INTERNATIONAL ASSOCIATION FOR CHEMICAL TESTING

# IACT NEWSLETTER

VOLUME 36, NUMBER 2 | INTERNATIONAL ASSOCIATION FOR CHEMICAL TESTING | AUGUST 2025

## WHAT'S INSIDE

**Section I—IACT Conference**

What happens in Vegas … page 1
Abstracts page 5

**Section II—Legal and Scientific Section**

Case Summaries page 27
Reaching to the Converted page 33

**Section III—Business**

President's Message page 34
Chair's Corner page 35
Treasurer's Report page 36
Board of Director's Meeting Minutes page 36
General Business Meeting page 38
Committee Reports page 40

**Section IV—Miscellaneous**

Bits and Pieces page 40
Course Announcements page 45
Historical Section page 46
Manufacturers' Corner page 49
2024–2026 Officers, Board of Directors, Committees & Chairpersons page 60

**Inserts**

Membership Update
Membership Application

**Next Newsletter Deadline**
October 2025

**Next Newsletter Published**
November 2025

## Section I—IACT Conference


## What happens in Vegas …

### Raegan Carter, IACT Site/Event Chair

… makes for a really great conference! I won't break Vegas code and talk about what happened after conference hours (did someone say speakeasy?), but Las Vegas was certainly an epic location for a meeting, wasn't it? We had great presentations on collaboration, legislation, and instrumentation, as well as our first breakout sessions in quite a while, with more presentations on breath alcohol, oral fluid, and toxicology topics. Then there was some local flair from the Mob Museum rounding out some fantastic workshops on Alcohol Calculations, Oral Fluid Devices, Testimony, Accreditation, and Driving Under the Influence of Designer Benzodiazepines.

*Continued, page 2*

IACT NEWSLETTER VOLUME 36, NUMBER 2 • AUGUST 2025

# Chasing Impairment: Emerging Technologies and a Shift in Safety Culture

**By Dr. Suman Rana | Founder & Chief Toxicologist, THINKTOX**

**Executive Summary**

As industries continue to evolve in complexity and safety demands intensify, one factor remains critical across all sectors: ensuring that individuals in safety-sensitive roles are truly fit for duty. Cognitive and functional impairment, whether due to fatigue, stress, medical conditions, or substance use—is a leading but under-addressed risk factor in the workplace. Traditional drug testing methods fall short in detecting real-time impairment, especially when the cause is not substance related.

A paradigm shift is underway, powered by new technologies that enable real-time, objective screening for impairment itself—not merely the presence of substances. Among these technologies, the DRUID® app by Impairment Science Inc. has demonstrated particularly promising results, especially in side-by-side comparisons with Drug Recognition Expert (DRE) evaluations.

This white paper highlights findings from a recent Green Lab study series, which shows strong alignment between DRUID scores and professional DRE assessments, validating DRUID's effectiveness as a real-time tool for fitness- for-duty screening.

**The Limitations of Traditional Approaches**

Drug tests have long been a standard for workplace safety as they are an excellent tool for deterrence and accountability. However, they detect only the presence of substances—not their effects. This distinction is critical. A positive test for THC, the psychoactive component in cannabis, for example, tells us nothing about whether the individual is currently impaired. Likewise, impairment from causes like fatigue, stress, or illness can go completely unnoticed by standard toxicological screens. This blind spot leaves organizations vulnerable, especially in environments where fitness for duty is mission critical.

The limitations of these methods have spurred interest in impairment detection technologies that assess functional performance, not just substance use. This shift marks a significant change in safety strategy, focusing on fitness for duty as an outcome, rather than substance detection.

**Emerging Impairment Detection Technologies**

Over the past decade, we've seen a wave of innovation in technologies designed to detect impairment—from THC breathalyzers and oculomotor tracking to biometric sensors, motion analysis, and cognitive performance testing. While many of these tools hold promise, their scientific validity, practical applications, and real-world reliability must be carefully evaluated before they can be responsibly adopted at scale.

**The DRUID App**

The DRUID app is one of these newer technologies that measures cognitive and psychomotor performance through a short, gamified assessment that takes approximately 60 seconds to complete. It evaluates reaction time, hand-eye coordination, balance, decision-making, and time estimation—all key neurological functions compromised by impairment.

Accessible via any smartphone or tablet and requiring no additional hardware, DRUID promises a practical and scalable solution for organizations seeking to implement real-time fitness for duty screening.

**Scientific Validation: Green Lab Series**

Green Labs are educational, and training events designed to increase awareness around cannabis impairment. Participants consume cannabis ad libitum in a legal and safe environment, after which a variety of impairment assessment tools—including cognitive tests, emerging technologies, and standardized field sobriety tests (SFSTs) administered by trained DREs—are used to evaluate their condition. Green Labs also serve as practical training grounds for police officers in ARIDE (Advanced Roadside Impaired Driving Enforcement) programs, helping them recognize signs of

*Continued*

cannabis impairment in real-world scenarios.

DRUID has been previously validated in several studies[1-5], including peer-reviewed research by institutions such as Johns Hopkins University School of Medicine[2,4] and University of Colorado[3]. Most recently, it was evaluated in real-world settings in six Green Lab events where cannabis users underwent both DRUID testing and SFST administered by DREs.

Study Design

- Participants (n=44) consumed cannabis in 6 Green Lab sessions in a controlled environment.
- Each subject took 3 DRUID tests before consuming cannabis to establish their individual base-line DRUID score (unimpaired score).
- The DRUID test was administered again within approximately 20 minutes of cannabis consumption. An increase in DRUID score of 5 or more points as compared to the individual baseline was used as the cut- off for considering the individual impaired.
- DRE officers independently evaluated each participant via the SFST.
- Participants also self-reported their perceived impairment – ability or inability to drive and work.

**Key Findings**

- DRUID scores showed strong agreement with DRE evaluations in most participants. DRUID results matched the DRE assessments in 82% of the participants (36 out of 44).
- DRUID scores aligned with participant's self- assessment in 77% (34 out of 44).
- Of the 8 participants where DRE assessment did not align with DRUID scores, 7 were impaired according to DRUID test but were unimpaired according to DRE. However, four participants in this group self-assessed themselves as impaired, ie unable to drive and/or work.

In this assessment, DRUID demonstrated greater sensitivity in detecting cannabis impairment compared to SFST evaluations. These findings align with earlier research by Spindle et.al., where DRUID was identified as the most sensitive measure of impairment among various cognitive performance tasks and standard field sobriety tests— including the Walk and Turn (WT), One Leg Stand (OLS), and Modified Romberg (MRB)[2].

These findings support the use of DRUID as a practical and reliable, real-time screening tool for employers, schools, and public safety organizations.

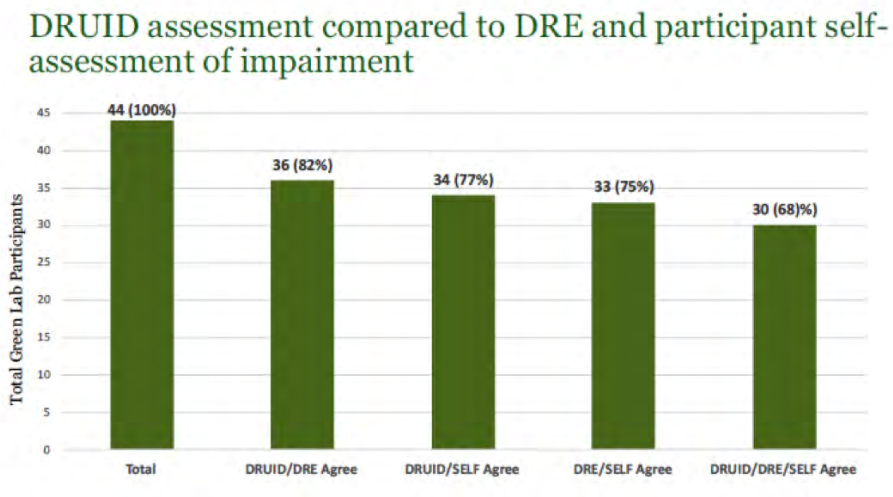
**Implications for Workplace Safety**

Organizations in transportation, healthcare, construction, energy, and public safety face daily challenges in verifying employee fitness for duty. The ability to quickly screen for actual functional impairment—not just substance presence—is a critical gap DRUID fills.

The Green Lab findings support DRUID as a practical tool for organizations seeking to:

- Conduct pre-shift fitness for duty checks.
- Supplement traditional drug testing with functional screening.
- Promote accountability and safety in high-risk environments.

For employers, adopting cognitive screening could mean fewer incidents, injuries, fatalities, greater worker well- being, and a culture that values functional capacity and productivity over punitive enforcement.




*Continued*

**Conclusion:**
**A New Era in Safety**

The DRUID app represents more than technological innovation—it reflects a shift in how we think about impairment. As drug use patterns evolve and workplaces demand greater agility, tools like DRUID can complement traditional methods, enhancing both safety and fairness.

Impairment is a complex condition, and it must be measured by function. As our understanding of impairment evolves, so too must our methods for detecting it. The Green Lab study data illustrates that DRUID offers a scientifically sound, accessible, and scalable way to detect impairment in real time. Aligning closely with professional DRE assessments, DRUID empowers organizations to make better-informed safety decisions and protect their workforce.

The future of impairment detection is not just about what substances may be in someone's system—it's about whether they are ready to do the job safely. DRUID helps answer that question.

**References:**


1. Richman, J., & May, L. S. (2019). An investigation of the Druid® smartphone/tablet app as a rapid screening assessment for cognitive and psychomotor impairment associated with alcohol intoxication. *Vision Development & Rehabilitation*, 5(1), 31–42. https://cdn.ymaws.com/www.covd.org/resource/resmgr/vdr/vdr_5_1/vdr5-1_article_richman_doi.pdf
2. Spindle, T. R., Martin, E. L., Grabenauer, M., Woodward, T., Milburn, M. A., & Vandrey, R. (2021). Assessment of cognitive and psychomotor impairment, subjective effects, and blood THC concentrations following acute administration of oral and vaporized cannabis. *Journal of Psychopharmacology*, 1–18. https://doi.org/10.1177/02698811211021583
3. Karoly, H. C., Milburn, M. A., Brooks-Russell, A., Brown, M., Streufert, J., Bryan, A. D., Lovrich, N. P., DeJong, W., & Bidwell, L. C. (2022). Effects of high-potency cannabis on psychomotor performance in frequent cannabis users. *Cannabis and Cannabinoid Research*, 7(1). https://doi.org/10.1089/can.2020.0048
4. Zamarripa, C. A., Spindle, T. R., Schriefer, D., Cone, E. J., Winecker, R. E., Flegel, R., Hayes, E., Davis, L. S., Kuntz, D., & Vandrey, R. (2025). A within-subject cross-over trial comparing the acute effects of oral delta-8-tetrahydrocannabinol and delta-9-tetrahydrocannabinol in healthy adults. *Drug and Alcohol Dependence*, 258, 111070. https://doi.org/10.1016/j.drugalcdep.2025.111070
5. DeJong, W., Choo, P. W., Jor'dan, A. J., Stanley, I. M., & Milburn, M. A. (2025). Monitoring concussion recovery with the Druid® rapid impairment assessment app: A case report. *Clinical Case Studies and Reports*, 7(1), 1–5. https://doi.org/10.15761/CCSR.1000178


**About the Author**

Dr. Suman Rana is the Founder and Chief Toxicologist of THINKTOX, providing consulting and advisory services to industry, government, and legal sectors. She serves on the Advisory Board of Impairment Science Inc. and is an advocate for evidence-based approaches to drug policy and workplace safety. She can be reached at srana@thinktoxicology.com

# INTERATIONAL ASSOCIATION FOR CHEMICAL TESTING, INC.
## 2024–2026 Officers, Board of Directors, Committees and Chairpersons

**President**
Carrie A. Kirkton
New York State Police
Forensic Investigation Center
1220 Washington Ave., Bldg. 30
Albany, NY 12226
carrie.kirkton@troopers.ny.gov

**Secretary**
Carla Peguese
New Hanover County Sheriff's
Office Forensic Laboratory
615 Bess Street
Wilmington, NC 28401
cpeguese@nhcgov.com

**Board of Directors**
Scott Brown
Jeff Dukette
Curt Harper
Patrick Harding
James Hutchings

**Vice President**
Jennie Duffy
Department of Forensic Science
700 North 5th Street
Richmond, VA 23219
jennie.duffy@dfs.virginia.gov

**Treasurer**
Matthew Howe
State of NH-State Police
Forensic Laboratory
33 Hazen Dr
Concord, NH 03305
matthew.d.howe@dos.nh.gov

## Committees

**Conference Site & Program**
Rebecca Wagner—Chair
Colleen O'Bryant—Vice Chair
Janna Feldmann • Alaina Holt
Melissa Kimball • Haley Mulder

**Ethics**
Robert Miles—Chair
Brian Lutmer—Vice Chair
Melissa Kimball

**Event**
Raegan Carter —Chair
Laura Bailey—Vice Chair
Alvin Barnes • Julian Conyers
Erin Feazell • Lezlei Haag
McCayla Lopez
Brianna Medrano
Daphne Ristau • Samera Zavaro

**Legal**
Kiran Chopra—Chair
Rebecca Daner—Vice Chair
Kevin Behrens • Nikka Bradley
Martha Mendoza • Macy Milam
Jared Olson • Alyssa Peterson

**Membership Committee**
Kevin Roberts—Chair
Grace Hancox—Vice Chair
Morgan Appenrott
Shauna Richardson

**Manufacturers Liaison**
Jessica Jackson—Chair
Haylea Debolt • Jeff Dukette
John Garner • Jeremy Johnston
Lisa Johnston

**Nomination Committee**
Chair—Randall Beaty
Patrick Harding • Curt Harper
Alka Lohmann

**Training Committee**
Jasmine Maxwell—Chair
Delfino Gaspar—Vice Chair
Shelley Benate • Jonna Berry
Justin Grodnitzky
Curt Harper • Carrie Kirkton
Lucien Lockhart • JJ Ojeda
Stephanie Souz • Delaney Ward

**Website committee**
Stephen Cooper—Chair
Michael Crowe • Jessica Duchene
Kelly Gomez • Morgan Hensley
Carla Peguese

**Volunteer committee**
Daphne Ristau—Chair
Kahleah Pell—Vice Chair
Nikka Bradley • Scott Brown
John Garner • Lauren Lewis
Colleen O'Bryant • Shayla Platt
Kevin Roberts • Kelci Somers