond the information contained in the prosecutor's case file. Discovery motions may include requests for basic items like:

- A copy of the evaluation face sheet, including the narrative report containing all

notations, statements, and observations made of the suspect

- The DRE's rolling log of every drug recognition evaluation conducted, including toxicology results, for all past evaluations
- A copy of the DRE's updated resume that lists all training, listing of readings that the DRE will rely upon to base and form any opinion, as well as all formal education or publications

The same motion might also seek additional information wholly irrelevant to the case and not subject to release. In DRE cases, these items may include:

- A copy of any and all manuals, documents, and other training materials used during any of the trainings the DRE attended
- Copies of all examinations completed by the DRE, the answer key for the examination, and copies of scores received to demonstrate proficiency of the materials
- Copies of all employment records, including dates of hire, salary information, commendations, discipline, or suspensions

A prosecutor should consider her local laws concerning discovery prior to responding to any motion for discovery. Obviously, information directly related to the investigation of the defendant is discoverable and should be provided to the defense attorney. This is also true of the DRE's resume, training, and other information related to his qualifications. The DRE's rolling log, however, contains personal information of the evaluation of other suspects who are not parties to the action of the current case. A prosecutor should plan to redact such information and/or ask for judicial review to consider the inherent privacy concerns for releasing information not directly related to the defendant's arrest.

A prosecutor may wish to consider objecting to a request for manuals, examinations, and other sensitive employment information if her local laws allow. Generally, discovery laws require the prosecution to allow the defendant access to items like manuals, tests or examinations that are within the control, custody, or possession of the prosecutor.

The prosecutor should be prepared to provide only the information within her control[156] and otherwise object to any defense "fishing expeditions."

A prosecutor should be familiar with her legal and ethical obligations to provide discovery under rules of criminal procedure in her jurisdiction and local laws.[157] This familiarity will help the prosecutor comply with the requirements and assist her to fend off overreaching discovery requests from the defendant. A prosecutor may receive defense motions for discovery requesting items that are privileged (*e.g.*, medical or psychiatric records), records from another jurisdiction, or those not in her possession and control[158] (*e.g.*, lab documents, personnel records, background checks, and so on). Before agreeing to provide anything not in the possession of the prosecutor, he should be sure to check with the agency or person in possession and have a discussion first.

Motion to Dismiss

The defense may also file a motion seeking to dismiss the entire case. A prosecutor may likely find this motion to claim a myriad of issues that might include an argument like the arresting officer possessed some mistaken basis for the traffic stop and the resulting seizure was therefore illegal. Other motions may claim that insufficient evidence exists to prove that a person was under the influence of a drug while driving. For example, in a cannabis-impaired driving case, the motion might claim that the arresting officer was not qualified to make an arrest decision based upon a lack of training in recognizing cannabis impairment. Another motion might claim that the DRE evaluation is unsupported by valid studies and is inadmissible to prove impairment as a necessary

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[156] See Footnote 135.

[157] See Footnote 135; *see also Giglio v. US*, 92 S.Ct. 763 (1972), when reliability of a given witness may well be determinative of guilt or innocence, nondisclosure of evidence affecting credibility falls within rule that suppression of material evidence justifies a new trial irrespective of good faith or bad faith of the prosecution; *see also* Federal Rule of Criminal Procedure Rule 16 (or jurisdiction's equivalent).

[158] A prosecutor should keep in mind that his "possession and control" may well include information in the actual possession or control of the law enforcement officer involved in the case.

element of the charge.

A prosecutor should carefully review a motion to dismiss for any overstatement of the case facts and then review her local laws prior to responding to the motion. An evidentiary hearing may likely be required for challenges to the officer's experience and training. A prosecutor should remember that an arresting officer likely has many years of recognizing driver impairment, regardless of the substance that caused the driver to be impaired. A prosecutor responding to challenges concerning the validity of the DRE program should consult with her DRE and TSRP as well as NTLC in preparing a cohesive response supporting admissibility the of this evidence.

Motion to Suppress SFST/DRE Evidence

The defense may likely want to keep all mention or reference to SFST or DRE evaluation out of evidence. There is a wide range of issues the defense may claim as a basis for the suppression. One motion may claim the evidence should be supported by competent expert testimony based on valid scientific evidence. Another may claim that the evidence requires a systematic application in each case for the officer's conclusion to be valid and admissible. A prosecutor may also encounter a motion that claims the evidence to be prejudicial to the defendant absent a showing the tests actually measure what they claim.

A prosecutor should first consult his state laws and TSRP regarding specific rules for whether expert testimony is necessary prior to admitting SFST or DRE evidence. A prosecutor should next consult with the arresting officer and DRE regarding their administration of these evaluations. While a systematic approach is a necessary element of the SFST and DRE evaluation, prosecutors should point out that valid and admissible evidence of impairment will likely be observed during the administration of the tests. Claims alleging prejudice should be countered with studies and evidence demonstrating the probative nature of the tests in assessing impairment through the testimony of a prosecutor's DRE. (See Appendix 4 for discussions of scientific studies.)

Motion to Suppress Toxicology Evidence

It is unlikely that a motion to suppress toxicological evidence will be based on a detailed explanation of the scientific background of the challenged evidence. Most challenges of the science will come from the defense presentation of an expert witness (see cross-examination, *infra*, for tips to respond to these witnesses). Rather, these motions will likely allege some violation of an administrative rule, chain of custody, or timing issue related to the chemical test. Prosecutors should consult with their TSRP for guidance related to the rules and statutes concerning these issues.

Motion in Limine

One of the most effective ways to keep the defense from making assertions that have no bearing on the case is to file a Motion in Limine. A Motion in Limine is designed to prohibit the defendant from introducing evidence that is not admissible because it violates a rule of evidence (*e.g.*, it is not relevant, it is speculative, it calls for hearsay, etc.). The rules of evidence were developed to secure fairness in the administration of justice, to eliminate unjustifiable expense and delay, and promote growth and development of the law of evidence, so that truth may be ascertained, and proceedings justly determined. The rules also provide that proceedings shall be conducted, to the extent practicable, to prevent inadmissible evidence from being suggested to the jury by any means, like making statements, offers of proof, or asking questions in the hearing of the jury.

A motion in limine is also a valuable tool utilized to prevent jury decisions based on emotion rather than the facts or evidence of the case. Additionally, a motion in limine promotes judicial economy by eliminating irrelevant argument and/or evidence. A motion in limine can also be utilized to prevent the testimony at trial of a lay witness with no independent knowledge of the facts, or an expert witness with no proper foundational background to make conclusions on the evidence. As part of the motion in limine, a prosecutor should consider requesting an offer of proof from the defendant should the defendant object. It is imperative to resolve any admissibility issues pre-trial, so the jury does

not hear the questionable testimony or argument. Resolving these issues pre-trial also provides a prosecutor with the option of an appeal if the court rules against the prosecutor.

A pre-trial motion is also effective at ensuring the defense provides the appropriate discovery to the prosecutor in a timely fashion, so the prosecutor can properly prepare for trial. A motion in limine can be used to prevent an expert witness from testifying if the defendant did not disclose discovery or opinion information within the proper amount of time prior to trial. For example, disclosure of discovery relating to an expert witness assists in ensuring the expert witness possesses the qualifications to testify. If the discovery defendant provides does not assure the witness possesses the required qualifications necessary to testify, the failure to provide the discovery should result in prevention of the defendant's desired expert testimony.

A motion in limine may also be filed to exclude offered exhibits. This type of motion is filed to prohibit the defendant from questioning any witness about any documents, reports, articles, books and/or studies for which the defendant is unable to provide a foundation for its admissibility (*i.e.*, specifically a hearsay exception), and/or that the particular witness recognizes the document and can testify to its accuracy and veracity. A defendant's pretrial memorandum may include a list of documents, reports, articles, books and studies as potential exhibits while not including any corresponding expert witness to testify about the potential exhibits. In this instance, a defendant may be required by the court to establish the foundational admissibility of the evidence or the testimony prior to trial. If the defendant is unable or cannot demonstrate to the court that such testimony or evidence is admissible under the Rules of Evidence, then the court may rule it is inadmissible and should be excluded from trial. For example, a defendant may attempt to utilize testimony simply meant to confuse the jury. Confusion by the jury is a strategy frequently used by a defendant to get jurors to focus its attention to something other than the relevant evidence. Once the defendant can accomplish the confusion, jurors may forget or ignore the relevant evidence that demonstrates impairment. A motion in limine to exclude this evidence avoids this danger in trial.

Defendants are also not supposed to use the discovery process to engage in a "fishing expedition" to find something that may have relevance to her case. The likelihood that information useful to the defendant will be found outside of the formal discovery is slim. This type of exercise is designed to unduly burden the prosecutor to provide information and/or evidence that simply is not relevant to the case. This tactic is designed to be cumbersome and distract the prosecutor from focusing on the relevant evidence of the case. A defendant may sometimes enjoy success in using this approach, because a prosecutor may agree to dismiss or amend the impaired driving case due to its burdensome nature. A prosecutor should maintain focus on what the discovery requirements are and should be familiar with the local rules of his jurisdiction to avoid the fishing expedition.

No blanket statements

A motion in limine, if granted, will prevent admission of any evidence or testimony relating to the suppressed evidence. This includes any comments or arguments on the issue. As part of the motion in limine, the prosecutor should ask the court to take steps to require appropriate safeguards to prevent testimony on the excluded matters. The court should instruct the parties and counsel to refrain from offering any suppressed evidence, directly or indirectly, and by implication. This prevents discussion, disclosure, or reference in any manner during the trial or in front of the jury.

Trial Preparation

Voir Dire

Voir dire may very well be the most difficult, and most rewarding, portion of the cannabis-impaired driving case. The prosecutor's goal should be to tactfully educate the jury regarding cannabis and impairment, establish a theme, build rapport and acceptance with the jury, and identify jurors who may demonstrate bias or sympathy for the defendant. A prosecutor should be open, patient and genuine during her interaction with prospective jurors.

A prosecutor's discussion with jurors regarding cannabis and impairment may in-

clude the following topics: the juror's prior exposure to persons consuming cannabis, how the person appeared to the juror after consuming cannabis or how the person smelled, whether the juror believed the person to be impaired based on what she observed, whether the juror read any articles or books about cannabis, whether the juror ever observed a person driving after ingesting cannabis, and whether the juror is familiar with different ways cannabis can be ingested.

It is important for the jury to use common sense when deciding a defendant's impairment. For a jury to determine the defendant was indeed impaired to a degree that made him unsafe to drive, the jury will need to understand why and how cannabis affects the various factors associated with safe operation of a vehicle.

Jurors are permitted to use their own common sense in assessing the evidence. In other words, a juror may rely on her own experience about the effects of marijuana in a similar manner as they do with alcohol. It is important to remember, however, most jurors may not have much first-hand experience with drug use or, particularly, cannabis impairment. Cannabis-impaired driving cases and concepts are not as easy for a juror to understand as they are able to do with alcohol. While most people have either consumed alcohol, or at least seen it consumed to the point of impairing someone, this is not necessarily the case with cannabis. Even though there may, eventually, be increased awareness in jurors as to the effects of cannabis impairment, given the current legalization trend, such understanding into cannabis impairment is just not quite there at this time. Even for those jurors who have experienced cannabis at some point in their life, many have not experienced cannabis by today's commercialized standard. For voir dire samples in a cannabis-impaired driving case, see Appendix 8, Voir Dire Samples.

Direct Examination

Prior to trial, a prosecutor should prepare a witness list and contact all potential witnesses to inform them of the trial date. Schedule a time to prepare each witness. It is a good idea for the prosecutor to meet with each witness in person to review each witness's testimony and to answer questions he may have about the court process. As discussed pre-

viously, it is necessary for the cannabis-impaired driving prosecutor to meet with his toxicologist prior to trial, too, to review the lab results and develop questions that best fit the toxicologist's background, education, and experience. The same is true in preparation of each law enforcement officer who will be called to testify.

The Arresting Officer

This witness introduces the facts that occurred about the event in question. The testimony of the arresting officer is vital because she observed the defendant driving, stopped the defendant, interacted with the defendant, detected possible impairment, tested the defendant, determined the defendant was intoxicated, and decided to arrest the defendant (*i.e.*, this witness observed the three phases of DWI detection discussed previously). Here, the prosecutor's direct examination questions must lay out the arresting officer's investigation chronologically and clearly. The prosecutor should ensure that he has the arresting officer explain her education, training, and qualifications in detail. The arresting officer's educational background and experience substantiates the actions she took during the investigation. See Appendix 1 for sample questions for this witness.

The DRE

For cannabis-impaired driving cases, a DRE is particularly helpful. In some jurisdictions, the arresting officer may be a trained DRE. As discussed previously, in other jurisdictions, a DRE is often called to the scene of an impaired driving investigation. After going through a 12-step process, a DRE can identify categories of drugs that could be the cause of impairment. A DRE is also particularly helpful because he can give an opinion as to potential impairment.

As discussed previously, a prosecutor should meet with the DRE prior to trial. This meeting will prove useful for the DRE to educate the prosecutor about the DRE program, the specifics of the pending case, and to develop appropriate examination questions based on the officer's background, training, and experience. See Appendix 2 for a sample of DRE predicate questions. A prosecutor should tailor these questions to suit the DRE and

the case. The National Traffic Law Center's *Drug Evaluation and Classification Program* monograph contains additional useful information on this topic. See the monograph on the NDAA website at https://ndaa.org/resources/publications-videos/ and scroll to the link for *The Drug Evaluation and Classification (DEC) Program*.

The Toxicologist

This witness explains to the judge or jury what substances, if any, were found in the defendant's blood or urine. Though the toxicologist cannot opine on the ultimate question of impairment, she can explain the effects of any substances found. Moreover, the toxicologist may be able to link the observations of the arresting officer and/or the DRE to the substances found in the defendant's blood or urine.

As discussed previously, a prosecutor should meet with the toxicologist prior to trial. This meeting will prove useful for the prosecutor to learn about the forensic toxicology process, the specifics of the pending case, and to develop appropriate examination questions based on the toxicologist's background, training, and experience. See Appendix 3 for a sample of toxicology predicate questions. A prosecutor should tailor these questions to suit the toxicologist and the case.

Other Witnesses

It is rare for the prosecution to present the testimony of witnesses other than those listed above. However, in some instances the testimony of other witnesses may be helpful. For example, if the identity of the driver is an issue, a fact witness may be necessary. A fact witness, who can testify to having seen the defendant driving, can help the prosecution overcome this hurdle. Moreover, a fact witness may be able to provide information about the whereabouts and/or actions of the defendant prior to driving while impaired.

Exhibits

Gather all exhibits, including any evidence that may be housed at the police department or forensic lab. A prosecutor should work closely with law enforcement officers

or office investigators to move and secure controlled substance evidence before, during, and after trial. Be sure to label all exhibits correctly. A prosecutor should also consider preparing an exhibit list prior to trial. This will help a prosecutor to stay organized and ensure that all exhibits are moved into evidence at trial.

Cross Examination

A trial is in many ways best considered as a constant power struggle. A prosecutor works to drag the jury's opinion of the evidence beyond that nebulous threshold of reasonable doubt. All the while, the defense is trying the keep the case full of reasonable doubts in order to gain an acquittal. Cross-examination is likely the most studied tool in the defense attorney toolkit, while many prosecutors invest their time and efforts in the presentation and proof of their case. Because of this focus, many prosecutors become all too familiar with questioning a witness with open-ended question where the witness tells the jury the facts of the case.

It is important to recognize the fundamental difference that effective cross-examination can provide prosecutors. It is the only time during a trial where a prosecutor can provide facts to a jury and the witness must confirm, deny, or try to explain those facts. A prosecutor skilled in cross-examination of professional defense expert witnesses, or the defendant, will be able to rectify or prevent damage to his evidence and may even be able to elicit facts and evidence beneficial to his case.

Jury Considerations

The overarching goal of cross-examination should always be to persuade the jury — not the witness or judge. It is important to be mindful that the jury is constantly forming its opinion of both the evidence and the attorneys throughout the trial. A prosecutor should focus upon controlling not only the witness, but also himself/herself when confronting a witness.

Consideration should be always given to the cross-examination approach afforded to each witness from the juror's perspective so that the prosecutor maintains credibility. Ju-

rors may appreciate an aggressive approach to a less-than-truthful witness, but not when that same approach is used to question a witness attempting to remain unbiased. A prosecutor should decide what potential damage a witness may do to her case; with this in mind, a prosecutor should develop the goals of her cross-examination of that witness.

Being Prepared

A prosecutor preparing for cross-examination of a professional expert witness should have both general and specific knowledge of the area that will be covered by the anticipated testimony. With this approach, a prosecutor can pinpoint issues and inconsistencies with the defense theory and develop cross-examination goals to combat these at trial. A significant attempt should be made to learn everything possible about the topic upon which the witness will testify. If the witness is being called to testify about the failures of the officer in conducting a DRE evaluation, the prosecutor should contact the DRE and ask as many questions as necessary to become comfortable with the 12-steps of the DRE program and the seven drug categories. If the witness is being called to testify about the shortcomings of the quality control policy used by the forensic laboratory, the prosecutor should access the lab policies and maybe schedule a tour of the lab.

Totality of the Circumstances

Many defense attorneys attend classes to learn about the SFST and DRE evaluation to be better prepared than the prosecutor's witnesses. A defense attorney may even hire experts to scour SFST and DRE manuals, create cross-examination outlines, and testify about the officer's missed steps or rush to judgment. For example, a witness may testify that based upon his experience, an officer should not consider odor of cannabis as an indicator of impaired driving in states with legislatively approved medical or recreational use. A defense expert may claim that a DRE opinion is invalid because she failed to complete portions of her evaluation even though it was because the driver refused to provide a chemical test sample. Another expert may speculate that SFSTs are wholly invalid be-

cause the officer left out an element of the instructions.

A prosecutor should remember not to be tricked into responding to these isolated alternate explanations of the defendant's behaviors and instead should focus on the totality of circumstances when crossing these witnesses. Each cross-examination question should be tailored to remind a reasonable juror to believe that the driver was impaired by cannabis. Asking questions that force the witness to agree that when considered together, all the other things the officer saw, heard, smelled or observed would lead an officer to an impaired driving arrest decision.

Each cross-examination question in a cannabis-impaired driving case should always lead to a prosecutor's closing argument. A prosecutor should use each question to gain concessions from the witness that force the jury to consider that either the driver was under the influence of cannabis, or his mental and physical abilities were impaired by the drug to make him unsafe to drive.

Defenses and challenges

A cannabis-impaired driving case is not a simple "check these boxes, have this THC concentration in the blood" type of impaired driving case. This type of case, therefore, typically leads to a defendant challenging everything about the case. Because cannabis impairment signs and symptoms can present differently based upon numerous factors, including the potency of the cannabis, the defendant is able to exploit the general public perception that driving high on cannabis makes the driver a safer driver.

A prosecutor should be identifying potential defenses and challenges each time the case is reviewed prior to trial. To do this, a prosecutor should identify anything the officer did incorrectly, anything the officer omitted, any inconsistencies in the evidence, anything the forensic laboratory did incorrectly in testing the evidence, including calibrations and laboratory procedures, and anything else the defense attorney can challenge, regardless of the merits of the challenge.

Defenses are designed to create reasonable doubt. The prosecutor should therefore

be considering anything in the case file that may remotely raise reasonable doubt in a juror's mind. This consideration is imperative when preparing to combat defenses as a defendant typically argues anything less than a 100 percent certainty, including 99.9 percent, can be considered reasonable doubt by the jury. If a jury can focus on an issue other than impairment in a cannabis-impaired driving case, the defense has successfully done his job of creating the requisite reasonable doubt for acquittal. It is incumbent upon the prosecutor to redirect the jury back to the real question in the case: impairment.

Fourth Amendment Issues

It is axiomatic that the Fourth Amendment prohibits unreasonable searches and seizures and the touchstone for a search under the Fourth Amendment is reasonableness. This typically requires law enforcement to obtain a warrant before conducting a search. Only a few exceptions to the warrant requirement exist and searches conducted without a warrant (or not conducted pursuant to a recognized exception) are considered per se unreasonable. Defense attorneys are likely to file motions asking trial courts to review whether, and when, a search warrant might be necessary during a cannabis-impaired driving investigation. A prosecutor should be prepared to respond to motions claiming that a search warrant was invalid or that law enforcement should have obtained a search warrant in the investigation.

Insufficient Search Warrant [159]

As mentioned above, search warrants must be based upon probable cause. Probable cause generally exists when there is reason for an officer to believe that a criminal offense has been, or is about to be, committed. This can be established through facts and circumstances within the officer's knowledge but must be more than a mere suspicion of the officer. It follows, then, that the most often challenged portion of a warrant will be to

[159] "Insufficient" here refers to the possibility of inadequate underlying probable cause (as opposed to probable cause based on a knowing and intentional false statement or based on reckless disregard for the truth as in *Franks v. Delaware*, 98 S. Ct. 2674 (1978)).

question the validity of the probable cause that served the basis of the judicial determination.

It is well settled that "an affidavit must provide the magistrate with a substantial basis for determining the existence of probable cause."[160] The task of the issuing magistrate is simply to make a practical, common-sense decision whether, given all the circumstances set forth in the affidavit before her, there is a fair probability that contraband or evidence of a crime will be found in a particular place.[161]

A prosecutor who faces this type of challenge should first focus on whether there is any specific challenge to the probable cause underlying the warrant. Does the defense claim that the probable cause was simply an officer suspicion, or does the motion mention specific details that would prevent the officer from forming a valid opinion? For example, does the motion claim that the officer was in a location where he was unable to observe the traffic violation as described? Absent these contentions, the defense may also claim that the officer's training and experience were insufficient to serve as a basis for determining probable cause. These claims oftentimes prove meritless since once a judge has issued a search warrant based on probable cause, the search is generally deemed reasonable. A prosecutor, however, should act with due diligence and consult with the affiant officer to confirm the observable evidence or impairment and work to prepare the officer for any evidentiary hearing that may follow the challenge.

Vehicle in Motion — Traffic Stop

"Temporary detention of individuals during the stop of an automobile by the police, even if only for a brief period and for a limited purpose, constitutes a 'seizure' of 'persons' within the… [Fourth Amendment]…. An automobile stop is thus subject to the constitutional imperative that it not be 'unreasonable' under the circumstances. As a general matter, the decision to stop an automobile is reasonable where the police have probable

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[160] *Illinois v. Gates*, 103 S. Ct. 2317 (1983).
[161] *Id.*

cause to believe that a traffic violation has occurred."[162] Like a *Terry*[163] stop, the tolerable duration of police inquiries in the traffic-stop context is determined by the seizure's "mission"—to address the traffic violation that warranted the stop. Authority for the seizure thus ends when tasks tied to the traffic infraction are—or reasonably should have been—completed.[164]

Cannabis-impaired cases may involve a situation where an officer stops a driver for a traffic violation and notices signs of intoxication, paraphenalia, or an odor of burnt cannabis during the traffic stop. A prosecutor should consider the time an officer spends during her investigation because of the increased prevalence of some form of legalized cannabis at roadside. Based upon existing United States Supreme Court case law, the defense may likely focus upon the absence of objective evidence of impairment or illegal possession to claim the warrantless seizure of the defendant was unreasonable and move to dismiss the case. A prosecutor should be prepared to consult with the arresting officer to confirm indicators of cannabis impairment prior to responding to these claims. State-specific statutes and laws may also be applicable to the defense claim and a prosecutor should consult his state TSRP for more detailed information.

Warrant Required — Implied Consent

The defense may file a pre-trial motion claiming that a chemical test should be excluded, because the officer should have obtained a warrant prior to testing. These generic assertions may likely be based upon state-specific statutes and laws and a prosecutor should consult her state TSRP for more detailed information. A prosecutor should note that many states, however, have enacted implied consent statutes that require the cooperation of the suspect in submitting to a chemical test. These statutes are typically considered to be a condition of the privilege of driving on state roads and subject a driver to revocation of that privilege if he refuses to consent to testing. Generally, the United States Supreme

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[162] *Whren v. United States*, 116 S. Ct. 1769 (1996).
[163] *Terry v. Ohio*, 88 S. Ct. 1868 (1968).
[164] *Rodriguez v. United States*, 135 S. Ct. 1609 (2015).

Court has held that breath testing, completed incident to a lawful arrest, does not implicate significant privacy concerns for the individual and are limited to certain information—the suspect's breath alcohol level—and are a valid search incident to a lawful arrest.[165] The *Birchfield* court found blood tests to be another matter altogether. The Court deemed a blood test to be a considerable intrusion on the suspect and provided law enforcement a sample that might provide information beyond the suspect's BAC.[166] Because of these concerns, blood tests may not be administered as a search incident to arrest.[167] *Birchfield* seemed to leave alone the issue of whether a blood test is reasonable if a suspect consents as a result of an implied consent advisory and request finding:

> "It is well established that a search is reasonable when the subject consents, … and that sometimes consent to a search need not be express but may be fairly inferred from context …. Our prior opinions have referred approvingly to the general concept of implied-consent laws that impose civil penalties and evidentiary consequences on motorists who refuse to comply…. Petitioners do not question the constitutionality of those laws, and nothing we say here should be read to cast doubt on them."[168]

Upon her research, a prosecutor may find the defendant consented to a chemical sample at the request of law enforcement. These defense motions are more likely to be filed in cases, however, where the defendant's consent is not clearly offered, or in circumstances where the consent was purportedly retracted. A prosecutor should diligently explore all the facts related to the arrest and effectively prepare her response with the assistance of her law enforcement officer.

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[165] *See Birchfield v. North Dakota*, 136 S. Ct. 2160 (2016).
[166] *Id.*
[167] *Id. at 1285.*
[168] *Birchfield v. North Dakota*, 136 S. Ct. 2160, (2016) (citations omitted).

Exigency

In *Schmerber v. California*,[169] a defendant challenged his DUI conviction based upon the warrantless seizure and testing of his blood while he was being treated at a hospital for injuries suffered in a vehicle crash. The arresting officer observed an odor of alcohol and other signs of intoxication from the defendant at the crash scene, and again at the hospital within two hours of the crash. The Supreme Court concluded that "[s]earch warrants are ordinarily required for searches of dwellings, and absent an emergency, no less could be required where intrusions into the human body are concerned[ ]"[170] but upheld the warrantless seizure of the blood sample based in part upon the exigency created by the body's natural dissipation of alcohol, stating:

> "The officer in the present case, however, might reasonably have believed that he was confronted with an emergency, in which the delay necessary to obtain a warrant, under the circumstances, threatened 'the destruction of evidence,'… We are told that the percentage of alcohol in the blood begins to diminish shortly after drinking stops, as the body functions to eliminate it from the system. Particularly in a case such as this, where time had to be taken to bring the accused to a hospital and to investigate the scene of the accident, there was no time to seek out a magistrate and secure a warrant. Given these special facts, we conclude that the attempt to secure evidence of blood-alcohol concentration in this case was an appropriate incident to petitioner's arrest."[171]

Studies have shown that maximum THC plasma concentrations rapidly diminish

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[169] *Schmerber v. California*, 86 S.Ct. 1826 (1966).
[170] *Id.*, 86 S. Ct. at 1835.
[171] *Id.*, 86 S. Ct. at 1835-36 (citations omitted).

within three to four hours.[172] This transient elimination is consistent with the exigency created by the elimination of alcohol as reviewed in *Schmerber*.[173] A prosecutor should carefully examine the facts and circumstances served as the basis for the exigency for the blood draw if challenged.

Blood draws

In *Missouri v. McNeely*,[174] the Supreme Court found that the body's natural dissipation of alcohol does not itself create a per se exigency which permits a warrantless search and seizure of a suspect's blood in every impaired driving case. The Court concluded that as in all other Fourth Amendment contexts, "[w]hether a warrantless blood test of a drunk-driving suspect is reasonable must be determined case by case based on the totality of the circumstances."[175] As such, in addition to having probable cause to support the search, law enforcement agents must also obtain a warrant unless there is some exigent circumstance justifying a properly conducted warrantless blood test where "the needs of law enforcement [are] so compelling that a warrantless search is objectively reasonable under the Fourth Amendment."[176]

A prosecutor should expect the defense to claim that all seizures of blood should be subject to the warrant requirement following *McNeely*. Prosecutors should refer to the discussion of implied consent implications in *Birchfield v. North Dakota*.

Unconscious Drivers

A defense attorney may also file a motion claiming a warrant is required to take blood from an unconscious suspect. A prosecutor should make note of the recent United States Supreme Court holding in *Mitchell v. Wisconsin*,[177] where the Court found that a

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[172] *See* Sharma, et. al. Fall 2012. Chemistry, Metabolism, and Toxicology of Cannabis: Clinical Implications. *Iran J Psychiatry*. 7(4): 149-156.
[173] Contrast with *McNeely*, below.
[174] *Missouri v. McNeely*, 133 S. Ct. 1552 (2013).
[175] *Id.*, 133 S. Ct. at 1563.
[176] *Id.*, 133 S.Ct. at 1558.
[177] *Mitchell v. Wisconsin*, 139 S.Ct. 2525 (2019).

suspect who is rendered unconscious as a result of a vehicle collision or his advanced state of impairment may have his blood taken by law enforcement without a warrant due to the exigent circumstances presented by the situation. For example, an unconscious defendant being treated for injuries as a result of a collision may claim his consent was a result of involuntary intoxication consistent with medical treatment and done without a suspect's control (*e.g.*, for example, morphine administered by medical personnel to control a person's pain caused by crash injury). A prosecutor who encounters this claim should investigate all the circumstances that may have resulted in the unconsciousness of the suspect, as a court's determination of voluntary consent should be based on the totality of the circumstances.[178]

12th step sample

The 12th-Step of the DRE protocol is for the DRE to obtain a sample of the suspect's blood or urine for toxicology testing. These chemical samples are often challenged by the defense to call into question the DRE opinion. Some state courts have extended the holding of *Birchfield* to include urine samples as a search incident to arrest.[179] A prosecutor confronted with this type of challenge should remind a trial court that the DRE protocol is a 100 percent consensual, voluntary exercise and can be stopped at any time upon the suspect's request. This freedom applies to all twelve steps; including the request for a toxicology specimen.

Chain of Custody

An essential part of any sampling or analytical process is ensuring the integrity of the chemical sample from collection through the final reporting of the result. Defense attorneys regularly use pre-trial motions to call into question the integrity of chemical samples by challenging its collection, handling, and custody in hopes of suppressing the test results from evidence. The defense may attempt to file a motion claiming the seizure of

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[178] *See Schneckloth v. Bustamonte*, 93 S. Ct. 2041 (1973).
[179] *See e.g.*, *State v. Helm*, 2017 ND 207, ¶ 2, 901 N.W.2d 57, 58.

a chemical sample, and its later testing, should be considered separate acts each requiring a search warrant. As a primary step, a prosecutor should be ready to describe each element of the chain of custody process to a reviewing judge while demonstrating the chain of possession was substantially established and adequate to sustain the foundation for admissibility. Next, a prosecutor should direct the reviewing court's attention to the fact that no appellate case supports a bifurcation of collection and testing citing any recent United States Supreme Court decision in support of this claim.

DRE Not Qualified / Just a Cop

Attacking DRE evidence is a common topic for defense attorney trainings. Attorneys are likely to spend a fair amount of time questioning the DRE about her qualifications and how being "just a cop" is insufficient for the DRE to testify to her evaluation and opinion.

Questions by the defense attorney may resemble this:

Q: Officer, you aren't a doctor?

A: No.

Q: Not a pharmacologist?

A: No.

Q: You aren't a paramedic?

A: No.

Q: A physiologist?

A: No.

Q: Never been qualified as a pharmacologist?

A: No.

Q: Not a toxicologist?

A: No.

Q: And according to your CV you don't have a degree in chemistry?

A: No.

Q: So, you're just a police officer correct?

A: Yes.

A defense attorney may then attempt to point out in closing that a DRE is not qualified to make what the defense may mischaracterize in argument as a medical diagnosis. He may claim that learning how to take a pulse, measure pupil size, obtain blood pressure, and evaluate outward symptoms of impairment, taught by another officer at a police academy, can never be sufficient for a truly valid, unbiased opinion from the DRE. A defense attorney may also claim that the limited training a DRE officer receives renders him unable to discern and exclude medical conditions that mimic impairment because of his "non-medical" qualifications.

A prosecutor should be prepared to point out that the DRE 12-step protocol is not a medical diagnosis and does not require specialized medical training. A DRE officer receives training in basic measurements that assist him in recognizing and classifying the physical and behavioral patterns associated a driver's impairment from seven categories of drugs. A prosecutor should also note that a DRE officer performs a preliminary assessment of the testing subject during Step 4 of the 12-step DRE protocol. This assessment includes a series of questions for the subject to provide information to the DRE about any possible injuries or medical conditions that might affect the evaluation. The DRE will also check the subject's eyes for the presence of any unusual pupil size and whether the eyes can track equally to rule out any medical issues or head injuries the subject may have failed to mention. A DRE officer takes multiple steps to focus solely on the impairment of an individual. A defense argument that a properly completed DRE evaluation is done by "just a cop" is spurious and without merit. A prosecutor should treat these assertions as such.

Missing Symptoms / "Normals"

The defense may also challenge the DRE opinion by claiming the DRE has no knowledge of the suspect's "normal" physiology. Usually this type of attack involves the attempt to elicit the fact that the terms "average" or "normal" account for very few people who are evaluated. The defense goal is to demonstrate to the jury that the officer really has no way of knowing of what normal or average physiology is, what it really means

in relation to the defendant, and that her opinion is, therefore, biased. The defense may also choose to challenge a DRE opinion by focusing on any signs or symptoms normally found in the DRE matrix but are missing from the defendant's evaluation. This attempt to "focus on the good stuff" is often presented to the jury as a distraction from the other, more difficult to explain, evidence of impairment.

Questions by the defense attorney, for example, may be expressed like this:

Q: You were taught the normal range for pulse in DRE training?

A: Yes.

Q: You agree that not all people fall in that normal range?

A: Yes.

Q: You would agree that some people have higher than normal pulse rates and are not on drugs?

A: Yes.

Q: There are also people with pulse rates below normal who are not on drugs?

A: Yes.

Q: You don't know what Mr. _____ normal pulse rate is?

A: No.

Q: It could be in your so-called normal range?

A: Yes.

Q: Mr. _____ could have "normal" pulse that is outside the "normal range?"

A: Yes.

Q: In fact, you had never met Mr. ____ prior to the night you arrested him correct?

A: No.

Q: Never seen him walk?

A: No.

Q: Never heard him speak?

A: No.

Q: Never seen his eyes?

A: No.

Q: Quite an assumption on your part that the signs symptoms you saw and measured were abnormal huh?

The DRE program uses the same "normal" values for vital signs a person would find with a quick internet search. A DRE will be able to testify that blood pressure, body temperature, and pulse rates can present as raised or lowered depending upon the type of drug a person is taking. While it is true that not every defendant is the same, the Drug Evaluation and Classification program bases its assessment on the same ranges as would a medical professional.

DRE evaluations rarely assess subjects as having ***all*** the potential "general indicators" consistent with a drug category. The fact that a cannabis-impaired suspect might be assessed as being "euphoric," but not "drowsy," should not present a conflict for a prosecutor. It is important to remember that a DRE officer is assessing impairment in a suspect, and all people are different. The general indicators of a drug category listed within the DRE matrix simply provide the signs a suspect ***might*** exhibit during an evaluation. A prosecutor should stress the DRE opinion is based upon the totality of the information in an evaluation. Because of this fact alone, a missing sign, symptom, or indicator will never, by itself, invalidate a DRE opinion.

Tolerance / residual / therapeutic doses

Many times, a defendant will claim she uses cannabis so frequently that she has developed a tolerance to the effects of cannabis. In the same manner, a chronic cannabis user will also claim she uses cannabis so frequently, that while she did not use cannabis on the particular day of the incident, there is so much THC built up in her system that the toxicology came back positive due to residual amounts of THC in her blood. This type of defense claim can be contested by utilizing scientific studies on chronic, frequent cannabis users. It is worth noting an occasional or novice user would be hard-pressed to use either of these claims as a defense; tolerance cannot be developed with occasional use and occasional use does not lend itself to the THC buildup in the individual's system to

display residual THC concentrations typically necessary to show on a toxicology report. See Appendix 5 for further discussion of chronic, frequent cannabis users, THC concentrations, and impairment and Appendix 6 for further discussion of dissipation or low THC concentrations.

DEC Program is not admissible evidence

The DEC process is a standardized and systematic 12-step evaluation. It utilizes a variety of readily observable signs and symptoms that are accepted as reliable indicators of drug influence by law enforcement, the medical community, those who scientifically study the effects of drugs and alcohol on the human body, and the traffic safety research community. During a DRE examination, the DRE interviews the suspect to elicit information about the suspect's behavior, physical symptoms, and any medical history. Physicians have long recognized that diverse types of drugs affect people differently. Nonetheless, drugs may be categorized or classified according to certain shared symptoms or effects. The DRE categorization process is premised on these long-standing, medically accepted facts.

A DRE candidate must be certified in, and proficient in, the administration of the standardized field sobriety tests (SFSTs), including the HGN test, prior to his acceptance into the DRE Pre-School. A DRE candidate undergoes over one hundred (100) hours of intensive classroom instruction and formal training (between the DRE Pre-School and the DRE School), including a basic overview of field sobriety tests, human physiology and drug pharmacology, and an internship period where the DRE candidate conducts actual drug evaluations under the tutelage of a certified DRE instructor. To achieve certification as a DRE, the candidate's opinions must be confirmed by laboratory analysis of biological specimens collected during the training examinations.

At the DRE Pre-School and School, a DRE receives ten (10) days of specialized DRE training about the effects of alcohol and other drugs on the human body. A DRE candidate also must pass a final, written exam before graduation. After graduation, a DRE undergoes a lengthy certification process. During this process, a prospective DRE must perform a minimum of twelve (12) supervised evaluations. The laboratory must corrob-

orate her opinions 75 percent of the time before she can be certified.

The DRE protocol is a standardized and systematic method of examining a Driving Under the Influence of Drugs (DUID) suspect to determine: "(1) Whether the suspect is impaired; and if so, (2) Whether the impairment relates to drugs or a medical condition; and if drugs, (3) The category or combination of categories of drugs that is the likely cause of the impairment."[180] The process is systematic "because it is based on a complete set of observable signs and symptoms that are known to be reliable indicators of drug impairment. A drug recognition expert never reaches a conclusion based on any one element of the examination, but instead on the totality of facts that emerge."[181] The DRE evaluation is standardized, because "it is conducted in exactly the same way, by every drug recognition expert, for every suspect."[182] Standardization is important because it makes the officers better observers, helps to avoid errors, allows for easy comparison of DRE evaluations, and promotes professionalism.

As described earlier, cannabis can cause impairment of the skills necessary for driving like coordination, concentration, and divided attention. Impairment is within the common experience and knowledge of jurors. An officer, therefore, need not be qualified as an expert and a *Daubert*[183] analysis is not necessary. Cannabis appears to interfere with a person's ability or willingness to pay attention. Accordingly, a person under the influence of cannabis does not divide his attention very well.

If a defendant claims the DRE protocol must meet the *Daubert* analysis to be admissible, a prosecutor needs to be prepared to oppose the defendant's claim. The first threshold issue in a *Daubert* analysis is whether the defendant has provided the court with a reason to hold a *Daubert* hearing. *Daubert* imposes a responsibility upon the court to

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[180] *Drug Evaluation and Classification Training: the Drug Recognition Expert School.* U.S. Dept. of Transportation, National Highway Traffic Safety Administration, February 2018.

[181] *Id.*

[182] *Id.*

[183] *See Daubert v. Merrill Dow*, 113 S. Ct. 2786 (1993); *see also Daubert/Frye* subsection of Investigation & Police Topics & Issues, *infra.*

keep "junk science" out of the courtroom, ensure that the trial testimony is well founded, and that it will assist the trier of fact. *Daubert* looks to the scientific theory or technique at issue, whether it has been tested, subjected to peer review, the error rate, the maintenance of standards, and the degree of acceptance within the relevant scientific community. Generally, a *Daubert* hearing may be required where there is 1) a new or flawed scientific test or theory at issue, and 2) the hearing has been properly requested. If those threshold requirements are met, then the hearing should be held to establish that the scientific testimony is well founded in science. Most courts can exercise discretionary authority as to whether to conduct a *Daubert* analysis. This discretionary authority exists to avoid unnecessary "reliability" proceedings in ordinary cases where the reliability of an expert's methods is properly taken for granted.

Often when claiming the DRE protocol needs *Daubert* scrutiny, the defendant will provide nothing more than a bald assertion the expert's testimony is unreliable. Furthermore, not every subject of expert testimony is appropriate for application of the *Daubert* factors, even if a "proper request" had been made. *Daubert's* general principles apply to the expert matters described in the Rules of Evidence. More importantly, however, there must be more than a mere request for a *Daubert* hearing. With respect to such matters, the Rules of Evidence (generally Rule 702) establishes a standard of evidentiary reliability. Furthermore, Rule 702 requires a valid connection to the pertinent inquiry as a precondition to admissibility. Where such testimony's factual basis, data, principles, methods, or their applications are called sufficiently into question, the trial judge must determine whether the testimony has a reliable basis in the knowledge and experience of the relevant discipline. For a court to grant a *Daubert* hearing, the defendant should specifically identify exactly what is being challenged so the court can appropriately determine the necessity and extent of any hearing. The defendant's motion should describe, in terms of the *Daubert* factors, what is believed to be lacking with respect to the validity and reliability of the evidence. In other words, a mere request or demand for a *Daubert* hearing is insufficient without the proper specified challenges.

Often, a defendant will merely file a motion to demand a *Daubert* hearing to determine the admissibility of any expert or technical testimony concerning the SFSTs or the DRE protocol. In this type of motion, the defendant typically does not call the SFSTs or DRE protocol into question or suggest the examination procedures are new or flawed. The defendant will also likely not provide an expert to refute the reliability of the methodology or procedure. In order to prevail on such a motion, the defendant must provide the court with a reason to hold the *Daubert* hearing. Consequently, most defendants will fail to assert a legitimate reason why the court should hold a *Daubert* hearing on the issue of SFSTs or the DRE protocol.

The second threshold question is whether *Daubert* applies at all to the use of SFSTs or the DRE protocol. Assuming, *arguendo*, the defendant has sufficiently challenged the methodology or procedure involved, the second issue the court should determine is whether DRE testimony is governed by *Daubert*. As to the DRE protocol, courts vary their treatment with some finding the use and testimony scientific and, thus, subject to a *Daubert* hearing. Whereas other courts concluding that DREs are not scientific but rather based on knowledge and training, thus only subject to the various jurisdictions' requirement for expert opinion testimony.[184] Even under a *Daubert* analysis, however, a DRE witness can testify, because the *Daubert* factors have been met.

The witnesses at issue are law enforcement officers, who have been given specialized training to recognize the impairment caused by drugs (including alcohol). These law enforcement officers generally do not possess an advanced science degree in the area of science. Rather, they have training and experience in the recognition of certain physiological symptoms characteristic of drug impairment. The DRE generally cannot testify to the details of the science behind the drug use; instead, a DRE is trained to recognize the well-documented symptoms that result when certain drugs are used. In other words, the DRE would not be asked, nor would they be qualified to explain why, consumption

[184] The National Traffic Law Center maintains a library of legal compilations of states' laws, including compilations on DRE case law, *Daubert / Frye*, Drugged Driving statutes, and HGN case law.

of alcohol or certain drugs causes certain symptoms. Rather, the DRE is trained to identify those symptoms and reach a conclusion based on those symptoms. This is not, therefore, a situation where a *Daubert* hearing is required, since the prosecution generally does not intend to introduce scientific or technical expert testimony to the jury. Alternatively, the prosecutor seeks to introduce expert testimony from DREs, trained to recognize specific physical manifestations of the use of drugs. This testimony would parallel a law enforcement officer's testimony (*e.g.*, via SFSTs) about someone under the influence of alcohol. That testimony does not require a *Daubert* hearing and, similarly, the court should not order a *Daubert* hearing to admit the testimony of the DRE protocol.

Furthermore, the relevant testimony at issue—the physical signs and symptoms of drug use resulting in impairment—is not novel or new in the scientific community. Rather it is reliable and widely accepted. In fact, the physiological effects of various drugs are so well documented, it led to the characterization of various substances as Schedule I, Schedule II, etc. Most importantly, treating physicians all over the world rely upon the specific characteristics of drugs to treat their patients. Consequently, those physicians choose their treatment drug carefully based upon those characteristics. Similarly, pharmacies now often have computer programs to monitor potential interactions of a new drug with other previously prescribed drugs since any additional drug may have a potentially dangerous physical interaction.

Courts that have considered the DRE protocol have found it to be valid, accurate, reliable, and, therefore, admissible into evidence. For example, the Nebraska Supreme Court examined a challenge to the DRE protocol and the use of a DRE officer to testify to the examination and his conclusions.[185] The court noted that it is a nationally standardized protocol based on the well-established concept that drugs cause observable signs and symptoms affecting vital signs and changing the physiology of the body. The court also noted that studies conducted by the Johns Hopkins University School of

[185] *State v. Daly*, 278 Neb. 903, 775 N.W. 2d 47, (Neb. 2009).

Medicine,[186] in conjunction with the National Highway Traffic Safety Administration, as well as studies by the Los Angeles Police Department,[187] the State of Minnesota,[188] and the State of Arizona[189] found that the DRE protocol showed a high degree of accuracy, and that one study showed that the protocol for detecting cannabis intoxication was the most reliable, corroborated by toxicology in 91.8 percent of cases. The court said the State of Arizona's findings that the DRE decisions were "highly accurate: and that the DRE program, supported by the toxicology laboratory, was a valid method for detecting and classifying drug-impaired individuals."[190] The *Daly* court noted that, based largely on that data and those studies, "every court to have considered the issue has concluded that testimony based upon the DRE protocol is admissible into evidence."[191]

A defendant's failure to provide the court with a specific reason to hold a *Daubert* hearing, coupled with numerous studies validating DREs, should provide the court with reasonable grounds to deny a defendant's motion. The underlying methodology of DREs has been found to be reliable in most courts where it has been considered. As such there is adequate reliability to ensure DRE evidence is reliable, it is not "junk" science, and, therefore, properly admissible evidence. A compilation of state DRE case law may be obtained from the National Traffic Law Center through its website: https://ndaa.org/resources/technical-assistance-request/.

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[186] *Id.*, referencing Bigelow, George E., Bickel, Warren K., Roache, John D., Liebson, Ira A., and Nowowieski, Pat (1986). Identifying Types of Drug Intoxication: A Laboratory Evaluation of Subject-Examination Procedures. In L.S. Harris (Ed.), *Problems of Drug Dependence*, 1985 (p. 492). NIDA Research Monograph No. 67, DHHS Publication No. (ADM) 86-1448. Washington, DC: Government Printing Office.

[187] *Id.*, referencing Compton, Richard P. (1986). Field Evaluation of the Los Angeles Police Department Drug Detection Program. National Highway Traffic Safety Administration, Washington, DC (DOT HS 807 012).

[188] *Id.*, referencing Hardin, Glenn G., Meyer, Robert F., and Jejurikar, S.G. (1993). Minnesota Corroboration Study: DRE Opinions and Toxicology Evaluations. Minnesota Department of Public Safety.

[189] *Id.*, referencing Adler, Eugene V. and Burns, Marcelline (1994). Drug Recognition Expert (DRE) Validation Study. Final Report to Governor's Office of Highway Safety, State of Arizona.

[190] *Id.* 775 N.W.2d at 58.

[191] *Id.* at 59.

Prescription Drugs

Some states may allow doctors to write a recommendation for cannabis possession and/or use. Local law will dictate how evidence of any recommendation or license (the name will differ by jurisdiction) may be introduced in court, if at all.

If having a lawfully prescribed drug is the defense, a prosecutor should consider responding that marijuana is a Schedule I drug. As a Schedule I drug, there is no legal prescription. Entitlement, therefore, is not a legally recognized defense. Even assuming a driver is legally using cannabis, as it is with a legal prescription, a person may not legally drive while impaired by the drug. For more information on this, see *Challenges and Defenses II Claims and Responses to Common Challenges and Defenses in Driving While Impaired Cases* available from the National Traffic Law Center.

Call out vs. Tox Report

A DRE does not complete her evaluation until she receives a chemical test specimen from a subject, or the subject refuses to provide a specimen. The results of that toxicological sample will either confirm or disagree with the DRE's opinion. How does a prosecutor reconcile the situation when a DRE makes a call a certain drug is present, and the toxicology report disagrees? Obviously, the defense will be the first to point out the discrepancy, but is the prosecutor's case over before it begins? Not at all.

Drugs affect each human differently and affect each body very differently from alcohol. Toxicological samples taken from a suspect may confirm the presence of a substance other than alcohol, but a positive result simply provides a prosecutor evidence that the suspect ingested the drug. Unlike alcohol, however, a positive confirmatory test will not provide direct evidence that the suspect was impaired by the drug at the time of arrest. This concept often proves to be a difficult one to understand even for experienced prosecutors with extensive knowledge of prosecuting alcohol-impaired drivers.

Toxicology's role in the totality of the DRE evaluation is to provide scientific corroboration of the DRE opinion. A discrepancy between a DRE call and a later toxicological report will only have two implications for a prosecutor. First, it's possible the DRE

was mistaken in her assessment of a drug category and made the wrong call. After all, drug influence is not an exact science, and a certain drug's effects might present differently in different people. A driver does not have to fall squarely in a single category, however, for him to be dangerous on the roadway. A prosecutor should examine whether the DRE officer observed signs of impairment even though her call was not corroborated by the final toxicology result. Next, it is possible that the report does not corroborate the DRE opinion even though her opinion of impairment is correct. Laboratories are similar, but each employs its own methods and policies for testing. There may be certain drugs a laboratory simply may not test for, while other drugs will not be detected unless they are present at relatively high concentrations.

A prosecutor should not fear a case where the DRE and toxicology result are not in agreement. A positive toxicology result in a DRE evaluation is an important part of the 12-step program, but it should only be considered along with a DRE's observations.

Intoxication as a Defense

Intoxication is a condition in which a person's normal capacity to act or reason is inhibited by alcohol or drugs. A defendant may claim that because of his intoxication, he was unable to know or understand what he was doing. The argument may be that the defendant was involuntarily or voluntarily intoxicated. Some individuals are trying these defenses, because of the varying symptoms exhibited after cannabis or synthetic cannabis use claiming he did not know what the drug would do.

Involuntary intoxication is where a person mistakenly consumed or was forced into taking a drug. Note that involuntary refers to the act of taking a drug(s), not a result of impairment (*e.g.*, poor decision making like the voluntary act of getting in a car to drive). Involuntary intoxication is a defense in most states. When a person is forced to consume an intoxicant against her will (*e.g.*, through second-hand marijuana smoke), the person may argue that she was involuntarily intoxicated. An involuntarily intoxicated person may not be able to distinguish right from wrong at the time of committing the wrongful act and, therefore, may have a valid defense.

A defendant may claim voluntary intoxication when the defendant became intoxicated on purpose to negate a specific intent crime (*i.e.*, defendant must want to commit an act and intend to accomplish a specific result). Voluntary intoxication is an affirmative defense, so the defendant bears the burden of proving something (depending on the actual defense, elements of the offense, and law on affirmative defenses).

Neither toxicologists nor pharmacologists (whether the prosecutor's expert or the defendant's) should opine about the absolute intent of an individual based solely on the drug results. See American Academy of Forensic Science Standards Board (ASB) Guidelines.

Impaired driving offenses do not require proof of intent or that the defendant intended to become intoxicated. A prosecutor should consider filing a pre-trial motion to address this argument if he anticipates either of these defenses.

CONCLUSION

With the proliferation of legalized marijuana in this country, cannabis-impaired driving is becoming more prevalent. It is imperative for law enforcement officers and prosecutors to become more educated about the signs and symptoms of cannabis impairment so they may effectively prosecute these types of impaired driving cases. As described in this monograph, it is important for an officer to be properly educated by courses approved by IACP and NHTSA. Further, it is critical for law enforcement officers to accurately document all of the observations of the vehicle in motion as well as from the personal contact made with the driver and the pre-arrest screening of him. An arresting officer should also not hesitate to call upon a DRE for further testing of a suspect in an effort to help identify the cause of impairment. Whether or not a DRE is utilized during the arrest process, a prosecutor can always enlist the assistance of a DRE, as well as the assistance of a toxicologist, in properly preparing for a cannabis-impaired driving case. When needed, law enforcement officers and prosecutors are encouraged to reach out for further assistance from state TSRPs, the NTLC, NHTSA, and IACP.

Appendix 1

PREDICATE QUESTIONS FOR ARRESTING / SFST OFFICER

CONTENTS

Direct Examination of Arresting Officer

Officer Background/Training/Experience (Identify the officer)

Q: Name

Q: Employment

Q: Length of Employment

Q: Assigned Duties

Q: Training

Q: What training have you received concerning impaired driving?

Q: Have you received any certifications of completion in this field? (SFST, ARIDE, or Drug Classification & Evaluation Program)

Q: Have you taught at any impaired driving classes?

Q: During the last month (six months) / (year), approximately how many vehicles have you stopped for suspicion of impaired driving?

Q: Was that a typical month (six months) / (year) for you?

Q: About how many of those stops resulted in an arrest for impaired driving?

Vehicle in Motion (Identify the Reasonable Suspicion)

Q: Were you on duty on the date of _____?

Q: What kind of vehicle were you in?

Q: Did you observe anything out of the ordinary at (time / location)?

Q: What brought your attention to the Defendant's car?

Q: Where was your vehicle in relation to his?

Q: What County was he in?

Q: What road was he on?

Q: Do you recognize the driver of the vehicle in the courtroom today?

Q: Could you please point him/her out and identify him/her for the record?

Have the record reflect the witness has identified the defendant

Q: What did you notice about how the car was being driven?

Q: Was there other traffic on the roadway?

Q: About how long did you watch him/her before you decided to pull him/her over?

Q: Did you turn on your blue lights / activate siren?

Q: What did he/she do then?

Q: How long did it take him/her to stop?

Q: Where did he/she stop?

Q: Did he/she stop appropriately?

Q: Is there a video tape recording that includes the defendant's driving?

Introducing Video in Trial / Motion Hearing

The video must be —

Q: Authenticated

- Have exhibit marked as evidence (ID only)
- Show exhibit to opposing counsel
- Show to witness
- Equipment in good working condition
  - Machine was tested prior to and after event
- Chain of custody — securely stored video
  - Video was labeled, sealed, and stored.
  - Operator recognizes and can identify the tape.
- Qualified witness as to the events involved
  - Operator was experienced & qualified to operate the machine
  - Operator heard/saw what was being recorded
  - Operator reviewed the video
  - Operator can identify voices, persons, and locations on video
- Accurate reproduction of events involved (accurately recorded scene)
  - Witness is familiar w/ the scene portrayed in video
  - Witness is familiar w/ the scene at relevant time & place

- Video accurately recorded sounds/images
- Video " fairly & accurately" shows scene as it appeared on the relevant date

Q: Relevant

- Have officer describe scene and situation

Q: Play the tape.

- ***Note:*** *Ask the officer to explain as the video plays. Be familiar with the pause button.*
- ***Note:*** *Stop the tape when the defendant stops the car.*

Personal Contact (Post-Stop Contact)

Q: Once the Defendant stopped, what did you do?

Q: Did you walk up to his/her car/truck?

Q: How many people were in the car/truck?

Q: What did you first say to him/her?

Q: How did he/she respond?

Q: How did he/she sound?

Q: How did he/she smell?

Q: How did you learn his/her name?

Q: How did you verify his/her name?

Q: How did he/she react to your request?

Q: What identification did he/she give you?

Q: Did you notice anything about him/her?

Q: What did you ask him/her then?

Q: What did he/she answer?

Q: Where was he/she at the time?

Q: Did he/she get out of the car?

Q: Why?

Q: How did he/she look as he got out?

Q: How did he act as he got out?

Q: Did you receive training as to indications of impairment from alcohol and/or drugs at the Academy and in additional training sessions?

Q: What are some indicators of impairment?

Q: After the Defendant got out of the car, did you have a chance to look at him/her?

Q: How far from him/her were you?

Q: How did his/her clothes look?

Q: How did his/her eyes look?

Q: Did you listen to him/her?

Q: Did he/she say anything about his/her driving?

Q: Did he/she say anything about whether he/she had been drinking alcohol?

Q: How did he/she sound?

Q: Did you smell his/her breath as he/she spoke to you?

Q: How did he/she smell?

Q: Did you see any unusual actions?

Q: Did you hear anything unusual?

Q: Did you notice any indications of impairment consistent with your training?

Q: Did you note your observations in writing?

Q: Was the Defendant cooperative at this time?

Q: Did the videotape record the Defendant getting out of his/her car?

Q: With your Honors permission, may I play the video?

- ***Note:*** *Stop the video before the Field sobriety tests.*

Pre-Arrest Screening (Administration of Standardized Field Sobriety Tests)

Q: Did you decide to ask the defendant to perform standardized field sobriety tests or SFSTs?

Q: Why?

Q: What are standardized field sobriety tests?

Q: What are divided attention tasks?

Q: Why are they given?

Q: About how many times have you administered SFSTs?

Q: About how many times the past month?

Q: What tests do you usually give?

Q: Why?

Q: What training have you received regarding standardized field sobriety tests?

Q: Where have you received this training?

Q: Have you watched others administer SFSTs?

Q: Have you seen people successfully complete the SFSTs?

Q: What happens to those drivers who successfully complete the SFSTs?

Q: Did the Defendant perform standardized field sobriety tests?

SFSTs, the Defendant, and the Horizontal Gaze Nystagmus Test

- **Caution**: *Do not ask these questions without the permission of the Court. The witness may have to be qualified as an expert.*

Q: What was the first standardized field sobriety test you asked the Defendant to perform?

Q: How is the test given?

Q: How did you explain it to him/her?

Q: When you first looked at his/her eyes, did you see anything unusual?

Q: Did you ask if the Defendant had any eye problems?

Q: Was he/she able to follow your pen (or stimulus), when you made the first pass?

Q: How did his/her pupils compare as far as their size?

Q: How did the eyes look when you checked for smooth pursuit?

Q: How did the eyes look when you held the pen all the way out?

Q: What is it called when you hold your pen all the way out?

Q: Why do you look for nystagmus at maximum deviation?

Q: When you tested for onset of nystagmus, when did his/her eyes first start acting unusual?

Q: How did you measure that?

Q: How did you score the test?

Q: How many clues are there?

Q: What are they?

Q: When you see clues, what does that mean to you?

SFSTs, the Defendant, and the Walk and Turn Test

Q: What was the next test given?

Q: Why was it given?

Q: What is the purpose of the test?

Q: How did you explain it?

Q: Did you ask if the Defendant was physically able to walk?

Q: Did you ask if he/she was diabetic?

Q: Did you ask if he/she was taking medication?

Q: Did you ask any other questions?

Q: If so, how did he/she respond?

Q: Did you have to repeat any of those questions? How many times?

Q: Did the Defendant appear to understand your questions?

Q: What is the purpose of the 9-step Walk and Turn Test?

Q: How did you explain it?

Q: How did the Defendant appear when you explained it?

Q: Did he/she say whether he/she understood the instructions?

Q: What is the instruction stage?

Q: How did he/she do during the instruction stage?

Q: What is the walking stage?

Q: How did the Defendant do as he performed the walk and turn?

Q: How many clues of impairment are there?

Q: How many clues did you see from the Defendant?

Q: When you see _____ clues, what does that mean to you?

SFSTs, the Defendant, and the One Leg Stand Test

Q: What was the next test given?

Q: Why was it given?

Q: What is the purpose of the test?

Q: How did you explain it?

Q: How did the Defendant appear when you explained it?

Q: Did you ask if he/she was physically able to stand on one leg?

Q: How did he/she do as he/she performed?

Q: How many clues are there?

Q: How many clues did you see from the Defendant?

Q: When you see _____ clues, what does that mean to you?

Other Field Sobriety Tests

Q: Do you sometimes give some other tests?

Q: Why?

Q: Did you give other tests to this Defendant?

Q: Which ones?

Q: What did you observe during the test(s)?

Q: What did this indicate to you?

Q: Were the Defendant's attempts to perform the field sobriety tests recorded on the video?

Q: You Honor, may I play the video?

- ***Note:*** *While the video plays, ask the officer to explain.*

Arrest Decision / Custody

Q: After the defendant completed the standardized field sobriety tests (and other tests), what did you do?

Q: Why?

Q: Where was he/she placed?

Q: Did you search the Defendant's car?

Q: What did you find?

Q: Was there any evidence of alcohol or drugs in the car?

Q: Was the car towed? If not, why?

Post-Arrest Transport to Jail

Q: How did the defendant act during the ride to the jail?

Q: Was there any conversation?

Q: Did you interrogate the Defendant?

Q: Did he/she talk about what he/she did prior to his/her arrest?

Q: Once you were at the jail, did anything unusual occur?

Implied Consent

Q: What is an implied consent form?

- *Mark the form for identification*
- *Pass the officer the implied consent form*

Q: Is this the implied consent form that you read to the Defendant that day?

Q: Did you read to the Defendant this implied consent form?

Q: Where were you at the time you read this form to the Defendant?

Q: Did you read it word for word?

Q: Did the Defendant read the form himself/herself?

Q: Would you read it to the jury word for word?

- *Have officer read implied consent form.*

Q: Did the Defendant sign the form?

Q: Did he/she check a box to indicate what he/she wanted to do?

Q: Did the Defendant tell you what he/she wanted to do as well?

Q: What was his/her decision?

- *Move for the admission of the implied consent form into evidence*

Breath Test

Q: Did you request the Defendant to take a breath test?

Q: After the Defendant agreed to take the test, where was he/she taken?

Q: Are you familiar with an instrument known as an Intoxilyzer?

Q: Have you had training and experience with the Intoxilyzer (or whatever instrument used in this case)?

Q: Please describe this training.

Q: Have you been properly certified in accordance with the standards of _____ Police Department (or other agency that maintains the instruments)?

Q: Is the Intoxilyzer approved for use in this state?

Q: How many times have you administered tests using the Intoxilyzer?

Q: Have you previously testified in court as a qualified DUI officer?

Q: Please explain how you operate the Intoxilyzer?

Q: Is there a procedure for operating the Intoxilyzer?

Q: What is the procedure?

Q: Did you follow that procedure when administering the test to the Defendant?

Q: Did you input the required info into the instrument?

Q: Did you allow the instrument to purge?

Q: Did you wait for the instrument's directions?

Q: Did you instruct the Defendant on how to blow into the instrument?

Q: Did the defendant submit to the test?

Q: Did you obtain printout results from the instrument?

Q: What was the Intoxilyzer assigned to you / used in this case on _____?

Q: Does it have a serial number?

Q: What is the serial number of the instrument used?

Q: Was the instrument in good working order at the time of the test?

Q: Was the instrument used certified by (the agency in jurisdiction that certifies)?

Q: Was the instrument tested regularly for accuracy?

Q: Was the instrument working properly when the test was performed?

Q: Did you observe the Defendant prior to the test?

Q: For how long did you observe the Defendant prior to the test?

Q: During the 20 minutes you were continuously observing the Defendant, did he/she have any foreign matter in his/her mouth?

Q: Did the Defendant eat anything during the 20 minutes?

Q: Did the Defendant drink anything during the 20 minutes?

Q: Did the Defendant drink any alcohol during the 20 minutes?

Q: Did the Defendant chew anything during the 20 minutes?

Q: Did the Defendant smoke anything during the 20 minutes?

Q: Did the Defendant regurgitate anything during the 20 minutes?

Q: Did the Defendant vomit anything during the 20 minutes?

Q: Did the Defendant belch anything during the 20 minutes?

Q: Why do you look for these things during your 20 minutes observation of the Defendant?

Q: If a foreign substance were in his/her mouth, what would the instrument do?

Q: If there were an error with the Intoxilyzer, would it give a numerical result?

Q: When the Defendant blew into the Intoxilyzer, did the instrument provide a numerical result?

Q: Will anything else besides alcohol cause the instrument to yield a numerical result?

Q: What was the legal limit on _____?

Q: Did the Defendant blow into the Intoxilyzer?

Q: What were the results?

Q: Did the results of the BAC test confirm your suspicions?

Q: What did the results of the Intoxilyzer test lead you to suspect?

Q: Did you base your opinion of the Defendant's level of impairment solely on

the BAC results?

Q: What did you base your opinion on?

- Mark defendant's intoxilyzer ticket for identification
- Have officer identify defendant's intoxilyzer ticket
- Move for admission of defendant's intoxilyzer ticket into evidence

Blood Test

Q: Did you request this defendant take a blood test?

Q: After the Defendant agreed to take the blood test, where did you go?

Q: Was the Defendant taken to a particular room?

Q: Did you go with him/her?

Q: What type of employee withdrew the blood?

Q: How was the blood withdrawn?

Q: What happened to the blood after it was withdrawn?

Q: What did you do with the blood vials in the collection box after you left?

Q: Have you received the blood test result from the (laboratory used in this case)?

Q: Do you have the result with you?

- Mark blood test result for identification

Q: Is there a signature above the line that says "Authorized Representative"?

Q: Who signed as the Authorized Representative of the (laboratory used in this case)?

Q: What was the result of the blood test?

Q: What was the legal limit on _____?

Q: Did the result confirm your suspicions?

- Move for admission of blood test results into evidence

Q: Did you base your opinion of the Defendant's level of impairment solely on the BAC result?

Q: What did you base your opinion on?

Refusal of Test

Q: After you read the Defendant the Implied Consent form, how did he/she respond?

Q: What did he/she say?

Q: Did you explain to the Defendant that he/she would lose his/her license to drive if he/she refused?

Q: Did the Defendant appear to understand what you told him/her?

Q: Did he/she ask any questions?

Q: Did the Defendant ask you to repeat anything you told him/her?

Q: Did he/she say why he/she would not take the test?

Q: Did you base your opinion of the Defendant's impairment solely on his refusal to take the test?

Q: What did you base your opinion on?

Opinion

Q: In your occupation as a police officer, have you observed persons driving under the influence of alcohol and/or drugs?

Q: Based on your training (list courses here if impressive) and years of experience, did you form an opinion as to whether this Defendant was under the influence?

Q: What is your opinion?

Q: What is your opinion based on?

Q: Based on your training and experience did you form an opinion as to whether the Defendant could safely continue to drive in _____ County on the __ day of _____ , 20__?

Q: What is your opinion.

Appendix 2

PREDICATE QUESTIONS FOR DRE OFFICER

CONTENTS

Introduction of the DRE Officer

Personal Information / Background / Experience

Q: Please tell the jury your name and occupation.

Q: Are you a certified peace officer in the State of _____?

Q: How long have you been employed as a law enforcement officer?

- Please tell the jury about you prior employment (if relevant to current employment such as prior law enforcement experience, military, etc.)
- Please tell the jury about your formal education (if any)

Q: Have you had any professional training and/or certification for your present employment?

- Please tell the jury about your law enforcement training and any certifications you have received
  - Where did you receive your training?
  - When did you receive your training?
  - How long was that training?
  - What certifications did you receive for successfully completing that training?
- Please tell the jury about any membership you have in a professional organization (if applicable, e.g. IACP, DRE section member, etc.)

Q: What are your current duties and responsibilities as a law enforcement officer?

Q: Have you had any awards or accommodations? (If applicable)

DUI Training

Q: Have you had any training specific to DUI detection and enforcement?

Q: Please describe the training you received

DUI Detection — Vehicle in Motion

Q: Does a person have to violate a traffic law to be pulled over?

Q: Describe some of the things that you have observed in your time working as a peace officer that impaired people do while driving that make them noticeable? (swerving, weaving, stopping when not necessary, running stop signs or lights, traveling well below the speed limit)

Q: Describe some of the things that you have observed in your time working as a peace officer that impaired people do after you have initiated a stop? (pulling over in unusual places, not noticing lights or sirens

DUI Detection — Personal Contact

Q: Did you receive any training on how alcohol and drugs affect the body?

Q: Based upon this training, what are some of the initial observations of a person that might indicate impairment? (smell, sight)

Q: Based upon this training, as contact with an impaired person continues, what are some further observations? (getting out the car, eyes, speech, dexterity and balance, odd responses)

Q: In your time as a peace officer, did you experience these indicia while working DUI cases?

DUI Detection – Pre-Arrest Screening

Q: Were the Standardized Field Sobriety Tests (SFSTs) part of your DUI training? Please describe

Q: In order to successfully complete your DUI training did you have to demonstrate proficiency on the SFSTs?

- How was this completed?
- Did you successfully complete this portion of the training?
- When?
- Update(s)?

Have you had any training in operating the breath instrument?

Q: What did your training entail?

Q: Are you certified to operate the breath instrument?

Q: When?

Q: Update(s)?

Drinking labs

Q: Have you ever participated in a drinking lab?

Q: How many times?

Q: Please describe to the jury the purpose of the drinking lab.

Q: During the lab(s), did you have an opportunity to administer the SFSTs to those participating in the lab and then compare your opinion regarding their level of impairment to their actual breath alcohol levels?

Q: Were you able to accurately and reliably discern their level of alcohol impairment?

Q: Have you participated in any labs where subjects were provided illegal or illicit drugs?

- Why not? (illegal, dangerous, liability)
- *exception may be participation in a green lab, cert nights

Have you had an opportunity to utilize what you learned in DUI detection and enforcement while working?

Q: Approximately how many times have you stopped someone for DUI?

Q: Do you arrest everyone you stop for a DUI investigation? (check with officer before asking question)

- Please explain

Q: Approximately how many times have you administered the SFST?

Q: Of those times, approximately how many have you determined were not impaired?

Q: Approximately how many DUI arrests have you made in your career as a law enforcement officer?

Q: On alcohol DUI arrests, did you have an opportunity to give them a chemical test?

Q: After giving the person a chemical test, were you able to compare your opinion of impairment to their actual BAC?

Q: Based on that comparison were you able to make good arrest decision using the SFST?

Q: Approximately how many of your DUI arrests involved drug impairment?

Q: Have you had any other opportunities to deal with an individual who was impaired by drugs? Please describe (drug or drug related offenses)

Have you had any DUI SFST Instructor Training? (if applicable)

Q: Please describe the training you received to become a DUI SFST instructor?

Q: Do you have any teaching or lecture experience?

- Please describe how often you teach and what classes you teach

Have you had any training on drug impairment and driving?

(Advanced Roadside Impaired Driving Enforcement (A.R.I.D.E.), Drug Evaluation and Classification (D.E.C.) course/certification (a/k/a DRE program), DRE instructor course, conferences, college courses, narcotics training, Drug Alcohol Recognition Technician (D.A.R.T.) Course, Drug Impairment Training for Educational Professionals (D.I.T.E.P.), published articles/classes taught by DRE), or similar)

Have you testified in court regarding DUI signs and symptoms?

Q: Approximately how many times?

Have you previously testified as an expert in a case where impairment due to non-alcohol drug use was an issue?

Q: Approximately how many times?

Q: In which courts?

Q: What expertise do you have? (DRE)

DRE Training and Overview

You previously testified that you are a DRE, would you please describe generally what a DRE is?

Q: Could you explain the DEC program?

Q: Did you receive special training to become a DRE?

Q: Is there a selection process that you go through to be a part of this training?

- Applied for training
- Selection committee
- Needed recommendation from supervisor
- Needed additional recommendations (prosecutor, DREs)

Q: Please describe the history of the DRE Program? When was the DRE program developed?

- National
- Local/State

Q: Is the program recognized nationally?

- How many states participate in the DRE Program?

Q: Is the program recognized internationally?

Q: Would you please generally describe the DRE training you received:

- When did you attend the training?
- Where did you attend the training?
- Are there standards used to determine proficiency?
- What is the purpose of the training?
- Does completion of the DRE Program qualify you to perform DRE duties?
- Update(s)?

Q: How many phases are there in the DRE training to become a certified DRE?

- What are those phases?

DRE Preschool (First Phase)

Q: Can you please describe the DRE Preschool in more detail?

Q: Were you given any tests or exams during the Preschool?

Q: Were you taught how to take vital signs during the Preschool?

- What signs were you taught to check?
- What did you learn about normal range for vital signs?
- What instruments were you taught to use during the Preschool?
- Were you provided with similar instruments to conduct subsequent evaluations?
- Did you have any training during the Preschool on use of SFSTs?
    - Were you tested on these SFSTs for proficiency during the Preschool?
    - Are these the same SFSTs you use for a typical DUI investigation?
    - Are these the same SFSTs that you are an instructor for? (if applicable)
- Did you have to successfully complete the DRE Preschool before moving to the DRE school?

DRE School (Second Phase)

Q: Can you please describe the training you received in the DRE school? (Techniques of DRE, Physiology of Drugs, Effects of Drugs, Legal Considerations, Toxicology)

Q: As part of the training you received to become a DRE, were you trained on how to perform a drug influence evaluation?

- Can you please generally explain what a drug influence evaluation is?
- What is the purpose of the drug influence evaluation?
- How can conducting a drug influence evaluation help you in a drugged driving case?
- Are you able to pinpoint a specific drug? Why not?
- How many drug categories are there in the DRE program?
    - What are the seven drug categories? (CNS Depressants, CNS

Stimulants, Hallucinogens, Dissociative Anesthetic, Narcotic Analgesics, Inhalants, Cannabis)

- What is the basis for grouping drugs into these categories? (common signs and symptoms)
- Does each category have known physical effects on humans?
- Where do these categories get their foundation? (medical doctors, researchers, trained law enforcement officers)
- Did a physician/optometrist teach any portion of your DRE school? (if applicable)
    - What did he/she talk about?
- Are you familiar with the DRE Matrix?
- Please explain what the DRE Matrix is to the jury

- Please explain why you do a drug recognition evaluation and not just get a chemical test

Q: Were there any tests or exams given during this portion of the training?

- Were you required to pass these tests and exams before moving on to the field testing?
- What score was required to successfully complete the DRE classroom portion of your training?

Field Testing (Third Phase)

Q: Describe the field testing portion of your DRE training

Q: Where did you get subjects for the field testing?

Q: How many people did you conduct drug influence evaluations on during your field training? (12)

Q: Was there any procedure in place to make sure you were correctly performing your drug influence evaluations?

Q: Did the individuals you performed drug influence evaluations on also receive chemical tests?

- How many of these drug influence evaluations were confirmed by chemical tests/toxicology?
- How many confirmations were required to successfully complete the field testing? (9 out of 12 or 75%)

Q: Were there any other requirements regarding the types of drug categories or the number of drug categories you had to recognize for successful completion? (correctly identify 3 categories of drugs confirmed by chemical test)

Q: After the field testing, did you have any additional exams?

Q: What was required to pass the final knowledge exam?

Q: Are there any other requirements? (recommendation for certification by at least 2 DRE instructors)

Q: Does the International Association of Chiefs of Police require certain standards for both instructors and students to be certified as a DRE?

- What are those standards?

Q: Did you successfully complete all the required standards to become a DRE?

Q: Upon being qualified to become a DRE, were you issued any form of certification?

- Do you recognize this document? (copy of DRE certification)
- Can you tell the court what the document is? (certification issued by IACP)
- Is it a true and accurate copy?
- Admit a copy of the DRE certification

Q: When did you become a certified DRE?

Continued Certification

Q: What records do you keep to maintain your certification as a DRE? (DRE progress log)

- What is a rolling log?
- Do you recognize this rolling log?
- Is it a true and accurate copy?

- Does this show every DRE evaluation you have ever performed?
- How many evaluations have you performed?
- What percentage of your cases were supported by toxicology?
    - What does this mean?
- Admit copy of rolling log into evidence

Q: Recertification (if applicable)

Q: Do you have any additional training in DRE? (if applicable - DRE Instructor)

Q: What was required for you to become a DRE instructor?

DRE Evaluation

Q: What procedures do DREs use to determine whether someone is under the influence of drugs? (drug influence evaluation)

Q: Is the DRE Protocol generally accepted to be an accurate and reliable means of identifying drug influence and impairment?

Q: How many people have you evaluated for drug influence and impairment?

Q: Approximately how many times have you determined that a DUI suspect was under the influence of drugs?

Q: Have you ever confirmed your opinions by chemical tests?

Q: Based on your training and experience, can you accurately and reliably determine whether someone is under the influence of drugs?

Q: Based on your training and experience, assuming a person is impaired, can you accurately and reliably identify the particular drug category causing a person's impairment?

Q: Are there procedures for performing a drug influence evaluation? (12-step protocol)

Q: Do you use this 12-step protocol to identify which drug category is impairing **the** individual?

- Can there be more than one category in use? (poly-drug)

- Can this 12-step protocol aid in identifying no impairment by drugs? (medical rule out)

Q: Can you please list the 12 steps of the DRE Protocol? (have protocol as demonstrative)

1. Breath Alcohol Test
2. Interview of Arresting Officer
3. Preliminary Examination and first pulse – assessment of person's speech, breath, appearance, demeanor, and to determine if there are any medical conditions
4. Examination of the Eyes – HGN, VGN, LOC
5. Divided Attention Psychophysical Tests –Modified Romberg Balance, Walk and Turn, One Leg Stand, and Finger to Nose
6. Vital Sign Examinations and second pulse – systematic checks of person's blood pressure, pulse rate, and temperature
7. Dark Room Examinations – systematic checks of the size of the pupils of the person's eyes, the reaction of the pupils to light, and evidence of ingestion of drugs by nose or mouth
8. Examination of Muscle Tone
9. Examination for Injection Sites and third pulse
10. Suspect's Statements and Other Observations
11. Opinion of the Evaluator
12. Toxicological Examination

Admit as an Expert for Testimony

Specific Application of DRE 12 Step Protocol to Defendant

Q: Where you working on (date) and (time)?

Q: How were you involved in this investigation? (conducted a drug influence evaluation)

Q: Who was the subject of the drug recognition evaluation you performed?

- Do you see him/her in the courtroom today?
- Would you please identify him/her for the jury?

Breath Test

Q: Please describe the first component of the evaluation

Q: Was a breath test done on the defendant?

Q: Why do a breath test?

Q: Why do a breath test even if there is no indication of alcohol use?

Q: Are you aware of the defendant's breath test results?

- How are you aware of these results?
- What was the result of the defendant's breath test?

Q: Do you have any experience in recognizing alcohol impairment at known breath alcohol concentrations?

Q: What, if anything, did the breath test indicate to you as to whether alcohol was the cause or contributing factor to impairment of the defendant?

Q: Did you record this step accurately?

Interviewing Arresting Officer

Q: Please describe the second component of the evaluation

Q: Did you interview the arresting officer in this case?

Q: Did the arresting officer tell you about his observations of the defendant?

Q: Did the arresting officer tell you about what, if anything, the defendant said?

- What, if anything, did those behaviors or statements mean to you? (if allowed by judge)

Preliminary Examination and First Pulse

Q: Please describe the third component to the DRE evaluation

Q: What are the purposes of the preliminary examination?

Q: Did you conduct a preliminary examination on the defendant?

Q: Did you ask the defendant any questions?

- Please tell the jury what questions you asked the defendant and what answers the defendant gave in response to those questions
- If you need to refresh recollection with the drug influence evaluation form
  - Would it refresh your recollection to refer to the Drug Influence Evaluation form you filled out while performing an evaluation on the defendant?
  - Do you recognize this document?
  - Would you please describe to the jury what the document is?
  - Is it a true and accurate copy of your evaluation?
  - Did you record the defendant's responses to you questions on this form as you were asking them?
  - Now that you have had an opportunity to take a look at your evaluation do you recall those questions and answers?
  - Please tell us those questions and the defendant's responses
- Questions to the defendant
  - What time is it now?
  - Are you sick or injured?
  - Are you diabetic or epileptic?
  - Do you take insulin?
  - Do you have any physical defects?
  - Are you under the care of a doctor or dentist?
  - Are you taking any medications or drugs?
  - Do you suffer from allergies? (if applicable)
  - Do you wear contacts or glasses? (if applicable)
  - Do you have blindness in either eye? (if applicable)

- What was the significance of the defendant's responses to these questions?

Q: What observations did you make of the defendant during this preliminary examination?

- Speech
- Eyes
- Face
- Breath
- Balance
- Demeanor
- Attitude

Q: During this phase, did you take the defendant's pulse?

- Why do you take the person's pulse during an evaluation?
- How many times do you take the person's pulse during an evaluation? Why?
- Please describe how you take a person's pulse?
- Did you use the same procedure you just described to take the defendant's pulse?
- What was the defendant's pulse?
- Is there an expected range for which most peoples' pulses fall during an evaluation?
- What is the normal range for a person's pulse? (60-90 beats per minute)
- Is this a medically accepted range for normal?
- Based upon your experience and training, what is the significance of the defendant's pulse?

Q: Did you accurately record all observations during this step?

Q: Based upon your training and experience, what did your observations during the preliminary examination mean to you?

Eye Examination

Q: Please describe the fourth component to the DRE evaluation

- Equal Tracking
- HGN
- VGN
- Lack of Convergence
- Pupil Size

Q: Equal Tracking

- What is equal tracking?
- Why do you look for equal tracking?
- Would you please explain and demonstrate how you administer equal tracking?
- Did you administer this to the defendant as you have just described?
- What did you observe?

Q: HGN

- What is HGN?
    - Have you received any training in administering the HGN?
        - Please describe this training
        - Have you had any additional training in HGN?
    - Please tell the jury about eye movements and the HGN test
    - Why is the HGN test important?
    - Do all drugs cause nystagmus?
        - Which categories of drugs cause HGN and which ones don't?
        - Can use of drugs in multiple drug categories cause HGN to present in a manner not typical of only using one category of drug?
        - Please explain
    - Can a person control nystagmus?
    - Does a person know when they have nystagmus?
    - Do contact lenses affect the results of the HGN test?

- Does poor eyesight affect the ability to perform the HGN test?
- Is the presence of nystagmus a reliable and valid indicator of the use of a CNS depressant (such as alcohol)? (Good & Augsburger, Halperin & Yolton, Colorado Study, Citek et al.)
- Would HGN itself impair someone's ability to drive?
- Are you aware of any scientific, peer-reviewed publications that state that there is no correlation between depressant drug use/alcohol consumption and the presence of nystagmus?

- How is HGN performed? (lack of smooth pursuit, maximum deviation, angle of onset)
  - How do you score this test?
  - Do you start with a specific eye?
  - Smooth pursuit
    - What is smooth pursuit?
    - Would you please explain and demonstrate how you administer smooth pursuit?
    - Please describe what you trained to look for regarding smooth pursuit
    - Did you perform this part of HGN on the defendant as you have just described?
    - What observations, if any, did you make?
  - Maximum Deviation
    - Would you please explain and demonstrate how you administer maximum deviation?
    - Please describe what you are trained to look for regarding maximum deviation?
    - How long do you have a person hold his eye at the outer corner?

- Did you perform this part of HGN on the defendant as you have just described?
- What observations, if any, did you make?

- Angle of Onset
  - Would you please explain and demonstrate how you administer angle of onset?
  - Please describe what you are trained to look for regarding angle of onset
  - Why do you estimate the angle of onset?
  - Did you perform this part of HGN on the defendant as you have just described?
  - What observations, if any, did you make?

- Was there anything that could have given false results? (flashing lights, etc.)
- Based upon your training and experience, and your familiarity with HGN related research, what, if anything, did the defendant's performance on the HGN test indicate to you?

Q: VGN

- What is the next eye test you administer in a DRE evaluation?
- Have you received any training in administering the VGN?
  - Please describe this training
  - Have you had any additional training in VGN?
- Please describe the VGN test
- What is the importance of the VGN test?
- Do all drugs cause VGN?
  - Which category of drugs cause VGN and which categories don't?
  - Can use of drugs in multiple drug categories cause VGN to present in a manner not typical of only using one category of drug?
    - Please explain

- Would you please explain and demonstrate how do you perform the VGN test?
- Did you perform the VGN test on the defendant?
- What did you observe?
- Based upon your training and experience, what was the significance of what you observed in the defendant's eyes while administering this test?

Q: Lack of Convergence

- What is the last eye test that you administer in a DRE evaluation?
- Please describe the lack of convergence test?
- What are you trained to look for when giving this test?
- What factors or drugs will affect convergence ability? (dysfunction/insufficiency, vision therapy, depressants, inhalants, Dissociative Anesthetics, cannabis)
- How is this test performed?
- Did you perform this test on the defendant as you have just described?
- What did you observed while performing this test on the defendant?
- Based upon your training and experience, what was the significance of what you observed in the defendant's eyes while administering this test?

Q: Did you accurately record the eye examinations on your drug influence evaluation form?

Divided Attention Psychophysical Tests

Q: What is the fifth component of the DRE evaluation?

- How many psychophysical tests do you administer during this phase? (4)
- Are the SFSTs divided attention tests?
    - What is a divided attention test?
    - Why are divided attention tests important?
    - Are these tests used exclusively by DREs?
    - Under what other circumstances are these tests used?

- In addition to being a DRE, have you had any training on how to administer these tests?
    - Please explain
    - Have you had any additional training in the SFSTs? (SFST Instructor)
- Why is divided attention important to driving?
- Why do you do the SFSTs again if it was done by the arresting officer?

Q: Modified Romberg Balance

- What is the first psychophysical test you administer?
- What is the Modified Romberg Balance Test?
- What is the purpose of this test?
- Do DREs instruct each person how to properly perform the test?
- Do DREs demonstrate the test to each person?
- Would you please explain and demonstrate the Modified Romberg Balance Test?
- What are you trained to look for when administering this test?
    - Body tremors
    - Eyelid Tremors
    - Feet still standing together
    - Sway (distance and direction)
    - Muscle rigidity/flaccidity
    - Statements or sounds
    - Number of seconds it takes for the person to estimate 30 seconds
- Did you administer this test on the defendant?
- Did you explain and demonstrate this test to the defendant in the same manner as you have just described?
- Did the defendant at any time indicate that he/she did not understand what he/she needed to do?

- How did the defendant perform on this test?
- Based upon your training and experience, what did the defendant's performance on this test indicate to you?

Q: Walk and Turn

- What is the second psychophysical test you administer?
- What is the Walk and Turn Test?
- What is the purpose of this test?
- Do DREs instruct each subject how to properly perform the test?
- Do DREs demonstrate the test to each person?
- Would you please explain and demonstrate the Walk and Turn Test?
- What are you trained to look for when administering this test? (clues of impairment – points)
    - What are the clues of impairment you are trained to note?
        - Keeps balance during the instruction phase
        - Starts too soon
        - Steps off the line
        - Raises arms while walking
        - Misses heel to toe
        - Stops walking
        - Wrong number of steps
        - Improper turn
- What are some other indicators of impairment that you look for that are not necessarily clues?
        - Body tremors
        - Muscle rigidity/flaccidity
        - Statements/sounds
        - Improper counting
- Did you administer this test on the defendant?

- Did you explain and demonstrate this test to the defendant in the same manner as you have just described?
- Did the defendant at any time indicate that he/she did not understand what he/she needed to do?
- How did the defendant perform on this test?
    - Did the defendant do anything that isn't considered a clue of impairment, but would indicate impairment?
- Based upon your training and experience, what did the defendant's performance on this test indicate to you?

Q: One Leg Stand

- What is the next psychophysical test you administer?
- What is the One Leg Stand Test?
- What is the purpose of this test?
- Do DREs instruct each subject how to properly perform the test?
- Do DREs demonstrate the test to each person?
- Would you please explain and demonstrate the One Leg Stand Test?
- What are you trained to look for when administering this test? (clues of impairment – points)
    - What are the clues of impairment you are trained to look for?
        - Raises arms
        - Sways
        - Puts foot down
        - Hops
    - What are other indicators of impairment that you are trained to look for, but aren't necessarily clues?
        - mproper counting
        - Not looking at foot
        - Bending leg(s)

- Body tremors
- Muscle rigidity/flaccidity
- Statements/sounds

- Did you administer this test on the defendant?
- Did you explain this test to the defendant in the same manner as you have just described?
- Did you demonstrate the test for the defendant?
- Did the defendant at any time indicate that he/she did not understand what he/she needed to do?
- How did the defendant perform on this test?
    - Did the defendant do anything that isn't considered a clue of impairment, but would indicate impairment?
- Based upon your training and experience, what did the defendant's performance on this test indicate to you?

Q: Finger to Nose

- What is the last psychophysical test you administer?
- What is the Finger to Nose Test?
- What is the purpose of this test?
- Do DREs instruct each subject how to properly perform the test?
- Do DREs demonstrate the test to each person?
- Would you please explain and demonstrate the Finger to Nose Test?
- What are you trained to look for when administering this test?
    - Fingertips touch nose or other parts of the face
    - Touching with the tip or the pad of the finger
    - Touching with incorrect finger
    - Sway
    - Body tremors
    - Eyelid tremors

- Abnormal muscle tone
- Statements sounds

- Did you administer this test on the defendant?
- Did you explain and demonstrate this test to the defendant in the same manner as you have just described?
- Did the defendant at any time indicate that he/she did not understand what he/she needed to do?
- How did the defendant perform on this test?
- Based upon your training and experience, what did the defendant's performance on this test indicate to you?

Q: Did you accurately record the defendant's performance on these tests and all other observations you made?

Q: What significance did you give the defendant's performance on all of these psychophysical tests?

Vital Signs and Second Pulse

Q: Please describe the next component of the DRE evaluation

Q: What are the purposes of checking vital signs?

Q: What vital signs are you trained to check and record? (pulse, blood pressure, temperature)

Q: During this phase, did you take the defendant's pulse?

- Why do you take the person's pulse a second time during an evaluation?
- Did you use the same procedure you previously testified on to take the defendant's pulse?
- What was the defendant's pulse?
- Where was defendant's pulse as it relates to the normal range you previously testified about?
- Based upon your experience and training, what is the significance of the

defendant's second pulse?

Q: During this phase, did you take the defendant's blood pressure?

- What is blood pressure?
- What instrument do you use to measure a person's blood pressure?
- Why do you take the person's blood pressure during an evaluation?
- Have you been trained to take someone's blood pressure?
  - What training do you have on this instrument?
  - Please describe how do you use this instrument to determine a person's blood pressure?
  - How do you know the difference between when the blood is starting to spurt and when the blood is flowing?
  - Can you explain systolic and diastolic blood pressure to the jury?
- Did you use the same procedure you just described to take the defendant's blood pressure?
- What was the defendant's blood pressure?
- Is there an expected range for which most peoples' systolic blood pressure falls during a drug influence evaluation?
- What is the expected range for a person's systolic blood pressure? (120-140 mmHg)
- Is there an expected range for which most peoples' diastolic blood pressure falls during a drug influence evaluation?
- What is the expected range for a person's diastolic blood pressure? (70-90 mmHg)
- Is this a medically accepted range for normal? (ACC/AHA changed definition of normal range in November 2017)
- Based upon your experience and training, what is the significance of the defendant's blood pressure?

Q: During this phase, did you take the defendant's temperature?

- Why do you take the person's temperature during an evaluation?
- Please describe how you take a person's temperature?
- Did you use the same procedure you just described to take the defendant's temperature?
- What was the defendant's temperature?
- Is there a normal range for which most peoples' temperatures fall?
- What is the normal range for a person's temperature? (97.6 – 99.6 degrees)
- Is this a medically accepted range for normal?
- Based upon your experience and training, what is the significance of the defendant's temperature?

Q: Did you accurately record all observations during this step?

Q: Based upon your training and experience, what did your observations during this phase mean to you?

Dark Room Examinations

Q: Please describe the seventh component of the DRE evaluation

- What are the purposes of dark room examination?
- Did you conduct a dark room examination on the defendant?
- What is the purpose of checking the eyes?
- Under what lighting conditions do you examine a person's eyes?
    - Room light
    - Near total darkness
    - Direct light
    - What is the purpose of looking at the eyes in variously lighting conditions?

Q: Pupil Size

- What is the first thing you check?

Why is checking the pupil important?

- What categories of drugs dilate the pupil?
- What categories of drugs constrict the pupil?
- What different effects could poly drug use have on pupil size if one drug constricts and one drug dilates?

- What do you use to determine pupil size?
  - What is a pupilometer card and how is it used by the DRE? (offer as exhibit)

Q: Pupil Reaction

- What are you looking for in your observation of the pupil's reaction to light?
  - How do you measure the change in pupil size?
  - How quickly should the pupil react to light?
- Is there anything else you look for? (rebound dilation)
  - Would you please describe what rebound dilation is?
- How do these observations help you?

Q: Please tell the court about the muscles of the eyelids.

What factors or drugs will affect ability to control the eyelids? (voluntary/involuntary, Bell's palsy, stimulants, opiates, cannabis)

Q: Conjunctiva & Sclera

- Please tell the court about the conjunctiva and sclera (white) of the eye.
- What common factors or drugs will affect the appearance of blood vessels in these tissues? (smoke, fatigue, alcohol, cocaine, cannabis, eye drops such as Visine & Murine)

Q: Room Light Examination

- How do you perform the room light portion of this evaluation?
- Did you perform the room light portion of the evaluation on the defendant using the procedure you just described?
- Did you determine the defendant's pupils in room light?
  - What was the pupil size in each eye?

- Is there a normal range for pupil size in room light?
- What is that normal range? (2.5-5.0 mm)

- Based upon your training and experience what did this indicate to you?

Q: Near Total Darkness Examination

- How do you perform the near total darkness portion of this evaluation?
- Did you perform the near total darkness portion of the evaluation on the defendant using the procedure you just described?
- Did you determine the defendant's pupils in near total darkness?
    - What was the pupil size in each eye?
    - Is there a normal range for pupil size in near total darkness?
    - What is that normal range? (5.0-8.5 mm)
- Based upon your training and experience what did this indicate to you?

Q: Direct Light Examination

- How do you perform the direct light portion of this evaluation?
- Did you perform the direct light portion of the evaluation on the defendant using the procedure you just described?
- Did you determine the defendant's pupils in direct light?
    - What was the pupil size in each eye?
    - Is there a normal range for pupil size in direct light?
    - What is that normal range? (2.0-4.5 mm)
- Did you check the defendant's pupil's reaction to light?
    - What did you observe?
    - Why is that significant?
- Based upon your training and experience what did this indicate to you?

Q: Nasal and Oral Examination

- You stated earlier that DREs also check each subject's nasal and oral cavities during the dark room examination, please describe how you do this
- What do you look for? (signs of ingestion)

- What do you mean by signs of ingestion?
- What kind of signs of ingestion are there and what do they indicate?

- Did you examine the defendant's nasal and oral cavities using the same procedure that you just described?
- What, if any, observation did you make of the defendant's mouth and nose?
- Based upon your training and experience what did this indicate to you?

Q: Did you accurately record all observations during this step?

Q: Based upon your training and experience, what did your observations during the dark room examination mean to you?

Examination for Muscle Tone

Q: Please describe the eighth component to the DRE evaluation

- What are the purposes of the muscle tone examination?
  - How do you examine muscle tone in this step?
  - What are you looking for in this step?
- Did you examine the defendant's muscle tone while conducting your evaluation using the same procedure you just described?
- How would you describe the defendant's muscle tone?
- What is the significance of your observations of the defendant muscle tone?

Q: Did you accurately record all observations during this step?

Q: Based upon your training and experience, what did your observations during the preliminary examination mean to you?

Examination for Injection Sites and Third Pulse

Q: Please describe the ninth component of the DRE evaluation

Q: What are the purposes of examining for injection sites?

- How do you examine someone for injection sites?
  - Specifically, what procedure do you use?

- What are you looking for in this step?
    - How do you determine whether bumps are caused by a needle or by other things? (magnifying glass, flashlights)
- Did you check the defendant for injection sites using the same procedure you just described?
- What, if any, observations did you make regarding the defendant's arms, neck, and legs?
- Based upon your training and experience what was the significance of your observations of the defendant's arms, neck, and legs?

Q: During this phase, did you take the defendant's pulse?

- Why do you take the person's pulse for a third time?
- Did you use the same procedure you previously testified on to take the defendant's pulse?
- What was the defendant's pulse?
- How did the defendant's pulse compare to normal range?
- Based upon your experience and training, what is the significance of the defendant's third pulse?

Q: Did you accurately record all observations during this step?

Q: Based upon your training and experience, what did your observations during the examination for injections sites and third pulse mean to you?

Suspect's Statements and Other Observations

Q: Please describe the tenth component to the DRE evaluation

Q: Did you obtain any statements from the defendant or make any additional observations?

Q: Was the defendant given his/her Miranda rights? (usually done by the arresting officer or the DRE prior to the evaluation)

- When was the defendant advised of his/her Miranda rights?

- Was the defendant informed of his/her right to remain silent?
- Was the defendant informed his/her statements could be used against him in court?
- Was the defendant informed of his/her right to an attorney?
- Was the defendant informed that if he/she could not afford an attorney, one would be appointed to him/her?
- Was the defendant asked if he/she understood those rights?
- How did the defendant respond?
- Did the defendant voluntarily, knowingly, and intelligently waive these rights?

Q: Did you ask the defendant a series of questions?

- Please tell us what questions you asked the defendant, and what answers the defendant gave.
    - If you need to refresh recollection with the drug influence evaluation form
    - Would it refresh your recollection to refer to the Drug Influence Evaluation form you filled out while performing an evaluation on the defendant?
    - Do you recognize this document?
    - Would you please describe to the jury what the document is?
    - Is it a true and accurate copy of your evaluation?
    - Did you record the defendant's responses to you questions on this form as you were asking them?
    - Now that you have had an opportunity to take a look at your evaluation do you recall those questions and answers?
    - Please tell us those questions and the defendant's responses
        - Have you eaten today?
        - When?
        - What have you been drinking?

- How much?
- Time of last drink?
- What time is it right now?
- When did you last sleep?
- How long?
- Were you driving?
- Do you feel that you are under the influence?
- What medicine or drugs have you been using?
- How much?
- Time of last use?
- Where were the drugs used?

- What was the significance of the information the defendant provided you?

Q: Did you accurately record all observations and statements made during this step?

Q: Based upon your training and experience, what did your observations and any of the defendant's statements mean to you?

Opinion of the Evaluator

Q: Please describe the eleventh component of the DRE evaluation

Q: How much time did you spend with the defendant that night?

Q: How long did the evaluation process take?

Q: Based on your training, experience, and the evaluation you performed on the defendant, did you form an opinion as to whether the defendant was under the influence of alcohol and/or drugs?

- What is that opinion?
- What is the basis for this opinion?
- What were the most significant factors that made you arrive at your opinion?

Q: Do you have an opinion as to what type of drug(s) was influencing the defendant?

- What is that opinion?

- What is the basis for that opinion?

Q: Are you familiar with the drug _____?

- Is that drug within the category of drugs you indicated was influencing the defendant?
- What signs and symptoms would you generally expect to see in a person under the influence of that drug?
- How long does it take for that drug to influence an individual once they have taken it?
- How long will the effects of that drug last?

Q: Are you familiar with the Physicians' Desk Reference (P.D.R.)?

- How familiar are you with it?
- What is it?
- Do you rely upon it in your work?
- Show exhibit, identify, turn to page, have DRE testify to pertinent parts
- Did you use this in forming your opinion?

Q: Have you done any research into the effects of alcohol and/or drugs on the central nervous system? (DRE papers, pupil study, HGN study)

- Please explain

Q: Do you have an opinion on whether or not a person under the influence of this category of drug would be able to operate a motor vehicle safely?

- What is your opinion?
- What is the basis for that opinion?

Q: Given your observations of the defendant and the information you just testified to, do you have an opinion as to whether or not the defendant could safely operate a motor vehicle given his/her impairment?

- What is that opinion?
- What is the basis for that opinion?

Toxicology Examination

Q: Please describe the twelfth component of the DRE evaluation

- What is the purpose of obtaining a toxicological sample from the defendant?
- Even though this is label as the twelfth step, do you have to do this step very last?
- Please explain why you would obtain the toxicological sample at the beginning of the evaluation?
- Do you know the results of the toxicology before forming your opinion on the defendant's impairment?

Q: Did you request a chemical test from the defendant in this case?

- What test?
- How did the defendant respond? (if defendant refused go through search warrant process if one was obtained otherwise skip the remaining chemical testing questions)
- Did you obtain a chemical test from the defendant?

Q: What is the process you followed to obtain a chemical test?

- Did you observe the defendant provide the chemical test sample?
- What did you do with the sample after you obtained it?
    - Sealed with identifying markers and then taken to log into evidence
- What happened to the sample after you logged it into evidence?
    - Transported for analysis
- Are their measures in place to ensure the chemical test result is actually the defendant's result?
    - Describe those safeguards
- How are the items sealed and transported?
- Are there any identifying marks to ensure it is the defendant's sample and to ensure the sample doesn't get tampered with?

Q: Was your opinion formed based on the results of the chemical test?

- Why or why not?
- What was your opinion based on? (signs and symptoms observed on the day of the evaluation)

Q: How does the presence of the drug in the defendant's chemical test fit with your observations and opinion on the defendant's impairment?

Q: Please discuss limitations of the chemical test (if applicable on a negative toxicology)

Q: If opinion is different than the toxicology results that the DRE can explain, have the DRE give the reasons this is possible

Q: Did you record this step accurately?

Q: Did this complete your evaluation of the defendant?

Q: Have you had an opportunity to observe the defendant today?

- Does he/she look the same or different today than he/she did on the day you performed an evaluation on him?
- Describe how the defendant is different today than he/she did during the evaluation

Appendix 3

PREDICATE QUESTIONS FOR TOXICOLOGIST

CONTENTS

Training /Experience

Q: Please introduce yourself to the members of the jury.

Q: What is your occupation? (forensic toxicologist)

Q: What is forensic toxicology?

Q: What does a forensic toxicologist do?

Q: What is your educational background?

Q: What training and experience do you have in the field of forensic toxicology?

Q: What training and experience do you have that enables you to test blood / urine specimens for the presence of drugs?

Q: How are you currently employed?

Q: How long have you been so employed / worked at the lab?

Q: Where were you previously employed? How long?

Q: What are your duties?

Q: How long have you been a forensic toxicologist?

Q: Do you do both bench testing and supervising?

Q: What other substances do you test for the presence of drugs?

Q: How long have you been a forensic toxicologist?

Q: Other than blood/urine, what other substances can be tested for drugs?

Q: How many cases does the laboratory test annually?

Q: How many blood / urine tests have you run in your career?

Q: Have you taught in the field of forensic toxicology?

Q: Have you published any articles in the field?

Q: Have you written any articles on the field?

Q: Are you a member of any Professional Organizations? Please name them.

Q: Why do you belong to the organization(s)?

Q: How did you become a member of these professional organizations?

Q: To which forensic toxicology groups do you belong?

Q: Have you held any offices or positions of responsibility in these organizations?

Q: Do you attend seminars and conferences held by these professional organizations?

Q: Why do you attend seminars and conferences?

Q: Have you ever interpreted the results of a blood/urine test in a court of law?

Q: Have you ever been qualified by a court of law as an expert in the field of toxicology?

Q: In which courts were your qualified as an expert?

Q: Were they criminal or civil proceedings?

Q: In what areas of expertise have you been previously qualified?

Q: Have you been qualified concerning (Blood, urine, breath, oral fluids)?

- Specifically in the field of testing urine and blood?
- Specifically in the affect of controlled substances on the body?

Q: How many times?

Q: Have you ever been called to testify as a defense expert?

Q: How many toxicologists are on staff at the lab?

Q: How many usually testify in court?

Q: Why doesn't everyone come to court?

> ***"At this time the state would like to tender _____ as an expert in the field of forensic toxicology"***

Q: Showing you what has previously been marked as State's Exhibit ___ (blood / urine report) for identification, do you recognize it?

Q: How do you recognize it? (bears signature)

Q: Whose blood/urine results / toxicology result does this contain?

Q: How is it that you came to test the blood/urine of this defendant?

Q: Why did you test the sample of this defendant?

Q: I am showing you what has been marked as State's Exhibit Number ____ for

identification purposes. (blood/urine kit and defendant's blood/urine samples) Do you recognize it?

Q: How?

Q: Whose sample is this?

Q: How do you know?

Q: How did that exhibit come in to your possession?

Q: How was it packaged and marked?

Q: Was it in a sealed container?

Q: Was the seal intact?

Q: Can you describe its condition when you received it? (came in sealed blood kit)

Q: Was there any evidence of tampering?

Q: When the sealed sample was received, was it identified in any way by the lab?

Q: How was it identified?

Q: Where do you store the kits prior to testing?

Q: Was this sample stored in that area?

Q: How do you know?

Q: Is the lab a secured environment?

Q: What security features does the lab maintain?

Q: Does the lab have limited access?

Q: Without discussing the results of the testing, what if anything was done with the blood/urine sample when you received it at the lab?

Q: From the time the seal was broken on the sample until the sample was re-sealed, was the sample continuously in the care, custody and control of your lab?

Q: How do you know that?

Q: What do you do with the blood/urine kit after you test it?

Q: Was there a leftover sample for the defendant to do his own testing? (only ask if known)

Q: What is the next step in the testing procedure? (a lab report is prepared)

Q: Was a lab report generated for the sample of the defendant, _____?

If Witness is Lab Director:

Q: As the lab director, are you responsible for all activies of the lab?

Q: Do you approve of all procedures to test and report results?

Q: Do you personally review all data generated that results in a positive report?

Q: Once you have reviewed the analytical data and approved it, what is the next step in the testing procedure? (a lab report is prepared)

Q: Was a lab report generated for the sample of the defednat, _____?

Testing

Q: What is the testing procedure used to analyze this sample?

Q: Can you describe how it works?

Q: What procedure do you follow when you test a blood sample?

Q: Is the testing procedure accurate and reliable?

Q: Do you use any controls during your analysis?

Q: What controls do you use?

Q: Why do you use controls?

Q: How do the controls work?

Q: Is this testing procedure generally accepted in the scientific community?

Q: What is considered the best testing method in forensic urine drug testing? Why is this so?

Q: Is this the same method used in toxicology labs throughout the nation?

Q: Was the instrument reading accurately and reliably during the analysis of this sample?

Q: How do you know?

Q: Blood: Was the defendant's blood coagulated / clotted / congealed when you ran the sample?

Q: Blood: How could you tell?

Q: Blood: Why does it matter whether the defendant's blood was coagulated / clotted / congealed?

Q: What did you do with the sample when you were finished?

Q: From the time you opened the blood kit until the time you tested the samples were the defendant's blood samples in your care custody and control?

Q: Is State's exhibit number _____ for identification in substantially the same condition as when you finished sealing it after performing the tests?

Move blood/urine kit in to evidence

Business Record Predicate

Q: Turning your attention back to State's Exhibit ___ for identification, was this document made at or near the time of the test?

Q: Was it made in the ordinary course of the lab's business?

Q: Are these reports usually kept in the ordinary course of your business?

Q: Is it a copy or the original?

Q: Is it a true and accurate copy?

Move lab report into evidence

Q: Showing you what has been marked as State's Exhibit _____ (lab report), did you review all aspects of the testing of this sample before signing the report?

Q: What were the results of the laboratory analysis of the defendant's blood/urine sample?

Alcohol

Q: What does _____ (blood test result) mean?

Q: What is the legal limit for blood alcohol level?

Q: What signs and symptoms does alcohol produce in the body?

Q: At what levels does alcohol begin to produce these effects?

Q: If "normal faculties" are defined as the ability to see, hear, walk, talk, make judgments, drive an automobile, etc. and do the many mental and physical acts of daily life, can alcohol, at _____(blood test result) impair a person's normal faculties?

Q: Have you participated in drinking experiments, sometimes referred to as wet labs?

Q: Have you read studies from organizations like the American Medical Association concerning the effects of alcohol?

Q: Is the per se limit established by state law consistent with the study of alcohol in the field of medicine?

Q: Is it higher or lower?

Q: If "normal faculties" are defined as the ability to see, hear, walk, talk, make judgments, drive an automobile, etc. and do the many mental and physical acts of daily life, can alcohol, at _____ (blood test result) impair a person's normal faculties?

Drug

Q: Are you familiar with the drug _____?

Q: How are you familiar with the drug _____?

Q: Is it a controlled substance?

Q: Is it a drug that causes psychomotor impairment?

Q: Is it a substance that causes psychomotor impairment?

Q: What does the term psychomotor impairment mean?

Q: Are controlled substances and other drugs and substances divided into categories?

Q: What is the purpose of these categories? (signs and symptoms)

Q: What signs and symptoms does the drug _____ produce in the body?

Q: What category does the drug or substance _____ fall into?

Q: If "normal faculties" are defined as the ability to see, hear, walk, talk, make judgments, drive an automobile, etc. and do the many mental and physical acts of daily life, can the drug _____impair a person's normal faculties?

Q: Are you familiar with the term "psychoactive"?

Q: What does it mean?

Q: How long would ____ drug be "psychoactive" in a person's system?

Q: Can you determine how much _____ was in the defendant's blood/urine sample?

Q: Does that have any impact on whether a person is impaired?

Q: Are safety precautions commonly included with prescriptions for the type of drug in this sample?

Q: Why?

Q: Are you familiar with the safety precautions given with the drug in this sample?

Q: What precautions are given by a pharmacist to a patient who receives this drug?

Q: What does the term "cutoff" mean?

Q: Why is that important in reporting your test results?

Q: What is the minimum level set by the laboratory for a positive finding for this drug?

Q: What is the purpose of setting a minimum or cut off level for testing of this drug?

If multiple drugs in system

Q: What other drugs did the defendant have in his system?

Q: Are you familiar with the terms "additive and synergistic"?

Q: What does additive mean?

Q: What does synergistic mean?

Q: Would the combination of the drugs in this case have an additive or synergistic effect?

Q: How would the combination of the drugs in this sample change a person's normal faculties?

Q: Do drugs of the type in this sample taken in combination have a more serious effect on the brain?

Q: Do drugs of the type in this sample taken in combination cause psychomotor impairment?

Q: What does psychomotor impairment mean?

Q: Are safety precautions commonly included with prescriptions for the types of drugs in this sample?

Q: Why?

Admitting Results Into Evidence

Q: Showing you what has previously been marked as State's Exhibit ___ [urine report] for identification, do you recognize it?

Q: How do you recognize it? [bears his signature]

Q: Whose urine results does this report contain?

Safeguards for Urine / Chain of Custody

Q: How is it that you came to test the urine of this defendant?

Q: In what condition was the urine sample and kit when you received it at the lab? [Sealed]

Q: Was there any evidence of tampering?

Q: When the sealed sample was received, was it identified in any way by the lab?

Q: How was it identified?

Q: Is the lab a secured environment?

Q: What security features does the lab maintain?

Q: Does the lab have limited access?

Q: Without discussing the results of the testing, what if anything was done with the urine sample when you received it at the lab?

Q: From the time the seal was broken on the sample until the sample was re-sealed, was the sample continuously in the care, custody and control of your lab?

Q: How do you know that?

Q: What do you do with the urine kit after you test it?

Q: Was there a leftover sample for the defendant to do his own testing? [only ask if known]

Q: As the lab director, are you responsible for all activities of the lab?

Q: Do you approve all procedures used to test and report results?

Q: Do you personally review all data generated that results in a positive report?

Q: Once you have reviewed the analytical data an approved it, what is the next step in the testing procedure? [a lab report is prepared]

Q: Was a lab report prepared for the sample of defendant _____ ?

General Effects of Marijuana

Q: In addition to the training mentioned earlier, do you have any specialized training and education concerning the effects of marijuana on the human body?

Q: Would you please describe that training to the jury?

Q: What is THC?

Q: What is Carboxy-THC?

Q: Why does the average person use THC?

Euphoria, *relaxation*, *sedation*

Q: Are there any medical use?

Q: In general, what are the effects of marijuana on the human body?

Increased BP, increased pulse, is a vasodilator which causes red eyes, (flushed red face) can cause dilated pupils and lack of convergence, sleepiness, relaxation, disinhibition, increased appetite, eyelid tremors, leg tremors, acts as a hallucinogen, short term memory loss, alters ones perception of time and space

Divided Attention and FSTs

Q: Are you familiar with the term "divided attention"?

Q: What does divided attention refer to?

Q: What is a divided attention task?

Q: Does marijuana affect a person's ability to perform divided attention tasks?

a. Are you familiar with field sobriety tests?

[— these are OK — but remember — lab staff does not perform this test with impaired subjects. Our familiarity is more with looking at the documented performance of these tests and evaluating the results in the context of impairment and the Toxicological findings. So do not ask about how to administer these tests.

b. Have you had education and training regarding field sobriety tests? Please explain?

c. Are they divided attention tests?

d. Which is a more difficult divided attention task, a FST or driving a car?

e. Are you familiar with the Romberg Balance Test?

f. Are you familiar with the Walk and Turn Test?

g. Are you familiar with the One Leg Stand?

h. Are you familiar with the Finger to Nose test?

Tolerance (can be very useful when driving and FSTs aren't bad)

Q: Can Marijuana affect a person's ability to drive?

Effects of Marijuana on Driving

Q: How does marijuana effect a person's ability to drive?

Because it alters the perception time and space, one typically sees difficulty maintaining headway between the impaired driver and ears ahead, weaving sometimes in the lane of travel, difficulty staying focused, tend to concentrate on one activity at the expense of other activities so they have difficulty staving focused and performing divided attention tasks (Driving is a very complex task in that the driver is expected to perform a number of tasks at the same time.)

Q: Can marijuana affect a person's judgment while driving?

Because of the disinhibition properties of the drugs, drivers use poor judgment and engage in risk taking behavior (such as speeding; pulling out from stop signs too early) THC impaired drivers tend to make errors of space (hitting objects) attention errors such as straightening out curves, missing red lights.

Q: How long does marijuana affect a person's ability to drive after they smoke it?

Following a typical high, marijuana affects a person s ability to drive for ~ 2–4 hours post smoking. (Recent studies may indicate a longer window of impairment.)

Q: Does it matter how much a person smokes?

To a certain degree, however, the typical marijuana smoker smokes enough to get "high" How much that takes is dependent upon his / her experience with the drug — there is a desired effect and subject's smoke enough to get that effect.

Estimate of When the Defendant Used Marijuana

Q: When looking at the defendant's blood test results in this case, can you give an estimate as to when the defendant probably last smoked marijuana?

Probably within 2-3 hours of the blood draw

Q: What do you base your opinion on?

Q: And if I told you the blood draw occurred 1 hour 20 minutes after the stop, can you estimate as to when defendant likely smoked with respect to her driving?

Probably within 1-2 hours of the driving

Q: What do you base your opinion on?

The pharmacokinetics of the drug THC is a lipophilic drug.

Q: Would please tell the jury what you mean when you say THC is a lipophilic drug?

It likes fat instead of water and whether we are heavy or thin, we all have a lot of lipids (or fat) in our body. In fact, your brain, which is the site of action of this drug, is filled with lipids. Your blood (which we use to test for drugs) is filled with water. So very shortly after smoking, the THC (active ingredients) will start to bind to lipids and in ~ 3–4 hours, it is no longer detectable in the blood. The ratio of the THC: its metabolite carboxy-THC helps us to estimate the time of use.

The Effects of Marijuana on the Defendant 's DRE Evaluation

Q: [Ofc. DRE] testified that the defendant exhibited a number of indicators during the DRE Evaluation. [Ofc. DRE] testified that the defendant smelled like marijuana, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant's pupils were visibly dialated even with the bright light from his flashlight, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] also testified that the whites of the defendant's eyes were a reddish/pinkish color, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that on the Romberg Balance test, the defendant swayed in each direction, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant also demonstrated eyelid and body tremors throughout the Romberg Balance test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that on the Walk and Turn test, the defendant lost her balance once as she stood heel to toe, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant also held her arms about 12 inches from her side throughout the entire Walk and Turn test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that on the One Leg Stand test, the defendant exhibited body and leg tremors throughout both parts of the test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant also skipped count "12" as she stood on her right foot during the One Leg Stand test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that on the Finger to Nose test, the defendant exhibited eyelid tremors throughout the entire test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant missed the tip of her nose on all attempts except 2 and 4 on the Finger to Nose test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] also testified that he had to remind her to bring her hand down after attempt 1 on the Finger to Nose test, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant demonstrated a lack of convergence, is this consistent with being under the influence of Marijuana?

Q: [Ofc DRE] testified that the defendant's pulse readings were 136, 118, and 108 when the normal pulse range is 60-90 beats per minute, is this consistent with being under the influence of Marijuana?

Q: [Ofc. DRE] testified that the defendant's Blood Pressure was 140/84, when normal blood pressure is 120-140/70-90, is this consistent with being under the influence of Marijuana?

For her age— this is high!

Opinion of Sobriety

Q: Did you form an opinion as to whether the defendant could safely operate a motor vehicle at the time of the stop?

Q: Without stating what your opinion was, would you please tell the jury what your opinion was based on?

The DRE Evaluation

The blood draw results and the fact that the sample was collected 1 hour and 20 minutes after the stop.

Q: Based on the defendant's performance during the DRE exam and the results of the Toxicology Analysis from the blood draw, could the defendant safely operate a motor vehicle at the time she was stopped on [date of crime]?

No further questions, the state reserves the right to the recall Witness.

DRE Program and Results

Q: Are you familiar with the DRE program?

Q: Do you believe that 12 step DRE protocol can allow properly trained officers to DETECT what categories of drugs a person has in his/her system?

Q: Do you believe the DRE protocol can allow a properly trained officer to DETECT what categories of drugs may be impairing a person?

Q: Have you had an opportunity to review the reports prepared by the police officers in this case regarding the Defendant's arrest for DUI?

Q: Have you had an opportunity to hear the officer's testimony regarding the defendant's condition at the time of the arrest and during the DRE evaluation?

Q: Is this behavior consistent with drug impairment?

Q: Based on your knowledge and experience, can consuming these drugs produce symptoms described by the officers in their testimony and written reports?

Q: Does the positive urine toxicology report corroborate the signs and symptoms as described in the testimony and written reports of the officers?

Q: Based on your knowledge, training and experience and your review of the officer's reports and testimony, do you have an opinion as to whether the defendant's normal faculties were impaired at the time of driving?

Q: What is that opinion?

Appendix 4

STANDARDIZED FIELD SOBRIETY TEST STUDIES

SFST Studies

Papafotiou, K; Carter, JD.; and Stough, C. (2005) An Evolution of the Sensitivity of the Standardised Field Sobriety Tests to Detect Impairment Due to Marijuana Smoking. *Psychopharmacology*. 180. 107-14

> This study's findings reveal consumption of THC impairs performance on SFSTs. Furthermore, performance on SFSTs provides a moderate predictor of driving impairment following the consumption of THC, which may provide an appropriate screening tool to assess the driving capabilities of individuals suspected of being under the influence of a drug other than alcohol. Even though SFSTs are a moderate predictor of impairment, impairment is still being observed in SFST performance. Given research findings that THC concentration in the blood does not provide an accurate and reliable indicator of whether driving performance is impaired, information obtained from the administration of the SFSTs may prove valuable concerning drug intoxication and driver fitness. SFSTs, therefore, appear to be an appropriate screening tool for law enforcement to assess the driving capabilities of individuals suspected of being under the influence of a drug other than alcohol.[1]

[1] Papafotiou, K & D Carter, J & Stough, Con. (2005). An evaluation of the sensitivity of the Standardised Field Sobriety Tests (SFSTs) to detect impairment due to marijuana intoxication. Psychopharmacology. 180. 107-14. 10.1007/s00213-004-2119-9.

Papafotiou, K; Carter, JD; and Stough C. (2005) The Relationship between Performance on the Standardised Field Sobriety Tests, Driving Performance and the Level of Delta9-tetrahydrocannabinol (THC) in Blood. *Forensic Science International*. 155 2-3, 172-8.

Performance on the SFSTs provides a moderate predictor of driving impairment following the consumption of THC.[2]

Declues, K.; Perez, S.; and Figueroa, A. (2016) A Two-Year Study of △9-tetrahydrocannabinol Concentrations in Drivers: Examining Driving and Field Sobriety Test Performance. *Journal of Forensic Sciences*. 61. 10.1111/1556-4029.131168.

Field sobriety tests are sensitive to impairment by cannabis. The study's findings determined when multiple tests are used, an "officer can be certain they are making a correct decision to arrest." Regardless of whether the assessment of impairment by SFSTs was performed by a DRE officer or a non-DRE officer, the information gathered from performance on SFSTs was equally useful. The researchers thereby concluded SFSTs are sensitive to cannabis impairment. The study, however, did not find a correlation between performance on SFSTs and the concentration of THC tested in whole-blood samples.[3]

Hartman, Richman, Hayes, Huestis, (2016) Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment. *Accident Analysis and Prevention,* vol. 92, 2016, pp. 219-29.

This study found the most reliable indicators of impairment are physical observations and psychophysical tasks. Furthermore, indicators of psychomotor and cognitive impairment were found during performance of the SFSTs on

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[2] Papafotiou, K., Carter, J.D., & Stough, C. (2005). The relationship between performance on the standardised field sobriety tests, driving performance and the level of Delta9-tetrahydrocannabinol (THC) in blood. *Forensic science international*, 155 2-3, 172-8.

[3] Declues, K.; Perez, S.; and Figueroa, A. (2016) A Two-Year Study of △9-tetrahydrocannabinol Concentrations in Drivers: Examining Driving and Field Sobriety Test Performance. *Journal of Forensic Sciences*. 61. 10.1111/1556-4029.131168.

cannabis-only impaired driving cases. The results of this research support the cannabis impairment training taught in the Drug Evaluation and Classification Program.

The above studies consequently demonstrate the usefulness of SFSTs as part of cannabis-impaired driving investigation. These studies are also useful in identifying common indicators of cannabis impairment. When faced with a challenge for SFST use in a cannabis-impaired driving case, a prosecutor should present the court with relevant studies to demonstrate the value of utilizing SFSTs for cannabis impairment. A prosecutor should also be critical of studies presented by the defendant, which may not reach scientific standards. The prosecutor should be intimately familiar with the studies cited by the defendant and should be prepared to point out the deficiencies and limitations of those studies. A prosecutor should not, however, draw a scientific conclusion in his/her argument to the court.

Ultimately, impairment is impairment, regardless of what substance is causing it. Remember driving requires the ability to divide attention among numerous tasks simultaneously. If any one of a person's mental or physical capabilities is diminished, the ability to perform these tasks is significantly reduced. This notion should be addressed frequently throughout court filings and proceedings. A prosecutor needs to make these connections by using testimony about the importance of divided attention skills for safe operation of a vehicle and how SFST performance demonstrates these skills necessary for driving.[4]

[4] Hartman, Richman, Hayes, Huestis, (2016) Drug Recognition Expert (DRE) Examination Characteristics of Cannabis Impairment. Accident Analysis and Prevention, vol. 92, 2016, pp. 219-29.

Appendix 5

CHRONIC FREQUENT CANNABIS USER STUDIES

- Reversible and Regionally Selective Downregulation of Brain Cannabinoid CB1 Receptors in Chronic Daily Cannabis Smokers — Hirvonen, et. al. (2012)[1]
- Impact of Prolonged Cannabinoid Excretion in Chronic Daily Cannabis Smokers' Blood on Per Se Drugged Driving Laws — Bergamaschi, et. al. (2013)[2]
- Psychomotor Function in Chronic Daily Cannabis Smokers during Sustained Abstinence — Bosker, et. al. (2013)[3]
- Phase I and II Cannabinoid Disposition in Blood and Plasma of Occasional and Frequent Smokers Following Controlled Smoked Cannabis — Desrosiers, et. al (2014)[4]

The series of chronic, frequent cannabis user studies demonstrated an association between residual THC concentrations and impairment. In these studies, serum concentrations of 2–5 ng (*i.e.*, approximately 1–2.5 ng whole blood as utilized in forensic testing) were shown to impair driving. These studies also found chronic users demonstrated prolonged impairment of psychomotor function during abstinence from cannabis. The studies also found psychomotor functioning in chronic cannabis smokers only partially recovered over the three weeks of abstinence from cannabis. The critical tracking per-

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[1] Hirvonen, J., Goodwin, R. S., Li, C., Terry, G. E., Zoghbi, S. S., Morse, C., . . . Innis, R. B. (2011). Reversible and regionally selective downregulation of brain cannabinoid CB1 receptors in chronic daily cannabis smokers. *Molecular Psychiatry*,17(6), 642-649. doi:10.1038/mp.2011.82.

[2] Bergamaschi, M. M., Karschner, E. L., Goodwin, R. S., Scheidweiler, K. B., Hirvonen, J., Queiroz, R. H., & Huestis, M. A. (2013). Impact of Prolonged Cannabinoid Excretion in Chronic Daily Cannabis Smokers Blood on Per Se Drugged Driving Laws. *Clinical Chemistry*,*59*(3), 519-526. doi:10.1373/clinchem.2012.195503.

[3] Bosker, W. M., Karschner, E. L., Lee, D., Goodwin, R. S., Hirvonen, J., Innis, R. B., … Ramaekers, J. G. (2013). Psychomotor function in chronic daily Cannabis smokers during sustained abstinence. *PloS one*, *8*(1), e53127. doi:10.1371/journal.pone.0053127.

[4] Desrosiers, N. A., Himes, S. K., Scheidweiler, K. B., Concheiro-Guisan, M., Gorelick, D. A., & Huestis, M. A. (2014). Phase I and II Cannabinoid Disposition in Blood and Plasma of Occasional and Frequent Smokers Following Controlled Smoked Cannabis. *Clinical Chemistry*,*60*(4), 631-643. doi:10.1373/clinchem.2013.216507.

formance of chronic, frequent cannabis users did not fully recover after three weeks of abstinence from cannabis and was significantly worse than the control group (*i.e.*, those who had not consumed cannabis).

Continued psychomotor impairment after three weeks of abstinence from cannabis in chronic, frequent users suggests the ability to drive is impaired at the time of these low blood THC concentrations, despite abstinence from cannabis. An association between residual THC concentrations and impairment over the initial few weeks of abstinence from cannabis exists, therefore, regardless of use. Impairment in chronic cannabis users may thereby result from residual THC concentrations in blood. This means a chronic, frequent user can still be impaired and demonstrate signs and symptoms regarding his/her impairment, even if he/she has not used for days and, in some cases, potentially weeks. In this manner, driving ability is impaired at low THC concentrations (even in chronic users or residual concentrations in abstained users) making the residual THC concentration argument invalid.

As for the claim of tolerance development, studies show chronic, frequent users are tolerant to some, but not all, effects of cannabis. Tolerance develops for memory impairment, somnolence, and somewhat for anti-nausea effects. Tolerance, however, does not develop for motor impairment (which is crucial to driving) and the observed high. Another study demonstrated frequent smokers demonstrate tolerance to some acute cannabis intoxication effects, but tolerance did not compensate for all effects (Ramakers).

Another argument frequently utilized by a defendant is that cannabis use at a therapeutic level is permissible. The first counterargument to the therapeutic level assertion is just because a substance is being used at a therapeutic level does not mean it does not impair. The purpose of many drugs, including cannabis, is to impair the body in some meaningful way. This is like Ambien; this drug, taken at a therapeutic level, is meant to put a person into a deep sleep. Cannabis follows a similar notion as to the impairing effects, as the purpose of THC use is to make the user feel high. This high causes both cognitive and motor impairment. The second counterargument to this defense is that cannabis

is a Schedule I drug and, therefore, not subject to FDA regulation. Prescriptions for drugs under this Schedule are, therefore, not valid so no therapeutic level for cannabis impairment has been determined. Because of these limitations there is no medically accepted therapeutic level for cannabis use. It is important to note that often a medical user of cannabis will make his/her own determination of how much cannabis he/she should use and how often he/she should use it. He/she determines his/her own dosage and frequency.

Appendix 6

DISSIPATION OR LOW THC CONCENTRATION IN BLOOD STUDIES

Characterization of the absorption phase of marijuana smoking — *Huestis* (1992)

One of the first studies about THC concentrations and observed effects found THC effects appear rapidly after smoking. After these effects begin to take place, THC concentrations in the blood begin to decline prior to the peak effects of the THC on the body occurring. This study demonstrated that both the physical (*i.e.*, objective measure) and the reported high (*i.e.*, subjective measure) had similar concentration-effect relationships, identified as a counter-clockwise hysteresis. Even though both the reported physical and mental effects of THC remained high, THC concentrations decreased dramatically as the THC was distributed to fatty tissue (*i.e.*, the brain). THC is therefore affecting the brain and thus impairing the body despite a significant drop in THC concentration in the blood. The importance of this study is that the cannabis effects and impairment peak *AFTER* the majority of THC has moved out of the blood. This means that typically, by the time a law enforcement officer can obtain a blood sample for forensic testing, most of the THC is no longer in the blood and, instead, is in the brain causing impairment. The THC concentration in the blood, therefore, is not quite the "tell all" as it may be for alcohol in the blood.[1]

[1] Huestis, M. A., Sampson, A. H., Holicky, B. J., Henningfield, J. E., & Cone, E. J. (1992). Characterization of the absorption phase of marijuana smoking. *Clinical Pharmacology and Therapeutics*, *52*(1), 31-41. doi:10.1038/clpt.1992.100

- Hartman RL, Brown TL, Milavetz G, Spurgin A, Gorelick DA, Gaffney GR, Huestis MA. "Effect of Blood Collection Time on Measured 9-Tetrahydrocannabinol Concentrations: Implications for Driving Interpretation and Drug Policy." *Clin Chem.* 2016 Feb;62(2):367-77.

  This study found that during drive time, THC concentrations previously associated with impairment greatly exceeded per se cutoffs. The THC concentrations collected after the drive time were considerably lower. In other words, THC concentrations during driving are higher than the THC concentrations measured hours later resulting in low THC blood results. Rapidly decreasing THC concentrations DO NOT imply decreasing impairment, as impairment is still present despite the lowered THC concentrations. Typical blood collection times in impaired driving cases result in a decrease of THC concentration exceeding 90%. As a result, forensic blood THC concentrations may be lower than common per se cutoffs despite greatly exceeding them while driving.

  Measured THC concentrations do not reflect the THC concentrations present during driving. There is typically a significant time gap between the officer observing the driving activity and when the forensic blood collection occurs. During this delay, rapid THC distribution from blood into fat, results in a rapid decrease in blood THC concentration within the first hour. Given these findings, it is important to consider the many variables affecting the THC concentration in the blood, most importantly, time, including the time it takes for law enforcement to obtain a search warrant and the time it takes to obtain a blood sample from the driver.[2]

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[2] Hartman, R. L., Brown, T. L., Milavetz, G., Spurgin, A., Gorelick, D. A., Gaffney, G. R., & Huestis, M. A. (2016). Effect of Blood Collection Time on Measured 9-Tetrahydrocannabinol Concentrations: Implications for Driving Interpretation and Drug Policy. *Clinical Chemistry*,*62*(2), 367-377. doi:10.1373/clinchem.2015.248492.

- An Evaluation of Data from Drivers Arrested for Driving Under the Influence in Relation to Per Se Limits for Cannabis, Barry Logan, Ph.D., f-ABFT, et al.

  There is no science showing drivers become impaired at a specific THC concentration in the blood. As demonstrated in previous studies, high THC concentrations may drop below legal thresholds before a test is administered to a suspected impaired driver. Based on this analysis, a quantitative threshold for per se laws for THC following cannabis use cannot be scientifically supported.[3]

Summary of THC Dissipation / Low Concentration Studies

THC concentrations in blood decrease dramatically by the time a forensic blood draw occurs which is the crux of the per se discussion. Cannabis THC concentrations fall to about 60% of their peak within 15 minutes and to about 20% of their peak 30 minutes, while impairment lasts for approximately two to four hours.[4] By the time a blood draw occurs from the suspected cannabis-impaired driver, the THC concentration in the blood has reduced significantly (at least 80%) while the impairment remains. This occurs because THC, which is lipophilic, seeks regions of the body higher in fat content, such as the brain, and moves quickly out of the blood, which is high in water content. As a result, the THC rapidly crosses the blood-brain barrier, impacting the functioning of the brain for several hours after THC concentrations have dissipated out of the blood.

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[3] Logan, Barry. (2016). An Evaluation of Data from Drivers Arrested for Driving Under the Influence in Relation to Per Se Limits for Cannabis. *AAA Foundation for Traffic Safety*.

[4] Kelley-Baker, T. (2014). "Marijuana and Driving Performance." Presentation at TRB Alcohol, Other Drugs and Transportation Committee 2014 Midyear Meeting. See also Logan, B.K. (2014). "Thresholds for THC and Driving." Presentation at TRB Alcohol, Other Drugs and Transportation Committee 2014 Midyear Meeting.

Appendix 7

INDICATORS CONSISTENT WITH DRUG CATEGORIES

	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
HGN	Present	None	None	Present	None	Present	None
Vertical Gaze Nystagmus	Present (High Dose]	None	None	Present	None	Present (High Dose]	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	LittIe 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	Flaccid	Normal or Flaccid	Normal

Footnote:
These indicators are the most consistent with the category, keep in mind that there may be variations due to individual reaction, dose taken and drug interactions.

1) Soma, Quaaludes and some antidepressants usually dilate pupils
2) Quaaludes, ETOH and some antidepressants may elevate
3) Certain psychedelic amphetamines may cause slowing
4] Normal, but may be dilated
5) Down with anesthetic gases, up with volatile solvents and aerosols
6) Pupil size possibly normal

	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
General Indicators	■ Disorientation ■ Droopy eyelids ■ Drowsiness ■ Drunk-like behavior ■ Slow, sluggish reactions ■ Thick, slurred speech ■ Uncoordinated ■ Unsteady walk	■ Anxiety ■ Body tremors ■ Dry mouth ■ Euphoria ■ Exaggerated reflexes ■ Excited ■ Eyelid tremors ■ Grinding teeth ■ Increased alertness ■ Insomnia ■ Irritability ■ Redness to the nasal area ■ Restlessness ■ Runny nose ■ Talkative	■ Body tremors ■ Dazed appearance ■ Difficulty with speech ■ Flashbacks ■ Hallucinations ■ Memory loss ■ Nausea ■ Paranoia ■ Perspiring ■ Poor perception of time and distance ■ Synesthesia ■ Uncoordinated *NOTE: With LSD, Piloerection may be observed (goose bumps, hair standing on end)*	■ Blank stare ■ Confusion ■ Chemical odor (PCP] ■ Cyclic behavior ■ Difficulty with speech ■ Disoriented ■ Early HGN Onset ■ Hallucinations ■ Incomplete verbal responses ■ Increased pain threshold ■ "Moon Walking" Non-communicative ■ Perspiring (PCP) ■ Possibly violent ■ Sensory distortions ■ Slow, slurred speech ■ Slowed responses ■ Warm to touch (PCP)	■ Depressed reflexes ■ Droopy eyelids ■ Drowsiness ■ Drymouth ■ Euphoria ■ Facial itching ■ Inability to concentrate ■ Nausea ■ "On the Nod" ■ Puncture marks ■ Slow, low, raspy speech ■ Slow breathing ■ Slow deliberate movements *NOTE: Tolerant users exhibit relatively little psychomotor impairment.*	■ Bloodshot eyes ■ Confusion ■ Disoriented ■ Flushed face ■ Intense headaches ■ Lack of muscle control ■ Non-communicative ■ Odor of substance ■ Possible nausea ■ Residue of substance ■ Slow, thick, slurred speech ■ Watery eyes	■ Altered time/distance perception ■ Alteration in thought formation ■ Body tremors ■ Bloodshot eyes ■ Disoriented ■ Drowsiness ■ Eyelid tremors ■ Euphoria ■ Impaired memory ■ Increased appetite ■ Lack of concentration ■ Mood changes ■ Odor of Marijuana ■ Rebound Dilation ■ Relaxed inhibitions ■ Sedation
Duration of Effects	■ Ultra-Short: A few minutes ■ Short: Up to 5 hours ■ Intermediate: 6-8 hours ■ Long: 8-14 hours	■ Cocaine: 5-90 minutes Methamphetamine: Up to 12 hours	■ Duration varies widely from one hallucinogen to another: ■ LSD: 10-12 hours ■ Psilocybin: 2-3 hours	■ PCP Onset: 1-5 minutes ■ Peak Effects: 15-30 minutes ■ Exhibits effects up to 4-6 hours ■ DXM: Onset 15-30 min. ■ Effects 3-6 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—exhibit and feel effects ■ (Impairment may last up to 24 hours, without awareness of effects)
Usual Methods of Administration	■ Injected (occasionally) ■ Insufflation ■ Oral	■ Insufflation ■ Injected ■ Oral ■ Smoked	■ Insufflation ■ Oral ■ Smoked ■ Transdermal	■ Injected ■ Insufflation ■ Oral ■ Smoked ■ Transdermal	■ Injected ■ Insufflation ■ Oral ■ Smoked ■ Transdermal	■ Inhalation	■ Oral ■ Smoked ■ Transdermal
Overdose Signs	■ Clammy skin ■ Coma ■ Rapid, weak pulse ■ Shallow breathing	■ Agitation ■ Hallucinations	■ Intense bad "trip" ■ Hyperthermia ■ Convulsions	■ Deep coma ■ Seizures and convulsions	■ Cold clammy skin ■ Coma ■ Convulsions ■ Slow, shallow breathing	■ Cardiac arrhythmia ■ Possible psychosis ■ Respiration ceases ■ Severe nausea /vomiting ■ Risk of death	■ Excessive vomiting ■ Fatigue ■ Acute anxiety attacks ■ Paranoia ■ Possible psychosis

Appendix 8

VOIR DIRE SAMPLES

The Experienced Juror — Bring It Back to What He Knows

A prosecutor may be able to preempt defense questions regarding impairment by tapping into these novice, personal and powerful assessments of impairment as follows:

Q: Mrs. _____, have you ever seen or been around someone you thought was "drunk?"

A: Yes.

Q: Remembering that experience, what was it about that person that caused you to think they were impaired

A: They were slurring their speech. Stumbling around…

Q: Slurring and stumbling. Anything else?

A: They pretty much covered it. But their face was flushed.

A prosecutor should then attempt to loop this assessment into the entire venire.

Q: Mr. _____, have you ever seen a drunk or someone you thought was impaired?

A: You bet.

Q: Is there anything you'd like to add to Mrs. Smith's assessment?

A: Those things and they smelled like a brewery.

Q: Ms. _____, have you seen someone you thought was impaired?

A: Yes.

Q: Anything that you'd like to add?

A: No, that's pretty much what I saw too.

Here, the prosecutor should move to lock in the entire jury panel to agree that

their collective personal experiences are important and have great value to recognizing impaired people.

Q: As a panel, by a show of hands, can we agree that, as just regular people, we probably can recognize when someone is impaired based upon our experiences?

A: Yes.

Go back to Juror #1.

Q: Mrs. _____, do you believe that a police officer, with years of special training in recognizing impaired drivers, would be better or worse than you at recognizing someone who was impaired?

A: Probably better.

To Juror #2:

Q: Mr. _____?

A: I'd hope better.

To Juror #3:

Q: Ms. _____?

A: Yes, better.

Now the prosecutor should move to lock in the jury panel to agree that an experienced officer is likely better at recognizing impaired drivers based upon advanced training and professional experience in interacting with impaired drivers.

Q: As a panel, by a show of hands, can we agree that, an experienced police officer, with years of experience and multiple hours of advanced training, is likely better than we are at recognizing people and drivers who are impaired?

A: Yes.

At this point in the process, the jury has likely given the prosecutor much of the evidence an officer will find in the Personal Contact phase of an impaired driving arrest through the juror's own life experiences and the defense is left without a main tool.

Just What is Cannabis?

It is likely that the jury will have very pronounced opinions about cannabis. Whether it should be legal or illegal. Whether it treats illness or has medical benefits. Whether it is harmful or should be socially acceptable. The social norming of cannabis use should lead a prosecutor to seek out bias against possession and whether cannabis use is "safe" as compared to other drugs. A prosecutor might consider asking questions like:

Q: Do any of you have any strong feelings about possessing or using cannabis?

Q: Can you be fair and impartial in a criminal case where the defendant is accused of using cannabis?

- Be sure to avoid the "I'll try" juror.

Q: Is there an amount of cannabis use that you would consider "safe"?

Q: Have you ever had an experience where you though someone was treated unfairly because of cannabis? Possession, use, or anything?

Q: In your opinion, why do you think people consume pharmaceuticals?

Q: Have you ever seen a prescription with a warning label that says a person should avoid driving until they know how the drug will affect them?

Q: Do you think that sometimes doctors can prescribe the wrong drug or maybe overprescribe an amount by mistake?

Q: So, that's why you follow the directions and wait to see how you feel?

Q: Do you think that sometimes people might take more than what was recommended because they believed more of the drug was needed for them to have the original effect?

Q: Do you think that it is possible that people could make the wrong self assessment and even though they might not know it, might really be impaired?

Q: Would you agree that those people should not drive a motor vehicle?

Signs, Symptoms, Impairment

General knowledge about the physical and mental effects of cannabis does not exist; cannabis impairment is not in the realm of common knowledge and experience like alcohol. Unlike alcohol where effects are known to everyone through actual experience, most juror's knowledge comes from the entertainment industry, via movies and television.

It is important to recognize the effects of cannabis vary greatly from one individual to another. Like alcohol, not every impaired person looks the same, and not every person looks the same every time they consume. There are a lot of varying factors that play into how a person presents their impairment.

Q: Would you agree that drugs and alcohol likely affect us all differently?

Q: For example, if two people drink alcohol, and become impaired, they may look completely different from each other?

Q: Think about a bar, you're likely to find many different types of drunks, right?

Q: The alcohol-impairment you see might be very subtle or very pronounced couldn't it?

Q: And in your experience with alcohol-impaired people, they may be different each time they become impaired?

Q: Would you agree that cannabis might produce different behaviors in different people who become impaired using it as well?

Q: Do you believe that you could recognize the signs of someone that was "stoned" or impaired by cannabis?

Q: s it possible that people can be impaired by cannabis and the signs be subtle like in your experience with alcohol?

Safer Driver After Cannabis

Q: Have you ever known someone who claims to be a better driver after they have consumed alcohol?

Q: Do you believe that it is possible to become even slightly impaired, "buzzed" if you will, and be a safer driver?

Q: If not, why are they not safer?

Q: Is it because they are less likely to be able to react to other traffic or other physical control issues like blurry vision, etc.?

Q: Have you ever heard someone say that they are a better driver after consuming cannabis? Either in life or on television?

Q: What examples did they give as to why they were better at driving? More calm? Drove more slowly?

Q: Would you agree that those behaviors sound the same?

Example of Defense Voir Dire

The defense attorney may stand up and engage a juror as follows:

Defense Attorney: Have you ever seen a drunk?

Potential Juror: Yes

Defense Attorney: How did you know they were drunk?

Potential Juror: Mannerism

Defense Attorney: Now you don't have specialized training, do you?

Potential Juror: No.

Defense Attorney: So, you don't actually know if that's an indicator of drunk, do you?

Potential Juror: No.

Defense Attorney: Mr. Jones what do you think?

Defense Attorney: Is ___ an indicator of drunk, how would you test that?

Defense Attorney: You can't test it, but you are certain it is an indicator of drunk?

Defense Attorney: You're absolutely certain?

Potential Juror: Yes.

Defense Attorney: So you disagree with her?

The defense attorney may go through the jury pool and attempt to try his case during jury selection. He will want to fair it out and find the people who are going to believe the defense theory as well as to try to identify jurors on whom he can use his challenges. Some defense attorneys may use this as an example to see how many people challenge him to get rid of those individuals who will not accept the theory of his case or the defense challenges they plan to utilize.

Example of a Prosecution Voir Dire

Compare the defense attorney exchange with these questions by a prosecutor:

Q: You just told me you have seen someone who is impaired?

Q: You just told me that _____ is part of impairment?

Q: Anything else you might see in someone who is impaired?

Q: What else would you see?

Q: Something else you would see?

Q: What do you think?

Q: Do you agree with him?

Q: Do you have any specialized training?

Q: Do you think someone with specialized training would be more capable of detecting impairment?

Q: What do you think?

Q: Does everyone else agree with them?

Q: Can we all agree as a panel that a person with specialized training would be better at recognizing an impaired driver then we are?

Jurors often understand difficult or overwhelming concepts, such as the DRE protocol, when a prosecutor can relate it back to something with which the juror is familiar. A good way to prepare a juror for the introduction of various DRE processes, which the defense will try to demonstrate is beyond the law enforcement officer's capabilities, such as taking vital signs, is to bring it back to something the juror has done or has seen done. One of the most effective ways to do this is to relate it back to a parent who has a kid who is sick or has a fever. Questions a prosecutor could ask to do this are:

Q: Has anyone here been sick or had a child who has been sick?

Q: What are some things you have done or seen done to make a determination about an illness? (temperature)

Q: Have you ever had to make a "call" about what is wrong with you when you're sick? Or, depending on the direction of the jury voir dire —

Q: Have you ever had to make a "call" about what is wrong with your child when she is sick?

Q: Do you have to see a doctor to know you or your child is sick? Why?

Q: Do you have to see a doctor every time you or your child is sick? Why?

Q: So, you can make a determination of illness based upon observations and experience, right? Who would agree?

Q: When you do go to the doctor, either for illness or regular checkups, would you agree that doctors rely on a lot of "normal ranges" for diagnosing and treatment.

Q: What is one of the first things a doctor will do when you have a visit? (Vital signs!)

Q: Is this a tool they use to make a diagnosis?

A prosecutor can also subtly suggest to the jury the dangers of operating a vehicle while impaired by cannabis by obtaining information regarding a juror's comfortability of an individual's impairment in certain situations. These types of questions can also tap into a juror's belief regarding cannabis, such as if the juror buys into the concept that using cannabis makes a person a better or driver. Examples of questions to tap into a juror's belief on how much impairment is okay are below:

Q: Has anyone flown on an airplane before?
Q: How much cannabis do you think the pilot could use and still safely operate the plane?
Q: If you were a passenger on the plane how much cannabis could the pilot use and you feel comfortable being on the plane?
Q: Would you feel comfortable getting on a plane with a pilot who has used cannabis right before getting on the plane? Would you feel safe?
Q: Has anyone had surgery?
Q: Would you feel comfortable going into a surgery if you knew the surgeon had used cannabis right before going into your surgery?
Q: If so, how much cannabis do you think a surgeon could use and still perform the surgery to the degree required by their standards?
Q: Would you be okay with having surgery from a doctor who has used cannabis right before going into the operating room?

Juror sympathy

It is important to recognize when the circumstances around a particular case or a particular defendant will lend to juror sympathy. A defendant may likely exploit any sympathy to entice a jury to feel sorry for him and acquit of the charge even if it fully believes in the defendant's guilt. This can be a very effective tactic for a sympathetic defendant. It is important for a prosecutor to acknowledge the sympathetic components

to the case in a sensitive manner, while committing the jury to following the law no matter how bad it feels for the defendant. This may be a time to also acknowledge the defendant is not a bad person, he just made a bad mistake. Voir dire can be a time for a prosecutor to get the jury to recognize that regardless of the circumstances and how sorry or bad it feels for the defendant, it is important hold it accountable for its actions.

Time Limits

It is important to know any limitations set by the court on voir dire. Jurisdictions, and even different judges within the same jurisdiction, can vary greatly on the approach to voir dire. If a prosecutor is not familiar with the judge or the court rules in a jurisdiction, she should take the initiative well before trial to determine any time constraints the court places on the parties during voir dire, question or topic restrictions, and the preference of the court for conducting voir dire.