I’m finding it hard to believe that this is my last ToxTalk message as your President. As they often say to parents— the days are long, but the years are short. And that is exactly how I feel right now! The year has flown by, but the Board accomplished so much over the past year (and there were some loooong days to get us there!).

I want to spend most of this message recapitulating my President’s report for those of you that were unable to attend the annual business meeting. I didn’t take the time to revisit the Board’s actions that had already been captured in previous editions of ToxTalk, but instead focused on the flurry of activity that had just occurred or that we were in the midst of addressing:

- **Hiring of Paula Brantner of Accountability Ignited as our new Accountability Officer:** My guess is that this seemed to come out of left field to you all. I wish that were true, but unbeknownst to most of the membership we have had incidences occur at SOFT events. The previous process was for the Executive Director, i.e., Beth, to handle these, but we realized that wasn’t the most appropriate course of action and that to best serve the SOFT membership and staff in the event of a potential code of conduct violation, we needed a neutral party with the training and expertise to handle such investigations. We all hope she is never needed, but we feel better knowing we always have her waiting in the wings in case anyone needs assistance. As of the writing of this column, Paula has received no calls related to the annual meeting.

- **Smith vs Arizona:** If you are not aware, this is a case that is headed to the Supreme Court next year and is related to the confrontation clause. If the lower courts’ rulings are overturned, this could have a drastic impact on many of...
our laboratories as it could require everyone involved with the case to testify, instead of just the signer of the report who is currently permitted to solely provide testimony in many jurisdictions. As the ruling could affect all areas of forensic science, the Board of Directors voted to join a group of forensic organizations, including the American Board of Forensic Toxicology, the American Society of Crime Laboratory Directors, the National Association of Medical Examiners, and the International Association of Coroners and Medical Examiners in hiring a law firm to write an amicus brief, or a friend of the court brief, to allow us to help provide insight into our processes which hopefully will help the court understand why everyone is not needed. We owe many thanks to MJ Menendez who has been invaluable in this endeavor, as she took the initiative to facilitate the coming together of these groups, had the important conversations to determine if this would be a worthwhile task, and ultimately identified a law firm with experience and excitement in taking on the brief.

- **SOFT Committees**: Past President Robert Sears had started the evaluation of committee term limits and the process of membership selection to broaden and diversify our committee membership. I’m happy to report that after much discussion over the past year, the Board of Directors officially made the decision to implement a number of measures related to committees. Please note, some committees have more specific needs and/or rules around committee membership and leadership, for example committees noted in the Bylaws and YFT, so these will apply to most, but not all, committees. – 1. Committee chairs are to select new members who are not members of other committees whenever possible; if they strongly feel that a particular applicant is the only person that could fulfill a role, which should generally be a rare occurrence, they will need to justify this to the President. 2. There will be committee term limits – a committee member may serve up to two consecutive three year terms before they must rotate off; they can apply to rejoin in later years (i.e., no lifetime limit). 3. To implement this, we may need to start rotating some people off sooner than that initially to get staggered start years, i.e., we can’t have the whole committee rotating off in the same year. Committee chairs may ask for volunteers and will also look to see if they have inactive members, and then may move to an unbiased approach, such as drawing straws for terms; and 4. We will move to a Chair/Vice Chair system, with a two year term limit for each position. The Vice Chair will be appointed by the President and then will automatically ascend into the Chair role at the end of their two year term. President Elect Tate Yeatman, Secretary Chris Heartsill and I have been very busy in recent weeks as we have met with all impacted committees. Please have patience with the Board and your committee chairs as we work to implement these new processes. I have heard time and time again over the years from members how hard it is to join a SOFT committee. It is our hope that we have made significant strides in removing those roadblocks with these updates.

- **Mission and Vision Statements**: I indicated in my incoming President’s speech last year that we wanted to write mission and vision statements for SOFT. We have what we call our mission statement on the website, but it wasn’t quite hitting the mark of what a mission statement should be. A mission statement should be concise and simple statement that encompasses the purpose, intention, and goals of an organization, whereas a vision statement is a short description of our organization’s long term goals. At the Executive Committee meeting this summer we drafted these statements and with a little tweaking from the rest of the Board this week, we were able to vote on and approve these statements:

**MISSION**

**SOFT is a professional scientific community committed to the advancement of forensic toxicology through collaboration, education, professional development, and promotion of research in the interest of justice and public health.**

**VISION**

**Elevating justice and public health through excellence in forensic toxicology.**
I also want to thank Dan Anderson, Vanessa Beall, and their planning committee for all their hard work on the annual meeting. I had a wonderful time and have heard nothing but rave reviews about the week. Looking back, I believe this is the 18th SOFT meeting that I have attended, and it was without a doubt one of the best. I also so appreciate that many of you leaned into the formal masquerade theme and went all out for the President’s Masquerade Ball. You guys looked fantastic!

Finally, to finish out my last Tox Talk message, I want to thank everyone once again for this opportunity of a lifetime. It’s been an honor to serve as your President twenty years after I first joined this amazing organization.

Best wishes for a safe and happy holiday season,

Erin A Spargo

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FROM THE EXECUTIVE DIRECTOR’S DESK

As we approach the end of the year, I’d like to encourage anyone who hasn’t already donated to the SOFT ERA/YSMA Fund to do so before the end of the year. Since SOFT now has 501c3 status, donations are tax deductible. Donations may be tax deductible. Please check with your tax advisor for more information. Donations fund SOFT’s Educational Research Award and Young Scientist Meeting Award. DONATE HERE!

**Educational Research Award (ERA)** - To encourage academic training and research in areas related to forensic toxicology and recognize worthy student researchers. The award is to be used to assist awardees with travel expenses to attend the Annual SOFT Meeting for the purpose of presenting their research. The type of presentation (platform or oral) will be decided upon by the scientific program committee for the annual meeting at which the award is to be presented.

**Young Scientist Meeting Award (YSMA)** - To encourage training and research in areas related to forensic toxicology, recognizing young bench scientists working in the field. The Young Scientist Meeting Award (YSMA) is for bench level scientists to undertake projects and get involved in the annual SOFT meetings. This award is to be used by the recipients to offset travel expenses incurred for the annual SOFT meeting.

I hope that those of you who were able to attend the Annual Meeting found it valuable! To date, 325 attendees completed the post-meeting survey, and I’ll share some quotes that highlight the most frequent comments.

**HIGHLIGHTS:**

- Getting to play with the puppies during the lunch breaks
- I really enjoyed the scientific sessions; I think they were well organized and they covered a good variety of topics.
- Networking with so many forensic scientists and useful vendors.
- I really liked how the Workshops were all 1/2 day and you could “mix-and-match.”
- As a first timer, the magnitude of the presenters and attendees was amazing. Absolutely everyone was amazing and knowledgeable. The networking events were all fantastic. I was just in awe everyday.
- I really enjoyed the Elmer Gordon session. It was very organized, good conversations, the moderators were good at keeping questions flowing.
- The food was great and the venue was perfect.
- I really enjoyed the feeling of inclusiveness at the meeting and to know that SOFT is working to allow younger, less seasoned toxicologists an opportunity for involvement.
- The offsite brewery tour was interesting with wonderful food choices and fun games provided.
- I really enjoyed the President’s Ball! The theme was really fun, the food was great, and the music was really good.
- Excellent scientific sessions! This was my first time presenting (both oral and poster) and
it was a lovely experience!

**AREAS FOR IMPROVEMENT:**

- Having the exhibit hall closer to the scientific sessions area/or at least the break refreshments closer to the scientific sessions
- More inclusion when it comes to sizes. The vests ran out for the larger sizes quite early. Same with the vendors only going up to XL in most instances.
- The shuttle to and from the hotel had an inconsistent schedule. The schedule that was posted was not followed by the drivers which caused frustration.
- The location offered limited access to go outside the hotel compound.
- I was disappointed the conference hotel seemed to sell out pretty fast this year.
- Avoid scheduling the meeting over Halloween! It takes me away from the family.

Thank you all for a wonderful 2023, and here’s to an equally productive 2024!

Help support SOFT’s next generation of forensic toxicologists by donating to the Educational Research Award (ERA) & the Young Scientist Meeting Award (YSMA)! These annual awards our used by recipients to offset travel expenses incurred to present their research at the annual SOFT meeting. Donations to the ERA & YSMA may be tax deductible. **Donate [HERE](#)!**

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### BUSINESS MEETING AGENDA AND MINUTES

**ANNUAL SOFT BUSINESS MEETING - DENVER, CO - NOVEMBER 2, 2023**

**Society of Forensic Toxicologists, Inc.**
**Business Meeting Agenda and Minutes**
**Annual Meeting 2023, Denver, Colorado**

3:30 pm Thursday, November 2, 2023

1. **Call to Order by President Spargo at 3:46 pm MT**
   a. A quorum was established and reported to President Spargo.

2. **Approval of Agenda** Erin Spargo
   a. **Motion to approve:** Robert Sears, Second Michelle Peace, Approved by all.

3. **Approval of 2022 Annual Business Meeting Minutes** Erin Spargo
   a. **Motion to approve:** Suman Rana, Second Robert Johnson, Approved by all.

4. **President’s Report** Erin Spargo
a. President Spargo welcomed everyone to SOFT 2023. She updated membership of the activities of the BOD and the very productive year and thanked the BOD for their dedication and hard work throughout the year. President Spargo discussed the hiring of Paula Brantner of Accountability Ignited to serve as a neutral third party to accept and investigate any incidents that may come up during a meeting. She then discussed the Arizona v. Smith case and its impact on forensic science laboratories as well as the decision to enter a collaboration with other groups to join in hiring a law firm to draft an Amicus Brief. Next, she discussed the changes to the structure of committees and term limits for committee leadership and membership, the purpose of which is to get more people involved. President Spargo introduced the new mission and vision statements for SOFT. She thanked the membership and others for their support.

5. Executive Director’s Report  Beth Olson  
   a. ED Olson thanked President Spargo and the Board for their work. She spoke to the desire to create a more inclusive and transparent environment in the organization outlining the various ways that members can interact. She discussed the addition of moderated discussion boards in 2024 on the SOFT website and the planning for future SOFT meeting locations. ED Olson described the difficulty with booking meetings and that future dates will not include the Halloween holiday. She wrapped up by thanking the hosts and the planning committee and spoke specifically about Liz Kiely and her contributions.

6. Secretary’s Report  Chris Heartsill  
   a. Secretary Heartsill began with requesting a moment of silence for members, family, and friends that have passed in the last year. He then discussed the status of membership numbers. This information was displayed on the meeting slides. He discussed the categories of membership and reminded everyone to update their information on the website.

7. Treasurer’s Report  Jeri Ropero-Miller  
   a. Treasurer Ropero-Miller discussed the current financial status of SOFT, which is good. She discussed the activities of the Finance Committee and balances in the SOFT bank accounts. She discussed the 2023 budget and its publication in ToxTalk. Details of the budget will be included in a future issue of ToxTalk. Details of her report were displayed on the meeting slides.

8. Committee Reports  Tate Yeatman  
   a. President-Elect Yeatman discussed the new process implemented this year to have the committee reports presented during a virtual meeting accessible to all members. The QR code provided will give members access to the report. The QR code was displayed on the meeting slides.

9. Regional Toxicology Liaison (RTL) Report  Amy Miles  
   a. Amy discussed what the RTL program is and introduced the three regions as defined by NHTSA. The liaisons were introduced and activities for 2023 were discussed. Specifically, testimony training provided to laboratories within the three regions including 192 people, 7 different locations, and 51 laboratories. She discussed plans for 2024 which will include continued testimony training as well as implementation of ASB standards and evaluation of laboratory funding sources. Amy discussed working with the SOFT Con Ed to possibly provide webinars on method development and validation. She expressed the desire of NHTSA to expand the program and add more RTLs and regions. She urged states/laboratories that are not represented to speak up and let it be known that they need such a program.

10. JAT Special Issue  Dayong Lee  
    a. Dayong spoke on behalf of Bruce Goldberger and thanked Sandra Bishop-Freeman for her work in putting together the Special Edition of JAT.  
       • EDIT Award  Sandra Bishop-Freeman  
       o Sandra thanked the hosts, President Spargo, Bruce Goldberger, the staff at AACC, and the SOFT Office for all their guidance. She also thanked all the reviewers and authors.
There were 17 articles submitted. The EDIT award this year went to Alaina Holt for “The Impact of Vaping Ethanol-Containing Electronic Cigarette Liquids on Roadside Impairment Investigations”.

11. SOFT Awards
   Tim Rohrig
   a. Tim announced the members of the Awards Committee and how scoring was conducted to determine the winners. He announced the following awards.
   • ERA - Masters Award was awarded to Bridget O’Leary from the John Jay School of Criminal Justice Department of Sciences for her research on the “Impact of Blood Preservatives and Anticoagulants on Cannabinoid Quantitative Analysis”.
   • ERA - Doctorate Award was awarded to Jessica Ayala from San Houston State University for her research on the “Application of Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS) All Ions Data Analysis to Authentic Blood Specimens”.
   • YSMA was awarded to two individuals this year:
     o Ashley Pokhai from Virginia Commonwealth University for her research on “Assessing the Cross-Reactivity of Cannabinoids Analogs (Delta-8 THC, Delta-10 THC, and CBD) and their Major Metabolites in Six Commercial Cannabinoid Urine Screening Kits.
     o Katie Diekhans from the San Francisco Office of the Chief Medical Examiner for her research “Analysis of over 250 Novel Synthetic Opioids by LC-MS/MS in Blood and Urine.”
   • 2023 Annual Awards were given in the following categories (details of the winners’ contributions were displayed on the meeting slides.):
     o Young Forensic Toxicologist Service Award was presented to Luke Rodda.
     o Research in Forensic Toxicology Award – there were no nominees in 2023.
     o Teaching and Mentoring Award was presented to Amy Miles.
     o Distinguished Service Award was posthumously awarded to Liz Kiely for her service to the organization. Her family was present to receive the award on her behalf.

12. Recognition of Workshop Chairs
    Donna Papsun and Lisa Reidy
    a. Donna and Lisa recognized the workshop chairs and had them come up to receive their certificates of thanks. A list of the recognized chairs were displayed on the meeting slides.

13. Recognition of Webinar Chairs
    Robert Johnson
    a. Robert read the 2023 webinar chairs and had them come up to receive their certificate of thanks. He announced the last webinar for 2023 to be held in December. A list of the recognized chairs were displayed on the meeting slides.

14. SOFT 2024 St. Louis
    Justin Poklis and Sarah Riley
    a. Justin and Sarah described the historic sites and attractions in St. Louis and urged members to attend the meeting in 2024. They described the meeting venue, exhibit hall, and social agenda.

15. Announcements
    Erin Spargo
    a. Drugs & Driving Travel Award (sponsored by CSLA) will be presented to an individual in the Drugs & Driving Special Session on Friday at SOFT. The awardee will be announced through an email blast from the SOFT Office.

16. Unfinished Business – there was no unfinished business to discuss, and none was brought forward.

17. New Business
    Erin Spargo
    a. Ethics Related Activities were discussed by President Spargo. There was one ethics complaint handled in 2023 and it has been adjudicated. All information related to the complaint will remain confidential.
    b. Bylaws Update were discussed. A redline version was published in September on the SOFT website for
member review. The BOD approved the Bylaws previously and there was no additional discussion. **All present voted to approve the Bylaws.**

c. Outgoing Officers and Directors were recognized and thanked for their contributions. The outgoing officers were:
   i. Director Madeline Montgomery
   ii. Counselor Dan Isenschmid
   iii. Immediate Past President Robert Sears

18. Elections
   a. The slate of officers as proposed by the Nominating Committee was published in the most recent ToxTalk and are as follows:
      i. Chris Heartsill – President-Elect
      ii. Madeleine Swortwood – Secretary
      iii. Jen Colby – Director
      iv. Rusty Lewis – Director
   b. President Spargo asked for any nominations from the floor. **There were no nominations from the floor, therefore the proposed slate of officers was approved by acclamation.**

19. Recognition of Past Presidents
   a. President Spargo asked all Past Presidents to stand and be recognized. She thanked them for their service to SOFT.
   b. Incoming President Tate Yeatman presented President Spargo with her Award as outgoing President.

20. Incoming President’s Remarks
   a. Tate presented his remarks in an elegant speech describing his journey in toxicology and integration into SOFT. He focused on the recent successes of SOFT and challenged everyone to do more going forward. He announced the 2024 counselor – Laurel Farrell. He announced the 2024 JAT Special Edition Editor – Erin Karschner. He gave thanks to everyone and highlighted Beth and CC as well as Shannon, his wife.

21. Adjournment
   a. President Spargo drew the winner of the Free Registration for 2024. The winner was Michael Stypa.
   b. **Motion to adjourn: Rusty Lewis, Second Tim Rohrig, Approved by all.**
      i. Meeting was adjourned at 4:52 pm MT.
The RTLs met in August to plan for 2024. The priorities for the next year are the following:

- ASB documents – Standardization in testing is going to be important in the future to be able to rely on data from DUID and Postmortem casework in forensic toxicology laboratories. Webinars will focus on implementing practices and assisting in meeting the ASB standards. This will include specific webinars on method validation and training with vendor-specific sessions to get into the details of data analysis.

- Data harmonization – Going hand in hand with testing standardization, the RTLs will begin working with highway safety partners on ways to collaborate on data projects. Many laboratories are limited to the capability of their Laboratory Information Management System (LIMS), and not all highway safety partners are aware of this issue. The RTLs will be working with local and national partners to tackle this initiative.

- Continuation of testimony training – Many regions and states held free, in-person testimony trainings produced by the RTLs. These trainings will continue throughout 2024. In addition, the RTLs will be reaching out to the laboratories that have had the training to find out if a follow up, virtual training would be useful.

The National Highway Traffic Safety Administration (NHTSA) is extremely pleased with the success of the RTL program. Discussions are occurring to grow the program in 2024. Stay tuned for details in the coming year.

The RTLs continue to receive requests for training and assistance from laboratories outside the project’s current scope. Keep your requests coming! If there are any questions or feedback, please reach out to Amy Miles, the Project Manager, or any of the RTLs.

Amy Miles, Project Manager
amy.miles@slh.wisc.edu

Chris Heartsill, Region 7
chris@soft-tox.org

Sabra Jones, Region 5
sabra@soft-tox.org

Kristen Burke, Region 9
kristen@soft-tox.org

SOFT’s LEARNING MANAGEMENT SYSTEM

Explore available continuing education opportunities in SOFTs Learning Management System! Unlock a wealth of knowledge through our live and on-demand webinars, specially crafted for both SOFT members and non-members. Enhance your expertise in diverse topics ranging from postmortem toxicology challenges to the latest advancements in instrumentation for NPS detection.

Webinars are offered at an exclusive rate of $25 for SOFT Members and $35 for non-members. As a bonus, SOFT members enjoy complimentary access to JAT’s Editor’s choice opportunities.

Available Opportunities:
- Navigating the Current Challenges in Postmortem Toxicology - REGISTER HERE!
- Pros and Cons of Various Instrumentation Types for NPS Detection - REGISTER HERE!
- Roadside and Laboratory Oral Fluid Drug Testing - REGISTER HERE!
- How to Promote Yourself in Your Career and in SOFT - REGISTER HERE!
- 2023 JAT Editor’s Choice CE opportunities - featuring 6 insightful articles - ACCESS HERE!

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Thank you very much for attending SOFT’s annual meeting at the Gaylord Rockies Convention Center in Denver, CO. Months of planning went by so quickly the week of the meeting! The week started with a winter weather advisory on Saturday and a potential of 9-12 inches of snow. It was reminiscent of the 2017 Boca meeting where Hurricane Irma forced the rescheduling of the annual meeting. But lucky enough for us, Denver has microclimates, and the snow that was anticipated only yielded a few inches at the resort and travel worries were not realized—thank goodness!

People ask about the SOFT process of hosting and the response was always, “It’s a well-oiled machine that seems to take a life of its own.” A successful meeting starts with the SOFT Office, Executive Director Beth and Operations Manager CC. Many individuals volunteer their time to the meeting annually, and without them, it would not be possible for the meeting to run so smoothly year after year. The F&B ladies (Ann Marie, Denice, and Delisa) did a wonderful job, as usual, guaranteeing the variety and quality of each meal and snack. And what would a meeting be without Frank’s excellent coordination of AV. Additionally, the Mobile App team (Rusty, Roxane, and Sunday) delivered a functional app to keep us informed throughout the week.

The 16 half-day workshops, coordinated by Donna and Lisa provided a variety of focused educational opportunities to the attendees. The scientific sessions, coordinated by Luke and Sara, complemented the workshops with excellent variety and content. The session moderators did a great job of keeping the speakers on time and encouraged audience questions. The Elmer Gordon Forum was very well attended. It was coordinated by Dani and her SOFTopics committee who strategically placed a runner with microphone in each corner of the room. It was great to hear questions, answers, comments all while flowing into the next topic seamlessly—great job! Volunteer coordinators Stephanie and Jenny did an absolutely amazing job with ensuring each event was appropriately staffed with assistance. YFT chair, Marissa did a fabulous job coordinating various events including the Student Enrichment Program, which brought 50 local high school students to the meeting to learn a little more about forensic toxicology.

No meeting is without hiccups, so big thank you to Sherri and Frances for their quick thinking and being able to find substitute material for the plenary speaker who had traveled to CO, became ill, and could not deliver the keynote address. The two days of puppy play during the lunch break added a completely different element to the annual meeting. It was a fun experience, a good stress relief, and even helped the puppies develop socialization skills! The evening out at the brewery with games, adult beverages, and mingling with colleagues was a nice break from the scientific content. If the memories aren’t enough, you can click here for all of the photos from the photo booth! And who can forget the President’s reception and the multi-piece Radio Band? The flexibility of those floorboards was amazing (and scary) for those on the dance floor, you know what we are referring to! Last but not least, if you were disciplined enough to get out of bed Thursday morning for the Fun-Run, we hoped you enjoyed the well-planned route and shirt planned by Aria.

And our last thank you goes to the SOFT Board of Directors for allowing us to host SOFT Denver 2023. Although we spent a full week together learning and enjoying our colleagues and friends, it is never enough. But we can look forward to our time together next year at SOFT St. Louis 2024, and staying in-touch through more virtual means. Thank you all for an excellent meeting.

Dan and Vanessa
Congratulations to the outstanding individuals honored as our 2023 Award Recipients!

2023 JAT SPECIAL ISSUE EDITOR
Sandra Bishop-Freeman

EDIT Award
Alaina K. Holt

EDUCATIONAL RESEARCH AWARD
Bridget O'Leary

EDUCATIONAL RESEARCH AWARD
Jessica Ayala

YOUNG SCIENTIST MEETING AWARD
Ashley Pokhai

YOUNG SCIENTIST MEETING AWARD
Katie Diekhans
ANNUAL MEETING UPDATE - DENVER, CO

YOUNG FORENSIC TOXICOLOGIST SERVICE AWARD
Luke Rodda

TEACHING AND MENTORING AWARD
Amy Miles

DISTINGUISHED SERVICE AWARD
Liz Kiely
Liz’s mother, Marge, and brother, Sean, were able to accept the award on her behalf.

Elizabeth “Liz” Rose Kiely
August 29, 1980 - February 21, 2023

2023 WEBINAR CHAIRS

2023 WORKSHOP CHAIRS
The 2024 Annual Meeting will be held in St. Louis, Missouri. The meeting will be held the week of October 27-November 1 at St. Louis Union Station.

Saint Louis, often referred to as the gateway to the West, is a vibrant city nestled along the western Bank of the Mississippi River. With a rich history, diverse culture, and a distinct architectural skyline, Saint Louis has earned its place as a prominent city in the heart of the United States.

One of the city’s most iconic landmarks is the Gateway Arch, a soaring stainless-steel monument that stands as a symbol of America’s western expansion. Designed by the architect Eero Saarinen, the arch offers breathtaking views of the city and the Mississippi River. Visitors can explore the Gateway Arch National Park, which includes the Museum of Westward Expansion, delving into the fascinating history of Saint Louis as the pivotal point during the westward expansion of the 19th century.

Saint Louis is renowned for its vibrant cultural scene. The city boasts world class museums, such as the Saint Louis Art Museum, housing an impressive collection of art spanning from ancient civilizations to contemporary masterpieces. The City Museum, a unique institution housed in a former shoe factory, provides an interactive and artistic experience featuring caves, tunnels, and surreal sculptures that captivate visitors of all ages.

Sports enthusiasts find solace in Saint Louis, home to the beloved Saint Louis Cardinals baseball team. The city’s fervent sports culture extends beyond baseball, with the Saint Louis Blues hockey team and St. Louis City soccer team, and the passionate fan base rallying behind their teams.

Saint Louis is also celebrated for its culinary scene showcasing, a diverse array of flavors. The city is known for the invention of the Saint Louis-style pizza characterized, by a thin cracker-like crust and unique Provel cheese blend. The Soulard market, one of the oldest farmers’ markets in the country, provides a sensory delight with fresh produce, local delicacies, and a lively atmosphere.

In keeping with the historic vibe of the city, the meeting will be held at the iconic Union Station. Opened in the 1890s, St. Louis Union station was the world’s largest train station to have the trains and ticketing all on one level. At its peak, the Station served over 100,000 people a day. Today the Station has been restored to a full-service hotel and convention space. You are sure to enjoy the light shows every evening in the classic Grand Hall, and fire and light shows each night in the courtyard, as well as the charming ambience of the gathering areas in the center.

No visit to St. Louis would be complete without a stop at the Anheuser-Busch Brewery. The off-site event will be held at the Biergarten at the Brewery, only a short drive from Union Station. The event will offer brewery tours, live music, yard games, tasty local eats, and a photo op with one of the famous Anheuser-Busch Clydesdales.

If this is your first meeting or your 51st, we hope to show you a great meeting in the “Show Me State!”

- Sarah and Justin
2024 JAT SPECIAL ISSUE

SPECIAL ISSUE EDITOR:
Erin Karschner, Ph.D., F-ABFT
Contact Erin HERE!

INSTRUCTIONS & DEADLINES:
Titles & Abstracts are due by March 1: SUBMIT HERE!
Final manuscripts are due by March 15: SUBMIT HERE!
Manuscripts should be submitted through Manuscript Central, please check the box for the SOFT Special Issue when submitting.

I cannot thank Incoming President Tate Yeatman enough for the honor of being named this year’s Journal of Analytical Toxicology (JAT) Special Issue Editor. JAT has a longstanding history of publishing impactful research on analytical methods, case reports, clinical research, and toxicological interpretation. It is because of this that JAT is a primary resource for forensic toxicologists with wide readership throughout our field.

Now that SOFT 2023 has ended and we are in the late stages of 2023, it is time to brainstorm ideas for manuscript submissions for the 2024 SOFT Special Issue. Each year the Special Issue is published in tandem with the SOFT Annual Meeting and highlights new research by SOFT members. One benefit is that SOFT members who are first authors of accepted manuscripts will be eligible for the Experimental Design and Impact on Toxicology (EDIT) Award. This award was first presented in 2009 and acknowledges research that is well-designed and has a significant impact on the field of forensic toxicology. Previous awardees can be found HERE and include projects such as, “Endogenous GHB in Segmented Hair Part II: Intra-Individual Variation for Exogenous Discrimination,” “Determination of Cross-Reactivity of Contemporary Cannabinoids with THC Direct Immunoassay (ELISA) in Whole Blood,” and most recently, “The Impact of Vaping Ethanol-Containing Electronic Cigarette Liquids on Roadside Impairment Investigations.” You could be next!

Whether or not you submit a manuscript, please consider volunteering to serve as a reviewer. The peer review process is crucial to ensure that the Special Issue is filled with high-quality manuscripts. When you see the invitation to participate as a reviewer, please accept it, if possible.

I hope that you will submit your research for publication in the 2024 SOFT JAT Special Issue. Consider writing up that project you have been meaning to publish—it will be worth it! Deadlines are approaching quickly, so please plan accordingly. I look forward to working with you and assisting in the process of getting your work across the finish line. See you in St. Louis!

- Erin
Hello Fellow Forensic Toxicologists!

We hope everyone enjoyed the annual meeting in Denver, CO a few weeks ago! The YFT committee definitely did!

The committee would like to thank everyone who attended the multiple YFT hosted activities. YFT activities started off strong with the YFT Symposium and Professional Development Fair (PDF) on Sunday, October 29th. The Symposium was well attended with 115 attendees who heard from the 2022 Leo Dal Cortivo Poster Award Winner Joseph Kahl followed by the SOFT Board of Directors. Instead of a keynote speaker, the Symposium hosted a panel discussion with panelist who spoke about various opportunities and career paths within the field of forensic toxicology, including higher education, working in public laboratories, working in industry, obtaining certifications, and involvement in professional organizations. The panel was well received by all attendees with a lot of audience participation. Another thank you to the panel members! The Professional Development Fair hosted 15 participants from professional organizations, university programs, SOFT committees, and potential employers.

New this year, the YFT committee hosted an Employment Board, which was up all meeting and received a lot of traffic! By the end of the week many of the spots for CV submissions were replaced with additional employment opportunities. Stay tuned if this will return at the annual meeting next year!

YFT activities continued Monday, October 30th with the Student Enrichment Program (SEP) and a workshop on Career Development and Leadership Techniques for the Forensic Toxicologist on Tuesday, October 31st. The YFT SEP subcommittee worked hard this last year to update the program, making it more engaging for the students. The mission of the new Student Enrichment Program is to connect students and educators nationwide with professionals in forensic toxicology to educate them on the foundations and opportunities in the field. This year YFT partnered with the Colorado Bureau of Investigation, Rangeview High School, and the Diversity Task Force to host 42 first- and second-year forensic science students. The program consisted of a combination of short lectures and hands-on activities to teach the students the different foundations and aspects of forensic toxicology. The final activity of the day was an escape room put on by the Diversity Task Force where the students utilized what they had learned during the day to solve puzzles and escape in time!

The workshop was well attended with over 70 registered attendees. Five YFT members, Kristin Kahl, Erin C. Strickland, Kayla Neuman, Whitney Brown, and Edward Zuamaeta, were joined by Dr. Matthew Juhascik, Jan Emmons, and Steve Emmons to discuss career development and leadership techniques for forensic toxicologists. Mr. and Mrs. Emmons provided general leadership and management skills and strategies to assist those interested in future promotions to management/supervisor roles. Also discussed was career paths and career development as well as the causes of stress for a forensic toxicologist and strategies for dealing those specific issues were provided and discussed. A lively Q&A session closed out the workshop for the afternoon.

The YFT committee rounded out their activities at the annual meeting by presenting the Leo Dal Cortivo Awards on Thursday, November 2nd to poster winner Alyssa Reyes (“Urine Drug Surveillance in Philadelphia, PA, with Emphasis on Xylazine and its Metabolites”) and platform presentation winner Danai T. Taruvinga (“Fluorexetamine and 2-fluoro-2-oxo-phenylcyclohexylmethyline: New Dissociative Hallucinogens in Forensic Toxicology and Drug Chemistry Casework”). They will each receive a $1,000 cash prize and free registration to a future SOFT meeting. Congratulations Alyssa and Danai!
YOUNG FORENSIC TOXICOLOGISTS (YFT)

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YFT PANEL SPEAKERS
STUDENT ENRICHMENT PROGRAM
CO-ORGANIZED WITH THE SOFT DIVERSITY TASK FORCE
Can you believe it is already December? Where did 2023 go? The Professional Mentoring Program (PMP) is wrapping up its 4th year with over 50 mentorship pairings. We’re super proud of all the work that the mentoring pairs have accomplished and the goals that they continue to work towards.

A GLIMPSE INTO THE PROGRESSION OF INITIAL GOALS BY OUR 2023 PAIRINGS
• Increase SOFT involvement by joining a committee, presenting at the meeting, and serving as an abstract reviewer
• Submitting ABFT exam application
• Submitting an article to a journal or ToxTalk
• Expand professional network
• Working towards laboratory accreditation
• Working towards development of leadership skills
• Navigate a career change

We also want to provide programming to our pairings that is meaningful to them and helps them achieve the goals they have set to accomplish.

A ROUND UP OF OUR EVENTS THROUGHOUT THE YEAR
• Virtual Kickoff Webinar
• ToxTalk Volume 47 Issue 1
• DISC Assessment Webinar
• ToxTalk Volume 47 Issue 2
• Invited speaker, Chris Atley, presented on self care and setting boundaries
• Book Club event with SOFTopics on “Atomic Habits” by James Clear
• Poster presentation at SOFT: Benefits and Impact of the Professional Mentoring Program to SOFT
• Networking Luncheon at SOFT

We hope that our participants have felt that the program was beneficial to increasing their professional network and enhanced their personal development goals. And of course, we’re hoping that it will encourage future involvement from our current members and any prospective members. As always, we would love to hear any feedback on improvement or suggestions from the members so please feel free to reach out to anyone on the committee. We’ve had a productive year and can’t believe it’s almost at the end, but are excited to continue to grow in 2024.

Participants chat over lunch at the PMP’s networking event.

SOFT MEMBERSHIP

SOFT is always accepting applications for membership. We offer five membership types: Student, Associate, Full, Emeritus, and Retired. Membership requirements and applications can be found to the right.

Membership Committee
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MEMBERSHIP BENEFITS

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HOW TO APPLY
S39 Combining toxicology testing with FST results to improve cannabis impairment classification

Robert L. Fitzgerald*

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- The study demonstrated that there is no relationship between concentrations of THC and simulated driving performance.
- The study demonstrated that there is no support for per se concentrations of THC in whole blood or OF.
- The authors conclude that driving impairment will likely remain a combination of officer observations and toxicology testing.

This work has been published as:


S40 Evaluation of the field sobriety tests in identifying drivers under the influence of cannabis

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- When administered by highly trained officers, Field Sobriety Tests (FSTs) differentiated between individuals receiving THC and Placebo.
- A high proportion (49.2%) of non-intoxicated individuals were found to be FST-impaired.
- Improvement in FSTs by the Placebo group suggests participants learned how to do the tests.
- Virtually all participants determined to be FST-impaired were suspected of being under the influence of THC, indicating possible effects of confirmation bias.
- In the context of this study, absent other indicators, Field Sobriety Tests alone are insufficient to identify THC-specific FST-impairment in individual drivers.

This work has been published as:


S41 Acute and chronic oral dosing of cannabidiol (CBD) with and without low doses of delta-9-tetrahydrocannabinol (Δ-9-THC)

Ryan Vandrey¹, C. Austin Zamarripa*², Tory Spindle³, Ruth Winecker², Ron Flegel³, David Kuntz⁴, Ed Cone³

¹Johns Hopkins University, Baltimore, MD, USA. ²RTI International, RTP, NC, USA. ³SAMHSA, Rockville, MD, USA. ⁴CRL Corporation, Lenexa, KS, USA
Acute and chronic administration of high CBD/low THC dose formulations containing THC under the federal limit does not produce impairment of cognitive/psychomotor or cardiovascular function.

High CBD/Low THC dose formulations produce mild subjective drug effects that decrease following repeated administration.

Despite the lack of effects on pharmacodynamic outcomes, high CBD/low THC dose formulations produce positive oral fluid and urine drug test following acute administration.

Chronic administration of high CBD/low THC dose formulations resulted in greater positive oral fluid and urine drug tests across all participants.

To meet the objectives of the SOFT Toxicology Resource Committee a second survey was sent to laboratories to assess current testing practices, barriers to performing drug testing, stop testing practices, and identify resources needed by laboratories. The survey was sent to approximately 150 laboratories across the US, with 96 responding to the questions. The following is a summary of highlighted responses:

- There was a wide variance in laboratory caseload, types of testing, and laboratory resources (staffing). Caseload averaged almost 4000 cases annually (150-29,300 cases, median of 2350), and covered DUID, Postmortem, and DFC casework. Staffing ranged from 2 to 20 analysts.

- A variety of factors influenced the laboratory scope of testing but was most heavily weighted to following Academy Standards Board (ASB) standards and evaluation by the laboratory of drug trends (input from seized drugs, DEA data, regional data, CFSRE data).

- Half of the laboratories responding have a stop testing policy (42.4%) or only test DUI specimens for alcohol (7.6%) and do not have a clear picture of the full scope of the DUID problem. These processes are primarily linked to a need for more resources.

- Laboratories are aware of the ASB published standards and either have implemented or have a desire to implement them.

Not surprisingly, laboratories need additional resources to implement comprehensive testing on all DUI/DUID cases. These resources include staffing, instrumentation, process improvements, and increased scope of testing. Ultimately, additional funding and support will be necessary to achieve these goals.
The designer benzodiazepine 4′-chloro deschloroalprazolam is an isomer of alprazolam first reported in late 2021 and has the potential to interfere with alprazolam identification and quantitation.

Houston Forensic Science Center (HFSC) analyzed a certified reference material of the isomer and found it met all acceptance criteria for the identification of alprazolam, including retention time (RT) and ion ratios (IR) (specification: unknown RT within ±1% and IR within ±20% when compared to calibrator averages), thus identifying a risk of misidentification and/or misreporting.

4′-chloro deschloroalprazolam consistently eluted before the deuterated internal standard, alprazolam-d5. Therefore, HFSC adopted a practice to only report alprazolam if the drug quantifier peak eluted after alprazolam-d5, and to issue a report stating the results could not be reported due to an interference when the drug quantifier peak eluted before alprazolam-d5.

Five cases analyzed in-house (and six analyzed by an outsource laboratory) between June 2021 and August 2023 indicated the potential for 4′-chloro deschloroalprazolam; two had associated seized drug evidence identified as containing 4′-chloro deschloroalprazolam. The toxicology reports were issued with an interference statement.

This work has been published as:


**S44 Impact of drug-driving legislation in England & Wales on fatal road traffic collisions following drug use**

Samiullah Soomro1, Kim Wollf2, Caroline Copeland*3

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- In 2015, England and Wales set threshold limits for 17 drugs deemed to have the potential to impair driving.
- A review of the data to include 5 years prior and 5 years post legislation was completed to evaluate the impact of the legislation on fatal collisions.
- Following legislation, the frequency of fatal collisions decreased by 21%.
- Over this time period, alcohol was present in 47% of deaths, a single drug was present in 24% of deaths, and poly-drug use was present in 76% of deaths.

**S45 The Prevalence of Drugs in Motor Vehicle Fatalities in Jefferson County, AL (2017-2022).**

Karen S Scott*1, Lauryn N Williams1, Nicola Pigaiani1,2, Brandi C McCleskey1

1University of Alabama at Birmingham, Birmingham, AL, USA. 2University of Verona, Verona, Italy

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- Jefferson County is a small densely populated area of AL with around 120 road traffic fatalities each year. This represents around 10% of the county’s forensic toxicology case load. Over the study period, 619 motor vehicle fatalities occurred of which 362 (58.5%) were drug positive and in which 205 had a substance listed as contributing to death.
- A wide variety of drugs and metabolites were seen with ethanol being the most prevalent drug detected; 217 cases were ethanol positive and 148 list it as contributing to death (130 (88%) as only drug).
● Opioids were the second most prevalent class of drugs seen followed by stimulants although cocaine (n=64) and methamphetamine (n=52) are the 2nd and 3rd most prevalent drugs observed in fatalities followed by fentanyl (n=20).

● The majority of cases involve poly-drug use similar to other case types in Jefferson County with a mixture of CNS stimulants and depressants being common.

● The laboratory is currently in the process of making major improvements to its methodologies to improve compliance with NSC Recommendations and ASB guidelines.

S46 Fentanyl in DUID Cases - A Comparison of Three Regions: Alabama, Orange County, CA, and Houston, TX

Curt Harper*, Dayong Lee², Danielle Mata³

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● In Alabama and Orange County, the prevalence of fentanyl DUID cases increased 4- and 6-fold in 2022 compared to 2017, respectively.

● In Houston, the increase was approximately 2-fold from 2019 to 2022.

● In 2022, fentanyl was the 4th most common drug in DUID cases in both Alabama and Orange County.

● Fentanyl blood concentrations increased over the evaluated time period likely due to user tolerance (median concentrations – 4.7-11 ng/mL).

● In Alabama, 29% of oral fluid specimens had concentrations >100 ng/mL.

This work has been published as:

The use of oral fluid as an evidential sample for DUID investigations in the United States is gaining momentum. One of the challenges for laboratories is that there is a much smaller volume of oral fluid available for testing compared to what is typically collected in a blood or urine kit. Most laboratories that are developing a program, or already have a program in place, are using the Quantisal™ collection device, which is designed to collect 1 mL of sample that is then diluted with 3 mL of buffer, resulting in a theoretical total volume of ~4 mL. In order to meet Tier 1 DUID recommendations, laboratories need to test for at least 30 drugs in that limited volume. Further, due to the nature of impaired driving criminal investigations, it is common practice for laboratories to not fully consume the sample, in order to allow for potential independent analysis; therefore, maximizing the amount of sample available for testing is an important process for the laboratory.

The Center for Forensic Science Research and Education (CFSRE) began testing oral fluid samples for drugs in 2014. Due to the number of samples collected and concerns related to manually having to “milk” the residual oral fluid from the pad, which was common practice at that time, alternative sample preparation procedures were developed to collect the residual oral fluid from the pad using a Sarstedt Salivette (Nümbrecht, Germany). The sorbent pad was removed from the plastic applicator in the Quantisal™ and transferred to the inner cup of the Salivette after removing the cotton pad. Samples were then placed in the centrifuge for five minutes at 4200 rpm. The residual oral fluid collected in the outer most container was subsequently recombined with the buffer in the collection container, which resulted in a total volume of ~3.5-4 mL.

The Toxicology section of the New York State Police (NYSP) Crime Laboratory System recently implemented evidential oral fluid testing. Samples were originally processed using the manufacturer’s recommended practice, where the pad and wick are removed from the plastic applicator and placed in the buffer. A serum separator tube is inserted into the tube to the bottom, which acts like a plunger and squeezes the pad to the bottom of the tube. The liquid (oral fluid and buffer) remaining in the serum separator is poured off into another storage container. However, during the course of implementation, it was noted there was a lot of variability in the final volume available for testing, with volumes typically ranging from ~2.5 – 3.5 mL, averaging ~3 mL.

So, like all smart forensic toxicologists, the NYSP reached out to colleagues to see if this was the normal sample processing protocol, and were able to verify that other laboratories were also seeing similar sample recovery volumes using the serum separator tube process. However, NYSP became aware of the alternate process being used at CFSRE (described above). A brief experiment was carried out to compare the two sample processing methods. Two oral fluid collections were provided by six different donors. Each donor’s sample set had one processed using the serum separator plunger and the other processed using the Salivette tube. The average volume using the serum separator plunger was 3.1 mL (range 2.7-3.3 mL). The average volume using the Salivette tube was 3.6 mL (range 3.4-3.9 mL), representing a 0.5 mL (16%) average increase in volume. NYSP oral fluid test methods use between 0.2 and 0.5 mL, so this represented a significant increase in the amount of testing that can be performed.

NYSP conducted additional interference and LOD studies to assess any potential impact to validation and found no issues. In addition, analysts found the Salivette processing much simpler.

Thank you to the staff at CFSRE and NYSP conducting the testing, as well as Matthew Levitas (Forensic Fluids), Curt Harper (Alabama Department of Forensic Sciences), Amy Miles (Wisconsin State Laboratory of Hygiene), and Michelle Peace (Virginia Commonwealth University) for sharing their processes and insights.
The onslaught of emerging novel psychoactive substances (NPS) over the past decade have made it increasingly difficult for toxicology laboratories to keep up with the current drug market and adapt their testing scopes to properly serve law enforcement, death investigations, and public health stakeholders. Identifying the most appropriate NPS testing scope requires many resources and significant investment from toxicology laboratories. Thankfully, many improvements in data-sharing and accessible resources to help identify the most appropriate targets and determine the most feasible testing workflows have been made over the past several years. NPS surveillance programs and early warning advisory systems have vastly improved and scope recommendations published by the Center for Forensic Science Research & Education (CFSRE) in conjunction with the SOFT NPS committee are now available as a valuable resource for understanding the current NPS drug landscape and the speed of how NPS positivity can change (Scope Recommendations cfsre.org). Even though hundreds of substances have been reported to early warning systems, not all NPS identified end up gaining popularity and many of these NPS trends vary greatly geographically. Data-sharing between more toxicology laboratories could assist in creating regionalized scope recommendations, however, toxicology testing may lag from what is currently observed on the streets. Collaborations between toxicologists and local law enforcement and crime laboratories to share their seized drug data in a timely manner can be an additional resource in efforts to stay current regional NPS trends and identify the most prevalent NPS targets.

To help identify potential regional NPS targets, the SOFT NPS committee aimed to examine NPS trends observed from seized drug data from three different laboratories located across the country over a 12-month period. The South Carolina Law Enforcement Division (SLED), the Sedgwick County Regional Forensic Science Center (SCRFSC), and the Orange County Crime Laboratory (OCCL) provided the committee with their NPS seized drug data based on reports issued from June 2022 through May 2023, except for the SLED whose data were from July 2022 through June 2023. It should be noted that there was some backlog observed between the dates of submission and when reports were issued so data may be partially skewed to older submissions of seized materials. Additionally, SLED relocated laboratories and experienced instrument shutdowns between October and December 2022, which would have further contributed to a backlog of reported cases. Between the three laboratories, there were 1425 NPS seized drug identifications reported (SLED n=539; SCRFSC n=502; OCCL n=384) with 54 unique NPS identifications made. Figure 1 illustrates the number of individual NPS seized drugs identified by subclass and the total percentage of NPS seized drugs identified by subclass for all laboratories combined and individually over the past year.

Figure 1. Individual number of NPS drugs identified by subclass and total percentage of NPS seized drugs identified by subclass for all laboratories combined and individually from June 2022 through June 2023.
Figure 2. Top 10 most frequently identified NPS seized drugs excluding fluorofentanyl and xylazine from 2022-2023

Focusing on specific regional trends, starting with the South Carolina Law Enforcement Division, unsurprisingly fluorofentanyl was the most frequently NPS reported (40%) over the past 12 months with no signs of slowing down (Figure 3). In contrast, eutylone was also one of the most frequently detected NPS compounds (33%), however, reports of eutylone decreased since December 2022. Around the same time, reports of dimethylpentylone and N-cyclohexyl methylene started increasing, although their combined prevalence remained less than 5% of all NPS seized drugs. Despite a relatively low prevalence, outside of eutylone, SLED observed a wide variety NPS stimulants/hallucinogens in their casework as highlighted in Figure 3. Many of the newer NPS stimulant/hallucinogen identifications were reported over the past 6 months, almost doubling from previous reports. Interestingly, the only NPS benzodiazepine reported from this laboratory was etizolam, accounting for 5% of NPS seized drug reports.

The Sedgwick County Regional Forensic Science Center observed a wider range of NPS benzodiazepines compared to the SLED including clonazolam, etizolam, bromazolam, flualprazolam, deschloroetizolam, and flubromazepam (Figure 4), although the most prevalent NPS in seized drug reports were fluorofentanyl (40%) and xylazine (19%). Outside of these NPS compounds, the SCRFSC reported the most diverse number of synthetic cannabinoids (n=11), however reported cases were all less than 10 (Figure 4). MDMB-en-PINACA (isomer not determined) was the most common synthetic cannabinoid identified, akin to toxicology reports over the same time frame [3], with the OXIZID’s starting to become more prevalent towards the end of 2023.
Figure 3. South Carolina Law Enforcement Division (SLED) NPS seized drug trends with a focus on seized NPS stimulants/hallucinogens.
Figure 4. Sedgwick County Regional Forensic Science Center (SCRFSC) NPS seized drug trends with a focus on seized synthetic cannabinoids.
The most diverse NPS subclass identified from these laboratories was NPS stimulants/hallucinogens, with a total of 22 different NPS identified, followed by synthetic cannabinoids (n=13), NPS opioids (n=11), and NPS benzodiazepines (n=8). The diversity of the various NPS subclasses varied regionally and often differed comparatively to the most frequently identified NPS subclass between laboratories. For example, synthetic cannabinoids were one of the most diverse subclasses identified in this data set, yet they were some of the least frequently identified NPS in seized drug material. The Sedgwick County Regional Forensic Science Center reported the widest variety of synthetic cannabinoids (n=11), but synthetic cannabinoids were only the third most identified NPS subclass identified in their casework (5%) (Figure 1). Overall, NPS opioids accounted for 56% of NPS seized drug data between all three laboratories, with 85% of those identifications attributed to fluorofentanyl (n=571) and xylazine (n=105); xylazine is grouped in this category due to frequency in detection with illicit fentanyl and its NPS classification is due to being used in a differing manner than what was originally intended. Xylazine is a veterinary drug with alpha-2 receptor agonism; it does not have pharmacological effects at opioid receptors. The Sedgwick County Regional Forensic Science Center located in the Midwest saw the largest number of NPS opioids accounting for 74% of NPS seized drugs with the remaining subclasses somewhat evenly distributed. NPS opioids accounted for just under half of the NPS seized drug identifications in both South Carolina and Orange County, with NPS stimulants/hallucinogens and NPS benzodiazepines accounting for 44% and 45% of total NPS seized drug identification at the SLED and the OCCL, respectively. This corresponds to similar NPS trends observed in toxicological cases where NPS benzodiazepines and NPS stimulants/hallucinogens are more prevalent on the West coast and Southeast regions of the United States, respectively.

In general, seized drug reports of NPS appear to be on the decline based on this current study (Figure 2). In terms of the most prevalent NPS over the past year, fluorofentanyl and/or xylazine accounted for over 80% of NPS opioids identified (SLED 88%; SCRFSC 81%; OCCL 92%) and almost half of all NPS seized drug identifications (n=676, 47%). For the purpose of this study, isomeric determination of fluorofentanyl was not differentiated. Figure 2 highlights the top 10 most frequently identified NPS for all three laboratories combined, excluding fluorofentanyl and xylazine drug seizures. Aside from these two NPS opioids, acetyl fentanyl (n=29) (a designer drug on its own and an artifact resulting from illicit fentanyl manufacturing) and methyl acetyl fentanyl (n=72) were the only other NPS opioids in the top 10. The most identified NPS outside of fluorofentanyl and xylazine included NPS stimulants/hallucinogens such as eutylone and dimethyltryptamine (DMT), and NPS benzodiazepines like clonazolam and etizolam. Eutylone accounted for 13% (n=191) of NPS drugs seized, with nearly two-thirds of identifications occurring in 2022. Clonazolam remained relatively consistent across the study period, whereas etizolam exhibited an overall decrease over time starting in December 2022. This is similar to the observed NPS toxicological trends reported by NPS Discovery [1, 2]; however, the sharp increases in bromazolam and dimethylpentylone cases starting towards the end of 2022 was not reflective in this subset of NPS seized drug data. Marginal increases in reported bromazolam and dimethylpentylone seized drug identifications did start to occur within the last quarter. This lag between toxicology NPS trend reports and NPS seized drug data could be due to backlog delays laboratories are facing. Additionally, it is important to note that these data are only representative of three laboratories and trends may vary regionally as illustrated in this current study (Figures 3-5). Reports of delta-8 THC identifications have remained stable over the past year (1.3% of NPS seized drug data); however, there is still debate in the scientific community if this classifies as an NPS and if it falls under the synthetic cannabinoid umbrella.
Figure 5. Orange County Crime Laboratory (OCCL) NPS seized drug trends with a focus on seized NPS benzodiazepines.

Similar to the other two laboratories, fluorofentanyl was the most prevalent NPS drug identified by the Orange County Crime Laboratory in their seized drug cases at 41% (Figure 5). Despite a diverse number of NPS stimulants/hallucinogens identified at the OOCL (n=10), their frequency of identification remained low (10%) compared the NPS benzodiazepines
that were detected (45%). Clonazolam, etizolam, flualprazolam, and flubromazolam were among the most frequently identified NPS benzodiazepines, while bromazolam started appearing in their casework in January 2023 (Figure 5). DMT was the second most prevalent NPS stimulant/hallucinogen reported from all three laboratories and the OCCL accounted for 65% of the total DMT identifications.

The seized material reporting of NPS highlighted in this study emphasizes that although significant improvements have been made in responding to emerging substances, there is still further room for improvement. The NPS Scope Recommendations are a significant resource to toxicology laboratories when ascertaining analytical scopes, but they are designed for a national perspective. In order for regional NPS scope recommendations to be developed, timely sharing of seized drug material testing from local laboratories would be a vital and necessary source of data. However, the usefulness of the seized drug data would be predicated on how timely the analysis was performed after submission and how quickly the data was shared. As an example, several compounds of the nitazene subclass of novel synthetic opioids have been reported [4], including metonitazene, protonitazene, and others. The data submitted in this study would need to be scrutinized in order to understand the lack of nitazene reports in seized drug reporting; the reason could be regional preferences, the timeline, or reporting hierarchies in polydrug cases. Further detail of NPS in polydrug seizures would also assist toxicologists in understanding their own data, since toxicologists are unable to interpret results as being from a single administration of one product with multiple compounds or separate administration of different products. Limited drug checking results and reporting has indicated that para-fluorofentanyl and xylazine are almost exclusively detected with fentanyl in illicit opioid supplies [4], but without that knowledge, the reason for the high frequency of co-positivity of the two in toxicology case-work would be speculative. “Keeping up” with NPS requires a full arsenal of tools, resources, and workflows as well as a daunting necessity for expedient testing and reporting to truly stay on top of emerging drugs.

Acknowledgments: The authors would like to thank Celia Modell with the South Carolina Law Enforcement Division Forensic Toxicology Department, Lana Goodson with the Sedgwick County Regional Forensic Science Center, and Dani Mata from the Orange County Crime Laboratory for providing their NPS seized drug data.

References:

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If your emails are bouncing we suggest that you reach out to your IT department to ensure our emails are not blocked.

Our new membership system will display information based on your membership type, please ensure you are logged into your account while navigating the SOFT website to access all of your member benefits.

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TOXTALK

TOXTALK® is the official publication of the Society of Forensic Toxicologists and is published quarterly.

Each year we receive numerous wonderful submissions for inclusion in ToxTalk. We appreciate each submission and are grateful to our submitters for their time and effort in creating their article.

As SOFT has continued to grow each issue of ToxTalk has also grown in size. To continue to accommodate ToxTalk submissions we will be moving to a new format for future issues. An explanation of the new format is included below. We have also included this information on the ToxTalk webpage. We look forward to your future submissions!

- Robert, Chris, and CC

NEW FORMAT OVERVIEW

ToxTalk will be formatted to include organizational information such as SOFT updates, Annual Meeting information, committee updates, award opportunities and continuing education opportunities. All science related submissions will now be included on their own webpage on the SOFT website. They will be stored there indefinitely and can be accessed at any point by both members and non-members. Scientific submissions will now need to include an abstract, a template has been included on the ToxTalk Webpage. The abstract will be included in the issue of ToxTalk and a link will be included to direct readers to the full article.

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FUTURE MEETINGS

SOFT 2025
Oregon Convention Center
October 26–October 31, 2025
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SOFT/TIAFT 2026
Hilton Chicago
September 19-24, 2026
Hosts: Luke Rodda and Andre Sukta