



TOXTALK®

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PRESIDENT'S MESSAGE

Submitted by Jennifer Limoges, M.S., DABC



The annual meeting in Dallas is fast approaching. Erin Spargo and Chris Heartsill and their team have been working hard to put together a fantastic scientific and social program. Registration is open and this issue of ToxTalk® is full of meeting details. Be sure to regularly check the website for the latest information.

The Continuing Education Committee has also been very active. Chair Jayne Thatcher and her committee have coordinated two local workshops this year. They recently hosted an Expert Witness Testimony workshop in Houston, TX this past May, with Ashraf Mozayani as the local host. They will also be hosting a Drug & Alcohol Pharmacology workshop in Dayton, OH in late August, with Liz Kiely and Doug Rohde as the local hosts. These workshops provide high quality, low cost, continuing education opportunities outside of the SOFT annual meeting.

The process of hiring an Executive Director is moving along quickly. Ted Shults and the Strategic Planning Committee are currently in the process of interviewing candidates. The Board hopes to have the Executive Director in place this fall and be able to introduce them to the membership at the annual meeting.

The annual SOFT office visit took place in May this year. Dwain Fuller (Secretary), Tom Kupiec (Audit Chair), and I spent some time with Bonnie (Administrative Assistant) at the office in Mesa, AZ. Tom conducted on-site audit activities and Dwain became more familiar with the office operations and records. The annual visit always provides an opportunity for quality time to discuss the business operations of SOFT and how we can make improvements, and Bonnie is always a wonderful host!

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PRESIDENT'S MESSAGE (CONTINUED)

The Board and your fellow SOFT members continue to work hard to represent the best interests of forensic toxicology in all arenas. As discussed last issue, SOFT is very well represented at all levels of standards development. SOFT

and ABFT are currently exploring a joint response to the recently released DOJ draft guidelines on expert testimony and reports. The Board also continues to work closely with CFSSO to ensure that the needs of forensic science, and in

particular forensic toxicology, are addressed in national legislation and funding. There are many different (and sometimes competing) interests trying to improve forensic science. I strongly encourage all of you to be a part of the process.

New Section Editor for "New Drugs"

Dan Anderson has served with distinction as the Section Editor for the New Drugs section of ToxTalk® for many years. However, as happens, new job responsibilities and obligations have limited his time for this endeavor; as such he has requested to step down from this role. The Editors and staff of ToxTalk® are extremely grateful for Dan's years of commitment to this task and wish to extend a heartfelt thank you for his service to ToxTalk®.

On that note, the Editors have reached out to Dr. Sherri Kacinko to pick up the torch and become the New Drugs Section Editor. She has graciously agreed to accept this role.

For those who don't know Sherri, she earned her Bachelor of Science Degree in Chemistry at the University of Pittsburgh in Johnstown, PA and took graduate classes in forensic science at George Washington University. She performed pharmaceutical quality control at Lancaster Laboratories in Lancaster, PA. After spending 3 years working as a crime laboratory analyst in the chemistry section of the Florida Department of Law Enforcement Orlando Regional



Operations Center she returned to graduate school and received her Doctor of Philosophy in Toxicology at the University of Maryland-Baltimore. She is now a toxicologist at NMS Labs in Willow Grove, PA.

Dr. Kacinko is also adjunct faculty in the chemistry department at Arcadia University and serves as an Instructor at the Center for Forensic Science Research & Education. In this role, Sherri lectures in postmortem forensic toxicology and human performance toxicology courses. Her current research interests include the identification and quantification of novel psychoactive substances including synthetic cannabinoids, stimulants, hallucinogens, opioids and benzo-

diazepines in biological fluids and their toxicological impact.

Sherri is Board Certified by the American Board of Forensic Toxicology (ABFT) and is a member of the Society of Forensic Toxicologists, the International Association of Forensic Toxicologists and the American Academy of Forensic Sciences. Sherri was presented with the American Academy of Forensic Sciences Toxicology Section Irving Sunshine Award in recognition of early career research.

Welcome aboard Sherri!

Dwain and Laura,
ToxTalk® Editors



2015 Annual SOFT Business Meeting Minutes

Atlanta, Georgia

Thursday, October 22, 2015

1. Call to Order

The 45th Annual SOFT Business Meeting was called to order at 3:41 PM by President Ruth Winecker.

Secretary Bruce Goldberger verified that a quorum was present by counting the signatures of voting members on the sign-in sheet. The business meeting sign-in sheets reflected that 154 out of 195 meeting attendees were members with voting privilege.

2. Approval of Agenda

President Winecker proposed approval of the Agenda after announcing corrections to the Meeting Resource Committee section of the Agenda, which included the following correction: only reports from the SOFT 2015, 2016 and 2017 annual meetings will be presented.

There was a motion to approve, no objections were made, and the agenda was approved.

3. Approval of Annual Business Meeting Minutes (October 2014)

President Winecker stated that the October 2014 Annual Business Meeting Minutes were published in ToxTalk[®] Volume 39, Issue 1 and asked for any corrections. With no corrections suggested, the meeting minutes were approved as published.

4. President's Report

President Winecker stated that it was a privilege to serve as SOFT President. She briefed the membership regarding the reorganization of the Meeting Resource, Strategic Planning and the Continuing Education Committees, and noted that the reorganization will benefit SOFT in many ways. The scope of the Meeting Resource Committee was expanded to include site review and selection, the Chair of the Strategic Planning Committee is no longer the Treasurer, and Continuing Education Committee was split into two separate Committees, Credits and Workshops. She also noted that the Board approved funds for the development of continuing education that will be available to members of SOFT through the SOFT website.

President Winecker reported to the SOFT membership that the Board of Directors approved an increase in Member dues as follows: in 2016, dues will increase to \$80, and in 2017 dues will increase to \$100. She stated that the current dues rate does not cover the SOFT's annual operating expenses and must be increased to sustain the Society. Annual meeting profits will continue to be used for the support of continuing education activities such as regional workshops, the Journal of Analytical Toxicology and Committee activities.

President Winecker continued by noting that the Board of Directors voted unanimously to approve the Strategic Planning Committee's recommendation to hire an Execu-

tive Director. The Executive Director will be tasked with the day-to-day running of SOFT. The Strategic Planning Committee will develop a position description, position advertisement and applicant interview questions.

President Winecker concluded by thanking the Board of Directors, Committee Chairs and Bonnie Fulmer for their support.

5. Secretary's Report

Secretary Goldberger thanked the members of the Membership Committee, Robert Kronstrand, Nichole Bynum and Monica Fileger, for their efforts in reviewing membership applications. Secretary Goldberger reported that the total membership of SOFT as of October 1, 2015 is 1293. He also reported that the Membership Committee reviewed a total of 115 applications and approved 41 Full Members, 42 Associate Members, 10 Student Members, 16 Promotions, 3 Reinstatements and 3 Retirements; 51 members were deleted from membership due to requests and non-payment of dues. Secretary Goldberger reported that to date there was a net gain of 64 members in 2015.

6. Treasurer's Report

Treasurer Michelle Peace began her report by reviewing the activities of the Treasurer which include budget preparation, approval of expenditures, monthly review of finances and asset management. She continued by summarizing the various budget categories and bal-

2015 Annual SOFT Business Meeting Minutes (CONTINUED)

ances. Her presentation included a review of the SOFT Operations, Reserve, ERA, Leo Dal Cortivo, Meeting Checking, and Merchant accounts. Treasurer Peace reiterated that the current Member dues rate does not cover SOFT's operating expenses and must be increased.

7. Vice President's (Committee) Reports

A. Bylaws (Yale Caplan) – Caplan reported no Committee activity.

B. Budget, Finance & Audit

(Bob Turk for Tom Kupiec) – Turk noted that SOFT is financially sound, but must increase member dues to cover SOFT's operating expenses including the new Executive Director position.

C. Membership

(Bruce Goldberger) – Goldberger stated that the Membership Committee report was provided earlier in the Secretary's Report.

D. ToxTalk® (Dwain Fuller, Laura Liddicoat) – Fuller stated that ToxTalk® is published four times annually. Fuller acknowledged his editorial staff including Associate Editor Laura Liddicoat; Section Editors Dan Anderson, Matt Barnhill and Laureen Marinetti; and Publication Assistants Kayla Ellefsen and Patty Pisana.

E. Publications

(Mathew Slawson) – Slawson encouraged Members of SOFT to submit review articles to the Journal of Analytical Toxicology. He also report-

ed that SOFT is developing a new no-cost continuing education opportunity in collaboration with the Journal of Analytical Toxicology.

i. JAT Special Issue and EDIT Award

– Sumandeep Rana, Journal of Analytical Toxicology SOFT Special Issue Editor, stated that 14 manuscripts were published in the JAT Special Issue. Rana thanked all of the contributors, as well as the reviewers. Rana also announced the recipient of EDIT Award, Justin Poklis, whose paper was titled "Identification of Metabolite Biomarkers of the Designer Hallucinogen 25I-NBOMe in Mouse Hepatic Microsomal Preparations and Human Urine Samples Associated with Clinical Intoxication." JAT Editor-in-Chief, Bruce Goldberger, presented Rana with a plaque acknowledging her work on the special issue.

F. Education Research Award

(Erin Spargo) – Spargo recognized the recipients of the SOFT ERA and YSMA Awards which included Mathew Newmeyer, Marissa Finkelstein and Erin Ehrlinger. The recipients were presented with a plaque and check.

G. Meeting Resource Committee

(Jennifer Limoges) – Limoges briefly reviewed the changes in the Committee and reported that SOFT will return to the West Coast in 2020.

i. 2015 - Atlanta, GA

(Robert Sears / Lisa Holt) – Sears noted that the meeting is a success with 1,057 registered attendees.

ii. **2016 - Dallas, TX** (Chris Heartsill / Erin Spargo) – Heartsill and Spargo encouraged everyone to attend the upcoming meeting in Dallas. A short video was played. The meeting will be held at the Sheraton and the Perot Museum will be the venue for the Wednesday evening function.

iii. **2017 - Boca Raton, FL** (Dan Anderson / Ruth Winecker) – Anderson reported that the meeting will be a joint meeting with The International Association of Forensic Toxicologists.

H. Drugs and Driving

(Amy Miles) – Miles reviewed the activities of the Committee, which included a special session devoted to oral fluid at the AAFS annual meeting and Drugs and Driving at the SOFT meeting

I. Policy and Procedures

(Bruce Goldberger) – Goldberger reported that the Policy and Procedures Manual had been thoroughly reviewed and revised by the Board of Directors with input from Committee Chairs.

J. IT / Website

(Bruce Goldberger / Matt Juhascik) – Juhascik reported that the content of the SOFT website is frequently updated which includes new drug monographs and many postings on the employment exchange tab. He also noted that the website is compatible with mobile devices.

K. Continuing Education – Credits

(Ann Marie Gordon) – Gordon addressed the need for

2015 Annual SOFT Business Meeting Minutes *(CONTINUED)*

continuing education in forensic toxicology and the role of SOFT as a provider of continuing education. Gordon noted that the Committee is working with AACC to provide continuing education credits through a collaborative agreement with the publisher of the Journal of Analytical Toxicology.

L. Continuing Education –

Workshops (Jayne Thatcher) – Thatcher reviewed the workshop opportunities provided through the Committee including a regional SWGTOX method validation workshop and two workshops offered at the SOFT meeting. She requested feedback from the SOFT membership regarding future regional workshops.

M. Young Forensic Toxicologists (Sarah Urfer) – Urfer reviewed the activities of the Committee at the meeting which included the YFT Symposium, and the Student Enrichment Program, the Professional Development Fair and the YFT / Dal Cortivo Award Competition.

N. Drug Facilitated Crimes

(Laureen Marinetti) – Marinetti reviewed the activities of the Committee, which included the sponsorship of a DFC session at the annual meeting. She also noted that the College of American Pathologists offers a DFC proficiency survey.

O. Ethics (Sarah Kerrigan) – Kerrigan reported that SOFT received an ethics complaint in September and the Committee is working to adjudicate the complaint.

P. Nominating (Peter Stout) – Stout announced the 2016 slate of candidates.

- i. President:** Jennifer Limoges
- ii. Vice President:** Bruce Goldberger
- iii. Secretary:** Dwain Fuller
- iv. Board of Directors:** Amy Miles and Robert Sears

Q. Strategic Planning (Ted Shults) – Shults reiterated the importance of the hiring of an Executive Director. He noted that the Executive Director will provide professional management and oversight of SOFT.

R. Designer Drugs (Sumandeep Rana) – Rana reported that the Committee sponsored a designer drug workshop at the meeting.

8. Announcements / Liaison Reports

A. Vendor Liaison (Jarrad Wagner) – Wagner acknowledged the Vendors who support the SOFT meeting and encouraged all meeting attendees to visit the exhibit hall.

B. CFSO Update (Tim Rohrig) – Rohrig briefly reviewed the recent activity of the CFSO.

C. FSSB Update (Laurel Farrell) – Farrell briefly reviewed the activities of the FSSB and noted that there were no specific toxicology-related issues at this time.

D. TIAFT (Dimitri Gerostamoulos) – Gerostamoulos announced that the 2016 annual meeting of TIAFT will be held in Brisbane, Australia.

9. Unfinished Business

President Winecker asked the membership if there was any unfinished business and there was none.

10. New Business

A. Recognition of Outgoing Officers – President Winecker recognized outgoing Vice President, Jennifer Limoges, outgoing Secretary, Bruce Goldberger, and outgoing Officers of the Board, Dwain Fuller and Madeline Montgomery.

B. Recognition of Workshop Chairs – President Winecker recognized the Workshop Chairs.

11. Elections

President Winecker asked if there were additional nominations from the floor. There were none. Thus, the nominees were approved by acclamation. The elected officers for 2016 are:

- A. President:** Jennifer Limoges
- B. Vice President:** Bruce Goldberger
- C. Secretary:** Dwain Fuller
- D. Board of Directors:** Amy Miles (2 year appointment) and Robert Sears (3 year appointment)

12. Incoming President's Remarks

(Jennifer Limoges)

Incoming President Limoges thanked President Winecker for her service and presented her with a plaque.

2015 Annual SOFT Business Meeting Minutes *(CONTINUED)*

Limoges began her presentation by noting that SOFT has become a million dollar business operation; however, she prefers to think of SOFT as a family business. She stated that it is the obligation of SOFT to ensure its stability and sustainability, and the Board has taken a variety of actions to address financial and operational vulnerabilities. But she noted that it is also SOFT's responsibility to maintain the strong volunteer culture that makes SOFT so special. Limoges concluded that the hiring of an Executive Director is a key aspect to meeting these goals.

Limoges concluded her remarks by announcing the SOFT Special Issue Editor for 2016, Robert Johnson.

13. Adjournment

The meeting was adjourned at 5:15 PM.

THANK YOU TO OUR GENEROUS CONTRIBUTORS OF THE ERA

SOFT's long sponsored mentoring programs, ERA & YSMA, are funded by generous donations by SOFT Members. Both awards encourage students and young scientists to excel in the Forensic Toxicology field.

More information about the Education Research Award (ERA) and the Young Scientist Meeting Award (YSMA), eligibility and application instructions, can be found at the SOFT website. SOFT Members should consider "mentoring" a talented co-worker or a promising student to apply for one of these prestigious recognition awards, now worth \$2,000.

Thank you 2016 contributors!

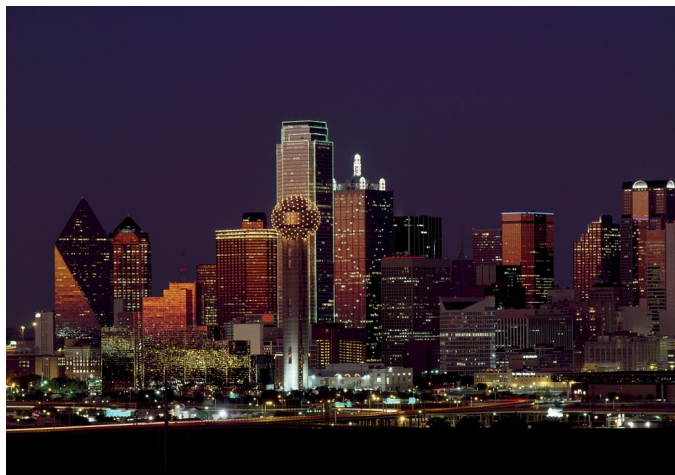
Ahmed Al-Asmari	Dwain C. Fuller	Matthew Lambing	Michael I. Schaffer
Dan T. Anderson	Demi B. Garvin	Eric Lavins	Robert M. Sears
Timothy Appel	Dimitri Gerostamoulos	Marc A. LeBeau	Robert Simon
Elba Arango	Laura Gorczynski	Nikolas P. Lemos	Matt Slawson
Joseph Avella	Ann Marie Gordon	Mark Lewis	Michael L. Smith
Daniel D. Baker	Teresa Gray	Jacqueline Martin	Chetan Soni
Michael Baylor	Brad J. Hall	Maria A. Martinez	John W. Soper
Stuart C. Bogema	Bradford R. Hepler	Hans H. Maurer	Erin A. Spargo
Sabra R. Botch	Robert L. Herndon	Joel Mayer	Elizabeth Spratt
Donna Bush	Donald B. Hoffman	Lisa McWhorter	Peter R. Stout
Marisol Castaneto	Evan Holzberg	Michele Merves	Andre Sukta
Phyllis Chandler	Larry Howard	John Mitchell	Craig Sutheimer
Paula Childs	Walter Hrynkiw	Madeline A. Montgomery	Jayne Thatcher
Edward J. Cone	Marilyn Huestis	Adam Negrusz	Samantha Tolliver
Anthony G. Costantino	John Hughes	Matthew Newmeyer	Robert F. Turk
Joseph Crifasi	Jeanette Janer-Figueroa	Lorna Nisbet	Sarah Urfer
Susan Crumpton	William R. Johnson	Robert J. Osiewicz	Sandra Valtier
Gary Dawson	Erin Karschner	Pat Pizzo	Javier Velasco
Wayne Duer	Philip M. Kemp	S. Tinsley Preston III	Susan Vondrak
Laurel Farrell	Ken Kodama	Michael Robertson	Sally L. Watford-Newlin
Frederick W. Fochtman	James C. Kraner	Jeri D. Roper-Miller	Robert M. White, Sr.
Robert Forney, Jr.	Thomas Kupiec	Joseph J. Saady	Ruth E. Winecker
			John F. Wyman

SOFT 2016 Annual Meeting Update

October 16-21, 2016 in Dallas, TX

Committee Co-Chairs: Erin Spargo and Chris Heartsill

Summer is nearly upon us and that means meeting preparations are in full swing! Our workshop slate is set and comprised of four full day and seven half day topics, which run the gamut from vaping to designer benzodiazepines /opiates to case files from our local medical toxicology team to Lean Six Sigma White Belt training (and lots in between!). There should be something that piques everyone's interest, with each workshop requiring only basic or intermediate knowledge of the topic. Our scientific sessions will kick off Wednesday morning and continue through Friday morning. The deadline for abstract submissions has passed and reviewers are hard at work ensuring that we bring you an informative and exciting scientific program.



As you all know, SOFT not only provides a strong scientific program but an event filled social agenda as well. Our Wednesday evening at the Perot Museum will surely be a night to remember. You'll be treated to a different food "theme" and a variety of music styles on each level of the museum. Many of the foods will only require your hands (no utensils!) so you'll easily be able to eat as you explore the museum. Drink choices will be plentiful! You'll be able to use a token to purchase beverages including a number of local craft beers and a signature margarita and lemonade; soft drinks and water are offered at the museum (only) at no charge. Many of the exhibits are interactive -try and outrun a T-Rex, throw a football like a pro, control a robot, or battle a friend as predator vs. prey, just to name a few. If this is a night where you simply want to sit and catch up with friends, don't worry, we'll have a tranquil area set aside on the lower level if that's your preference.

Be sure to set your alarm so you wake up early to participate in the 20th Annual Karla Moore Memorial Tox 'N Purge Fun Run/Walk on Thursday morning. In addition to a t-shirt, you'll also receive a new Legacy pin this year. Make sure to read Chair Aria McCall's write up or visit the fun run portion of the website to learn all about the swag and the new Virtual Run option.

Speaking of swag, you won't want to miss the giveaways this year. Make sure you leave a little extra room in your suitcase for these keepsake items!



SOFT 2016 Annual Meeting Update *(CONTINUED)*



Thursday night will kick off with a cocktail reception before we move on over to the President's Banquet. This year you're being asked to indicate on the registration worksheet whether you'd prefer the beef, fish or vegetarian option for planning purposes. Don't panic if you change your mind, you will be able to switch at the registration desk if a different entrée ultimately appeals to you in October. After our delectable meal and acknowledgement of all those whose hard work allowed us to put on this meeting, we'll be treated to an evening of music by the band Moving Colors. We hope you're ready to join President Limoges out on the dance floor!

If you have some extra time, don't forget that the Texas State Fair will be going on throughout the conference and is easily accessible by light rail from the Sheraton. We highly encourage you to consider coming early or staying late to experience this truly memorable event (www.bigtex.com) – everything really is bigger in Texas!

So, hurry on over to the website to register and book your hotel room – rooms are going fast! Information will be posted on the website when available about an overflow option, as we do expect the Sheraton block to fill up.

We hope y'all are as excited about this meeting as we are – it's going to be a great one!

Erin and Chris



Pictures courtesy of the Dallas Convention and Visitors Bureau website

The Tox 'N Purge is enjoying its 20th outing this year!

Submitted by Aria McCall, B.S., D-ABFT-FT

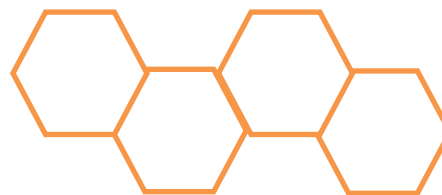
The original Tox 'N Purge run was created by Dr. Karla Moore in 1997 for the Salt Lake City meeting. In addition to her involvement in the field of toxicology and participation in SOFT, she was an officer in the United States Air Force. After her passing in 2008, the run was memorialized in her honor. Expenses for the event are supported by our awesome SOFT exhibitors and proceeds are donated to the American Cancer Society. Here is a look at some of the past designs and themes for the runs:



Registration includes the fashionable Texas-themed Tox 'n Purge running shirt and, new this year, a LEGACY pin. We hope to start a new tradition with Legacy Pins for the Fun Runs of the future. The design of the pin will allow you to collect them and create a larger pattern as you gather more. Don't miss out on getting the very first Dallas, Texas pin!! Pin designs will be based on the following structure:



Single pin



Multiple pins

This year's route will not allow for any road closures, so all traffic signals will have to be obeyed. Due to the nature of the course, there will be no prizes given out for fastest people. Be safe!!

The Tox 'N Purge! (CONTINUED)

I CAN DO WHAT???

If you can't come to the 2016 SOFT meeting you can still participate in the 2016 SOFT Karla Moore Memorial Fun Run/Walk with a Virtual Fun Run.

Virtual Fun Run check list:

1. I am NOT attending the SOFT 2016 Dallas meeting
2. I would like to:
 - make a charitable contribution to the American Cancer Society
 - get the running shirt
 - not miss out on getting the very first LEGACY pin with the Texas theme design
 - participate in an annual SOFT event

So, if you are NOT attending the meeting and answered "Yes" to any option in "2", you are eligible for the Virtual FUN RUN!!

Virtual Fun Run ideas:

1. Get your toxicology office together and walk/run your 5k together!
2. Get on your treadmill or go to the gym.
3. Head out on your favorite route with your own music.
4. Take your pet along on your 5k!
5. Send photos of you and your fellow participants (maybe with their new stylish running shirts)!

The run/walk should be completed in October up to a week after the date of the meeting. The Fun Run form at the SOFT website can be used for the Virtual Fun Run. Under the "Annual Meeting" drop down menu, choose "Fun Run". A link at the top of the page "SOFT 2016 Fun Run and Walk Registration Form" will take you to the required form. The form can be downloaded to Acrobat and filled out electronically for your convenience. Our awesome staff at SOFT headquarters will invoice and accept your payment.

Sign up early so enough shirts and pins are available!! This is the 20th Annual Karla Moore Memorial Tox 'N Purge and we want to break all previous records!

There are no excuses! Everyone can join the 20th Annual Karla Moore Memorial Tox 'N Purge this year!



Workshop Abstracts-October 17 and 18, 2016

FOR MORE INFORMATION CONTACT Workshop Coordinators

Liz Kiely (kielye@mcoho.org) and Sue Howe (srhowe@tarrantcounty.com)

The following workshop selections have a “knowledge level” suggested:

- **BASIC**- Suitable for individuals new to the field, or requires little prior knowledge of the subject matter.
- **INTERMEDIATE**- Involves more advanced concepts requiring technical working knowledge or prior exposure to the subject matter.
- **ADVANCED**- Devoted to highly advanced concepts requiring extensive background or technical working knowledge of the subject matter.

#	Title	Abstract	Co-Chairs	Date
1	The Medical Toxicology Detectives: From the Case Files of Parkland Memorial Hospital Knowledge Level: Intermediate	Medical toxicology is a physician-based, medical subspecialty focusing on the diagnosis and management of poisoning due to medications, illicit drugs, and occupational or environmental toxins. A “toxidrome” is the constellation of clinical signs and symptoms that are exhibited in poisoned patients and is unique to a toxin or group of toxins. Many of the drugs assessed by forensic toxicologists manifest clinically with specific toxidromes. An increased understanding of the clinical signs and symptoms with the different drugs and drug classes would enable forensic toxicologists to better interpret analytical results. This workshop educates the learners on the toxidromes associated with commonly analyzed drugs. Next, challenging and intriguing cases from Parkland Memorial Hospital’s past and present will be evaluated to highlight the medical toxicologists’ methodology in “solving” such cases. The methodology is focused on the clinical presentation and circumstances of an event along with the concentrations of the agents in bodily fluids. Finally, the workshop will explore outcomes of toxicology legal cases as these cases navigate through the legal system beyond the medical examiner.	Stacey L. Hail, MD, FACMT and Kurt C. Kleinschmidt, MD, FACEP, FACMT, DABAM	Monday Full Day
2	Opioids in DUID Investigations Knowledge Level: Intermediate	This workshop is an official offering of the joint SOFT/AAFS Drugs and Driving Committee. Opioid use and abuse is an ongoing concern for Driving Under the Influence of Drugs (DUID) casework. A detailed description of opioid pharmacology and physiology will be presented along with ante and post mortem case studies. Current legal and pain management perspectives will also be provided. A panel discussion on the problem of opioids in DUID casework will conclude the session.	Amy K. Miles, BS and William R. Johnson, BA	Monday Full Day
3	Applied Statistics for the Forensic Scientist - Does the Data Say What it Means and Mean What it Says? Knowledge Level: Intermediate	The National Academy of Sciences report in 2009 focused on the deficiency of scientific principles used in various forensic disciplines and the need for more research to establish sound/dependable methodologies. The integration of statistics into the discipline of forensic toxicology has been an important step in the improvement of data generation and interpretation. Understanding experimental design, bias quantification, precision, accuracy and robustness are important foundations for laboratory method validation. More importantly, understanding the limitations of the data generated in the laboratory or reviewed in the literature is key to providing neutral and unbiased conclusions.	Michael A. Wagner, PhD, F-ABFT and Randall K. Julian, Jr. PhD	Monday Morning
4	Alcohol Concentration Extrapolation Knowledge Level: Basic	This half-day workshop will explore aspects of alcohol concentration (AC) extrapolation. The pharmacokinetics of ethanol will be reviewed, including calculations for estimating AC under a variety of circumstances. Factors that may affect AC estimations will be covered, along with an update of legal issues surrounding extrapolation testimony. Reference materials will be provided.	Laura J. Liddicoat, BS and Patrick M. Harding, BS	Monday Morning

#	Title	Abstract	Co-Chairs	Date
5	<p>Toxicology of Designer Benzodiazepines and Opioids</p> <p>Knowledge Level: Intermediate</p>	<p>The emergence and widespread availability of many designer drugs over the last few years supports the need to continually expand our knowledge regarding the prevalence, analytical techniques/challenges and toxicology of these drugs. This workshop will focus on the detection of designer benzodiazepines and designer opioids, two emerging classes of designer drugs, in forensic toxicology investigations. Abuse patterns, metabolism, detection methodology including analytical instrumentation and resources needed for routine laboratory testing/screening and highly targeted confirmatory procedures will be discussed. DUID and post-mortem cases involving both types of drugs with full case histories and DRE reports will provide a basis for a discussion on effects and toxicity. This workshop aims to provide a comprehensive overview of the challenges associated with the detection and interpretation, metabolism and toxicology related to designer benzodiazepines and designer opioids.</p>	<p>Robert Kronstrand, PhD and Sumandeep Rana, PhD, MBA</p>	<p>Monday Afternoon</p>
6	<p>Vaping: What You Don't Know About Electronic Cigarettes and Why You Should Care</p> <p>Knowledge Level: Basic</p>	<p>Electronic cigarettes (e-cigarettes or e-cigs), known as “personal vaporizers” (PV) by avid users or electronic nicotine delivery devices (ENDS) by industry, have experienced a significant increase in popularity for those seeking an alternative to smoking traditional tobacco products. These products are comprised of a battery-powered atomizer and a cartridge filled with a pharmaceutical (nicotine), flavorings, and water dissolved in glycerol products. E-cigarette devices are manufactured with a spectrum of personalization opportunities: from off-the-shelf non-customizable devices to customizations such as self-wrapping of the element, homemade wicks, self-preparation of the e-cigarette liquid formulation, cups to hold plant material, dripping vs wicking, and wattage adjustors to administer a desired drug dosage.</p> <p>The lack of enforced regulation has made e-cigarettes easy to access and has shepherded the nefarious use of electronic cigarettes. The use of the electronic cigarette as an illicit drug delivery device is touted on websites, forums, blogs, and videos describing how best to use them for specific illicit drugs such as tetrahydrocannabinol, methamphetamine, fentanyl, and heroin. They also explain at length benefits of “vaping” illicit drugs because it can be done in public without questions (no odor and vaping is not just acceptable, it is “cool”).</p> <p>Analyzing paraphernalia for drug usage is a practiced and conceivably straightforward methodology established in controlled substance laboratories nationwide. However, electronic cigarettes are still largely uncharacterized. Little is known or understood about their construction, let alone how they are potentially used to deliver illicit drugs. Additionally, from a toxicological perspective, little is documented regarding the delivery of nicotine, particularly as a function of power, for electronic cigarettes. And, even less is known regarding the adulteration of electronic cigarettes and how the e-cigarettes are used or modified to optimize the delivery of an adulterant.</p> <p>A problem that can arise with using electronic cigarettes to deliver illicit drugs is that the dosing can be increased by turning up the wattage on the device. This method to increase dosage alone, or combined with increasing the volume of the “puff”, could easily lead to overdoses. Additionally, increasing temperatures could lead to pyrolysis products which can potentially be used as biomarkers. Drug forums are providing cautionary tales to users, however, these are overshadowed by the clear benefits these devices bring to drug users.</p>	<p>Michelle Peace, PhD and Justin Poklis, BS</p>	<p>Monday Afternoon</p>

#	Title	Abstract	Co-Chairs	Date
		<p>Few peer-reviewed manuscripts exist in the literature that describe, define, and illustrate the use of electronic cigarettes. This forum describing how they work and their efficacy in drug delivery will be of great benefit to the forensic science community. Given that one role of the forensic toxicologist is to define and characterize drug usage trends, publicly funded research poses an important, relevant, and critically timed study to address an identified threat to public health and criminal justice. This forum will support analytical efforts in controlled substances units and support the findings and opinions of scientists, medical examiners, death investigators, and forensic toxicologists as they present analytical results. It will also provide greater understanding in the court systems nationwide as to the nature of drug usage, abuse, and overdose cases in which electronic cigarettes were used to deliver an illicit drug.</p> <p>Research was supported by Award No. NIJ-2014-3744, awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect those of the Department of Justice.</p>		
7	<p>From the Sample Tube to the Mass Spectrometer: A Comprehensive Look at Extracting Small Molecules from Complex Matrices and Subsequent Analysis Using Mass Spectrometry</p> <p>Knowledge Level: Basic-Intermediate</p> <p>Note: Workshop attendance will be capped at a total of 50 attendees.</p>	<p>Sample preparation, analytical analysis and method development continue to be challenging obstacles for scientists working in toxicology laboratories whom are either engaged in developing methods for new panels of analytes or improving upon current analytical methods that may be outdated. Better understanding the fundamental principles of the current sample preparation technology available to an analyst is just the first step in planning and developing an effective analyte extraction method from complex biological matrices like urine, whole blood and oral fluid. Identifying an effective strategy that is fast, robust and helps to increase laboratory productivity and lessen the potential for samples to "fail" during analytical analysis is paramount. To assist in workflow efficiency the sample preparation process can be automated to facilitate high throughput scenarios. Automation technology can also be used to aid in the sample preparation method development phase. Once the proper sample preparation method is identified, a viable analytical method is needed to qualitatively and quantitatively analyze for the target analyte(s).</p> <p>In a typical toxicology laboratory the method of choice is Gas Chromatography Mass Spectrometry (GC-MS) and/or Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS). Development of the analytical method for analyte analysis requires some fundamental knowledge of chromatography and mass spectrometry. Once the analytical analysis method is established then the sample preparation method can be tested and verified for effectiveness and robustness. Together the overall method development process should yield an effective way to extract and detect your target analytes from any type of biological matrices. This workshop will draw from over 15 years of combined experience in sample preparation and analytical method development from the panel of presenters.</p>	Victor E. Vandell, PhD and Dan Menasco, PhD	Tuesday Full Day

#	Title	Abstract	Co-Chairs	Date
8	Lean Six Sigma White Belt Training Knowledge Level: Basic Note: Workshop attendance will be capped at a total of 30 attendees.	The purpose of this workshop is to introduce participants to Lean and Six Sigma methodologies and how they can be applied to improve operations in a forensic toxicology laboratory. Lean originated in the Toyota Production System and focuses on eliminating waste. The Six Sigma methodology originated at Motorola and emphasizes reducing variation and rework in a process. As part of the training, we will develop a Value Stream Map of a forensic toxicology process to identify areas of waste, variation, and rework. We then describe how the DMAIC framework (which includes the 5 phases: Define, Measure, Analyze, Improve, and Control) can be used to improve the process. A critical part of deploying a successful Lean Six Sigma project involves focusing a parallel effort on change management. As part of this workshop, we will provide training on gauging the culture of an organization, preparing a group for change, and using Lean Six Sigma as a vehicle for shifting a culture towards continuous improvement. By the end of the workshop, participants will: have an understanding of Lean and Six Sigma; gained experience using some DMAIC tools; participated in engaging hands-on activities; and receive White Belt certification.	M. Gambrelli Layco, MFS, and Deki K. Yangser, BS	Tuesday Full Day
9	Postmortem Interpretation of Toxic Pharmacodynamic Drug Interactions Knowledge Level: Intermediate	<p>Toxicologists are frequently called upon to determine whether or not toxic or therapeutic substances played a role in a victim's death. This is already quite complicated when only a few substances are identified. The challenge is even greater in what we like to call "medicine cabinet" cases with five or more drugs, many of which can interact in unexpected ways. Polypharmacy is a growing trend in the United States where approximately half of adults over 65 take five or more medications per week.</p> <p>While a quick review of the findings and their respective blood concentrations may be enough to make the cause of death jump off the page in simple cases, some deaths due to combined toxicity can be more subtle. For example, the ceiling effect that makes methadone, buprenorphine and other partial agonist opioids safer than morphine is easily overcome by the addition of benzodiazepines.</p> <p>In addition to respiratory depressant effects, methadone and some other opioids can lengthen the QT interval, especially in combination with other cardiotoxic drugs such as haloperidol. Antibiotics are usually considered benign, but penicillin and ciprofloxacin can lower the seizure threshold, especially in combination with more notorious agents such as antipsychotics. Perhaps the best known example of a toxic pharmacodynamic interaction is serotonin syndrome, which is a risk associated with many substances that are not antidepressants such as meperidine.</p> <p>This workshop will include four segments devoted to each of the four most common toxic pharmacodynamic interactions seen in postmortem cases. The mechanisms, causative agents and case examples will be discussed for each segment. Resources for further information will be provided. Online applications to check for drug interactions will also be reviewed, along with their features and limitations.</p>	Wendy R. Adams, PhD and Denice Teem, BS	Tuesday Morning
10	Medico-Legal Aspects of Medical Marijuana Knowledge Level: Intermediate	This workshop will cover the clinical uses of marijuana, the legal issues involved in its sale and use, the real-world consequences of legalization and the long-term health issues involved.	Michele A. Glinn, PhD, F-ABFT and Michael P. Smith, PhD, F-ABFT	Tuesday Morning

#	Title	Abstract	Co-Chairs	Date
11	Postmortem Cannabinoids: Issues of Analysis and Interpretation Knowledge Level: Intermediate	The well documented increase in plant concentrations of $\Delta 9$ - tetrahydrocannabinol (THC) being reported in confiscated and commercial Cannabis plant material, and the continuing rise in the number of jurisdictions with legalized medical and recreational marijuana, will increase the number of decedents with cannabinoids in their bodies at the time of their death. Concerns regarding the greater potential for adverse effects on performance (e.g., driving) as well as physiological (e.g., cardiotoxicity) and neurological (e.g., psychosis) effects of THC are growing. As a result, forensic toxicologists will increasingly be called upon to analyze and interpret cannabinoid concentrations in postmortem fluids and tissues. Few studies have been published that evaluate the potential for postmortem changes in blood concentrations of THC, THC-OH, and THC-COOH. This workshop will review the pharmacology of cannabis in casual and chronic users as well as the selection, collection, and analysis of specimens in postmortem cases. In addition, postmortem changes in concentration, and the current limitations of interpretation for postmortem cannabinoid findings will be presented.	J. Rod McCutcheon, BS and Philip M. Kemp, PhD.	Tuesday Afternoon

FOR MORE INFORMATION CONTACT Workshop Coordinators
Liz Kiely (kielye@mcchio.org) and Sue Howe (srhowe@tarrantcounty.com)

Midwestern Association of Forensic Scientists' Annual Meeting October 3-7, 2016

The MAFS 2016 Fall Meeting will be held October 3rd - 7th, 2016 in Branson, Missouri. Hosted by The Missouri State Highway Patrol, the meeting will consist of workshops, break-out sessions, and posters for analysts in Drugs, Toxicology, Trace Evidence, Crime Scene, Biology, Questioned Documents, Latent Prints, and Firearms/Toolmarks.

Hosted by The Missouri State Highway Patrol

Contact: Program Chair Abigail Lehman 573-526-6134 x2529 abigail.lehman@mshp.dps.mo.gov
<http://www.mafs.net/news-feeds-1/mafs-2016-meeting>

Hilton Branson Convention Center
(417) 336-5400
conventioncenter.hiltonsofbranson.com
Room Rate: \$139/night
Group Code: MAFSMO

2016 SOFT ANNUAL MEETING VOLUNTEER FORM

The 2016 SOFT Annual Meeting will take place October 17-21 in Dallas, TX. We need volunteers to assist with a wide variety of tasks throughout the entire meeting (October 15-22). Although volunteers do not receive complimentary registration, YOU are essential for a successful meeting. Meet friends, both old and new while helping SOFT host the best conference yet!

Contact Information Form

Name: _____ Organization: _____

Cell Phone: _____ Email: _____

The best way to contact me during the meeting is: Cell Phone Email Other: _____

SOFT Member? Yes No Are you able to lift 30lbs? Yes No

I plan to arrive in Dallas, TX on _____ and depart on _____ .
(date) (date)

Please check all dates you are available to volunteer. Mark the time(s) of day you are available (a.m. and/or p.m.) as well as the maximum number of days for which you are willing to volunteer.

Dates Available	v	Times of Day Available		Additional Comments/Needs
Saturday, October 15	_____	_____ a.m.	_____ p.m.	_____
Sunday, October 16	_____	_____ a.m.	_____ p.m.	_____
Monday, October 17	_____	_____ a.m.	_____ p.m.	_____
Tuesday, October 18	_____	_____ a.m.	_____ p.m.	_____
Wednesday, October 19	_____	_____ a.m.	_____ p.m.	_____
Thursday, October 20	_____	_____ a.m.	_____ p.m.	_____
Friday, October 21	_____	_____ a.m.	_____ p.m.	_____

Maximum number of days willing to work: _____

Below is a list of the various areas where we will need volunteers. Please circle any event with which you would prefer to help. We will do our best to accommodate requests.

Pre-meeting Preparation	Poster Session	Silent Auction	Registration Desk
Workshop Registration	Wednesday Night Social	Fun Run	Scientific Sessions
Audio-Visual	President's Reception	Vendor Aide	

Please return this information form to one of the SOFT 2016 Volunteer Coordinators:

Dani C. Mata
Orange County Crime Lab
P) 714-834-4510
F) 714-834-4519
dmata@occl.ocgov.com

Samantha S. Tolliver
Office of Chief Medical Examiner
P) 202-698-9049
F) 202-698-9104
samantha.tolliver@dc.gov

2016 SOFT STUDENT ENRICHMENT PROGRAM

at the 46th Annual Meeting of the
Society of Forensic Toxicologists (SOFT)

Monday, October 17th 2016 from 8am-5pm
Sheraton Dallas Hotel
400 North Olive Street, Dallas, Texas

APPLICATION

CONTACT INFORMATION

Name: _____
Last First MI

Mailing Address: _____

Email: _____ Phone: _____

EDUCATIONAL INFORMATION

Academic institution attended in the fall semester of 2016: _____

Academic status for fall 2016: Graduate Student Undergraduate Student

If undergraduate, provide class (freshman, sophomore, etc.): _____

PREVIOUS EXPERIENCE

In the space provided, describe your previous experience with forensic science or forensic toxicology.

(Note: Previous experience is **NOT** required.)

INTEREST STATEMENT

On a separate page, please describe your interests and goals relating to forensic toxicology and explain how attending this program will help you meet those goals. *Limit interest statements to one page or less.*



E-MAIL COMPLETED APPLICATIONS TO softyft@gmail.com

APPLICATIONS DUE 16 SEPTEMBER 2016

Accepted applicants will be notified by 23 September 2016

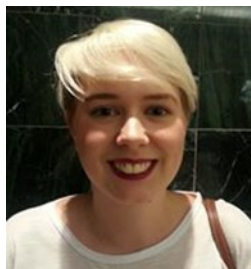
CONGRATULATIONS TO 2016 ERA – YSMA AWARDEES

The SOFT Awards Committee has announced the following Educational Research Award (ERA) and Young Scientist Meeting Award (YSMA) winners for 2016.

The four Awardees (pictured below) will present their research during one of the Scientific Sessions at the October annual meeting in Dallas.

The ERA was established in 1980 to encourage academic training and research in areas of forensic toxicology. The YSMA was established in 2003 to recognize bench level scientists. Both awards allow for a complimentary registration to the annual meeting, PLUS a financial stipend of \$2,000 each. These four awardees will each be presented with an honorary plaque during the annual SOFT Business Meeting on October 20, 2016.

The SOFT website (www.soft-tox.org) has a link for eligibility and application information. ALL SOFT MEMBERS are urged to “encourage” co-workers, interns, or students to apply for these prestigious recognition awards. The 2016 Award Committee members are Erin Spargo (Chair), Jessica Smith, Rusty Lewis, Betsy Spratt, and Michelle Merves.



ERA Awardee-**Lorna Nisbet**, University of Glasgow
Title of Research: “Optimisation of a GC-MS Method for Quantitative Identification of 23 New Psychoactive Substances in Blood and Urine”
Mentor: Dr. Karen Scott



ERA Awardee-**Madeleine Swortwood, Ph.D.**, National Institute on Drug Abuse
Title of Research: “Cannabinoid Pharmacokinetics and Detection Windows in Oral Fluid after Controlled Smoked, Vaporized, and Oral Cannabis Administration”
Mentor: Dr. Marilyn Huestis



ERA Awardee-**Meaghan Drumm**, Arcadia University
Title of Research: “Methamphetamine, Amphetamine, and Norephedrine Levels in Dermestid Beetle Frass after Consumption of Dosed, Buried Rat Remains”
Mentor: Dr. Karen Scott



YSMA Awardee-**Erin Strickland, Ph.D.**, Ameritox, Ltd.
Title of Research: “Metabolomics in Urine: Seroquel® and Beyond”
Mentor: Dr. Gregory McIntire

2016 SOFT STUDENT ENRICHMENT PROGRAM

at the 46th Annual Meeting of the
Society of Forensic Toxicologists (SOFT)

Monday, October 17th 2016 from 8am-5pm

Sheraton Dallas Hotel
400 North Olive Street, Dallas, Texas

Learn about a Career as a Forensic Toxicologist

Forensic toxicology applies the principles of analytical chemistry, pharmacology and toxicology to determine the presence of drugs in biological samples and interpret analytical findings within the context of a legal investigation. Applications of forensic toxicology include (but are not limited to):

Medicolegal Death Investigation
Workplace Drug Testing
Drug Facilitated Crimes
Driving Under the Influence of Alcohol or Drugs
Sports Doping

Student Enrichment Program (SEP)

Undergraduate and graduate students interested in forensic toxicology are invited to participate in a one-day educational outreach program as part of the 2016 Annual Society of Forensic Toxicologists (SOFT) Meeting. The SEP will take place on Monday, October 17th 2016 from 8am-5pm at Sheraton Dallas Hotel in Dallas, Texas. Students will learn about various disciplines within forensic toxicology and what knowledge and skills are necessary for this exciting career path from practicing forensic toxicologists.

To sign up, please fill out an application. If more individuals sign up that can be accommodated, SEP participants will be selected on the basis of the application.

Application Process

Students interested in forensic toxicology should apply. The SEP, including continental breakfast and lunch, are provided to accepted applicants at no cost; however, students are responsible for their own transportation and lodging, if needed. Interested students should download an Application Form from the 2016 SOFT website <http://www.soft-tox.org> (under the Young Forensic Toxicologists link on the main menu).

The completed application, including a one-page interest statement, is due by 16 September 2016.

Applicants will be notified of acceptance by 23 September 2016.

For questions or additional information, visit the SOFT website <http://www.soft-tox.org> (under the Young Forensic Toxicologists link on the main menu), check out our Facebook page, www.facebook.com/SOFTYFT, or contact us at softyft@gmail.com.

Quick Facts

Student Enrichment Program
Monday, October 17th 2016 8am-5pm
Sheraton Dallas Hotel, Dallas, Texas
Continental breakfast and lunch provided
Applications due by 16 September 2016
<http://www.soft-tox.org> (Young Forensic Tox)
www.facebook.com/SOFTYFT
softyft@gmail.com





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Shimadzu Scientific Instruments Inc., 7102 Riverwood Dr., Columbia, MD 21046, USA

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SOFT Continuing Education Workshop:
Alcohol and Drugs of Abuse Affecting the Central Nervous System:
Pharmacology, Toxicology, and Impairment
August 29 - 30, 2016
Dayton, Ohio



This SOFT Continuing Education Regional Workshop will provide Forensic Toxicologists a basic overview of the pharmacology of alcohol and drugs of abuse and how they affect the central nervous system. Emphasis will be given to the effects of these drugs on driving performance and impairment detection. Synthetic drug pharmacology will also be addressed. Workshop faculty will include experts in forensic toxicology, pharmacology, pathology and law enforcement. The two day workshop will include a question and answer session each day where participants can ask questions of the workshop faculty.

Instructors:

Robert Forney, Jr., Ph.D.
 Lucas County Coroner's Office

Will Scott Wright
 Dayton Police Department

Matthew Juhascik, Ph.D.
 Miami Valley Regional Crime Laboratory/Montgomery County Coroner's Office

Joe Turner, M.S.
 Indiana Law Enforcement Academy

Jon Sprague, Ph.D.
 Ohio Attorney General's Center for the Future of Forensic Science

John Wyman, Ph.D.
 Cuyahoga County Medical Examiner's Office (Retired)

David Dolinak, M.D.
 Cuyahoga County Medical Examiner's Office

Douglas Rohde, M.S.
 Lake County Crime Laboratory

Registration Fee:

SOFT Members: \$120.00
Non-SOFT Members: \$200.00
Student Fee: \$120.00
1 day (SOFT Member): \$75.00
1 day (Non-SOFT Member): \$115.00

Registration Deadline: August 15, 2016

Training Venue:
 University of Dayton
 300 College Park,
 Dayton, OH 45469

Hotel Room Block Reserved at:
 Marriott at the University of Dayton
 1414 S Patterson Blvd
 Dayton, OH 45409
 Group rate: \$90/night

Registration Information:

Are you a SOFT Member? NO YES

 Last Name First Name

 Position / Title

 Agency / Company

 Street Address

 City State Zip Code

 Phone

 Email

Check this box if you require special accommodations to fully participate in the training. Describe briefly below:

Method of Payment:

Enclosed check payable to **SOFT** in US currency
 VISA MasterCard American Express

 Card Number Exp Date CVC Code

 Signature

Send payments to:

Society of Forensic Toxicologists
 Suite 15
 One North Macdonald Street
 Mesa, AZ 85201
 (480) 839-9106

Toxicology Section of the American Academy of Forensic Sciences

Submitted by Dan Anderson, M.S., Section Chair

Are you ready to *Let the Good Times Roll* in the Big Easy?

The Toxicology Section of the American Academy of Forensic Sciences is preparing another exciting program for the 2017 Annual Meeting in New Orleans, LA, where the chosen theme is “Our Future Reflects Our Past: The Evolution of Forensic Science”.

We are going to be offering a vast array of quality workshops, scientific sessions, breakfasts, and lunches and will also continue the traditional special sessions on Drugs and Driving, Postmortem Pediatric Toxicology and our joint session with the Pathology/Biology Section.

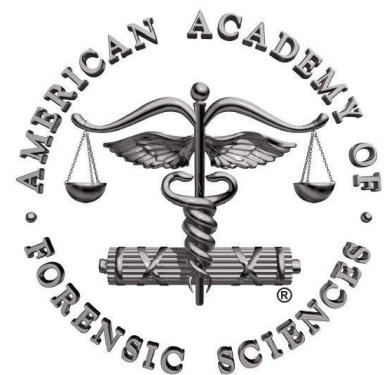
If you haven't already, we encourage you to consider abstract submissions and/or identify workshop proposals – now is the time to start!

The August 1st deadline will rapidly approach; please don't delay in contacting Nikolas P. Lemos (Nikolas.Lemos2@ucsf.edu), section chair or William Johnson (william.johnson@slh.wisc.edu), program co-chair with your workshop suggestions and other program ideas.

Please note another important August 1st deadline: *Nominations for Section Awards*. These peer-driven awards remain a wonderful way to recognize your fellow colleagues for their contributions and dedication to our field. Contact the Chair of the Toxicology Section Awards and Scholarship Committee, Graham Jones (graham.jones@gov.ab.ca), with your nominations.

One final reminder: moderators and volunteers play a pivotal role in the success of the annual meeting, and both activities count as service to the Academy come promotion time! Volunteering is also an excellent way for newcomers to get engaged and meet people, so please encourage your colleagues and students to participate and contact your program chair Nikolas Lemos (Nikolas.Lemos2@ucsf.edu) if you're interested in this opportunity.

So, mark your calendars now for what promises to be a spectacular 69th AAFS Annual Scientific Meeting, February 13 - 18, 2017, in New Orleans, LA.





FROM THE TOXICOLOGY LITERATURE

Submitted by Kevin G. Shanks, M.S., D-ABFT-FT

kshanks@aitlabs.com

Forensic Science International
April 2016

Volume 261

**Is Toxicity of PMMA
(Paramethoxymethamphetamine)
Associated With Cytochrome
P450 Pharmacogenetics?**

Vevelstad *et al.* studied the association between cytochrome P450 genetics, paramethoxymethamphetamine (PMMA) metabolism, and fatal human PMMA toxicity by comparing the frequency distribution of variants of CYP2D6, CYP2C9, CYP2C19, and CYP3A5 and the phenotypic blood CYP2D6 metabolic ratio of 4-hydroxymethamphetamine:PMMA in fatal and nonfatal PMMA intoxication. A non-using population was used as a reference group for the expected genotype frequencies in the specific Norwegian population. The study results showed that the CYP2D6 enzyme and genotype are crucial in the metabolism of PMMA to 4-hydroxymethamphetamine as other enzymes are not involved. In the subset of fatal PMMA intoxications studied, the PMMA blood concentrations were higher and the CYP2D6 metabolic ratio was lower than the nonfatal PMMA intoxication. The authors conclude that in most cases, death from PMMA occurred rapidly and at an early stage of metabolism – following the ingestion of large dosages. They did not identify any specific genetic predictive biomarker for fatal toxicity of PMMA.

Journal of Analytical Toxicology
May 2016

Volume 40, Issue 4

**Analysis of MT-45, a Novel
Synthetic Opioid, in Human
Whole Blood by LC-MS-MS and
Its Identification in a Drug-
Related Death**

Papsun *et al.* reported an analytical method for the detection of the opioid research chemical MT-45 in whole blood by liquid chromatography with tandem mass spectrometry. Method attributes assessed during a limited validation included linearity and accuracy/imprecision. Samples were prepared via a liquid liquid extraction using ammonium hydroxide and butyl chloride/ acetonitrile. The method was used in the detection of MT-45 in a toxicology case involving the death of a 35 year old male. The male had no history of drug abuse. He was found deceased after several days of not being seen by anyone. Paraphernalia including a scale, spoon, pipe, lighter, and two packages of powder were found at the scene of the death. The white powders were later identified as MT-45 and Etizolam. Pathological findings at autopsy included cerebral edema, pulmonary congestion and historical injection sites on the foot. Blood specimens were drawn for comprehensive toxicology. During the comprehensive analysis of the femoral blood, positive findings included diphenhydramine (220 ng/mL), etizolam (35 ng/mL), and MT-45 (520 ng/mL). Cause of death was certified as combined toxicity of MT-45 and etizolam and manner of death was accident.

Journal of Analytical Toxicology
May 2016

Volume 40, Issue 4

**To Measure or Not to Measure?
That is the NPS Question**

In a timely letter to the editor, Gerostamoulos *et al.* asked the prudent question – should we quantify new psychoactive substances (NPS) such as synthetic cannabinoids and substituted cathinones in toxicology casework or is it suitable to report confirmed qualitative results? Reasons for reporting qualitative results included ease of method development and validation, lack of funding or resources, and the paucity of information of known pharmacology/toxicology surrounding many of these substances. Basically, in order to develop and validate quantitative assays, a large amount of resources are consumed in the typical forensic toxicology laboratory and the quantitative measurement leads to no real significance in interpretation of the substance's role in cause or contributing cause of death. The authors conclude that the qualitative reporting of NPS is sufficient for routine forensic purposes and would allow the toxicology laboratory to be more reactive to changes in NPS and possible even proactive to the drug market.



FROM THE TOXICOLOGY LITERATURE (CONTINUED)

Clinical Toxicology
Volume 54, Issue 4
Intoxications Involving the
Fentanyl Analogs
Acetylfentanyl,
4-Methoxybutyrylfentanyl and
Furanylfentanyl: Results from
the Swedish STRIDA Project

Helander *et al.* reported a series of clinical toxicology cases from the STRIDA project involving fentanyl analog presentations to the hospitals in Sweden. The date range on the cases was April to November 2015. During the time range, there were 14 confirmed fentanyl analog cases - 4-methoxybutyrylfentanyl (n=3), acetylfentanyl (n=9), furanylfentanyl (n=1), and 4-methoxybutyrylfentanyl/furanylfentanyl (n=1). Ages ranged from 20-40 years (mean, 28.5 years) and 86% of the individuals were male. Typical opioid agonist effects were observed and included decreased consciousness, respiratory depression, and miosis. Twelve individuals were admitted to the intensive care unit and two of those required intubation/mechanical ventilation. Naloxone was administered to 8 of the individuals. Serum 4-methoxybutyrylfentanyl concentrations ranged from 1.3-3.1 ng/mL. Serum acetylfentanyl concentrations ranged from 0.6-51.6 ng/mL. Serum furanylfentanyl concentrations ranged from 4.4-148 ng/mL. In 13 of 14 cases, substances other than the fentanyl analogs were also detected. One death involving acetylfentanyl occurred via cerebral hemorrhage.

Forensic Science International
May 2016
Volume 262
Gabapentin Concentrations and
Postmortem Distribution

Hamm *et al.* reported gabapentin concentrations over a series of 30 postmortem toxicology cases. Each of the cases included peripheral blood, central blood, and liver. Gabapentin was analyzed via a previously published LC/MS method. The central to peripheral blood concentration ratio averaged 0.90 ± 0.24 ; median was 0.97. The liver to peripheral blood concentration ratio averaged 0.68 ± 0.26 ; median was 0.65. The authors concluded that gabapentin was not likely to undergo postmortem redistribution (PMR).

Forensic Science International
May 2016
Volume 262
Fatal Intoxication with the
Synthetic Cannabinoid MDMB-
CHMICA

Adamowicz reported the death of a 25 year old male who had a history of ethanol and new psychoactive substance (NPS) abuse. He also had a history of psychiatric treatment for NPS dependence. The male smoked some herbal product he had purchased via the internet and also drank some ethanol. He was last seen 3-4 hours later where it was observed that he was drunk, sleepy, and had slurred speech. He returned home about 1-2 hours later, used another product, and col-

lapsed. He was wheezing, vomiting, and then became unconscious. Emergency personnel were called. Six packages of powders and plant products were found at the scene. He was resuscitated by emergency workers (though he never regained consciousness) and was transferred to Intensive Care. Upon admittance, there were no signs of a functioning central nervous system. Pupils were wide, stiff, and had no reaction to light. Heart rate was 100 beats per minute. Blood pressure was 120/40 mm Hg. Body temperature was 35.1 degrees Celsius. On the fourth day of admittance, cardiac arrest occurred twice, with the second time proving fatal. Upon autopsy, the pathologist concluded respiratory, circulatory, heart, kidney, and liver failures, as well as hypoxic ischemic damage of the central nervous system. Toxicological analysis of antemortem blood revealed the synthetic cannabinoid MDMB-CHMICA (5.6 ng/mL) and ethanol (1.48 g/L). Postmortem blood was positive for MDMB-CHMICA, but less than the reporting limit (<0.2 ng/mL), as well as ethanol (0.81 g/L). Brain tissue was positive for MDMB-CHMICA (2.6 ng/g). MDMB-CHMICA was also detected in stomach contents, liver, bile, and kidney. No other substances were detected. The cause of death was certified as multiple organ failure. The author notes that the main cause of poisoning was "undoubtedly MDMB-CHMICA", but ethanol was also present.

FROM THE TOXICOLOGY LITERATURE (CONTINUED)

Journal of Analytical Toxicology
June 2016

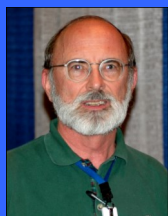
Volume 40, Issue 5

Analysis of a Commercial Marijuana e-Cigarette Formulation

Peace *et al.* characterized a marijuana e-liquid for use in a vaporizer or electronic cigarette. They identified various cannabinoids, terpenes, and propylene glycol by DART-MS and GC/MS as well as

quantification of cannabinoids by LC/MS/MS. The product was named Liberty Reach and consisted of 1 mL of brown liquid contained within a plastic syringe. Label claim was 69.1% delta-9-tetrahydrocannabinol (THC) and 1% cannabidiol (CBD). DART-MS identified six cannabinoids and 13 possible terpenes. LC/MS/MS analysis revealed 42.6% THC, 0.5% CBD, 0.36% cannabinol (CBN),

0.72% cannabichromene (CBC), 0.64% cannabigerol (CBG), and 5.6% tetrahydrocannabinolic acid-A (THC-A). The THC and CBD concentrations were different than label claim of the product. The product also did not disclose the other cannabinoids that were detected, but their presence was consistent with the manufacturer's claim of how the product was produced, i.e. marijuana extraction.



CASE NOTES

Send interesting "Case Notes" to Section Editor

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5F-ADB drivers in the State of Washington

Submitted by Brian Capron

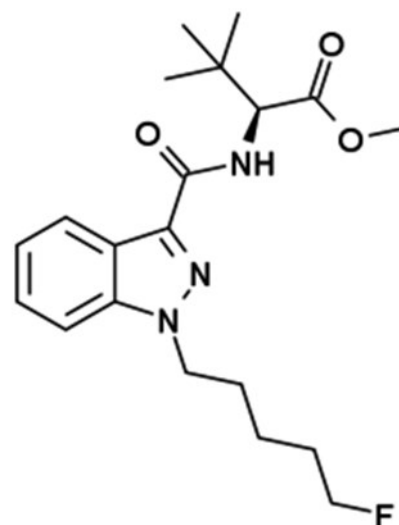
Washington State Toxicology Laboratory

Synthetic cannabinoids (SC) are synthesized compounds found in smoking products which are designed to mimic the effects of marijuana by binding to cannabinoid receptors, specifically CB1 and CB2. These compounds, sometimes referred to as "legal highs", are used by individuals as an alternative to marijuana, often times in order to avoid detection by random drug testing. Like marijuana, synthetic cannabinoids are typically smoked with effects similar to those of marijuana. However, many of these compounds have been found to produce more powerful effects than marijuana which has led to an increase in hospitalizations and deaths. Manufacturers remain a step ahead of law en-

forcement and testing laboratories as they continue to alter chemical structures in response to legislation. Thus, detecting these quickly changing compounds has been problematic for many forensic laboratories.

5F-ADB (Figure 1), also known as 5F-MDMB-PINACA, is an indazole-based synthetic cannabinoid, believed to be a potent CB1 receptor agonist that was identified in late 2014 in post-mortem samples from an individual who died after using a product containing this substance. Subsequent testing identified 5F-ADB in ten people who had died from unexplained drug overdoses in Japan caused by smoking this compound (1).

Figure 1



5F-ADB drivers in the State of Washington (CONTINUED)

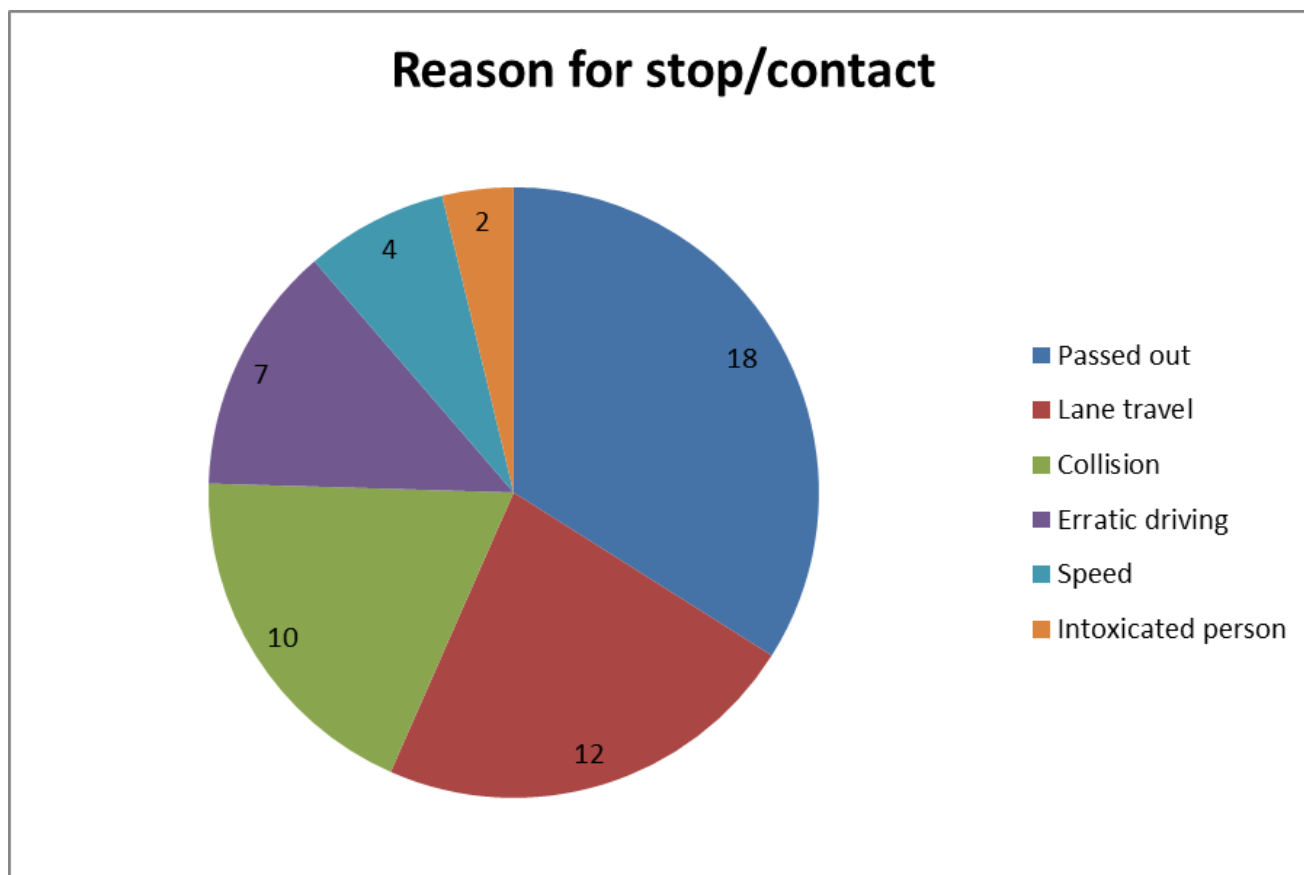
The Washington State Toxicology Laboratory (WSTL) began seeing SC's in driving under the influence (DUI) and Drug Recognition Expert (DRE) cases starting in 2012. In these cases, our laboratory performed comprehensive testing to identify any impairing substances. If impairing substances were not identified, or SC's were found on the subject and/or were suspected, the samples were then sent out for testing by an outside laboratory. In October 2015 we began receiving suspected SC driving cases with individuals showing extreme signs and symptoms of impairment, much more pronounced than earlier cases in which a SC was detected. These suspected cases were sent to AIT

Laboratories in Indianapolis, Indiana for testing of SC's. Results started coming back with a new compound we had not seen in our driving cases previously, 5F-ADB. Over the next eight months we have had at least 36 confirmed impaired driving cases in which 5F-ADB has been identified.

In 30 of the 36 confirmed cases, 5F-ADB was the only psychoactive substance identified (two with carboxy-THC and four with other SC's). Twenty-six (26) of the 36 cases were DUI, while the remaining ten were DRE cases. The defendants were predominantly male (29 of 36), ages ranged from 21-52 years old, and concentrations of 5F-ADB ranged from 0.2 - 1.2 ng/mL

(N=32). All drivers exhibited multiple poor driving behaviors or were reported as intoxicated individuals (Figure 2). In total, ~28% of the drivers who tested positive for 5F-ADB were involved in collisions ranging from single to multiple car. Of the 36 total drivers, 16 performed the standardized field sobriety tests consisting of horizontal gaze nystagmus (HGN), walk and turn (WAT), and one leg stand (OLS) with results similar to those seen in marijuana impaired drivers with the exception of the (HGN) test (Table 1). Of the remaining 20 drivers, nine refused testing, five needed medical aid, and six others were not tested by officer choice.

Figure 2



5F-ADB drivers in the State of Washington (CONTINUED)

Table 1

Summary of Standardized Field Sobriety Tests (SFST's) of 16 Impaired Driving Subjects

Subject	# clues for HGN	# clues for WAT	# clues for OLS
1	6	4	1
2	6	3	3
3	0	2	1
4	0	3	2
5	4	NP	3
6	0	3	2
7	6	8	3
8	2	2	2
9	0	4	2
10	4	3	2
11	0	2	1
12	6	6	3
13	0	4	3
14	0	2	1
15	6	2	1
16	6	4	2

HGN, horizontal gaze nystagmus, 6 clues possible; WAT, walk and turn, 8 clues possible; OLS, one leg stand, 4 clues possible; NP, not performed.

Although the effects of many SC's have been reported to be similar to those of marijuana, the physiological effects of 5F-ADB in our 36 drivers were found to be much more impairing and pronounced when compared to marijuana. Extremely high blood pressure, vomiting, convulsions, incoherent speech, possible seizures, body tremors, and unconsciousness were predominately exhibited by drivers. All 36 drivers were deemed to be impaired by the arresting officer or DRE. Case histories for several cases are listed below.

Subject 1

A 26 year old female was contacted on four separate occasions over a two week period in late 2015. Three of the four contacts were due to vehicle collisions including a head on collision in which she crossed the center line. On all four occasions she was deemed to be extremely impaired, including three incidents of being passed out. The subject displayed slurred and slow speech, droopy and bloodshot eyes, poor coordination and focus, confusion, aggressiveness, and

had vomit on her clothing on all four occasions. She was only able to complete a partial SFST on one occasion in which she displayed 4/6 HGN and 3/4 clues on the WAT. The subject became more coherent as time passed and denied use of SC even though packets were observed in her vehicle. 5F-ADB was identified in all four cases with three being reported as positive and one reported quantitatively at 0.5 ng/mL.

5F-ADB drivers in the State of Washington (CONTINUED)

Subject 2

A 48 year old male was contacted on two separate occasions over the course of a few weeks after being found passed out behind the wheel. One incident occurred at a stop light, while the other involved hitting parked cars. The subject displayed poor coordination, bloodshot and watery eyes, slurred and slow speech, declined SFST's and denied usage. 5F-ADB was identified in both cases at 0.2 ng/mL.

Subject 3

A 37 year old male was contacted twice a few months apart after being reported as an erratic driver. On one occasion the subject was observed by law enforcement smoking something and was then contacted. Upon contact the subject drove off and eluded police until he was found moments later in a grocery store parking lot. The subject was standing outside of his vehicle leaning against it while sleeping. Once he woke he was found to be very argumentative with poor coordination. He was slow to respond to questions and continually fumbled with his wallet. His eyes appeared to be bloodshot and watery, with heavily slurred speech. He refused SFST's and denied use of any drug. 5F-ADB was found in both cases at 0.2 ng/mL and 1.0 ng/mL.

Subject 4

A 52 year old male was reported to police as being impaired after arriving to an ignition interlock installation shop and exhibiting strange behavior. The subject dis-

played incoherent speech mixed with yelling, growling, and drooling. He agreed to a DRE examination during which his pupils varied from constricted to dilated and his behavior was described as cyclic, going from calm to rage. He displayed body eye tremors while shaking violently and had rigid muscle tone. SFTS's indicated 4/6 HGN, 3/8 of the WAT, and 2/4 on the OLS. His pulse was determined to be 74/70/68 with a blood pressure of 130/80. He was argumentative throughout the process and was found to have ten prior lifetime DUI's. Toxicology results were 1.2 ng/mL of 5F-ADB and 8.8 ng/mL of carboxy-THC.

Subject 5

A 21 year old male was found passed out in the middle of the roadway in his vehicle. When contacted by law enforcement, he was shaking and convulsing uncontrollably. It was noted that he was dressed in his military uniform. Once coherent, he admitted to smoking while driving and then passing out. He was found to have bloodshot, watery, droopy eyes with dilated pupils. He was sweating profusely and was unable to perform SFST's due to being transported to the hospital for observation. He informed the arresting officer that he was in rehab for spice abuse and was on his way to a meeting when this incident took place. He admitted to using "Black Voodoo" brand spice. Toxicology results were 1 ng/mL of 5F-ADB.

As demonstrated by the cases above, the physiological and psychological effects of 5F-ADB, although similar to marijuana, appear

to be much more powerful. All 36 drivers exhibited significant signs of impairment and unsafe driving abilities. Fifty percent of these subjects had passed out while operating a motor vehicle, with nearly a third being involved in collisions. The available data from our driving cases demonstrates that 5F-ADB has a much more severe pattern of toxicity than marijuana and poses a threat to one's health and ability to safely operate a motor vehicle.

References

1. Hasegawa K, Wurita A, Minakata K, Gonmori K, Yamagishi I, Nozawa H, Watanabe K, Suzuki O (2014). "Identification and quantitation of 5-fluoro-ADB, one of the most dangerous synthetic cannabinoids, in the stomach contents and solid tissues of a human cadaver and in some herbal products". *Forensic Toxicology* 33: 112-21.



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2017: Boca Raton, FL.....	Sept. 10-15, 2017.....	Ruth Winecker/Dan Anderson
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2019: San Antonio, TX.....	Oct. 13-18, 2019.....	Veronica Hargrove/Brad Hall
2020: San Diego, CA.....	Sept. 20-25, 2020.....	TBD

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