

TOXTALK

PRESIDENT'S MESSAGE



Chris Heartsill, B.S., D-ABFT-FT
SOFT President

Spring has sprung! Some of you are digging out of the snow (or may still have snow) and others are already firmly headed toward summer. I love the spring, a time of taking short walks in my yard and anticipating what plants might come back from the year before, watching everything being born again. My dog also loves it as the local rabbit population sets up residence in our flowerpots and the little nests full of bunnies are also full of extreme interest. No matter the reason to go outside, the first stop is a flowerpot investigation. With the burst of new life, all things seem possible in the spring and the renewed energy of longer days and warmer weather inspire all of us

to do more. It is my hope that you get the chance to do more: travel more, relax more, laugh more, spend more time with friends and family. Whatever your more is, do it, don't just plan it.

Three individuals will be doing something exciting this fall. The first awardees of the **Huestis & Smith International Travel Award** were selected. There were some outstanding submissions and some interesting abstracts. The Awards Committee spent a lot of time and effort to evaluate and rank these submissions. Three were chosen to have the opportunity to travel to New Zealand and present their work at the 2025 TIAFT meeting. In no particular order I want to congratulate the following individuals:

Gillian Sayer - Development and Validation of a General-Purpose Broad-Spectrum LC-QTOF Screening Method in Blood, Serum/Plasma, and Urine Using Minimal Sample Volume.

Kei Osawa - Mitragynine: Distribution in Postmortem Specimens Plus Three Interesting Cases.

Madison Shackmuth - Cytochrome P450-Mediated Metabolism of Isotonitazene, a Novel Synthetic 2-Benzylbenzimidazole Opioid.

EDITORS

Robert Johnson, Ph.D., F-ABFT
Chris Heartsill, B.S., D-ABFT-FT

EDITOR EMERITUS

Yale Caplan, Ph.D., F-ABFT

PRESIDENT

Chris Heartsill, B.S., D-ABFT-FT

PRESIDENT ELECT

Jeri Ropero-Miller, Ph.D., F-ABFT

TREASURER

Robert D. Johnson, Ph.D., F-ABFT

SECRETARY

Madeleine J. Swortwood, Ph.D.

PAST PRESIDENT

Tate Yeatman, M.S., F-ABFT

DIRECTORS

Bill Johnson, B.A., D-ABFT-FT

Dayong Lee, Ph.D., F-ABFT

Jennifer Colby, Ph.D., DABCC (CC, TC), F-ABFT

Russell Lewis, Ph.D., F-ABFT

Dani Mata, M.S.F.S., D-ABFT-FT

Kim Samano, Ph.D., D-ABFT-FD

COUNSELORS

Laurel Farrell, B.A.

Dan Anderson, M.S., D-ABFT-FT, ABC-GKE

TOXTALK

BOARD OF DIRECTORS

PRESIDENT'S MESSAGE	1-2
TREASURER'S REPORT & 2025 BUDGET	2-3
SOFT DONOR WALL	4
JOIN SOFT: MEMBERSHIP & PROMOTIONS	5
CONTINUING EDUCATION OPPORTUNITIES	6
SOFT 2025 MEETING UPDATE	7-18

YFT COMMITTEE UPDATE	19-20
RTL UPDATE	21
PROFESSIONAL MENTORING PROGRAM	22
AAFS NEWS	23
SCIENTIFIC CONTENT	24-36
SOFT INFORMATION	37

PRESIDENT'S MESSAGE CONTINUED

For those submissions that were not selected, thank you for taking the time to participate and keep working to present high quality research, case reports, and validation information. Perhaps 2026 is yours!

One of the difficult things of being in a leadership role is telling people you care about things that they do not want to hear. A couple of years ago, SOFT moved away from using **ACCENT credits for continuing education** due to cost and complexity of the process they required. SOFT does provide continuing education certificates for attendees of webinars, workshops, and the Annual Meeting which have been used successfully for the needs of ABFT certification. However, there were some concerns that were raised by several members that this process did not meet their needs for continuing education regarding specific state or clinical certifications. These concerns were heard and discussed and the SOFT Board of Directors (BOD) decided to gather information regarding the impact of this process on its membership.

In January, a **Continuing Education Survey** went to all SOFT members to gather feedback on the entire continuing education process. There were **143 responses** to the survey with an overwhelming majority making positive comments on the current SOFT process and feeling no impact on the change from using ACCENT credits. There were 11 individuals who were affected or could be affected and were requesting that the process change back or have a combination of the two processes. During the interim meeting in Baltimore, the BOD discussed the results of the survey and the path forward. The decision was to continue the current process of SOFT derived documentation of continuing education and not revert to using ACCENT credits. For those members that are affected by this decision I hope you understand that it is in the best interest of SOFT and the majority of its membership to continue the current process.

The planning for the **Annual Meeting** is heating up and I am so looking forward to seeing all of you in Portland, Oregon. The Planning Committee will have some really great things in store for all of us and I am very excited to see it all unfold. I hope you will join us on **Thursday, October 28** for **THE RED ROSE BALL!**

Chris Heartsill
SOFT President

TREASURER'S REPORT & 2025 BUDGET



Robert Johnson, Ph.D., F-ABFT
SOFT Treasurer

Hello SOFT community!

First, I would like to thank all SOFT members for trusting me to oversee the finances of SOFT. As I ease into the role and learn more daily, I want to especially thank past-Treasurer, Jeri Roper-Miller, as well as Beth Olson and CC Watson for all their help. It's hard to believe we are already in the 2nd quarter of 2025, summer is here. I am happy to report that the Finance Committee consisting of myself, **Denice Teem, Lynn Wagner, Mary Lynn Heffington, Steven Fleming, Chris Heartsill, and Jeri Roper Miller** are eagerly anticipating our first review of the finances in 2025. The committee helps provide financial oversight for the organization and provides guidance and recommendations to the Board on financial matters.

The year has not started problem-free. In early 2025, SOFT, like many of its members have in the past, suffered from an unauthorized attempted withdrawal of funds from one of our accounts. The attempted theft, not from anyone associated with SOFT, resulted in the closure of that account, and months of work by Beth and CC to set up the new account while keeping the office running. The good news is that we are now nearly back to normal, and all accounts are up to date.

SOFT remains in a strong financial position. As of May 9th, 2025, SOFT's bank account balances totaled \$756,432. At the interim board meeting held during the AAFS meeting, the board unanimously approved the 2025 budget.

FINANCE COMMITTEE

ROBERT JOHNSON, CHAIR

DENICE TEEM

LYNN WAGNER

MARY LYNN HEFFINGTON

STEVEN FLEMING

CHRIS HEARTSILL

JERI ROPERO MILLER

TREASURER'S REPORT & 2025 BUDGET

In full transparency to its membership, **SOFT provides the approved budget for your review** and input annually in Tox-Talk as well as a full report at the annual business meeting. I encourage you to review the included budget spreadsheet which includes the approved budget for 2025. If you have any questions, please don't hesitate to contact me. Thank you again for all your support.

Robert Johnson
SOFT Treasurer

Revenue	2020 Actual	2021 Actual	2022 Actual	2023 Actual	2024 Actual	2025 Budget
Membership	\$143,859	\$143,985	\$173,539	\$196,835	\$218,720	\$218,720
Annual Meeting	\$13,375	\$820,109	\$1,073,054	\$1,136,926	\$1,102,183	\$1,226,817
SOFTember	\$434,175	\$0	\$0	\$0	\$0	\$0
Merchandise Sales	\$0	\$536	\$0	\$0	\$0	\$0
Advertising	\$500	\$0	\$0	\$600	\$0	\$0
Continuing Education	\$9,345	\$14,895	\$20,155	\$8,220	\$7,560	\$10,000
Contributions	\$3,372	\$3,347	\$4,615	\$4,172	\$3,836	\$3,500
Interest	\$138	\$680	\$2,154	\$429	\$445	\$400
Rebates/Credits	\$0	\$0	\$2,183	\$2,631	\$5,645	\$5,000
Grants	\$0	\$0	\$5,000	\$5,000	\$5,000	\$25,000
Total Revenue	\$604,764	\$983,552	\$1,280,700	\$1,354,813	\$1,343,389	\$1,489,437
Expense						
Payroll	\$149,384	\$147,203	\$150,794	\$162,582	\$178,812	\$184,091
Occupancy	\$2,109	\$3,155	\$4,273	\$3,754	\$4,830	\$5,000
Office	\$876	\$686	\$686	\$1,884	\$464	\$2,350
Administrative Expenses	\$69,001	\$22,062	\$89,410	\$84,850	\$85,301	\$94,861
Insurance	\$9,179	\$10,469	\$9,824	\$20,638	\$22,463	\$24,709
Annual Meeting	(\$6)	\$824,533	\$788,542	\$1,010,182	\$955,506	\$1,035,948
SOFTember	\$45,447	\$0	\$0	\$0	\$0	\$0
Board and Committees	\$8,433	\$33,572	\$20,763	\$33,410	\$56,394	\$68,000
Legal & Professional Services	\$17,682	\$9,147	\$13,417	\$22,346	\$31,745	\$25,192
Membership	\$7,500	\$10,500	\$13,000	\$13,000	\$10,000	\$15,000
Awards	\$8,000	\$8,000	\$9,000	\$12,000	\$12,000	\$12,000
Meals and Entertainment	\$67	\$143	\$47	\$72	\$35	\$250
Appreciation Gifts	\$458	\$1,211	\$855	\$663	\$509	\$1,250
Bank Charges	\$6,169	\$7,056	\$7,411	\$7,493	\$8,830	\$9,000
Total Expense	\$324,299	\$1,077,737	\$1,108,022	\$1,372,874	\$1,366,889	\$1,477,651
Net Income/(Loss)	\$280,465	(\$94,185)	\$172,678	(\$18,061)	(\$23,500)	\$11,786

HONORING OUR 2025 ERA/YSMA DONORS

Your Support Fuels the Future of Forensic Toxicology!

THANK YOU! We're deeply grateful for your generous support of the **Educational Research Award (ERA)** and the **Young Scientist Meeting Award (YSMA)**. Your contributions directly advance education, research, and mentorship in forensic toxicology. Thank you for your unwavering commitment to the future of our field!

ABOUT THE ERA/YSMA AWARDS

These awards recognize innovation, leadership, and excellence in our field.

- The ERA honors exceptional contributions to forensic education and research.
- The YSMA helps early-career scientists showcase their work and grow their networks.
- Recipients will present their research in Portland, OR at SOFT 2025.



JOIN THE SOFT DONOR WALL

Support the advancement of forensic toxicology by contributing to the Educational Research Award (ERA) and the Young Scientist Meeting Award (YSMA). Your donation helps fund critical opportunities in education, mentorship, and scientific research.

Every contribution—regardless of amount—makes a lasting impact and helps us recognize and support outstanding members of our community.

SOFT DONOR WALL

PATRON: \$200+

Our most generous contributors - thank you for leading the way in advancing science and education.

Bridget Lorenz Lemberg
Michelle Peace
Erin A Spargo

FUNDER: \$100+

Supporters who provide substantial contributions to help grow the next generation of scientists.

Crystal Arndt
Tyson Baird
Ayako Chan-Hosokawa
Anthony G Costantino
Robert L Herndon
Erin M Hensel
Thomas C Kupiec
Dayong Lee
Haley Mulder
Eugene Schwilke
Jeff Walterscheid
Diana G. Wilkins

CONTRIBUTOR: \$50

Donors whose generosity helps sustain SOFT's research and mentoring programs.

Sarah H Bartock
Garry B Dawson
Teresa Gray
Chris Heartsill
Bradford R Hepler
Robert D Johnson
William R Johnson
Sabra R Jones
Erin Karschner
James C Kraner
Matthew Lambing
Michael Mbughuni
Jeri D Ropero-Miller
Tania Sasaki
Karen S Scott
Joshua Z Seither
Britni Skillman
Peter R Stout
Andre J Sukta
Javier Velasco

SUPPORTER: \$1+

Every gift matters—thank you for being part of our mission!

Laurel P Aldhurai
Kaitlyn B Palmquist-Orlando
Luke N Rodda
Bridget D Verdino
Heather L. Ciallella
Edward J Cone
Sumandeep Rana
Robert Kronstrand
Kari M Midthun
Erin C Strickland
Craig A Sutheimer

Thank You!

Join SOFT: Membership & Promotions

The Society of Forensic Toxicologists (SOFT) offers several categories of membership to support individuals at all stages of their careers in forensic toxicology. Whether you are a student exploring the field, an experienced professional, or a long-time member transitioning into retirement, there is a membership type tailored to your background and level of involvement.

Each category has specific eligibility requirements, benefits, and sponsorship guidelines. Please review the details below to determine the membership type that best fits your qualifications and professional status. If you are a current member seeking to update your membership category, information about membership promotion is also provided.

Please feel free to reach out to the Membership Committee with any questions or if you need assistance with your Membership Application.

MEMBERSHIP COMMITTEE Chair: Madeleine Swortwood

Sarah Martin
Justin Grodnitzky
Marissa Finkelstein

Apply Now

How to Apply for SOFT Membership

BECOME A MEMBER TODAY!

STEP 01

Select your Membership Level

Determine the level you qualify for or wish to promote to. Review the requirements and sponsorship needs.



STEP 02

Contact Your Sponsor

Reach out to your sponsors and request they submit a Sponsorship Form for your application.



STEP 03

Create Your Profile & Pay

Create your Membership Profile & Submit your Application Fee - Applied to first-year dues upon approval.



STEP 04

Submit Your Application

Submit your Membership Application with the following:

- Current CV or Resume
- Completed Sponsorship Form (PDF received via email)





CONTINUING EDUCATION OPPORTUNITIES

Unlock a treasure trove of knowledge with our live and on-demand webinars, designed for forensic toxicologists at every stage of their career. Whether you're a seasoned professional or just starting out, these sessions are crafted to enrich your understanding of cutting-edge topics and industry challenges.

SOF Learning Center Offers:

- ✓ **EXCLUSIVE ACCESS**
- ✓ **AFFORDABLE LEARNING**
- ✓ **ON-DEMAND FLEXIBILITY**



ACCESS THE LEARNING CENTER!



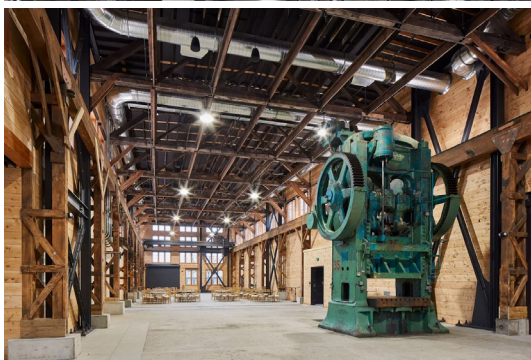
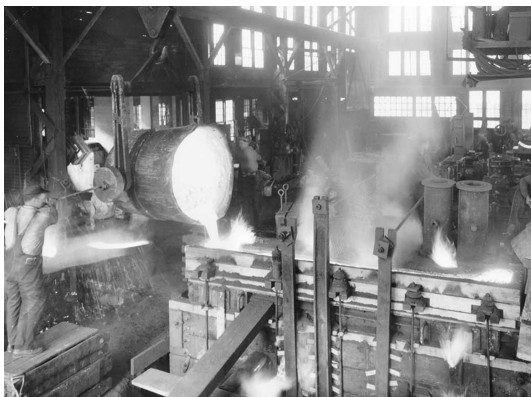
ANNUAL MEETING UPDATE - PORTLAND, OR

In March, **Ann Marie Gordon (F&B)**, **Denice Teem (F&B)**, **Frank Wallace (A/V)**, **Beth Olson**, and **CC Watson** joined us in Portland for the SOFT 2025 site visit. We had the unique opportunity to experience Portland's vibrant culture, sustainability efforts, and great food. We spent time in the Oregon Convention Center (OCC), touring the meeting rooms and vendor space. Tours of the Hyatt Regency and the Hotel Eastland offer excellent accommodations just steps from the OCC and the Max Light Rail.

REDD ON SALMON STREET

WEDNESDAY, OCTOBER 28 NETWORKING EVENT

A standout moment of the visit was the tour of the Wednesday offsite venue, [Redd on Salmon Street](#). The Redd is a dynamic event venue and sustainability hub in Portland's Central East-side. Originally a **century-old ironworks building**, The Redd has been transformed into a center for food innovation and community gatherings. It exemplifies Portland's commitment to environmental responsibility, local partnerships, and adaptive reuse of urban spaces. The venue offers versatile space for conferences, workshops, and vendor exhibits, making it an ideal candidate for SOFT.



The group explored the expansive OCC for Scientific Sessions, Networking Events, and Workshops. The Exhibitor Hall allows for substantial room for our 2025 partners and ample room for posters and food stations. The OCC is an impressive facility with **LEED Platinum Certification** that aligns with Portland's leadership in green building and sustainable practices. OCC is committed to recycling conference materials and displays, donating excess conference food to local organizations, reducing landfill waste, and harnessing solar power using rooftop solar panels. SOFT is participating in these efforts by **providing attendees with a SOFT 2025 Hydroflask** that can be refilled at one of the many water bottle refilling stations throughout the venue. The site visit underscored the city's suitability for hosting a science-driven conference in a dynamic, environmentally conscious urban setting.

With scenic views, a thriving local food scene, and a strong spirit of innovation, Portland promises to deliver an unforgettable experience for SOFT 2025 attendees.

-Sara & Amy

Stay Hydrated
with your SOFT 2025 Hydroflask!



OREGON CONVENTION CENTER
OCTOBER 26 – 31, 2025



PLANNING COMMITTEE



HOST
SARA SHORT



HOST
AMY MILES

Scientific Program Coordinators

Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators

Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators

Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators

Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators

Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator

Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair

Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor

Rebecca Wagner - Virginia Dept. of Forensic Science

Fun Run Coordinator

Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison

Sarah Riley - St. Louis University School of Medicine

ANNUAL MEETING UPDATE - PORTLAND, OR

REGISTRATION

Registration for SOFT 2025 Opens on June 25! Join us for the SOFT 2025 Annual Meeting in beautiful Portland, OR, where the forensic toxicology community gathers to explore the latest innovations, research, and professional connections. [View the Registration Webpage.](#)

REGISTRATION RATES AND INCLUSIONS

Take advantage of Early Bird pricing and plan ahead!

Early Bird Rate: June 25 – September 11

Late Rate: Begins September 12

Onsite Rate: Begins October 9

Registration	Membership	Early Bird (June 25 - Sep 10)	Late (Begins Sept 11)	Onsite (Begins Oct 9)
Meeting Attendee Registration: Access to Scientific Sessions, Exhibit Hall, Networking Events, SOFT Bag & Giveaways, Breakfast, Lunch & Refreshment Breaks on W/TH/F	Member	\$599	\$799	\$899
	Student	\$299	\$499	\$699
	Non-Member	\$799	\$999	\$1,099
Workshop Registration: Breakfast & Refreshment Breaks on Workshop Days	Member	\$150	\$175	\$200
	Student	\$150	\$175	\$200
	Non-Member	\$200	\$225	\$250
Exhibitor Booth Staff Registration: Exhibit Hall & Booth Access plus Meeting Attendee Registration Inclusions		\$600	\$600	\$600
Guest Package: Access to Exhibit Hall, Networking Events, SOFT Bag & Giveaways, Breakfast, Lunch & Refreshment Breaks on W/TH/F. Guest Packages are for personal guests and can not be used for industry professionals.		\$500	\$500	\$500
Karla Moore Fun Run/Walk Registration: Donation to the American Cancer Society, Includes Lapel Pin & Shirt		\$30	\$30	\$30

Feature/Access	Meeting Attendee	Student	Workshop Only	Exhibitor	Guest
Workshop Access (M/T - Additional Cost)	Optional Add-on	Optional Add-on	✓	Optional Add-on	✗
Breakfast & Refreshment Breaks (M/T)	If Attending Workshop	If Attending Workshop	✓	If Attending Workshop	✗
Breakfast, Lunch & Refreshment Breaks (W/TH/F)	✓	✓	✗	✓	✓
Exhibit Hall (T/W/TH)	✓	✓	✗	✓	✓
Scientific Sessions (W/TH/F)	✓	✓	✗	✓	✗
Networking Events (T/W/TH)	✓	✓	✗	✓	✓
Program Book & Abstracts	✓	✓	✗	✓	✓
SOFT Bag & Giveaways	✓	✓	✗	✓	✓



**Apply for SOFT Membership by July 31
to Qualify for Member Rates**



**OREGON CONVENTION CENTER
OCTOBER 26 – 31, 2025**



PLANNING COMMITTEE



**HOST
SARA SHORT**



**HOST
AMY MILES**

Scientific Program Coordinators

Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators

Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators

Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators

Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators

Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator

Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair

Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor

Rebecca Wagner - Virginia Dept. of Forensic Science

Fun Run Coordinator

Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison

Sarah Riley - St. Louis University School of Medicine

ANNUAL MEETING UPDATE - PORTLAND, OR

HOTEL ROOM BLOCKS

Room Blocks Open June 25! SOFT 2025 will be held in Portland, OR, with programming taking place at the Oregon Convention Center. We have secured discounted room blocks at two nearby hotels:

HYATT REGENCY PORTLAND

SOFT Room Block Rate: \$229

Distance: .02 miles/4 min



HOTEL EASTLUND

SOFT Room Block Rate: \$209

Distance: .02 miles/5 min



OREGON CONVENTION CENTER



OREGON CONVENTION CENTER
OCTOBER 26 – 31, 2025

PLANNING COMMITTEE



HOST
SARA SHORT



HOST
AMY MILES

Scientific Program Coordinators

Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators

Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators

Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators

Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators

Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator

Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair
Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor

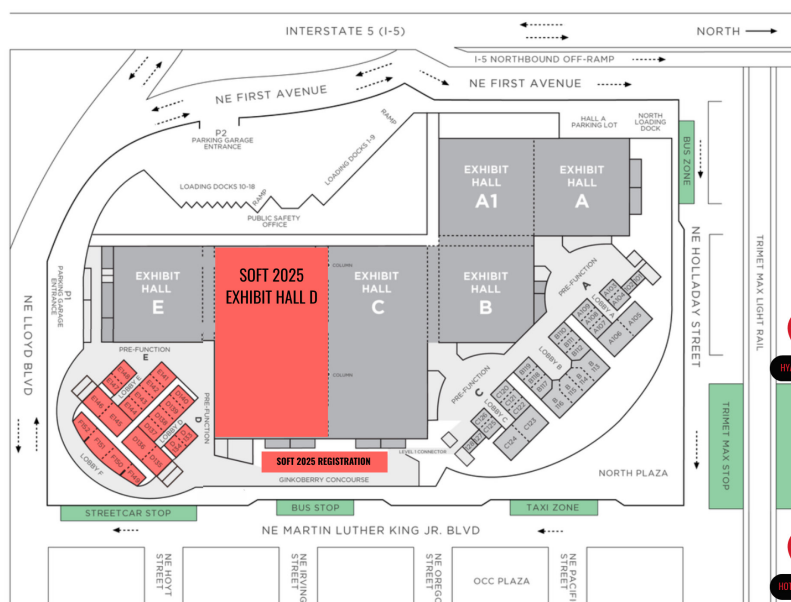
Rebecca Wagner - Virginia Dept. of Forensic Science

Fun Run Coordinator

Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison

Sarah Riley - St. Louis University School of Medicine



ANNUAL MEETING UPDATE - PORTLAND, OR

SCIENTIFIC PROGRAM

Program Coordinators: Kayla Neuman & Tyson Baird

Program Dates: Wednesday, October 29 - Friday, October 31

Location: Oregon Convention Center, Portland, OR

Abstract Submissions Closed on June 5

[Scientific Program Webpage](#)

IMPORTANT DATES & DEADLINES:

August 6: Final Decision to Authors

August 27: Program Schedule to Authors

October 2: Poster PDF's Due

October 9: Platform Presentations Due

October 29 - 31: SOFT 2025!

NEW - "SPECIAL TOPIC" SESSION FOR 2025!

This year the Scientific Program Coordinators have chosen **Kratom** as a Special Topic and encourage those with interesting case studies, research, or analytical information related to Kratom.

PLATFORM PRESENTATION GUIDELINES:

Platform Presentation guidelines have been updated to enhance the quality of discourse and maximize engagement. Platform presenters will be allocated **12 minutes**:

- **10 minutes** Dedicated to the Presentation
- **2 minutes** for Questions

THANK YOU, ABSTRACT REVIEWERS!

We're incredibly grateful to the **215 SOFT members who volunteered to review abstracts** for the SOFT 2025 Annual Meeting. This record-breaking response reflects the dedication and generosity of our community. Thank you for helping shape a strong and engaging scientific program for



WORKSHOP PROGRAM

Program Coordinators: Mary Lynn Heffington & Dani Mata

Dates: Monday, October 27 & Tuesday, October 28

Location: Oregon Convention Center, Portland, OR

THANK YOU, WORKSHOP PROGRAM COORDINATORS!

SOFT would like to extend its heartfelt appreciation to Workshop Program Coordinators, **Mary Lynn Heffington and Dani Mata**, for their invaluable contributions in crafting an exceptional workshop program.

Below you will find a concise overview of the Workshop Program. Further details, including abstracts and supplementary workshop information will be posted to the [Workshop Program Webpage](#).



**OREGON CONVENTION CENTER
OCTOBER 26 - 31, 2025**



PLANNING COMMITTEE



**HOST
SARA SHORT**



**HOST
AMY MILES**

Scientific Program Coordinators
Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators
Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators
Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators
Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators
Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator
Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair
Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor
Rebecca Wagner - Virginia Dept. of Forensic Science

Fun Run Coordinator
Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison
Sarah Riley - St. Louis University School of Medicine

WORKSHOP PROGRAM - MONDAY, OCTOBER 27

MONDAY, OCTOBER 27 | 8:00 AM - 12:00 PM

WS01: From Crisis to Calm: Mental Health in Forensic Science Workplaces

Chairs: Kristen Burke, MS, MBA & Sabra Jones, PhD

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS02: The Rise of Smoke Shops and Commercial Sales of NPS

Chairs: Kayla N Ellefsen, PhD & Helen Chang, MS

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS03: A Closer Look at Pediatric Toxicology: Unraveling the Mysteries of Pediatric Testing

Chairs: Theresa Hippolyte, M.S., D-ABFT-FT & Lindsay Glicksberg, Ph.D.

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS04: Method Development: Foundations for the New Toxicologist, Part I

Chairs: Elisa N Shoff, MS, D-ABFT-FT & Wayne Lewallen, BS

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

MONDAY, OCTOBER 27 | 1:30 - 5:30 PM

WS05: Forensic Toxicology Validation: Navigating the Latest ANSI/ASB 036 Revisions: Part II

Chairs: Rebecca Wagner, PhD & Robert Lockwood, PhD

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter

WS06: The “Postmortem Blood Drug Screen”: Analytical and Managerial Approaches

Chairs: Carl E Wolf, PhD & Justin L Poklis, BS

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter

WS07: Choosing Wisely: How Alternative Biological Matrices Shape and Support Forensic Interpretation

Chairs: Eduardo de Campos, PhD & Ana Pego, PhD

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter

WS08: Beyond the Pill Bottle: Prescription Drugs’ Hidden Impacts on Driving, Work, and Life

Chairs: Kristen Burke, MS, MBA & Sabra Jones, PhD

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter



WORKSHOP PROGRAM - TUESDAY, OCTOBER 28

TUESDAY, OCTOBER 28 | 8:00 AM - 12:00 PM

WS09: Stimulants and the Road Ahead

Chairs: Anisha Paul, MS & Vanessa Meneses, MS

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS10: Recent Advances in MS-based Forensic Toxicology: Achieving Efficiency, Selectivity, and Sensitivity

Chairs: Tim Fassette & Laura Friederich

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter

WS11: Data Analysis: Collection, Preparation and Visualization

Chairs: Brigitte Desharnais, PhD & Sue Pearing, MS

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS12: Roadside Oral Fluid Testing Device Evaluation and Approval

Chairs: Curt E. Harper, Ph.D. & Mandi Mohr, MS

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter

TUESDAY, OCTOBER 28 | 1:30 PM - 5:30 PM

WS13: "Can I Say That?" Mastering Expert Testimony in Forensic Toxicology

Chairs: Robert Johnson, PhD & Kei Osawa, MFS

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS14: Death in Portland, Let Knowledge Service the City. Postmortem Toxicology—How to Complete a Thorough Investigation

Chairs: Craig N Chatterton, PhD & Luke N Rodda, PhD

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

WS15: Uniting Forensic Toxicology and Medical Toxicology to Implement the Drug Overdose Toxicology-Surveillance (DOTS) Reporting Program

Chairs: Alex J Krotulski, PhD & Paul Wax, MD

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter

WS16: Leveraging Large Language Models to Investigate the Novel Psychoactive Drug Ecosystem: Applications in Structural Prediction, Behavioral Analysis, and Cyber Surveillance

Chairs: Lynn M Wagner, PhD & Erin R Wilfong, PhD

Audience Knowledge: Intermediate - Involves more advanced concepts requiring some technical working knowledge or prior exposure to the subject matter



ANNUAL MEETING UPDATE - PORTLAND, OR

EXHIBITING & SPONSORSHIP - *OPPORTUNITIES STILL AVAILABLE!*

Location: Oregon Convention Center - Exhibit Hall D

Contact: CC Watson, Operations Manager & Sarah Riley, Exhibitor Liaison

Exhibit Hall Hours:

- **Tuesday, October 28:** 6:30 PM – 9:30 PM (Welcome Reception)
- **Wednesday, October 29:** 9:30 AM – 3:30 PM
- **Thursday, October 30:** 9:30 AM – 3:30 PM

Booth assignments are currently underway for the SOFT 2025 Annual Meeting, taking place October 27–31 at the Oregon Convention Center in Portland, Oregon. We extend our sincere appreciation to all the exhibitors and sponsors who have already committed to supporting this year's meeting. Thank You!

There is still space available in the Exhibit Hall—don't miss this opportunity to connect with **over 900 attendees** representing the forensic toxicology community from around the world.

Why Exhibit at SOFT?

- **Targeted Exposure:** Engage with decision-makers in forensic laboratories, academic institutions, and industry.
- **High-Traffic Opportunities:** Take advantage of the Welcome Reception, networking breaks, and daily exhibit hall hours.
- **Elevated Visibility:** Sponsorship options provide premium branding and positioning throughout the meeting.

To **reserve your booth** or explore sponsorship opportunities, visit the [SOFT 2025 Exhibition & Sponsorship page](#).

We look forward to your participation in making SOFT 2025 a dynamic and engaging experience for the forensic toxicology community!



KARLA MOORE MEMORIAL FUN RUN/WALK

Date: Thursday, October 30

Time: 6:30 AM – 8:00 AM

Fun Run Coordinator: Shannon Palladino

Sponsor the Fun Run – \$250

Sponsorship of the Karla Moore Memorial Fun Run/Walk is open to all exhibitors. Sponsors will receive:

- Company logo placement on the back of participant shirts
- Special recognition in the General Session, SOFT Abstract/Program Book, and the mobile app

This event is a beloved SOFT tradition, honoring Dr. Karla Moore and benefiting the **American Cancer Society**.



**OREGON CONVENTION CENTER
OCTOBER 26 – 31, 2025**



PLANNING COMMITTEE



**HOST
SARA SHORT**



**HOST
AMY MILES**

Scientific Program Coordinators

Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators

Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators

Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators

Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators

Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator

Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair

Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor

Rebecca Wagner - Virginia Dept. of Forensic Science

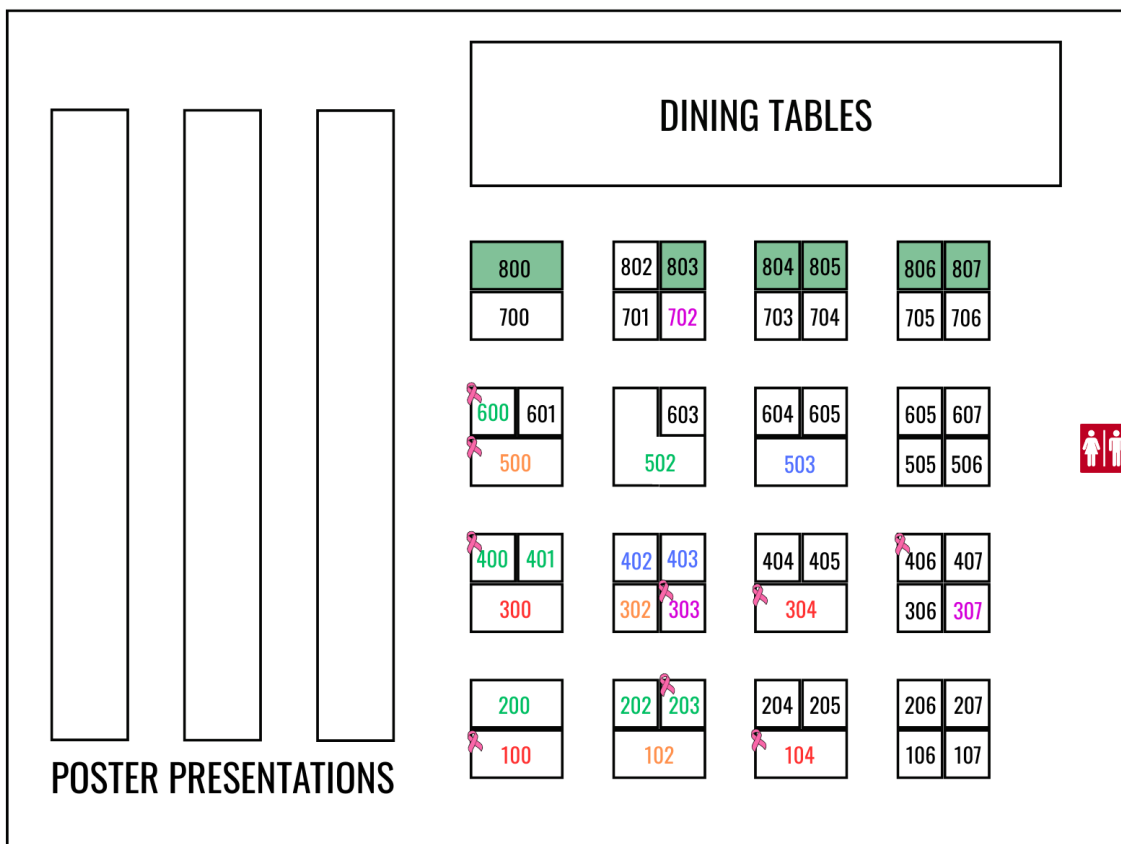
Fun Run Coordinator

Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison

Sarah Riley - St. Louis University School of Medicine

SOFT 2025 EXHIBITORS & SPONSORS



POSTER PRESENTATIONS

Wednesday, October 29

Poster Preparation

7:00 – 11:00 AM

Poster Session #1

12:00 – 2:00 PM

Thursday, October 30

Poster Preparation

7:00 – 11:00 AM

Poster Session #2

12:00 – 2:00 PM

SPONSORSHIP

TIER I SPONSOR - \$15,500

TIER II SPONSOR - \$7,500

TIER III SPONSOR - \$3,500

TIER IV SPONSOR - \$1,500

TIER V SPONSOR - \$1,000

ENTRANCE

PRE FUNCTION D

COMPANY/ORGANIZATION	BOOTH #
9-Delta Analytical LLC & Responsibility.org	404
Abbott	302
Agilent Technologies	300
American Solutions for Business	106
ANSI National Accreditation Board	701
ARK Diagnostics, Inc.	307
AXIOM DIAGNOSTICS, Inc.	102
Biotage, LLC	705
Bruker Scientific LLC	204
Campbell Science	203
Cayman Chemical Company	405
Collaborative Testing Services	107
Diamond Diagnostics	607
DPX Technologies, Inc.	306
DrugImpairment.com	205
Forensic Advantage (The Computer Solution Company of Virginia, LLC)	703
Golden West	400
IMCS	601
Indigo BioAutomation	402
INTEGRA Biosciences	700
ionBench Corporation	206
JEOL USA, Inc.	303
Kura Biotech	503
LGC Standards	802
Lin-Zhi International, Inc.	403

COMPANY/ORGANIZATION	BOOTH #
LNI Swissgas	604
Medix Biochemica	207
Neogen	702
NMS Labs/CFSRE	200 & 202
Peeke Scientific	406
Phenomenex Inc.	600
Phytronix Technologies Inc.	407
Provision	605
Randox Toxicology	502
SCIEX	500
Shimadzu Scientific Instruments Inc.	304
Siemens Healthineers	505
SOFT-TIAFT 2026	603
Tecan	506
UCT	104
UTAK Laboratories, Inc.	401
Validity Diagnostics	704
Versaterm	706
VICI DBS	605
Waters Corporation	100

FUN RUN/WALK SPONSORSHIP



SPONSORSHIP - \$250

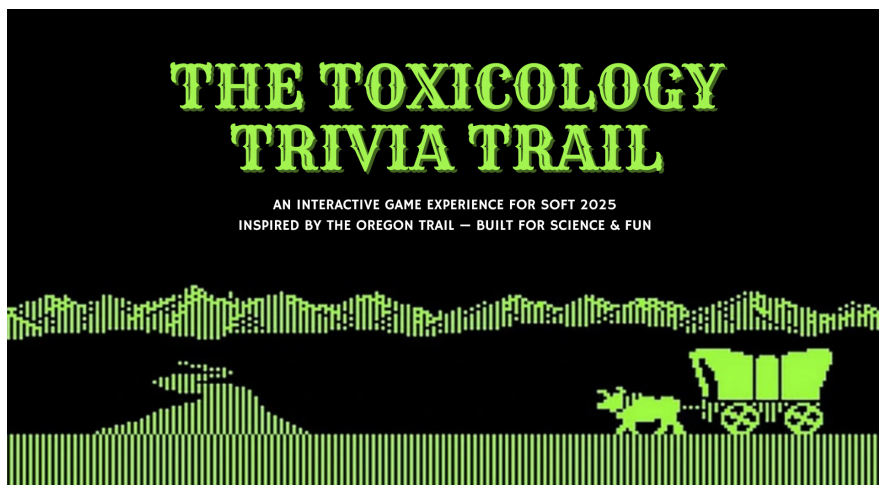
PROCEEDS ARE DONATED TO THE
AMERICAN CANCER SOCIETY IN DR.
KARLA MOORE'S MEMORY

THE TOXICOLOGY TRIVIA TRAIL

Join the Toxicology Trivia Trail! - Explore the SOFT 2025 exhibit hall, answer trivia, and earn raffle tickets for a chance to win prizes!

Starts: Tuesday, October 28
at the Welcome Reception
Ends: Thursday, October 30
at 10:30 AM

Thank You!



NEW FOR 2025: THE TOXICOLOGY TRIVIA TRAIL EXHIBIT HALL GAME!

You are invited to participate in the Toxicology Trivia Trail, a new exhibit hall game **inspired by the classic Oregon Trail computer game**. This fun, themed activity is designed to encourage meaningful engagement between attendees and exhibitors.

Attendees will **“travel the trail”** to visit booths and answer forensic toxicology trivia questions. Correct answers earn participants **raffle tickets for prizes**—ensuring sustained traffic throughout exhibit hours and adding a fun, interactive element to the experience.

GAME SCHEDULE:

Begins: Tuesday, October 28 – Welcome Reception

Ends: Thursday, October 30 at 10:30 AM (ticket submission deadline)

PRIZES INCLUDE:

- Free Registration to **SOFT-TIAFT 2026 in Chicago**
- Gift Cards to the **SOFT Store**
- **Special Award: *You Have Died of Dysentery!*** — for the most enthusiastic participant!
- Exhibitor-Donated Prizes:
 - Agilent Technologies
 - American Solutions for Business
 - AXIOM DIAGNOSTICS, Inc.
 - Cayman Chemical Company
 - Forensic Advantage (The Computer Solution Company of Virginia, LLC)
 - Golden West
 - INTEGRA Biosciences
 - JEOL USA, Inc.
 - Kura Biotech
 - NMS Labs/CFSRE
 - Peeke Scientific
 - Provision
 - SCIE X
 - Shimadzu Scientific Instruments Inc.
 - Tecan
 - UCT
 - UTAK Laboratories, Inc.
 - Waters Corporation



OREGON CONVENTION CENTER
OCTOBER 26 – 31, 2025



PLANNING COMMITTEE



HOST
SARA SHORT



HOST
AMY MILES

Scientific Program Coordinators

Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators

Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators

Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators

Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators

Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator

Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair

Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor

Rebecca Wagner - Virginia Dept. of Forensic Science

Fun Run Coordinator

Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison

Sarah Riley - St. Louis University School of Medicine

ANNUAL MEETING UPDATE - PORTLAND, OR

HOW IT WORKS:

- **Choose a Character:** Scan any Trivia Trail QR code to adopt a pioneer persona, each with a unique story and route through the exhibit hall.



DR. JOSEPH ORFILA



DR. KARLA SCHEEL



MR. DANIEL METZGER



MS. ALICE HAMILTON



DR. RAY CARSON



MS. TRACEY LEE



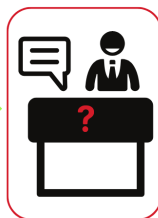
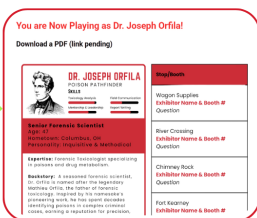
MR. TOM STEVENSON



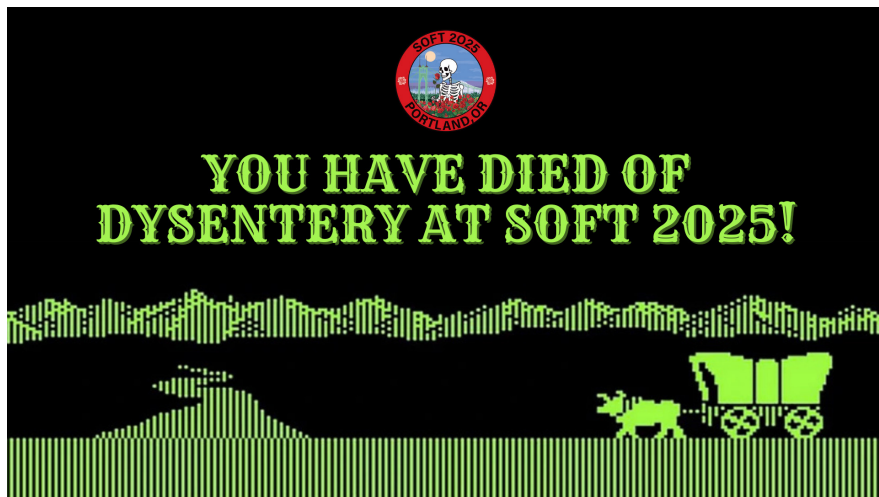
MS. SAM GREER

- **Access Your Trail Map:** Receive a personalized digital map showing which booths to visit, checkpoints for trivia, and sponsor bonus stops.
- **Visit Booths & Answer Trivia:** Stop at each assigned booth, answer the trivia question on display, and earn raffle tickets for each correct response.

SCAN ME



- **Sponsor Bonus Questions:** Sponsor booths offer an extra trivia question for an additional ticket.
- **Play Again & Again:** Trailblazers can scan new characters and explore new routes to collect more tickets and support more exhibitors.



Join the journey. Test your knowledge. Win great prizes!



OREGON CONVENTION CENTER
OCTOBER 26 – 31, 2025



PLANNING COMMITTEE



**HOST
SARA SHORT**



**HOST
AMY MILES**

Scientific Program Coordinators

Kayla Neuman - WI State Lab of Hygiene
Tyson Baird - Sedgewick Co Regional Forensic Science Center

Workshop Program Coordinators

Mary Lynn Heffington - Arkansas State Crime Lab
Dani Mata - Orange Co Crime Lab

Volunteer Coordinators

Chelsea VanDenBurg - Oregon State Police Lab
Brianna Lehr - Oregon State Police Lab
Dawn Sklerov - Washington State Patrol Toxicology Lab

Food & Beverage Coordinators

Ann Marie Gordon - Consultant
Denice Teem - Oakland County ME's Office
Delisa Downey - Virginian Dept. of Forensic Science

Mobile Application Coordinators

Rusty Lewis - Federal Aviation Administration
Roxane Ritter - Federal Aviation Administration
Sunday Hickerson - Federal Aviation Administration

Audio Visual Coordinator

Frank Wallace - Wallace Consulting Solutions

Young Forensic Toxicologists Chair
Elisa Shoff - Miami-Dade ME's Office

JAT Special Issue Editor

Rebecca Wagner - Virginia Dept. of Forensic Science

Fun Run Coordinator

Shannon Palladino - Oregon State Police Lab

Exhibitor Liaison

Sarah Riley - St. Louis University School of Medicine



PRESIDENT HEARTSILL

INVITES YOU TO THE

RED
ROSE
BALL

A DOSE OF RED:
DINNER, DANCING & DAZZLE!

COCKTAILS OCT BANQUET
6:00 PM 30 7:00 PM



SUGGESTED ATTIRE:

COCKTAIL ATTIRE IS RECOMMENDED:
GUESTS ARE ENCOURAGED TO EMBRACE THE EVENING'S THEME BY
INCORPORATING **RED OR ROSE-INSPIRED ELEMENTS** INTO THEIR LOOK.



A BOLD RED DRESS, A FLORAL TIE, OR EVEN A SIMPLE ROSE
ACCESSORY—SMALL TOUCHES CAN MAKE A BIG IMPRESSION!



YOUNG FORENSIC TOXICOLOGISTS COMMITTEE

The Young Forensic Toxicologist (YFT) committee is actively preparing for the Annual SOFT Meeting in Portland, OR this October! Abstracts were due this past week so in the coming months we'll review accepted abstracts that applied for the **Leo Dal Cortivo award**. Reminder that the winning platform and poster presentations are provided with a **\$1,000 travel stipend** as well as **free registration** to a future SOFT meeting where they will present their research!

When meeting registration and the hotel block opens on June 25th, please also plan your travel so you can attend the **YFT Symposium** on October 26th from 5-9pm. Heavy appetizers will be served, and it is a great chance to network with other young (<41 years of age) forensic toxicologists, as well as different academic and career organizations through our **Professional Development Fair**. We look forward to seeing you there! teach court terminology as well as enabling you to get used to the layout of the courtroom and courtroom etiquette, so hopefully you aren't as nervous when it's your first time testifying. Being able to design your own project using published guidelines and examples of past projects helps reinforce analytical and problem-solving skills you learned in school and helps give you experience writing validation plans and write-ups. Different internships provide different levels of opportunities but overall just soak up all the knowledge you can!

Wiley recently acknowledged the top cited articles in their journals, and we're excited to announce that **YFT Chair, Elisa Shoff** was recognized for her article ***"Review of analytical methods for screening and quantification of fentanyl analogs and novel synthetic opioids in biological specimens"***. Thank you for your contributions to the forensic toxicology community as well as the YFT committee!



We would like to thank everyone that joined us at our open committee meeting on May 28th. Your attendance and participation was appreciated! If you have any questions or suggestions for the committee, please don't hesitate to reach out to us at YFT@soft-tox.org.

Finally, we strive to be a resource for the YFT community so below are answers to some common questions that we get!

IF YOU ARE STUCK BETWEEN ATTENDING GRADUATE SCHOOL OR GOING INTO THE WORKFORCE, WHAT IS YOUR BEST ADVICE TO MAKE THE RIGHT DECISION FOR YOURSELF AND YOUR FUTURE?

It is easier to complete higher education before entering the workforce but ultimately it's up to whatever works best for you. If you enjoy school and have the funds to continue then you should do so, but if you're burnt out after undergraduate or can't afford to continue then entering the workforce may be the better path. It is also worth considering your career goals; if you plan on working in a lab setting then a graduate degree may not be necessary, but if you want to eventually promote past benchwork then it can help. Overall, most employers tend to care more about a person's skill set or lab experience rather than the level of degree that they may have.

Pros of Attending Graduate School Later:

- Can get some work experience and ensure that it's the field you want to be in
- Easier to apply what you learn in school when you already have real-world experience
- Have time to save up money or use tuition reimbursement offered by your employer



YOUNG FORENSIC TOXICOLOGISTS COMMITTEE

Cons of Attending Graduate School Later:

- Once you join the workforce it's tough to leave
- Completing graduate school while working full-time requires time management skills
- Online programs can't replace everything you would learn in-person on campus

IF YOU HAD AN INTERNSHIP, WHAT WAS THE MOST VALUABLE PART FOR YOU OR WHAT DO YOU WISH YOU COULD HAVE EXPERIENCED DURING THAT TIME?

Observation and hands-on experience are invaluable! Learning about extractions and instrumentation and then being able to try it yourself is extremely useful because then you not only get benchwork experience, but you can also learn more about the instrument software and data analysis/interpretation. Observation is beneficial for testimony or anything lab-related that you may not be able to try first-hand. Being able to observe testimony in a court setting helps teach court terminology as well as enabling you to get used to the layout of the courtroom and courtroom etiquette, so hopefully you aren't as nervous when it's your first time testifying. Being able to design your own project using published guidelines and examples of past projects helps reinforce analytical and problem-solving skills you learned in school and helps give you experience writing validation plans and write-ups. Different internships provide different levels of opportunities but overall just soak up all the knowledge you can!

**YFT COMMITTEE MEMBERS: ELISA SHOFF, CHAIR | WHITNEY BROWN, VICE CHAIR | ERIKA PHUNG, SECRETARY
ERIN STRICKLAND, PAST CHAIR | AMANDA BROOKING | LUKE GARCIA | KIMBERLY KARIN | ARACELIS VELEZ
SARA WALTON | LAUREN WOLFE | EDWARD ZUMAETA | SARAH TOMA | MAHAGANI THOMAS | LINDSEY VOSTERS**



**This is the Gabapentin ELISA
we've been waiting for.**

Neogen® Gabapentin ELISA: clear results and trusted performance.



REGIONAL TOXICOLOGY LIAISONS

APRIL 2025 UPDATE

REPORT AUTHOR: AMY MILES, PROJECT MANAGER

The National Highway Transportation Safety Administration (NHTSA) has approved the RTL expansion! At the beginning of the year, the RTLs began working with the new states' laboratories and highway safety partners. To find out more, visit the [RTL section](#) of the SOFT website. The RTLs receive several requests for information each week. In an effort to reduce inbox clutter, we are sending one email each week with information requests and information about upcoming training.

The RTLs spent most of the first quarter of the year connecting with new laboratories and partners. Understanding the needs of the laboratories is key to exploring ways to assist them. Introducing laboratories to other highway safety partners has been beneficial to all involved. Some have requested testimony training, others would like to hold a Toxicology Summit. The Summit brings together laboratories, state highway safety offices (SHSO), law enforcement, judicial, attorneys, and public health. Forensic Toxicology impacts several aspects of highway safety, and getting everyone in the same room has been crucial.

Much travel has occurred during the last few months. The RTLs have been to national conferences such as AAFS, the Lifesavers Conference, and IACT. In addition to the national meetings, the RTLs attend local impaired driving conferences, treatment court conferences, and meetings. It's tough to keep track of where the RTLs are on any given day!

Standardization continues to be the primary goal for the RTLs. Several of you responded to our survey to understand your needs regarding ANSI/ASB implementation. In 2025, the RTLs are planning to hold a webinar or two on the topic.

The RTLs received funding from [Responsibility.org](#) to provide method development and validation services to a laboratory. This pilot was key to identifying the laboratory's expectations for preparing for the work and how to efficiently develop and validate methods for laboratories, all within a few weeks. More will come as the process is streamlined and funding partners are identified.

If you have any questions or suggestions for the RTL team, please reach out!

Amy Miles

PROJECT MANAGER, MIDWEST: [AMY MILES](#)

NORTHEAST: [SABRA JONES](#)

MID-SOUTH: [CHRIS HEARTSILL](#)

WESTERN: [KRISTEN BURKE](#)

[VISIT THE RTL WEBPAGE!](#)



L

G

B

T

Q

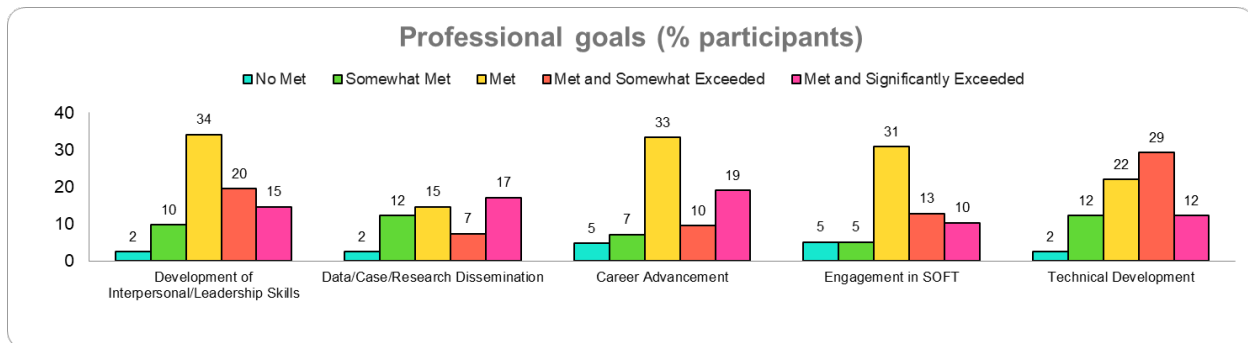
+

Happy Pride Month!

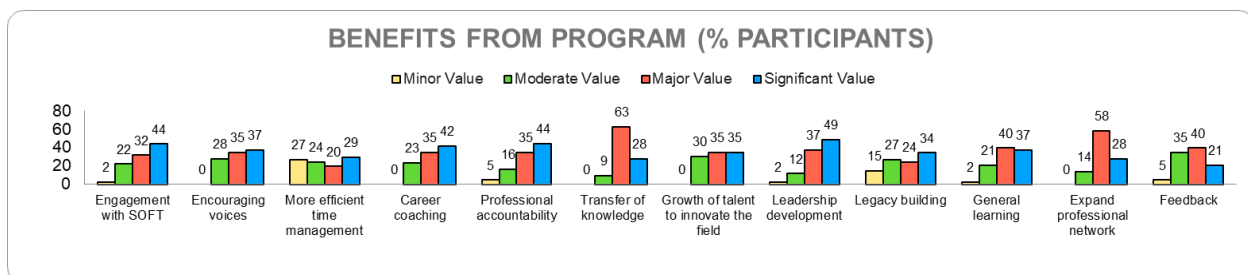
PROFESSIONAL MENTORING PROGRAM

The Professional Mentoring Committee strives to provide an environment where relationships between mentees and mentors can foster opportunities for passing on career advice, sharing case data, developing leadership skills, and a variety of other goals the pairings have created over the years. Part of making sure that we can continue to help foster these beneficial relationships is sending out a survey at the end of each year to the mentoring pairs to assess their opinions about the program.

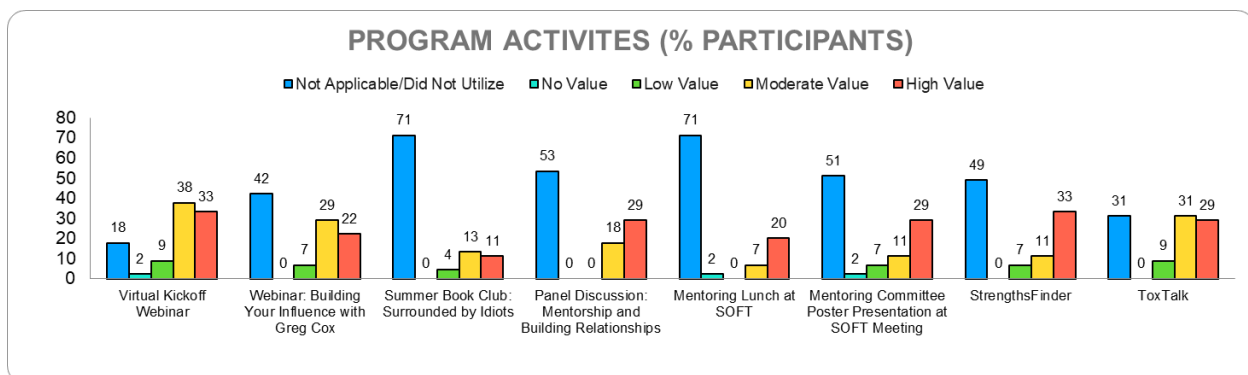
At the beginning of the year, pairs will set goals in their mentoring agreement. Many things can affect if goals are met and the pairs are given the flexibility to adjust the goals throughout the year as life events or other factors arise. As seen in the Professional Goals graph, many pairs who had goals applicable to each of the major subjects either met or exceeded those goals. Overall, 91% of participants said that their expectations were met and/or exceeded.



In 2024, the top 3 benefits of participating in the program were transfer of knowledge, leadership development, and expanding professional network followed by professional accountability, career coaching, general learning, and engagement in SOFT.



The top three program activities were the virtual kickoff webinar, ToxTalk, and the webinar: Building your Influence with Greg Cox. The feedback from this survey can help the committee implement new ideas and programming for the participants, or even give ideas on how to modify existing programming to better fit the schedule and/or needs of the mentoring community. We hope to take some feedback from the 2024 survey and implement it in the 2025 programming.



This data is invaluable to making sure that the Professional Mentoring Committee can continue evolving for the ever changing professional pairs and can continuously update what will better facilitate future pairs with meeting their goals. For those pairs participating in the program this year please remember to complete the survey at the end of the year. We strive to continuously improve the program using the feedback we gain from our pairs to provide them with the best quality materials and support available! Any pair or individual mentor or mentee can reach out to a member of the Professional Mentoring Committee throughout the year should they have suggestions on ways to improve their experience in the program for 2025 or future years.

AAFS TOXICOLOGY UPDATES & NEWS

On behalf of the **AAFS Toxicology Section**, I would like to thank everyone who joined us in Baltimore for an amazing meeting! It was so nice to have everyone in-person, and we look forward to seeing you all next year in New Orleans. The Toxicology Section leadership would like to extend a big thank you to all the sponsors who supported our Toxicology Reception and Open Forum. Additionally, we would like to express our appreciation to all the workshop chairs, presenters, moderators, abstract reviewers, and everyone who helped facilitate the outstanding meeting – we couldn't have done it without you!

We have an exciting year ahead, so I wanted to get things rolling. As Section Chair, I am pleased to announce that Toxicology Section leadership will include *Erin Karschner* (Secretary), *Svante Vikingsson* (Program Chair), and *Curt Harper* (Program Co-Chair). While we await scientific program deadlines, now is the time to get your workshop proposals and abstract ideas together. If you are thinking of a workshop, please reach out to Svante Vikingsson (svikingsson@rti.org) to let us know your plans. We would also like to start gathering abstract reviewers. If you are willing to help (and get service that counts towards your membership promotion application), please **email Svante to serve as an abstract reviewer**.

Now is also a great time to think about nominating some of our colleagues for the AAFS Toxicology Section awards and scholarships. **Nominations and supporting documents are due August 1, 2025**, to the Awards & Scholarships Committee Chair Kari Midthun (kari.midthun@nmslabs.com). A full list of awards and descriptions are linked [here](#) (pp 161-165) and lists of the past awardees can be found at <https://www.aafs.org/membership/toxicology>, under Toxicology Section Awards.

Are you thinking about promoting to Member or Fellow or applying to become an Associate Member? [AAFS membership](#) is a great way to serve on committees, network, join mentorship programs, apply for grants/scholarships/awards, and serve on Toxicology Section Leadership. You can read about our membership categories and promotion requirements [here](#). If you are looking to promote, there are Academy and Section requirements which include attendance at business meetings, conference attendance, and service to the field. Some ways to advance within the Section for promotion include presenting abstracts, moderating, serving as a workshop presenter or an abstract reviewer, etc. For more detailed information related to membership and promotion, please refer to the [AAFS Policy and Procedure Manual](#) (pp 26-27, 37-38, 42, 54-55).

Stay tuned for more information on the **78th Annual AAFS Meeting** in New Orleans, LA, February 9-14, 2026, celebrating our theme of “Back to Basics”!

Best regards,

Dayong Lee

2025-2026 AAFS Toxicology Section Chair

SOFT-DFC SNAPSHOT – KETAMINE

BY GILLIAN SAYER & STEPHANIE TROUPE FOR THE SOFT DFC COMMITTEE

SOFT-DFC Snapshots are short reports of critical information about the more common drugs associated with drug-facilitated crimes (DFCs). They are not complete literature reviews about the drug or drug class. One key aspect is their focus on the ability to detect a drug after a single-dose administration, as is often the situation in DFC investigations. As such, these summaries also point out instances in which available data is limited in the hopes that this will encourage further research studies. Finally, SOFT-DFC Snapshots point to the use of these drugs in actual DFC cases, as cited in the medical and open literature.

Ketamine is a ‘dissociative anesthetic’ that is commonly known for its ability to create a feeling of disconnect between mind and body. It is widely used clinically in both animals and humans for the induction and maintenance of anesthesia. Initially synthesized in the 1960’s and clinically approved for use in the 1970’s, it is chemically and pharmacologically related to phencyclidine (PCP, angel dust). Both drugs were studied concurrently, however, ketamine was found to exhibit a superior safety profile as compared to PCP. Ketamine is distinct from other anesthetics as it provides short-term analgesia and amnesia without suppression of breathing^{1,2}. In recent years, sub-anesthetic intravenous and intranasal doses of ketamine have been used to combat symptoms of treatment-resistant depression³.

Ketamine (“K”, “Special K”, “Vitamin K”) is also used recreationally for its psychedelic and dissociative effects, and is popular in the electronic music/rave/dance scenes for its ability to produce dream-like hallucinations and depersonalization^{1,2}. Novel analogues of ketamine are also available on the illicit market (e.g., 2-fluorodeschloroketamine, methoxetamine). Limited pharmacokinetic information for these analogs is available but the effects are generally similar to ketamine.

Ketamine has been implicated in cases of Drug Facilitated Crime (DFC) worldwide. Whether consumed voluntarily or surreptitiously administered, the dissociative, amnesic, and hallucinatory effects produced by the drug can be exploited to render an individual unconscious or incapacitated. Its relative safety, quick onset of action, and rapid elimination also makes ketamine an attractive drug of choice by perpetrators of DFC.

Drug Class: Dissociative Anaesthetic (non-barbiturate), CNS Depressant^{1,4}.

Generic Name: Ketamine (racemic) or ketamine hydrochloride, esketamine (S-ketamine), Arketamine (R-ketamine, not FDA approved)

Dosage Forms: Injectable liquid (Ketalar®)⁵, Intranasal spray (Spravato®)⁶, powder (illicit use)

Used clinically, dosing is based on body weight and anesthesia is generally achieved between 1 – 2 mg/kg intravenously, and 4 – 11 mg/kg intramuscularly⁷.

Esketamine, used for treatment of depression, is administered intranasally, with doses ranging from 28 to 84 mg administered once or twice weekly⁸.

When used recreationally, ketamine can be consumed orally, intra-nasally, intravenously, rectally, or by smoking. Single recreational doses can range from 10 to 500 mg, but may be used multiple times in a single session due to its short duration of effects⁹.

FDA Approval: Ketamine is used therapeutically as an intravenous anesthetic in adults and children for short surgical and diagnostic procedures.

Intranasal esketamine has been approved as an adjunctive treatment for treatment-resistant depression in 2019^{3,10}.

Ketamine is also widely used as an animal tranquilizer in veterinary medicine.

Non-FDA applications can include its use for the treatment alcoholism, post-traumatic stress syndrome, anxiety, depression, suicidal ideation, refractory status epilepticus, and chronic pain⁴.

Pharmacological Effects: Ketamine’s effects are primarily due to its function as an N-methyl-D-aspartate (NMDA)

SCIENTIFIC CONTENT

non-competitive receptor antagonist, interrupting the effects of glutamate and aspartate, and producing amnesic, analgesic and psychedelic effects. To a lesser extent, ketamine also acts on opioid, serotonin, and muscarinic receptors². As a partial opiate mu receptor agonist, ketamine can impart analgesic effects.

The effects produced by ketamine are dose dependent. At low (sub-anesthetic) doses, effects can include euphoria, depersonalization, and a trance-like state. At higher doses, impaired motor function, vomiting, slurred speech, agitation, elevated heart rate and delirium can occur. When used recreationally, users may seek to achieve a state known as the “K-hole”, characterized by a loss of sense of time and space, difficulty moving, distorted body image, and what can be described as an ‘out-of-body’ or near-death experience¹. While overdose is rare, death can be caused by respiratory depression^{2,9}.

The most intense effects of ketamine are short-lived, owing to its short half-life (estimated at 1 – 4 hours, intravenously¹¹). Effects begin rapidly (within seconds) when smoked or injected, within 5 – 10 minutes when snorted, and within approximately 30 minutes when used orally. Effects will typically last less than one hour when smoked, injected, or snorted, but can extend for 1 – 2 hours when used orally (which may be due, at least in part, to higher concentrations of the active metabolite norketamine produced by this route)¹².

Metabolism/Elimination: Ketamine is extensively metabolized in the liver, primarily by CYP 3A4, to the active metabolite norketamine¹². Secondary metabolism occurs via CYP 2B6 and CYP 2C9 enzymes. The metabolic process includes N-dealkylation, hydroxylation, conjugation, and dehydration. Ketamine is subject to extensive first-pass metabolism when consumed orally², and metabolism may also be subject to CYP enzyme polymorphism and can be subject to drug-drug interactions¹³.

R-Ketamine and S-Ketamine are similarly metabolized to norketamine and esnorketamine. Norketamine and esnorketamine are subsequently metabolized to the inactive dehydronorketamine by dehydrogenation^{7, 12}.

Single Dose Studies

Urine: After a single dose, ketamine can typically be detected in urine for between 48 and 72 hours¹⁴. However, this time frame may be extended up to 120 hours when using sensitive methods with detection limits at the sub-nanogram level¹⁵. In cases of repeated administration, ketamine can be detected in urine for much longer. In a frequent high dose user, ketamine has been detected up to 61 days¹⁶.

Norketamine and dehydronorketamine are detectable in urine for longer than the parent drug up to 14 days and 10 days, respectively, after a single dose^{14, 17}.

The SOFT DFC committee guidelines currently recommend a minimum method performance limit of 10 ng/mL for ketamine and norketamine in urine. The AAFS Standards Board similarly recommends a detection limit of 10 ng/mL or lower for norketamine¹⁸.

Blood/Plasma/Serum: Forensic interpretation of blood ketamine and norketamine concentrations can be complicated due to its short half-life and large inter-individual variability.

Psychedelic effects have been reported at plasma concentrations as low as 50 ng/mL, with intensity increasing with increasing plasma concentration¹⁹. Pain threshold elevation has been observed at plasma concentrations greater than 160 ng/mL²⁰.

When used intravenously in a clinical setting, plasma concentrations necessary to induce dissociative anesthesia range from 1.2 – 2.4 mg/L with awakening from anesthesia associated with concentrations of less than 1.1 mg/L^{7, 21, 22}.

Intranasal esketamine administration produces substantially lower blood concentrations, owing in part to the lower doses needed to achieve efficacy with this enantiomer. Following 3 escalating doses of 25mg, 50 mg, and 100 mg administered approximately 1 hour apart, plasma concentrations of less than 200 ng/mL, 300 ng/mL and 500 ng/mL were achieved, respectively, in healthy volunteers²³.

Hair Testing: Hair can also provide evidence of past drug exposure to ketamine²⁴. It can provide a longer detection window as compared to blood or urine and might be more practical in DFC cases in which biological samples weren’t collected or available close to the time of the incident.

At a hair growth rate of approximately 1 cm per month, a 3 cm hair shaft sample can potentially indicate ketamine exposure over a 3-month period²⁵. Like other basic drugs, the concentration detected may vary due to hair color which is caused by variable binding to melanin²⁶.

In a study administering a single oral dose of 10 mg ketamine, ketamine and norketamine were detected in the 0 to 0.5 cm hair segment starting at one week following administration and ending at approximately 8 weeks^{27, 28}. Occupational exposure may also cause a positive result for ketamine in hair. In a study of 13 veterinarians, who worked with ketamine, it was detected in hair samples from all participants²⁹.

DFC Cases: Ketamine has been implicated in DFC cases worldwide. Its dissociative, sedative, anesthetic, amnesiac, and hallucinatory effects make it an attractive drug to use for this purpose. Furthermore, it can be ingested voluntarily, or surreptitiously diluted into a beverage.

While its true prevalence in cases of DFC is not known, a Canadian study reported the prevalence of ketamine as an unexpected finding in cases of drug facilitated sexual assault to be 2.3%³⁰.

A case report in the literature describes the sexual assault of a young woman by her gynecologist who used intravenous ketamine and diazepam to sedate her. Effects described included loss of consciousness and vomiting upon waking. At approximately 30 hours after the assault, ketamine and norketamine concentrations detected in blood were 2 and 6 ng/mL respectively³¹.

References

1. Mozayani, A. (2002). Ketamine - Effects on Human Performance and Behavior. *Forensic science review*, 14 (1-2), 123-31
2. Wolff, K., & Winstock, A. R. (2006). Ketamine. *CNS Drugs*, 20(3), 199–218. <https://doi.org/10.2165/00023210-200620030-00003>
3. Yavi, M., Lee, H., Henter, I. D., Park, L. T., & Zarate, C. A. (2022). Ketamine treatment for depression: a review. *Discover Mental Health*, 2(1). <https://doi.org/10.1007/s44192-022-00012-3>
4. Rosenbaum, S.B., Gupta, V., Patel, P., et al. Ketamine. [Updated 2024 Jan 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK470357/>
5. https://www.accessdata.fda.gov/drugsatfda_docs/label/2020/016812s046lbl.pdf, Ketamine FDA Label. Retrieved January 6, 2025.
6. https://www.accessdata.fda.gov/drugsatfda_docs/label/2019/211243lbl.pdf, Esketamine FDA Label. Retrieved January 6, 2025
7. Zanos, P., Moaddel, R., Morris, P. J., Riggs, L. M., Highland, J. N., Georgiou, P., Pereira, E. F. R., Albuquerque, E. X., Thomas, C. J., Zarate, C. A., & Gould, T. D. (2018). Ketamine and Ketamine Metabolite Pharmacology: Insights into Therapeutic Mechanisms. *Pharmacological Reviews*, 70(3), 621–660. <https://doi.org/10.1124/pr.117.015198>
8. Seshadri, A., Prokop, L. J., & Singh, B. (2024). Efficacy of intravenous ketamine and intranasal esketamine with dose escalation for Major depression: A systematic review and meta-analysis. *Journal of Affective Disorders*, 356, 379–384. <https://doi.org/10.1016/j.jad.2024.03.137>
9. Corkery, J. M., Hung, W.-C., Claridge, H., Goodair, C., Copeland, C. S., & Schifano, F. (2021). Recreational ketamine-related deaths notified to the National Programme on Substance Abuse Deaths, England, 1997–2019. *Journal of Psychopharmacology*, 35(11), 026988112110215. <https://doi.org/10.1177/02698811211021588>
10. Langmia, I. M., Just, K. S., Yamoune, S., Müller, J. P., & Stingl, J. C. (2022). Pharmacogenetic and drug interaction aspects on ketamine safety in its use as antidepressant - implications for precision dosing in a global perspective. *British Journal of Clinical Pharmacology*, 88(12), 5149–5165. <https://doi.org/10.1111/bcp.15467>

11. Domino, E. F., Domino, S. E., Smith, R. E., Domino, L. E., Goulet, J. R., Domino, K. E., & Zsigmond, E. K. (1984). Ketamine kinetics in unmedicated and diazepam-premedicated subjects. *Clinical Pharmacology and Therapeutics*, 36(5), 645–653. <https://doi.org/10.1038/clpt.1984.235>
12. Dinis-Oliveira, R. J. (2017). Metabolism and metabolomics of ketamine: a toxicological approach. *Forensic Sciences Research*, 2(1), 2–10. <https://doi.org/10.1080/20961790.2017.1285219>
13. Dutton, M., Can, A., Lagopoulos, J., & Hermens, D. F. (2023). Oral ketamine may offer a solution to the ketamine conundrum. *Psychopharmacology*. <https://doi.org/10.1007/s00213-023-06480-x>
14. Adamowicz, P., & Kala, M. (2005). Urinary Excretion Rates of Ketamine and Norketamine Following Therapeutic Ketamine Administration: Method and Detection Window Considerations. *Journal of Analytical Toxicology*, 29(5), 376–382. <https://doi.org/10.1093/jat/29.5.376>
15. Parkin, M. C., Turfus, S. C., Smith, N. W., Halket, J. M., Braithwaite, R. A., Elliott, S. P., Osselton, M. D., Cowan, D. A., & Kicman, A. T. (2008). Detection of ketamine and its metabolites in urine by ultra high pressure liquid chromatography–tandem mass spectrometry. *Journal of Chromatography B*, 876(1), 137–142. <https://doi.org/10.1016/j.jchromb.2008.09.036>
16. de Jong, L. A. A., Qurishi, R., Stams, M. P. J., Böttcher, M., & de Jong, C. A. J. (2020). Prolonged Ketamine and Nor-ketamine Excretion Profiles in Urine After Chronic Use. *Journal of Clinical Psychopharmacology*, 40(3), 300–304. <https://doi.org/10.1097/jcp.0000000000001191>
17. Wieber, J., R. Gugler, J.H. Hengstmann and H.J. Denglet. (1975). Pharmacokinetics of ketamine in man. *Anaesthesist*. 24: 260-263
18. [ANSI/ASB Standard 121 – Standard for Analytical Scope and Sensitivity of Forensic Toxicological Testing of Urine in Drug-Facilitated Crimes](#)". Academy Standards Board. First Edition, 2021. Retrieved Aug 16, 2024.
19. Bowdle, Andrew T., Radant, Allen D., Cowley, Deborah S., Kharasch, Evan D., Strassman, Rick J., & Roy-Byrne, Peter P. (1998). Psychedelic Effects of Ketamine in Healthy Volunteers . *Anesthesiology*, 88(1), 82–88. <https://doi.org/10.1097/00000542-199801000-00015>
20. Clements, J.A. W.S. Nimmo and I.S. Grant. (1982). Bioavailability, pharmacokinetics and analgesic activity of ketamine in humans. *J. Pharm. Sci.* 71(5): 539-542
21. Idvall, J., Ahlgren, I., Aronsen, K. F., & Stenberg, P. (1979). Ketamine Infusions: Pharmacokinetics and Clinical Effects. *British Journal of Anaesthesia*, 51(12), 1167–1173. <https://doi.org/10.1093/bja/51.12.1167>
22. Grant, I. S., Nimmo, W. S., & Clemenets, J. A. (1981). Pharmacokinetics and Analgesic Effects of I.M. and Oral Ketamine. *British Journal of Anaesthesia*, 53(8), 805–810. <https://doi.org/10.1093/bja/53.8.805>
23. Jonkman, K., Duma, A., Olofsen, E., Henthorn, T., van Velzen, M., Mooren, R., Siebers, L., van den Beukel, J., Aarts, L., Niesters, M., Dahan, A. (2017). Pharmacokinetics and Bioavailability of Inhaled Esketamine in Healthy Volunteers. *Anesthesiology*. 127(4):675-683. <https://doi.org/10.1097/ALN.0000000000001798>.
24. Favretto, D., Vogliardi, S., Tucci, M., Simoncello, I., El Mazloum, R., & Snenghi, R. (2016). Occupational exposure to ketamine detected by hair analysis: a retrospective and prospective toxicological study. *Forensic Science International*, 265, 193–199. <https://doi.org/10.1016/j.forsciint.2016.03.010>
25. Rhee, J., Lee, J., Kim, J., Jang, M., Shin, I., & Lee, S. (2020). Determination of Ketamine and Norketamine in Hair and Evaluation of Polydrug Use in Ketamine Abusers Using Hair Analysis in Korea. *Journal of Analytical Toxicology*, 45(9), 993–1005. <https://doi.org/10.1093/jat/bkaa166>
26. Xiang, P., Shen, M., & Zhuo, X. (2006). Hair analysis for ketamine and its metabolites. *Forensic Science International*, 162(1-3), 131–134. <https://doi.org/10.1016/j.forsciint.2006.05.046>

27. Xiang, P., Shen, M., & Drummer, O. H. (2015). Review: Drug concentrations in hair and their relevance in drug facilitated crimes. *Journal of Forensic and Legal Medicine*, 36, 126–135. <https://doi.org/10.1016/j.jflm.2015.09.009>
28. Favretto, D., Vogliardi, S., Stocchero, G., Nalesso, A., Tucci, M., Terranova, C., & Ferrara, S. D. (2013). Determination of ketamine and norketamine in hair by micropulverized extraction and liquid chromatography–high resolution mass spectrometry. *Forensic Science International*, 226(1-3), 88–93. <https://doi.org/10.1016/j.forsci-int.2012.12.013>
29. Favretto, D., Vogliardi, S., Tucci, M., Simoncello, I., El Mazloun, R., & Snenghi, R. (2016). Occupational exposure to ketamine detected by hair analysis: a retrospective and prospective toxicological study. *Forensic Science International*, 265, 193–199. <https://doi.org/10.1016/j.forsciint.2016.03.010>
30. Du Mont, J., Macdonald, S., Rotbard, N., Bainbridge, D., Asllani, E., Smith, N., & Cohen, M. M. (2010). Drug-facilitated sexual assault in Ontario, Canada: Toxicological and DNA findings. *Journal of Forensic and Legal Medicine*, 17(6), 333–338. <https://doi.org/10.1016/j.jflm.2010.05.004>
31. Wille, S. M. R., Di Fazio, V., & Samyn, N. (2013). Drug-facilitated sexual crime by use of ketamine and diazepam by a gynaecologist. *Drug Testing and Analysis*, 5(9-10), 730–735. <https://doi.org/10.1002/dta.1554>

THREE THINGS YOU SHOULD KNOW ABOUT OBTAINING TOXICOLOGY RESOURCES SOFT TOXICOLOGY RESOURCE COMMITTEE

Even the most efficient, well-run laboratory will struggle if it does not possess the resources necessary for the demands and expectations put on today's toxicology labs. Understanding how to increase your budget through grant funding and utilizing other resources can be essential in creating the necessary infrastructure to succeed.

The following grants and their government overseers are relatively well known. Some laboratories have an easier time obtaining this funding depending on the competition within your state. It is worth the time to investigate which of these options work for your lab.

- Highway Safety Offices (Department of Transportation)
 - This group's mission includes impaired driving and has a significant amount of federal and state grant funding. These grants are opportunities for instrumentation, training, etc.
 - [State Highway Safety Offices | GHSA](#)
- Coverdale (Public Safety entities)
 - Bureau of Justice Assistance provides formula and competitive grants that cover all aspects of forensic toxicology and has a focus on postmortem work. These grants are opportunities for training, outsourcing, lab accreditation, or the short-term funding of new ideas that could provide a vital service to stakeholders. This can be used as a proof-of-concept for future growth and services.
 - [Paul Coverdell Forensic Science Improvement Grants Program | Overview | Bureau of Justice Assistance](#)
- OD2A (Public Health departments)
 - The Center of Disease Control provides grants to state health departments. These grants focus on the surveillance of drugs and ultimately reducing drug overdoses. These grants are opportunities for instrumentation, training, etc.
 - [Overdose Data to Action | Overdose Prevention | CDC](#)
- National Institute of Justice
 - Provides grants for larger research, development, or collaborative projects. These are usually at a scale for larger labs or universities.
 - [Funding & Awards | National Institute of Justice](#)

SCIENTIFIC CONTENT

- Regional Toxicology Liaisons
 - Provides support to government funded toxicology programs through communications, resources, criminal justice system coordination, and better data reporting.
 - [About the RTL Program](#)

Many of the grants listed above are controlled through different state agencies. All those agencies are either direct or indirect partners to a toxicology labs mission. Creating and maintaining relationships with these groups will improve your chances at being awarded a grant.

- Public Health
 - Collaboration with this group provides vital insight on death investigation and overdose deaths. They usually have an interest in a laboratory's postmortem toxicology statistics and drug trends. Their epidemiologists can be extremely helpful in understanding your data which is vital in deciding the placement of future resources. These groups usually have task forces set up to deal with a multitude of issues that affect forensic toxicology.
- Public Safety entities (Law Enforcement)
 - Collaboration with this group can assist in educating the stakeholder on proper evidence submission, set expectations for both sides, and provide an understanding of toxicology results.
- Department of Transportation/Highway Safety Office
 - Collaboration with this group provides an opportunity to provide impaired driving (alcohol and/or drug) results within your jurisdiction to a group whose mission is to reduce that issue.
- Coroners/Medical Examiners
 - There are many variations across the United States on who is in charge of death investigations within a jurisdiction. Regardless, having a collaborative relationship can help set priorities and make the daily management of your lab easier.
- Judges
 - Educating this group can improve courtroom experience for toxicologists and help with certain issues such as allowing video testimony.
- Lawyers (Prosecution and Public Defenders)
 - Educating this group can improve courtroom experience for toxicologists and provide vital information for the court system. They can also provide moot court training to better prepare new toxicologists.
- Public Advocates
 - Engagement with community members who promote criminal justice in their communities may be powerful allies for labs.
- Academic Universities
 - Creating partnerships can provide a workforce pipeline through interns, work-study jobs, and student research projects. There can also be opportunities for your staff to provide lectures and have free access to literature.
- Government lawmakers
 - Creating trust with lawmakers is vital when they are evaluating your budget and requests for additional resources. It is necessary to communicate your value and demonstrate that your organization is a proper steward of public funds.
 - Project Foresight is a great tool to evaluate laboratories. It can provide insight on where labs are thriving or struggling. The data obtained from this exercise can be used as a tool to show that the operation is well run but that any increased scope of testing or decreased turn-around times would need additional staffing or operational funds. This third-party analysis can be instrumental in increased government funding. [FORESIGHT | John Chambers College of Business and Economics | West Virginia University](#)

It is vital to write proposals with a deliverable goal that fits within the lab's short and long-term vision. Preferably the project will build infrastructure that will either make the lab more efficient, create a better working environment for ana-

lysts, or create a better product for your stakeholders.

- Instruments
 - New instruments can provide needed infrastructure and the technology can increase scope of testing while providing greater efficiency to your testing system. Creating a new method that provides a solution to a known testing gap can help justify being awarded a grant. Make it relevant to what is currently being addressed in the field (rise of NPS, fentanyl, cannabis, etc.) or scope of testing deficiency, such as a stop-testing policy. At the end of this project the laboratory will have an instrument and new method.
- Obtaining lab accreditation
 - Create a plan that details the needed resources to make this a reality. Hiring a quality manager or training existing staff to develop a laboratory's quality management system to meet the accreditation requirements is essential. Determining whether the lab must upgrade an existing LIMS system for document management or the acquisition of a new system.
 - Understanding the time frame associated with ramping up the laboratory to become accredited or to move from one type of accreditation to another.
- Meeting National Standards/Recommendations
 - Identify resources needed to adopt ASB standards.
 - Data: Review how toxicology data is used in your jurisdiction, county, state, etc. Linking improvements to laboratory information management systems (LIMS) to access and share data with stakeholders to get the attention of funding agencies. Packaging your data into an annual report is a great way to share data, document successes, and provide talking points with clients and partners.
- Training
 - Professional meetings- Can be used to increase internal knowledge of toxicologists and gain new ideas from other labs.
 - Board certification- Can be used to increase internal knowledge of toxicologists and create a higher level of professionalism within your organization.
 - Targeted training (e.g., Workshops, Borkenstein Alcohol and/or Drug Course)
 - Virtual training and on-line resources (SOFT, RTI, FTCOE, NIST, etc.)
- Outsourcing a case backlog
 - Laboratories first need to create a testing system to handle all incoming cases within the desired turn-around time. Outsource cases with grant funds to become self-reliant within a set timeframe. Spending money on outsourcing large volumes of cases should only be done within a broader plan of self-reliance. If this is not the case then it is a better use of resources to build up a lab's infrastructure.
 - This process needs to be a collaboration with submitting agencies and prosecution offices to work properly. Prioritizing cases that are least likely to go to court (postmortem) while working more litigious cases (DUI) in-house.

It is critical to identify what the lab needs, create a vision of how this will improve the laboratory's "product", and ensure to finalize the project. Most clients or partners have annual meetings which is a great opportunity to present information of a toxicology lab's importance to their mission. Speaking at these meetings can give you an opportunity to deliver your vision on how additional resources to the toxicology laboratory would add a greater value. This approach will increase laboratories odds of getting an award the next time money is available. These agencies remember when funded projects are not completed. If you want recurring funding through these grants, the lab must complete the project on-time, every time. Over time, these infrastructure improvements to your laboratory can compensate for decreased local government funding and provide the resources your lab needs to thrive.

AAFS ORAL FLUID PRESENTATIONS AND ORAL FLUID RESEARCH SOFT/AAFS ORAL FLUID COMMITTEE, SUBMITTED BY: JASMINE MAXWELL

The SOFT/AAFS Oral Fluid Committee remains committed to advancing the role of oral fluid in forensic toxicology through ongoing collaboration, education, and research dissemination. The following presentations, submitted to the 2025 American Academy of Forensic Sciences (AAFS) Annual Meeting, showcase recent developments in oral fluid drug testing across multiple domains—including analytical method development, screening challenges, cross-reactivity evaluations, and field implementation in impaired driving programs. Together, these contributions demonstrate the continued expansion and relevance of oral fluid as a forensic matrix and highlight the committee's efforts to promote standardization, scientific rigor, and practical integration of oral fluid testing in forensic laboratories nationwide.

L15 - A Comparison of Sample Preparation Techniques for the Analysis of Drugs of Abuse in Oral Fluids

Samantha Herbick, MSFS, Restek Corporation, Bellefonte, PA; Jared Burkhardt*, Restek Corporation, Bellefonte, PA

- This study evaluates and compares three sample preparation techniques—Salt-Assisted Liquid-Liquid Extraction (SALLE), Supported Liquid Extraction (SLE), and dilute-and-shoot—for the analysis of 68 drugs of abuse (DOA) and novel psychoactive substances (NPS) in oral fluid using LC-MS/MS, aiming to guide forensic laboratories in selecting appropriate methods based on analyte range, sensitivity needs, and resource constraints.
- Results showed SALLE outperformed other methods, yielding high recovery, no matrix effects, and passing accuracy/precision for all analytes; SLE performed well but was analyte-dependent, while dilute-and-shoot suffered from poor matrix removal, reduced sensitivity, and failed performance metrics for most compounds.

L20 - An Assessment of Cross-Reactivity for Cannabinoids in Blood and Oral Fluid Using Enzyme Immunoassay Kits

Sara Jablonski, MSFS*, Alabama Department of Forensic Sciences, Hoover, AL; Curt E. Harper, PhD, Alabama Department of Forensic Sciences, Birmingham, AL

- This study emphasizes the value of conducting in-house cross-reactivity (CR) studies to expand immunoassay (ELISA) screening capabilities for emerging drugs, such as novel cannabinoids, in both blood and oral fluid. It offers a practical framework for laboratories to evaluate and validate CR, allowing more efficient presumptive testing aligned with their unique testing scopes.
- Results demonstrated that several novel cannabinoids—such as Δ^8 -THC, 9R- Δ^{10} -THC, and 9S- Δ^{10} -THC—exhibited cross-reactivity at specific concentrations in both matrices, enabling detection using existing ELISA assays, while more complex compounds like Δ^9 -THCP and THCO variants showed no cross-reactivity, highlighting the assay-specific nature of CR and the need for continuous evaluation as new drugs emerge.

L34 - The Quantitation of an Oral Fluid Drug Panel, Including THC, Using High Resolution Accurate-Mass(HRAM) Orbitrap Mass Spectrometry

Courtney Patterson, MPS*, ThermoFisher, San Jose, CA; Kerry H. Hassell, PhD, ThermoFisher Scientific, Middletown Township, NJ

- This study presents the development of a sensitive and high-throughput method for analyzing 31 drugs of abuse in oral fluid using Orbitrap Exploris 120 mass spectrometry, aligning with SAMHSA and National Safety Council guidelines. It highlights the utility of Orbitrap technology for achieving low detection limits and enabling retrospective data analysis.
- Results showed all target drugs, including challenging compounds like THC, met or exceeded required cutoff levels with limits of quantitation as low as 0.5 ng/mL, demonstrating strong linearity (up to 1,000 ng/mL for select opioids), mass accuracy within 5 ppm, and reliable quantitation despite common THC extraction issues.

L51 – Recommendations for Drug Testing in Driving Under the Influence of Drugs (DUID) and Motor Vehicle Fatality Cases—A 2025 Update

Amanda L. D’Orazio, MS*, NMS Labs, Horsham, Pennsylvania; Barry K. Logan, PhD, Center for Forensic Science Research

and Education, Horsham, PA; Amanda L.A Mohr, MS, Center for Forensic Science Research and Education, Horsham, PA; Curt E. Harper, PhD, Alabama Department of Forensic Sciences, Birmingham, AL; Ayako Chan-Hosokawa, MS, NMS Labs, Horsham, PA; Marilyn A. Huestis, PhD, Thomas Jefferson University, Severna Park, MD; Amy Miles, BS, Wisconsin State Laboratory of Hygiene, Madison, WI; Sarah Kerrigan, PhD, SHSU, Huntsville, TX; Karen S. Scott, PhD, University of Alabama at Birmingham, Birmingham, AL; Jennifer F. Limoges, MS, New York State Police Forensic Investigation Center, Albany, New York; Colleen Scarneo, MS, New England Forensic Toxicology, Concord, NH

- This study updates the National Safety Council Alcohol, Drugs and Impairment Division (NSC ADID) recommendations for Tier I and Tier II drug scopes and cutoffs for DUID and traffic fatality cases, with a focus on aligning laboratory oral fluid testing practices with evolving casework trends and analytical capabilities.
- Results showed several oral fluid cutoffs were raised or removed based on prevalence data and matrix-specific concentration trends; for example, immunoassay screening cutoffs were eliminated for drugs like codeine and hydrocodone, while chromatographic cutoffs were added. These updates reflect broader adoption of oral fluid testing and increased compliance with standardized guidelines across laboratories.

L52 - New York's Drug Recognition Expert (DRE) Oral Fluid Field Certifications

Jennifer F. Limoges, MS*, New York State Police Forensic Investigation Center, Albany, New York

- This study explores the integration of oral fluid (OF) testing into Drug Recognition Expert (DRE) training programs, demonstrating how it can serve as a viable alternative to urine for toxicological corroboration, while providing officers early exposure to OF collection and analysis protocols.
- Results showed strong agreement between OF test results and DRE assessments, with 75% category match in Jacksonville and 96% in Philadelphia. Oral fluid testing detected high prevalence of CNS stimulants and narcotic analgesics, though cannabis detection was lower in OF than urine, likely due to shorter detection windows and different target analytes.

L69 - An Investigation Into the Utility of Creatinine and the Submaxillary Gland Androgen-Regulated Protein 3B as Adulteration Biomarkers and Normalization Factors in Oral Fluid

Christopher McGrowder, BS, John Jay College, Jamaica, NY; Alejandro Ocampo, MS, John Jay College, Queens, NY; Mechthild Prinz, PhD, John Jay College, New York, NY; Marta Concheiro-Guisan, PhD*, John Jay College, New York, NY

- This study developed and validated LC-MS/MS methods to quantify creatinine and SMR3B peptides in oral fluid, aiming to improve drug quantification and assess the potential of these endogenous markers for sample validity and normalization in forensic toxicology.
- Results showed creatinine was consistently detected in nearly all oral fluid samples, with higher levels in males and older individuals, making it a potential validity marker. In contrast, SMR3B peptides were detected in only ~50% of samples and showed limited utility for normalization due to inconsistent presence and weak correlation with blood drug levels.

One Hell of a Drug: Changes in Cathinone Positivity in Florida

Marco Ballotari, PhD^{1*}; Michael T. Truver, PhD¹; Elisa N. Shoff, MS, D-ABFT-FT²; Donna M. Papsun, MS, D-ABFT-FT³

¹ Department of Pathology, Immunology and Laboratory Medicine, University of Florida College of Medicine, Gainesville, Florida, USA.

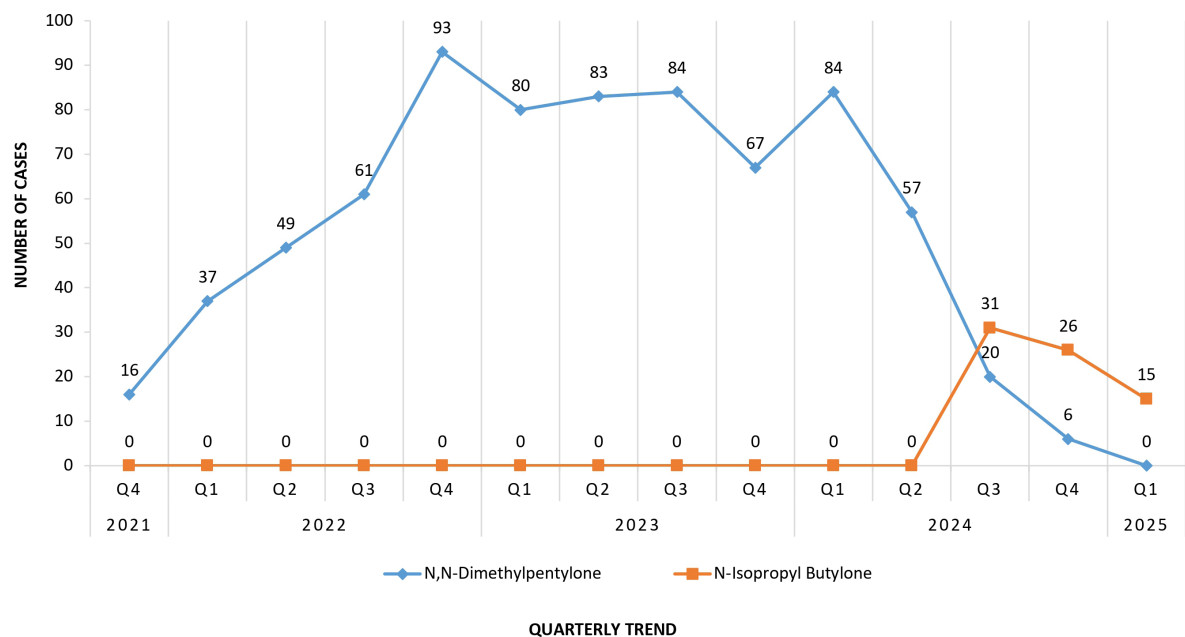
² Miami-Dade Medical Examiner Department, Miami, Florida, USA.

³ NMS Labs, Horsham, Pennsylvania, USA.

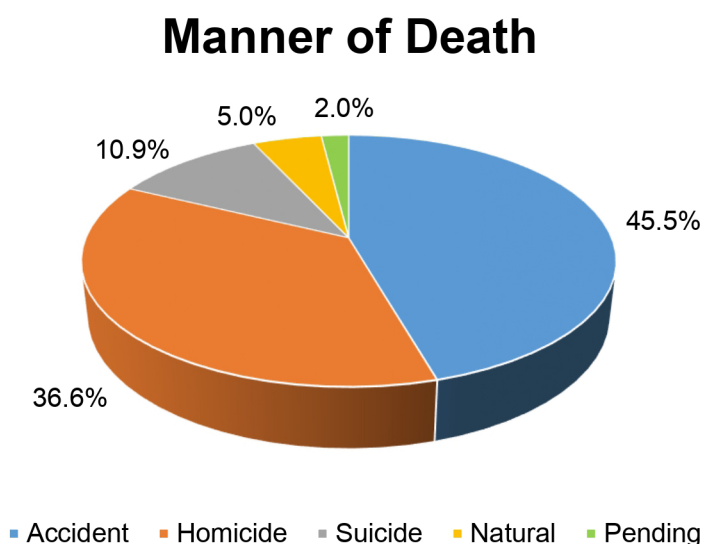
In the US illicit drug market, cathinones represent a relevant category among reported novel psychoactive substances (NPS), with the most prevalent cathinone reported changing over time. As soon as the substituted cathinone eutylone was recommended for international monitoring at the end of 2021, a shift in the drug market was observed that led to an increase in *N,N*-Dimethylpentylone (DMP) proliferation [1,2]. Although these novel stimulants have historically been categorized in the illicit drug market as substitutes for traditional stimulants such as cocaine, methamphetamine, and methylenedioxymethamphetamine (MDMA or ecstasy) [3], they now are being misused alone, with other stimulants and/or fentanyl. Recommendations for forensic toxicology laboratories remain to keep monitoring for such substances with accurate assays and a suggested limit of detection set at a concentration of 10 ng/mL [4].

Since their earliest detection, substituted cathinones have always been prominent in Florida and starting in 2021 Q3, DMP became the most prevalent synthetic stimulant to appear in forensic casework, with a prevalence that varied across the state. At the University of Florida Forensic Toxicology Laboratory (UF), a total of 173 cases submitted for analysis from five Medical Examiner Districts (District 8, District 10, District 12, District 16, and District 20) were screened and confirmed positive for DMP and/or its metabolite pentylone in postmortem blood specimens from 2021 Q4 to 2025 Q1, with the highest number of identifications (n=22) observed in 2022 Q4. During the same period, the Miami-Dade Medical Examiner Department (MDME), Medical Examiner District 11, detected DMP in a total of 564 postmortem blood specimens, with 2022 Q4 counting again as the highest number of positives (n=71) in reported forensic casework (Figure 1). The Florida Medical Examiner Districts and Counties are reported in Table 1.

TRENDS: 2021 Q4 TO 2025 Q1



At UF, DMP was confirmed as the only drug present in the postmortem blood of 25 cases (14.4%) with a concentration range of 16-2200 ng/mL (median: 180 ng/mL; mean: 322 ± 463 ng/mL). The quantitative analysis was achieved using liquid chromatography-tandem mass spectrometry (LC-MS/MS), and the analytical range was 10-1000 ng/mL. The age of the decedents ranged from 19-75 years old, with the majority being male (92.0%) of black race (60.0%). The toxicological findings reflected a geographical distribution for DMP attributable mainly to the area of District 8 (32.0%), and District 10 (32.0%). At the MDME, DMP was identified qualitatively as the only drug present in the postmortem blood of 76 cases (13.4%). The age of the decedents ranged from 15-70 years old, with a 4-month-old outlier excluded, and with the majority being male (86.8%) of black race (75.0%). Among the total 101 cases from the six Medical Examiner Districts considered, based on the investigation, toxicology, and autopsy findings, the manner of death was deemed accidental (45.5%) for the majority of the cases, and homicide in 36.6% of the cases (Figure 2).



A decline in DMP identifications started after its regulation in 2024 Q1, and the next prevalent synthetic stimulant appeared to be *N*-isopropyl butylone. The novel synthetic stimulant and substituted cathinone *N*-isopropyl butylone, one of the structural isomers of DMP, started to garner attention around 2024 Q3. Its potency is currently unknown, although is hypothesized to be a potent inhibitor for the reuptake of dopamine and serotonin [5]. From 2024 Q3 to 2025 Q1, *N*-isopropyl butylone was predominantly detected in cases submitted for analysis from District 11 (n=66) and reported qualitatively. For the other geographical area and districts in this study, *N*-Isopropyl butylone was quantitated in 5 postmortem blood samples using LC-MS/MS at a concentration range of <1-1400 ng/mL (median: 51 ng/mL; mean: 380 ± 680 ng/mL). Two cases each were submitted from District 12, and District 8. The last case was submitted from District 10. Interestingly, one of these cases involved a prison inmate.

In 2024 Q3, a case from a suspected driving under the influence of drugs (DUID) investigation, was positive for *N*-isopropyl butylone in the blood. The blood sample received was collected from the driver, who appeared to have slurred, sleepy speech, droopy eyelids, and slow response to specific questions. *N*-isopropyl butylone was quantified in the blood at a concentration of 16 ng/mL; the presence of other drugs such as methamphetamine, fentanyl, and other NPS substances were also reported.

N-Isopropyl butylone has been reported in a few additional states (CT, SC) besides Florida, but Florida accounts for the majority of reported cases. Florida tends to serve as the epicenter of novel stimulant emergence. In contrast to other NPS subclasses, the subclass of novel stimulants typically has one compound dominate the market at a time, with a

switch to a new compound after scheduling efforts, like when eutylone replaced *N*-ethyl pentylone and DMP replaced eutylone. Although *N*-isopropyl butylone started to appear towards DMP’s decline, it does not appear to have garnered the same kind of momentum as previous emerging stimulants. One hypothesis for this could be that users do not find *N*-isopropyl butylone a suitable replacement for DMP compared to other available stimulants, such as methamphetamine or “pink cocaine”, or even iso-PV8, a recently reported alpha-PVP analogue. Since *N*-isopropyl butylone does not readily appear to be DMP’s successor, the toxicology community continues to monitor for that wave of change, with eyes on Florida.

References

1. Walton, S., Fogarty, M., Papsun, D., Lamb, M., Logan, B., & Krotulski, A. (2022). N,N-Dimethylpentylone—an emerging NPS stimulant of concern in the United States. *30th Meeting of SFTA- 59th Meeting of TIAFT - September 2022*, 34(3, Supplement), S67–S68. <https://doi.org/10.1016/j.toxac.2022.06.091>

2. Fogarty, M. F., Krotulski, A. J., Papsun, D. M., Walton, S. E., Lamb, M., Truver, M. T., Chronister, C. W., Goldberger, B. A., & Logan, B. K. (2023). N,N-Dimethylpentylone (dipentylone)—A new synthetic cathinone identified in a postmortem forensic toxicology case series. *Journal of Analytical Toxicology*, 47(8), 753–761. <https://doi.org/10.1093/jat/bkad037>

3. Gladden, R. M., Chavez-Gray, V., O’Donnell, J., & Goldberger, B. A. (2022). *Overdose Deaths Involving Eutylone (Psychoactive Bath Salts)—United States, 2020*. 71(32).

4. Krotulski, A. J., et al. (2025). *Recommended Scope for NPS Testing in the United States*. <https://www.cfsre.org/images/scoperecommendations/Q1-2025-NPS-Scope-Recommendations-NPS-Discovery-031425.pdf>

5. Walton, S. E., Lattanzio, N., Brown, K., Brunner, B., Liston, M., Papsun, D. M., DeBord, J. S., Logan, B. K., & Krotulski, A. J. (2024). *N-Isopropyl Butylone—NPS Discovery New Drug Monograph*. <https://www.cfsre.org/images/monographs/N-Isopropyl-Butylone-New-Drug-Monograph-NPS-Discovery.pdf>

Table 1. Florida Medical Examiner Districts and Counties.

Medical Examiner District	County
District 8	Alachua
	Baker
	Bradford
	Dixie
	Gilchrist
	Levy
	Union
District 10	Hardee
	Highlands
	Polk

District 11	Miami-Dade
District 12	DeSoto
	Manatee
	Sarasota
District 16	Monroe
District 20	Collier

Figure Legends

Figure 1. Total number of *N,N*-Dimethylpentylone and *N*-isopropyl butylone cases identified in the postmortem blood specimens at the UF Forensic Toxicology Laboratory and at the Miami-Dade Medical Examiner Department from 2021 Q4 to 2025 Q1.

Figure 2. Manner of death ruled for the 101 cases submitted for analysis at the UF Forensic Toxicology Laboratory and Miami-Dade Medical Examiner Department (MDME) for which *N,N*-Dimethylpentylone was detected alone in the post-mortem blood specimens from 2021 Q4 to 2025 Q1.



SOFT Mailing Address
1955 W Baseline Rd.
Ste. 133-442
Mesa, AZ 85202
480-839-9106

INFO@SOFT-TOX.ORG

SOFT-TOX.ORG

[FOLLOW US ON FACEBOOK!](#)

[JAT ADDRESS UPDATE](#)

[SOFT MEMBER LOGIN](#)

SOFT 2025 COMMITTEES

Applied Analytical Toxicology Committee: *Rebecca Wagner & Wayne Lewallen*

Awards Committee: *Sara Schreiber & Rusty Lewis*

Continuing Education Committee: *Kari Midthun & Kei Osawa*

Culture, Values and Diversity Committee: *Frances Scott & Danielle Boden*

Drug Facilitated Crimes Committee: *Teri Stockham & Celeste Wareing*

Drugs & Driving Committee: *Nick Tiscione & Sara Dempsey*

Ethics Committee: *Madeline Montgomery*

Finance Committee: *Robert Johnson*

Meeting Resource Committee: *Erin Spargo & Denice Teem*

Membership Committee: *Madeleine Swortwood*

Mentoring Committee: *Courtney Wardwell & Kim Samano*

Nominating Committee: *Tate Yeatman*

NPS Committee: *Kayla Ellefsen & Alex Krotulski*

Oral Fluid Committee: *Curt Harper & Mandi Mohr*

Policies & Procedures Committee: *Madeleine Swortwood*

Postmortem Toxicology Committee: *Joe Kahl & Samantha Tolliver*

Publications Committee: *Stephen Raso & Heather Barkholtz*

SOFTopics: *Vanessa Meneses, Alanna deKorompay & Brennon Foster*

Toxicology Resource Committee: *Sabra Jones & Joey Jones*

Young Forensic Toxicologists Committee: *Elisa Shoff & Whitney Brown*

TOXTALK

EDITORS

Robert Johnson, Ph.D., F-ABFT & Chris Heartsill, B.S., D-ABFT-FT

2025 PUBLISHING SCHEDULE

Issue 3: Due by Aug 13, Published week of Sep 15

Issue 4: Due by Nov 14, Published week of Dec 15

SUBMISSION CATEGORIES

- **Organizational Updates:** News from SOFT, Annual Meeting details, Committee Updates, Award Announcements, Continuing Education Opportunities, and other information valuable to members.
- **Scientific Submissions:** Research articles, case reports, and scientific studies related to forensic toxicology. Submissions must include an abstract. Published abstracts will feature direct links to the full articles.

SUBMISSION PROCESS

- [Submit an Article for ToxTalk](#)
- **Review and Acceptance:** All submissions undergo editorial review. The editorial team reserves the right to edit for clarity, grammar, and style. Acceptance notifications will be communicated promptly.

FUTURE MEETINGS



SOFT/TIAFT 2026

Hilton Chicago
Chicago, IL

September 19-24, 2026

Hosts: Luke Rodda & Andre Sukta



SOFT 2027

Rhode Island Convention Center
Providence, RI

September 26-October 1, 2027

Hosts: Sabra Jones & Dani Mata



SOFT 2028

Baird Center
Milwaukee, WI

October 15-20, 2028

Hosts: TBD

[GUIDELINES AND SUBMISSION](#)

[VISIT THE TOXTALK ARCHIVE](#)