Society of Forensic Toxicologists, Inc.

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TOXTALK

SOFT-TIAFT 2011 MEETING UPDATE

The 41st annual meeting of SOFT will be offered in conjunction with the 49th annual meeting of TIAFT at the Marriott Marquis Hotel and Conference Centre in San Francisco, California, making for an extraordinary opportunity to meet and learn from leaders in the analytical and forensic toxicology field from every corner of the globe.

The Planning Committee of the 2011 Joint SOFT-TIAFT International Conference and Expo, headed by Nikolas P. Lemos is currently in full throttle making final preparations for what promises to be the toxicology gathering of the decade. The preparations this year range from boat scheduling for our delegates for our trip to Alcatraz Island to food and beverage arrangements for delegates from dozens of countries – all diligently coordinated by Ann Marie Gordon and local destination guru, Rosie Katz.

Twelve half-day Workshops, coordinated by Laureen Marinetti and Dimitri Gerostamoulos are on offer on Monday, 26 September and Tuesday, 27, September 2011. The extensive Scientific Program, planned by Marilyn Huestis will feature 106 Oral Presentations as well as up to 300 Poster Presentations from Wednesday, 28 September to Friday, 30 September. The detailed schedule of all Scientific Sessions is now available on the meeting website (www.toxicology2011.org). Presenting authors giving Oral Presentations will need to communicate with the AV Team prior to the meeting to make sure data format and equipment functions are compatible (see details on page 28).

This year's expansive Scientific Expo will feature 74 exhibitors from all over the world who will welcome attendees to the Exhibit Hall on Tuesday evening for the "Streets of San Francisco" Welcome Reception. Food & fun will be the theme while posing for pictures with Marilyn Monroe, Britney Spears, Dianna Ross, and many other female impersonators!

The famous "Elmer Gordon Open Forum" will have a different spin this year as it will also feature a historical lecture from our international colleagues as well as a short presentation on SWGTOX. All this will be followed by the "12th Annual Nite Owl Event" sponsored by Cerilliant.

On Wednesday afternoon, SOFT will hold its Business Meeting which will be followed by an off-site excursion to Alcatraz Island, also known as The Rock. Bring your camera and be prepared to take some of the most amazing photographs of the San Francisco skyline, Alcatraz Island, Golden Gate Bridge and Bay Bridge as we sail around the Bay of San Francisco. The "Sisters of Perpetual Indulgence" will greet our delegates as they board the San Francisco Bell for a dinner cruise after leaving Alcatraz Island. A jazz quartet and a dance DJ will provide fun music for dancing and entertainment.

Thursday's scientific presentations will be followed by the formal "Uniting Nations" Presidential Gala Dinner where delegates from dozens of countries will be in attendance. Our profession's most prestigious awards will be presented during this event and the name of each country in attendance will be announced. After dinner, we will be entertained by a local band which will play 60's music to compliment the "Flower Power" theme of the night. Hippies Still Rule!

INSIDE THIS ISSUE:

PRESIDENT'S MESSAGE

*Submitted by **Sarah Kerrigan**, Ph.D.*

New Developments:

In the March ToxTalk issue I discussed the opportunity for professional growth and the shared responsibility to strengthen and further improve the standards of our discipline. This has never been more relevant than now. Federal legislation still continues to make its way through Congress; Scientific Working Groups (SWGs) including SWGTOX are busy drafting and approving documents; and the Interagency Working Groups (IWGs) of the National Science and Technology Council Subcommittee (NSTC) on Forensic Science established by the executive branch continue to move forward. An extraordinary amount of effort has been undertaken by individuals at all levels to develop recommendations, guidelines and standards that have the potential to shape forensic science, and more specifically, our discipline. It is critical that members remain active and engage in the review of standards from SWGTOX. Documents are available on the SWGTOX website at http://www.swgtox.org/. Draft standards for public comment are available on the website and the broadcast email system will be used to remind members to participate when new standards are posted.

Ethics Documents:

I would like to commend the Ethics Committee together with Dr. Yale Caplan for their work developing and updating a number of very important documents. In June, the revised Ethics Procedures were approved by the Board of Directors and were posted in the member only section of the SOFT website. The newly approved SOFT Code of Ethics and Guiding Principles of Professional Responsibility were also added to the website and appear in this issue of ToxTalk.

San Francisco:

The joint SOFT/TIAFT meeting in San Francisco is destined to be an outstanding success thanks to the incredible efforts of Dr. Nik Lemos, Ann Marie Gordon and their highly dedicated Organizing Committee. The scientific program, workshops and events planned at this meeting are truly exceptional. On a personal level, it means a great deal to serve as President at the annual meeting in my old home town.

Challenges Ahead:

Although we all support change that will strengthen our science and further improve public confidence, this change could not come at a more challenging time for many laboratories. Too many have been severely impacted by the country's economic downturn, facing increasing caseloads, fiscal cutbacks and inability to fill vacant positions. As I mentioned in the recent broadcast email message, the proposed FY12 budget eliminates Coverdell funding, which is the only source of federal funds to support operational expenditures in many publicly funded laboratories. A good number of institutions rely on these funds to supplement ongoing budget shortfalls, and avoid serious criminal justice consequences. Operational laboratories will have extreme difficulty transitioning to tougher standards and improved performance with fewer resources. Nobody told you it would be easy, right?

So does all this make you wonder why you chose forensic toxicology anyway? Certainly not because it was an easy job, a walk in the park, or because there was nothing else that tickled your fancy. What is *your* story? For an extraordinary account of an exceptional friend and colleague - Dr. Marilyn Huestis - see *Inspiring Minds* in the June Issue of Clinical Chemistry. For most of you, this was a deliberate choosing, and a decision made with passion and determination to make a difference or a contribution of some sort very early on. I was determined to become a toxicologist, despite that very few people at the time seemed to know what it really was, and most of our neighbors and family friends thought I was becoming a taxidermist. Regardless of our beginning, each one of us as a career professional made an important decision to dedicate ourselves to the field, despite the many challenges and obstacles that we had to overcome to get to this place. So although the landscape is changing, standards and expectations rise and resources may dwindle, we face a great many challenges in the road ahead. For many of us, our most challenging assignments or places of work were by far the most rewarding. So buckle your seat belt, jump on board and hold on for the ride. If it doesn't work out, there's always taxidermy!

Society of Forensic Toxicologists (SOFT)
Code of Ethics

As a Member of the Society of Forensic Toxicologists (the "Society"), I agree to conduct myself in a professional manner, in accordance with the following ethical principles. I understand if I behave in a manner detrimental to the organization or the profession of forensic toxicology in general, I may be censured or expelled from membership.

Members agree to:

1. Perform professional activities with honesty, integrity and objectivity.

2. Refrain from knowingly misrepresenting professional qualifications including, but not limited to: education, training, experience, certification, area of expertise, and professional memberships.

3. Hold in confidence and refrain from misuse of information obtained or received in the course of professional activities.

4. Provide expert advice and opinions within the limits of individual competence and generally accepted scientific principles.

5. Render testimony in a truthful manner without bias or misrepresentation.

6. Refrain from exercising professional or personal conduct adverse to the best interests and objectives of the Society.

SOCIETY OF FORENSIC TOXICOLOGISTS (SOFT) GUIDING PRINCIPLES OF PROFESSIONAL RESPONSIBILITY

Preamble

The Guiding Principles are intended to create a culture of ethical behavior and professional responsibility among SOFT members and/or affiliates. The concepts presented here have been drawn from other professional codes and suggestions made by leaders in the forensic community. The Guiding Principles have been vetted and adopted by the Society of Forensic Toxicologists (SOFT) Board of Directors with the expectation that forensic toxicologists and forensic toxicology laboratory personnel and management will use them in training sessions, performance evaluations, disciplinary decisions, and as guides in other professional and management decisions. It is important that all individuals engaged in forensic toxicology are equally aware of these Guiding Principles and incorporate the principles into their daily work.

These Guiding Principles provide a framework for describing ethical and professional responsibilities in the forensic community. While not all inclusive, they describe key areas and provide some specific rules to supplement the existing Code of Ethics adopted by SOFT.

Professionalism

The ethical and professionally responsible forensic toxicologist and forensic toxicology laboratory manager:

1. Are independent, impartial, detached, and objective, approaching all examinations with due diligence and an open mind.
2. Conduct full and fair examinations. Conclusions are based on the evidence and reference material relevant to the evidence, not on extraneous information, political pressure, or other outside influences.
3. Are aware of their limitations and only render conclusions that are within their area of expertise and about matters which they have given formal consideration.
4. Honestly communicate with all parties (the investigator, prosecutor, defense, and other expert witnesses) about all information relating to their analyses, when communications are permitted by law and agency practice.
5. Report to the appropriate legal or administrative authorities unethical, illegal, scientifically questionable conduct or impaired competence.
6. Take appropriate action if there is potential for, or there has been, a miscarriage of justice due to circumstances that have come to light, incompetent practice or malpractice.
7. Report conflicts between their ethical/professional responsibilities and applicable agency policy, law, regulation, or other legal authority, and attempt to resolve them.
8. Do not accept or participate in any case on a contingency fee basis or in which they have any other personal or financial conflict of interest or an appearance of such a conflict.

SOFT GUIDING PRINCIPLES (CONTINUED)

Competency and Proficiency

The ethical and professionally responsible forensic toxicologist and forensic toxicology laboratory manager:

1. Are committed to career-long learning in the forensic disciplines in which they practice and staying abreast of new technologies and techniques. Conclusions and opinions are based on generally accepted tests and procedures.
2. Are properly trained and determined to be competent through testing prior to undertaking the examination of the evidence.
3. Give utmost care to the treatment of any samples or items of potential evidentiary value to avoid tampering, adulteration, loss or unnecessary consumption.

Clear Communications

The ethical and professionally responsible forensic toxicologist and forensic toxicology laboratory manager:

1. Accurately represent their education, training, experience, and area of expertise.
2. Present accurate and complete data in reports, testimony, publications and oral presentations.
3. Make and retain full, contemporaneous, clear and accurate records of all examinations and tests conducted, and conclusions drawn, in sufficient detail to allow meaningful review and assessment of the conclusions by an independent person competent in the field.
4. Prepare reports in which facts, opinions and interpretations are clearly distinguishable, and which clearly describe limitations on the methods, interpretations and opinions presented.
5. Do not alter reports or other records, or withhold information from reports for strategic or tactical litigation advantage.
6. Support sound scientific techniques and practices and do not use their positions to pressure an examiner or technician to arrive at conclusions or results that are not supported by data.
7. Testify to results obtained and conclusions reached only when they have confidence that the opinions are based on good scientific principles and methods. Opinions are to be stated so as to be clear in their meaning.

The Guiding Principles of Professional Responsibility are based upon the ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists. Prior to adoption, the Guiding Principles were reviewed by more than thirty forensic science organizations, including the Society of Forensic Toxicologists in 2008.

NOMINATING COMMITTEE OFFERS 2012 SLATE OF OFFICERS

The 2011 SOFT Nominating Committee, comprised of Bradford Hepler, Ph.D., Chair, Joseph Saady, Ph.D. and Dan Isenschmid, Ph.D. respectfully submit the following slate of Officer Nominations for consideration by the SOFT membership.

President:	Marc LeBeau, Ph.D.
Vice President:	Dan Anderson, M.S.
Secretary	Ruth Winecker, Ph.D.
Director:	Michelle Peace, Ph.D.
Director:	Laurel Farrell, B.A.

The President and Vice President serve one year terms, while the Secretary and Treasurer serve two year terms which expire in alternate years. Five additional Directors are elected for three year terms. If a Director cannot serve his/her entire term, an interim Director shall be named by the Board to serve the remaining term.

President (one year term)
Marc LeBeau, Ph.D., D-ABFT

Marc A. LeBeau, PhD, is the Senior Scientist of the Scientific Analysis Section of the FBI Laboratory. He has worked as a Forensic Chemist and Toxicologist for the FBI since 1994 and has testified as an expert in federal, state, and county courts throughout the United States. From 2000 to 2011, Dr. LeBeau served as the Chemistry Unit Chief for the FBI Laboratory.

Dr. LeBeau holds a Bachelors degree in Chemistry and Criminal Justice from Central Missouri State University (1988) and a Master of Science degree in Forensic Science from the University of New Haven (1990). He was employed in the St. Louis County Medical Examiners Office (1990-1994), before beginning his career with the FBI. In 2005, he received his Doctorate in toxicology from the University of Maryland – Baltimore.

Dr. LeBeau has co-authored numerous peer-reviewed papers in scientific journals, as well as book chapters and abstracts. He has provided training to more than 12,000 law enforcement officers, forensic scientists, attorneys, medical professionals, and rape crisis counselors throughout the world. Additionally, in 2001, he co-edited Drug-Facilitated Sexual Assault: A Forensic Handbook.

As a Diplomate of the American Board of Forensic Toxicology (ABFT), Dr. LeBeau is active in numerous scientific organizations. He has been a member of the Society of Forensic Toxicologists (SOFT) since 1995. From 2000-2010, he served as Chairperson of the Drug-Facilitated Sexual Assault Committee and currently holds the office of Vice President of SOFT. Additionally, Dr. LeBeau serves on the Executive Board of The International Association of Forensic Toxicologists (TIAFT) and sits on the Systematic Toxicological Analysis Committee within TIAFT. He is a Fellow of the American Academy of Forensic Sciences (AAFS) and a member of the American Society of Crime Laboratory Directors (ASCLD).

Dr. LeBeau has served as the chairman of the Scientific Working Group on the Forensic Analysis of Chemical Terrorism (SWGFACT) and co-chair to the Scientific Working Group on the Forensic Analysis on Chemical, Biological, Radiological, and Nuclear Terrorism (SWGCBRN). He is currently a member of the Scientific Working Group for Forensic Toxicology (SWGTOX).

Dr. LeBeau is on the editorial board of a number of scientific journals including *Forensic Science Communications,* the *Journal of Analytical Toxicology,* and *Forensic Toxicology*. He has also served as Guest Editor to the *Journal of Analytical Toxicology,* the *Journal of Chromatography B, Forensic Science International,* and *Forensic Science Review*. Dr. LeBeau is an American Society of Crime Laboratory Directors - Laboratory Accreditation Board (ASCLD-LAB) assessor in the areas of drug chemistry and forensic toxicology and serves on the ASLCD-LAB Toxicology Proficiency Review Committee. He also serves as an assessor for ABFT.

In 2004, Dr. LeBeau won the *FBI Director's Award for Outstanding Scientific Advancement* and in 2008 he was the recipient of the *End Violence Against Women (EVAW) International Visionary Award*.

Vice President (one year term)
Dan Anderson, M.S., FTS-ABFT, D-ABC

Dan Anderson has been a Toxicologist for over 20 years and is currently the Supervising Criminalist/Toxicologist in the Forensic Science Laboratories of the Los Angeles County Department of Coroner in Los Angeles, CA. He has held a position as an adjunct professor at California State University-Los Angeles (2001-2005) where he taught the subject of Forensic Toxicology to students obtaining their Master's Degree in Criminalistics, served as an instructor at the California Criminalistics Institute-Sacramento, CA (2002 & 2010) and at the Midwest Forensics Resource Center in Ames, IA (2008). Dan received a BS Degree from Colorado State University in Fort Collins, CO in 1988 and a MS in Forensic Science from the University of New Haven in West Haven, CT in 1990.

Dan has held affiliations with several professional organizations including the Cali-

NOMINATING COMMITTEE OFFERS 2012 SLATE (CONTINUED)

fornia Association of Toxicologists (CAT), American Academy of Forensic Sciences (AAFS), California Association of Criminalists (CAC), and Society of Forensic Toxicologists (SOFT). He has been very active in the organizations including being the SOFT Meeting Workshop Coordinator (Phoenix, 2008), SOFT Board of Directors (2008-2009), SOFT Secretary and Membership Chair (2010-present), SOFT ToxTalk Section Editor (2001-present), SOFT Budget, Finance and Audit committee, SOFT Membership Committee, hosting seminars for CAT (2000 & 2006-2x) and CAC (2002), CAC Toxicology Study group Chair (1995-1997), CAT Quality Assurance Coordinator (2000-2007), CAT New Drugs Chair (2002-present), and CAT President (2005-2006). In 2010 & 2011, Dan participated in the National Institute of Justice (NIJ) – General Forensics Research and Development Technology Working Group (TWG) as well as in 2011, was invited as a member of the Scientific Working Group Toxicology (SWGTOX). Lastly, he is a Diplomate of the American Board of Criminalistics (1998) and is certified as a Forensic Toxicology Specialist with the American Board of Forensic Toxicology (2007).

Dan has given many platform presentations, posters, and published articles in forensic toxicology whose topics include Buproprion, Fentanyl (Duragesic® Patch), Flecainide, GHB, Oxycontin®, Mirtazapine, Paroxetine, Quetiapine, Duloxetine, and Zaleplon. He has peer reviewed articles for both the Forensic Science International and Journal of Analytical Toxicology (JAT). In addition, Dan is on the JAT Editorial Advisory Board and served as the 2008 Special Editor of JAT. Highlighting his career, Dan was the recipient of the 2011 AAFS Toxicology Section Ray Abernathy Award recognizing him for being an outstanding Forensic Toxicology practitioner.

As a firm believer of becoming involved and promoting research within the laboratory, Dan has mentored four members of his scientific staff who were awarded the SOFT Young Scientist Meeting Award (2004, 2006, 2007, 2009) and two members who were awarded the AAFS Regional Award (2001 & 2005).

Secretary (two year term)
Ruth Winecker, Ph.D., D-ABFT

Ruth E. Winecker, Ph.D. is currently the Chief Toxicologist for the State of North Carolina's Office of the Chief Medical Examiner (NC-OCME) in Chapel Hill, North Carolina. Prior to her appointment as Chief Toxicologist, she served as the Deputy Chief Toxicologist with the NC-OCME from 1996-1999. Dr. Winecker is one of two toxicologists that technically and administratively serve the State of North Carolina's medical examiner system. The toxicology laboratory functions for all 100 counties of North Carolina by providing forensic analytical testing of specimens and evidence from medical examiner cases. The laboratory is responsible for analytical testing, records maintenance and review of analytical testing for >10,000 medical examiner cases per year.

Prior to employment with NC-OCME, Dr. Winecker was a laboratory technician with SmithKline Laboratories where she primarily tested for performance enhancing drugs during the 1996 Summer Olympics. Previously, she was employed in Gainesville, Florida as a chemist/certifying scientist with a forensic urine drug-testing laboratory (DRL, Inc) and a technician in the analytical laboratory of a chemical manufacturing company (PCR)

Dr. Winecker received a Bachelor of Science (Cum Laude) degree in Biology from Oglethorpe University in Atlanta, Georgia (1987), and a Doctor of Philosophy Degree specializing in Forensic Toxicology and Clinical Chemistry from the University of Florida, College of Medicine in Gainesville, Florida (1996). Her doctoral research focused on the determination of cocaine and its metabolites in specimens of neonatal and maternal origin. The American Board of Forensic Toxicology awarded Dr. Winecker certification in the specialty of forensic toxicology in 2004.

Dr. Winecker has published articles, book chapters and abstracts related to forensic toxicology whose topics include analytical methodology, reviews of therapeutic and abused drugs, the toxicology of metals, and the measurement of therapeutic and abused drugs in alternative matrices such as hair, amniotic fluid, umbilical cord tissue, meconium and breast milk. Additionally, she holds the academic position of Assistant Professor at the University of North Carolina School of Medicine, Department of Pathology and Laboratory Medicine where she supervises internships/rotations for fellows, residents and undergraduates.

An active member of the American Academy of Forensic Sciences (AAFS), the Society of Forensic Toxicologists (SOFT), and the International Association of Forensic Toxicologists, Dr. Winecker has served as an abstract reviewer and

NOMINATING COMMITTEE OFFERS 2012 SLATE (CONTINUED)

moderator since 2000 and has continually presented research data, chaired and co-chaired workshops and presented various topics at workshops at both the AAFS and SOFT annual meetings since 1998. Dr. Winecker is currently serving as Toxicology Section Secretary for the AAFS and is a member of the board of directors for ABFT. She has held the following previous offices and appointments: AAFS toxicology section program chair (2011), SOFT Board of Directors (2004-2006), co-host and treasurer for the SOFT annual meeting held in Raleigh-Durham in October 2007. In 2005, she was awarded Fellow status in the Toxicology section of AAFS. She has been an invited reviewer for the Journal of Analytical Toxicology since 1996, a reviewer for the SOFT/JAT special issues of 1999, 2001, 2002, 2005, 2006 and 2007, a guest reviewer for Journal of Forensic Science since 2003 and an invited editor for Forensic Science Review SOFT Drug Monographs (Volumes 14 and 15).

Director (three year term)
Michelle Peace, Ph.D.

Michelle Peace holds a Bachelor of Arts degree from Wittenberg University in Springfield, Ohio where she majored in Chemistry and minored in Biology. She has worked as a research technician for Liqui-Box Corporation, developing flavored bottled water and improved delivery systems for wine and condiments in bag-in-box units. She was also a research technician for Procter and Gamble in the Paper Products Division, developing new technologies for diaper and feminine hygiene products. After several years at the manufacturing bench, she returned to school to receive her Master of Forensic Science degree from George Washington University and a Ph.D. from Virginia Commonwealth University's School of Medicine, specializing in Forensic Toxicology. Her dissertation was in the emerging cross-disciplinary area of "entomotoxicology", addressing significant toxicological questions as they pertain to and involve entomology.

Dr. Peace was employed as the laboratory manager and alternate RP of Kroll Laboratories (now Alere Toxicology), serves as a member of SWGTOX, and served SOFT as the host of the 2010 Annual Meeting in Richmond, VA. She continues to provide continuing education for toxicology laboratories, and consults with companies developing drug testing programs. She has taught in numerous workshops for CSI and Homicide Detectives, and also trains crime scene investigators in the identification, collection, and preservation of entomological evidence through Virginia's Forensic Science Academy and frequently consults with them as to significance of entomological evidence in their casework. Dr. Peace has also presented research in poster and platform formats and in numerous workshops at regional and national meetings. She also develops and teaches forensic science workshops for elementary and high school teachers and successfully implemented a grant in which she developed "kits" with forensic science based SOL driven curriculum, laboratories, and all required materials for educators in high need school systems to "check out" at no expense.

Dr. Peace currently serves Virginia Commonwealth University's Department of Forensic Science as the Interim Chair. She helped develop the undergraduate curriculum in forensic science and strengthen the graduate curriculum to address educational pressures in the forensic science community. She helped administratively evolve the "program" into a "Department", which is now proudly FEPAC accredited (Forensic Science Education Programs Accreditation Commission) in both undergraduate and graduate curricula, which is 1 of only 4 academic units in the nation with 2 accredited programs. The Department has approximately 400 undergraduate and 48 graduate students, and maintains relationships with more than 75 agencies around the world for the advancement of forensic science research. The Department also produces significant research internally in forensic toxicology and forensic molecular biology and boasts one of the strongest Academia-Crime Lab relationships in the country with the Virginia Department of Forensic Science.

Dr. Peace has served as a faculty mentor to 20+ students performing research in host laboratories on forensic toxicology questions, as well as general trace and drug analysis questions. In addition to broader teaching responsibilities in the curriculum, she teaches the courses Instrumentation in Forensic Chemistry at the graduate level and Forensic Chemistry for the undergraduate population, specializing in problem-based active learning. She continues to build sustainable and significant relationships for the Department with agencies and programs that are committed to strengthening and advancing forensic science education.

NOMINATING COMMITTEE OFFERS 2012 SLATE OF OFFICERS (CONTINUED)

Director (three year term)
Laurel Farrell, B.A.

Laurel Farrell joined the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) Staff in September of 2008. First serving as a Certified Lead Inspector and now as a Staff Trainer, Laurel works with forensic laboratories working to maintain or achieve ASCLD/LAB accreditation.

Laurel retired from the State of Colorado in 2007 after 30 years of service. Laurel worked for the Colorado Department of Public Health and Environment for over twenty-one years serving in a variety of capacities in the toxicology and breath alcohol programs. For the last half of her employment she served as the staff authority in the toxicology laboratory. Laurel then transferred to the Colorado Bureau of Investigation and was an Agent-in-Charge for the Denver Laboratory when she retired. In this capacity she had supervisory responsibility for a number of the forensic disciplines performed in the laboratory.

Active in a number of professional organizations, Laurel has previously served SOFT for seven years as an officer/director serving as President in 2002 as well as serving on the SOFT DUID; Budget, Finance and Audit; and Strategic Planning committees and is currently representing SOFT on the Consortium of Forensic Science Organizations (CFSO). Laurel is a Fellow of the American Academy of Forensic Sciences and in 2008 received the Toxicology Section Ray Abernathy Award for Outstanding Forensic Toxicology Practitioner. Laurel is currently a member of SWGTOX, also serving on that group's Executive Committee; she is a member of SAMHSA's Drug Testing Advisory Board and is a committee member and serves on the Executive Board for the National Safety Council's Committee on Alcohol and Other Drugs. Laurel was recognized by the National Safety Council with the presentation of the 2009 Robert F. Borkenstein Award for her career long-service to the alcohol, drugs, and transportation safety field.

CFSO UPDATE

*Submitted by **Laurel J. Farrell, B.A.***

As we all know, the focus in Washington has been the national debt and the FY12 budget. Through it all, the CFSO Chair and lobbyist have continued to meet with Senate and House staff to keep the needs of forensic science in the forefront. The current House version of the FY12 Budget has no funding in Coverdell. An improvement for forensic science was made in the wording of the Debbie Smith DNA Backlog Grant Program to allow the use of funding for "forensic science" if the laboratory does not have DNA needs. Research dollars will be available - start designing those research projects that look at innovative technologies with both a forensic science and national security application and apply for the available competitive grants. CFSO is anticipating some renewed legislative action in the fall. Comments made by CFSO, SOFT and other forensic organizations on Senate Bill S132: The Criminal Justice and Forensic Science Reform Act of 2011 have been considered by Senator Leahy and his staff. A revised bill has not been released. Many of the comments focused on the established forensic organizations that provide certification and accreditation and the strength of the Scientific Working Groups (SWGs) structure that is already in place. The House seems to be in a wait and see mode - they appear to be waiting to see what will happen in the Senate and from the White House IWGs.

TOXTALK TEMPORARY SCHEDULE CHANGE

- Due to the earlier than normal 2011 annual meeting in September, the regular June issue of ToxTalk has been reconfigured into a June/July issue.
- There will be no September issue of ToxTalk; instead a November /December issue will be substituted.
- Deadlines for the next issue will be delayed until November 1, 2011.

CONGRATULATIONS TO THE 2011 ERA / YSMA AWARDEES

The Award Committee, chaired by Dr. Philip Kemp, Ph.D., DABFT , has announced the following 2011 ERA (Educational Research Award) & YSMA (Young Scientist Meeting Award) winners. These six Awardees will report the findings of their research during Scientific Sessions at the September annual meeting in San Francisco, CA.

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 working in the forensic toxicology field.

Both awards allow for a complimentary registration to the annual meeting, plus a financial stipend of $2,000 each. These six awardees will be presented with an honorary plaque during the SOFT Business Meeting in San Francisco, on Wed., Sept. 28, 2011.

The SOFT website (www.soft-tox.org) has a link for eligibility and application information. All SOFT members are urged to persuade co-workers and accomplished students to apply for these prestigious recognition awards.

YSMA- Kristopher Graf
kristopher.graf@nmslabs.com

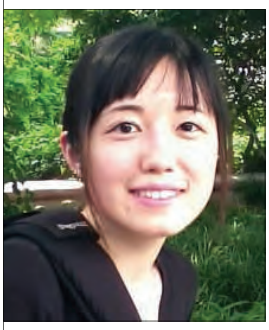
National Medical Services (Willow Grove, PA)

Title of Abstract:

Synthetic Cannabinoids in Whole Blood: Observations From the First Year of Casework.

Mentors: Donna Warrington and Sherri Kacinko, PhD

ERA- Dayong Lee
Leed5@yahoo.com



NIDA (Baltimore, MD)

Title of Abstract:

Δ^9-Tetrahydrocannabinol (THC), 11-nor-9-carboxy-THC (THCCOOH), Cannabidiol (CBD) and Cannabinol (CBN) in Oral Fluid Following Controlled, Smoked Cannabis.

Mentor: Marilyn Huestis, PhD

ERA- Michelle Schmidt
mlschmid@cedarcrest.edu

Cedar Crest College (Allentown, PA)

Title of Abstract:

Investigation of Pyrolysis-Gas Chromatography/Mass Spectrometry (Py-GC/MS) as an Analytical Procedure for the Detection of Cocaine in Hair.

Mentor: Laurence Quarino, PhD

ERA- Trista Wright
Soccertre016@msn.com

East Tennessee State University (Johnson City, TN)

Title of Abstract:

Comparison of Postmortem Vitreous Humor Ethyl Glucuronide Concentrations in Humans and Sprague Dawley Rats Following Ingestion of Ethanol.

Mentor: Ken Ferslew, PhD

ERA- C. Meagan O'Hehir
cmohehir@yahoo.com

Arcadia University (Glenside, PA)

Title of Abstract:

Evaluation of K2 and Synthetic Cannabinoid Products Sold Over the Internet.

Mentor: Barry Logan, PhD

ERA- Nathalie Desrosiers
Nathalie.desrosiers@nida.nih.gov

NIDA (Baltimore, MD)

Title of Abstract:

Oral Fluid and Plasma 3,4-methylenedioxymethamphetamine (MDMA) and Metabolite Correlation After Controlled Oral MDMA Administration.

Mentor: Marilyn Huestis, PhD

THE SCIENTIFIC WORKING GROUP IN TOXICOLOGY (SWGTOX)

UPDATE: AIMING FOR THE STARS AND ALREADY IN THE STRATOSPHERE

*Submitted by **Rob Middleberg**, Ph.D., DABFT, DABCC*

It seems like just yesterday that Dan Isenschmid, Bruce Goldberger and I were meeting in beautiful airport hotels trying to get SWGTOX off the ground. Well, this fledgling little enterprise has blossomed into an exquisitely hard working group of professionals who have made remarkable progress in a relatively short period of time. There have been two formal meetings of SWGTOX members since its inception. The first meeting's progress was summarized in the December, 2010 issue of ToxTalk. In April, 2011, the SWGTOX members met in St. Louis, MO, three days after the tornado struck the airport. We should have guessed that there would be a whirlwind of activity at the meeting! Once again, this meeting had continued funding support by the National Institute of Justice with administration through the Federal Bureau of Investigation (FBI). What follows is an accounting of the activities at this meeting, as well as some topics from the December meeting worthy of note or repetition.

As a course of business, the general SWGTOX membership decided that there should be, in addition to the three Co-Chairs appointed by the Forensic Toxicology Commission (FTC), two members-at-large, who together will make up the SWGTOX Executive Committee. The two elected members-at-large are Laurel Farrell and Marc LeBeau. Additionally, an Executive Secretary was elected and that is Madeline Montgomery. In respect to generalities, the following has been established:

1. SWGTOX includes in its areas of concern human performance toxicology, postmortem toxicology, forensic workplace testing, breath alcohol testing, probation and parole and drug courts.
2. SWGTOX is charged with establishing standards of practice for forensic toxicology in the United States, not guidelines.
3. SWGTOX is comprised of Members, Consultants and Invited Guests. The original subgroup called "Advisors" has been blended into Consultants. Only Members have voting privileges.
4. SWGTOX members must abide by an established Code of Professional Conduct.
5. SWGTOX membership can change depending on the needs of SWGTOX.
6. Committees, Subcommittees and Task Groups within the broad categories of Standards, Practices, Protocols and Accreditation; Certification, Education, Outreach, and Ethics; Research, Development, Testing and Evaluation have been formed to tackle specific areas within each category.
7. A voting process is established for approval of SWGTOX standards that includes a public comment period.

The 40 or so members of SWGTOX, representing government, academia and the private sector, have been working diligently to make progress in establishing specific standards of practice. The meetings run all day long and, but for a lunch break, are incredibly productive. As a demonstration of these efforts, SWGTOX has published on its website its first document for public comment concerning Ethics. This is near the end of the voting process to establish a particular standard. Several other standards are in various stages of the voting or an internal comment process leading to the public comment period, and include: method validation; quality assurance; accreditation; certification; etc. And while we have a long way to go still, this cannot diminish what has been accomplished to date. The community at large should be proud of the efforts of its representative members on SWGTOX. The next planned meeting of SWGTOX members will be held Sept. 14-15 in Baltimore, Maryland.

I would also like to acknowledge our SWGTOX consultants. These individuals, some of whom are from outside the United States representing Europe and Australia, have specialized knowledge in given areas, expertise that is well-recognized, and contribute significantly to the process and generation of the standards.

In closing, and on behalf of the Executive Committee of SWGTOX, I want to thank all those who have contributed to SWGTOX to date and to ask the forensic toxicology community for its continued support and participation as documents are provided for comment.

SYNTHETIC CATHINONES - DEA REQUEST FOR INFORMATION

The sudden appearance of synthetic cathinones (see list below) on the designer drug market in the United States is of great concern.

- **MDPV** *synonym* 3,4-methylenedioxypyrovalerone
- **Mephedrone** *synonyms* 4-methylmethcathinone, 4-MMC
- **Methylone** *synonyms* 3,4-methylenedioxymethcathinone, MDMC
- **Naphyrone** *synonyms* napthylpyrovalerone, NRG-1
- **4-Fluoromethcathinone** *synonyms* 4-FMC, flephedrone
- **3-Fluoromethcathinone** *synonym* 3-FMC
- **Methedrone** *synonyms* 4-methoxymethcathinone, bk-PMMA, PMMC
- **Butylone** *synonyms* bk-MBDB, beta-keto-N-methylbenzodioxolylpropylamine

Although these substances are new to the United States' drug market, they have been popular in Europe since 2007. These substances are falsely marketed as "research chemicals," "plant food," or "bath salts." They are sold at smoke shops, head shops, convenience stores, adult book stores, and gas stations and can also be purchased on the Internet. These substances are manufactured in the form of capsules, tablets, and powders. The packages of these commercial products usually contain the warning "not for human consumption" most likely in an effort to circumvent statutory restrictions for these substances. Some of the products found to contain synthetic cathinones include, but are not limited to: Ivory Wave, Vanilla Sky, Energy 1, Explosion, Meow Meow, Bubbles, and others.

Evidence from law enforcement and poison control centers indicates that the use of these substances appears to be widespread and is growing. The American Association of Poison Control Centers reported that in 2010, poison control centers took 302 calls about synthetic cathinones. As of May 12, 2011, poison control centers have received 2,237 calls relating to these products for this year. These calls were received in poison control centers in at least 47 states and the District of Columbia. In 2009, the National Forensic Information System (NFLIS) received 16 reports of analyzed seizures from 8 states related to these substances. However, in 2010, there were 515 reports of analyzed seizures from 26 states related to these substances reported to NFLIS. Several states including Alabama, Arkansas, Florida, Hawaii, Idaho, Kentucky, Louisiana, Michigan, Mississippi, New Jersey, New Mexico, North Carolina, North Dakota, Oregon, Utah, Virginia, Washington, West Virginia, and Wyoming have passed laws to control all or many of these synthetic cathinones.

MDPV and mephedrone are psychoactive chemicals that are structurally related to the schedule I stimulants, cathinone, with a ring-bearing substituent group, and methcathinone, respectively. Cathinone derivatives including those which bear ring-group substituents have been reported to induce subjective effects similar to those induced by cocaine, amphetamine, 3,4-methylenedioxymethamphetamine (MDMA), and methcathinone. MDPV and mephedrone are not scheduled under the Controlled Substances Act (CSA). However, law enforcement cases involving synthetic cathinones can be prosecuted under the Controlled Substances Analogue Enforcement Act if the synthetic cathinone meets the definition of a "controlled substance analogue."

Methylone is psychoactive chemical that is structurally and pharmacologically similar to the schedule I substance MDMA. Methylone is not scheduled under the CSA. Naphyrone, 4-fluorometh-cathinone, 3-fluoromethcathinone, methedrone, and butylone are not scheduled under the CSA, but they have been identified by U. S. Drug Courts in drug screens or in the International drug market.

These substances are popular with youths in urban environments with males appearing to use synthetic cathinones more than females. The most common routes of administration are inhalation by snorting the powder and ingestion by taking capsules or tablets. The powder can also be injected or swallowed. Abusers report effects occurring a few minutes to 15 minutes after administration, depending on the route of administration, and the effects can last up to 3 hours.

The Drug and Chemical Evaluation Section (ODE) of the DEA Office of Diversion Control continues to gather information on the pharmacology, toxicity, and abuse of synthetic cathinones and products containing these substances to support possible scheduling of these substances. **ODE would greatly appreciate any information related to law enforcement encounters, drug identification, toxicology reports, medical examiner reports, and abuse related to these synthetic cathinones.** This includes, but is not limited to, any information associated with the biological response occurring from episodes, data describing toxic effects from exposure to these substances occurring in humans or animals, toxicology reports, risk assessments, identification of these substances to establish prevalence and trends, and suspicion of poisonings connected to patients or postmortem samples. Information that connects these substances to adverse health effects is of particular interest and would provide valuable assistance in the evaluation of these substances for a federal control action.

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DRUGS IN THE NEWS

THE 2C-PHENETHYLAMINES HAVE ARRIVED

Submitted by Section Editor, ***Dwain C. Fuller****, D-FTCB, TC-NRCC*

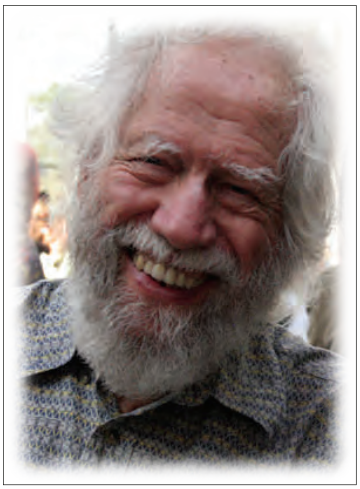
Send interesting *"Drugs In The News"* articles to Section Editor, Dwain Fuller, (Dwain.Fuller@va.gov)

To see a world in a grain of sand,
And a heaven in a wild flower,
Hold infinity in the palm of your hand,
And eternity in an hour.
__ William Blake

I found this opening stanza from William Blake's poem *Auguries of Innocence* while looking for some clever way to use the letters "2C" as the words "to see". That quest was unsuccessful, and probably thankfully so, but these words were so appropriate in describing the psychedelic experiences of users of the 2C compounds that I felt compelled to include them here. Perhaps Blake would forgive me.

According to Wikipedia the term "2C" was coined by Alexander Shulgin of PiHKAL and TiHKAL fame as a descriptor of phenethylamine homologs having two carbons between the benzene ring and the amine group. While the 2C designation apparently originates with Shulgin, this specious explanation doesn't ring true to a chemist; by definition, all phenethylamines have two carbons between the benzene ring and the amine group. A better explanation appears to be that Dr. Shulgin used the 2C designation for those compounds having an unsubstituted two carbon chain between the benzene ring and the amine group. Be that as it may, there doesn't appear to be any doubt that it was Dr. Shulgin that brought the synthesis and pharmacodynamics of these compounds to light.

For those not acquainted with Dr. Shulgin and his "contribution" to pharmacology, I offer this brief bio: Alexander



Theodore Shulgin, known as Sasha to his friends, was born on June 7, 1925 in Berkeley, California. Shulgin studied organic chemistry at Harvard until dropping out to join the Navy in 1943. After the end of World War II, Shulgin returned to Berkeley and earned his PhD in biochemistry from UC Berkeley in 1954. Dr. Shulgin performed postdoctoral work in pharmacology and psychiatry at UC San Francisco and worked for a brief period as research director for Bio-Rad Laboratories, a name familiar to toxicologists, before working at Dow Chemical as a senior research chemist, prior to leaving to pursue his own interests. According to the LA Times, it was his experience with the phenethylamine, mescaline, that was seminal in setting the course of his future work.

Dr. Shulgin is credited with popularizing MDMA and has synthesized and tested on himself and volunteers, hundreds of compounds of pharmacological interest and has published much of this information in the books, PiHKAL (Phenethylamines I Have Known And Loved) and TiHKAL (Tryptamines I Have Known And Loved), both of which are available online, as well as various laboratory notebooks and peer-reviewed publications.

In short, Dr. Shulgin is both a blessing and a curse to the forensic toxicologist. On the one hand he has provided ready access to recipes for the synthesis of a large number of psychoactive chemicals to anyone who may be interested. On the other hand, however, he has provided the forensic toxicologist with at least a rudimentary idea of the expected pharmacodynamics of these compounds. Sinner or a saint? I'll let you be the judge.

The 2C's:

The 2C compounds have been around for several years. Curtis, et al. reported a finding of a 2C-T-7 death in 2003. As with the emergence of synthetic cannabinoid-containing potpourri and MDPV-laced bath salts, there seems to have been an awakening to the Shulgin's 2C compounds.

In Coon Rapids, Minnesota one teenager died and ten others

DRUGS IN THE NEWS (CONTINUED)

were hospitalized after ingesting 2C-E (2,5-dimethoxy-4-ethyl-phenethylamine). The drug was first believed to be 2C-I (2,5-dimethoxy-4-iodophenethyla-mine) until tested by authorities.

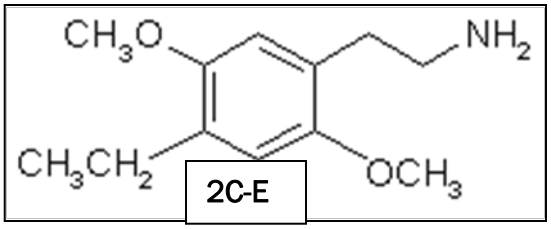
In Konawa, Oklahoma seven people were hospitalized and one died after allegedly being given 2C-E at a party.

A University of Montana student was arrested in March 2011 for allegedly selling 2C-B, among other drugs.

So what is the 2C class of compounds? The 2-C compounds described by Dr. Shulgin are, with perhaps a few exceptions, 2,5-dimethoxy-phenethylamines. Various substitutions at the 4 po-sition are the principle difference in all of these compounds. To quote Dr. Shulgin, "There is a broad variety of chemical groups that can be attached to the ben-zene ring, at one or more of the five available positions, and in an unending number of combina-tions. And, in any given mole-cule, the greater the number of substituents on the benzene ring, the greater the likelihood that there will be psychedelic action rather than stimulant action."

In PiHKAL, Dr. Shulgin describes thirty or more 2C com-pounds. However, I will limit the discussion to just the following few. Among these, the first four are the 2C compounds included in Dr. Shulgin's self-described "magical half dozen". I have also included 2C-I, which anecdotal evidence would indicate is be-coming popular.

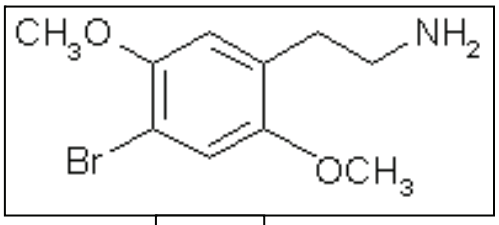
2C-E



2C-E

Of the 2C compounds currently being seen on the street, 2C-E, (2,5-dimethoxy-4-ethylphenethylamine) seems to be the most prevalent. 2C-E is commonly ingested orally in the 10 – 20 mg doses, but is sometimes insuf-flated in doses typically less than 5 mg. As with all of the 2C compounds, insuffulation is not a popular route of administration as these compounds apparently cause considerable pain in the nasal passages for ten minutes or so after use. The reported effects of 2C-E are intensely psychedelic in na-ture, similar to LSD. The onset of effects is reported to occur in about 20 – 90 minutes with a duration of 6 – 10 hours. The effects on sound percep-tion by 2C-E are reported to be notable, with users reporting, shifting of pitch, echoing, and flanging. Currently 2C-E is unscheduled in the United States.

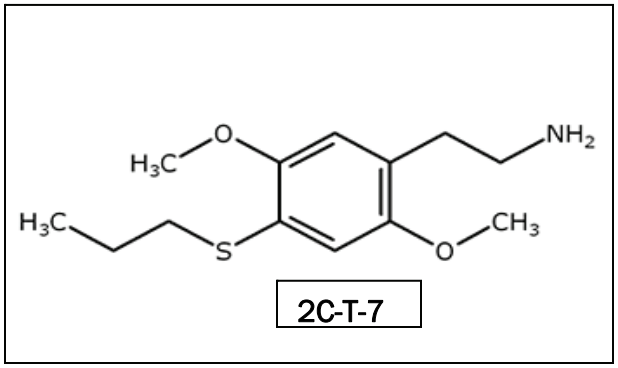
2C-B



2C-B

2C-B, (2,5-dimethoxy-4-bromophenethylamine) was first synthesized in 1974. PiHKAL lists the dosage range as 16 -24 mg, in-gested orally. 2C-B has been used in the psychiatric field as an aid in therapy and has seen recreational use under the trade name "Eros", manufactured by the German pharmaceutical company Drittewelle. 2C-B was also sold in the Netherlands under the name "Nexus". The reported effects of 2C-B are psychedelic in nature and come and go in "waves". The onset of effects are reported to occur in about 30 – 90 minutes with a duration of 2 – 5 hours. 2C-B is a Schedule I controlled substance in the United States.

2C-T-7

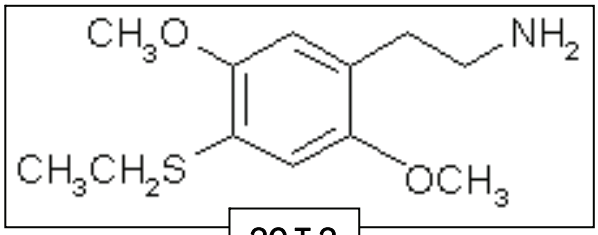


2C-T-7

2C-T-7, (2,5-dimethoxy-4-propylthiophenethyl-amine), according to PiHKAL, is used in oral dosages of 10 -30 mg. 2C-T-7 was sold in Dutch and Japanese smart shops and is referred to as Blue Mystic, T7, Beautiful, Tripstay, and Tweety-Bird Mescaline. The reported effects of 2C-T-7 are psychedelic and may last as long as 8 – 15 hours. There have been at least three reported deaths involving the use of 2C-T-7 as well as many hospitalizations. 2C-T-7 is a Schedule I controlled sub-stance in the United States.

DRUGS IN THE NEWS (CONTINUED)

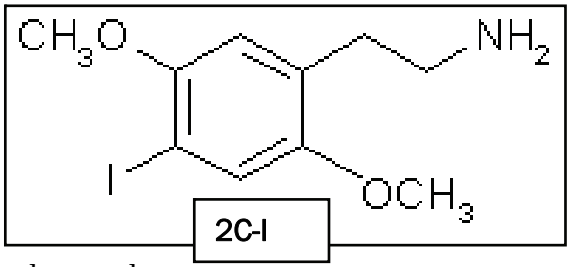
2C-T-2



2C-T-2

2C-T-2, (2,5-dimethoxy-4-ethylthiophenethylamine) was first synthesized by Dr. Shulgin in 1981. As can be clearly seen, it is very similar to 2C-T-7, having an ethyl group attached to sulfur rather than a propyl group. 2C-T-2 is reported to have pharmacodynamic properties similar to 2C-T-7. PiHKAL lists the dosage range as 12 – 25 mg. Effects can reportedly last up to 16 hours. 2C-T-2 is currently unscheduled in the United States.

2C-I



2C-I

2C-I, (2,5-dimethoxy-4-iodophenethylamine) is reported to be a stimulant as well as an empathogen-entactogen and an entheogen. Larger doses are reported to produce psychedelic effects. In the early 2000's 2C-I was sold in smart shops in the Netherlands after the ban of 2C-B, but was banned itself in April 2003. A typical oral dose is reported to be 10 – 25 mg with effects lasting from 4 – 12 hours. 2C-I is currently unscheduled in the United States.

Summary

The 2C compounds are making their way to the streets and, predictably, as one 2C compound becomes scheduled another one takes its place. These compounds, unlike some others encountered in the past, should not present any great analytical challenge to laboratories. Due to their similarity to the amphetamine class of compounds, the 2C compounds should be readily extractable by procedures designed to isolate alkaline drugs, or more specific amphetamine extractions. Likewise, the primary amine would be predicted to derivatize utilizing any derivatizing scheme successfully employed in routine amphetamine procedures. Laboratories may, however, wish to check their mass spec database and add these spectra, if not already present. A recent check of one popular drug standard supplier showed that 2C-B, 2C-I and 2C-T-7 analytical standards are currently available.

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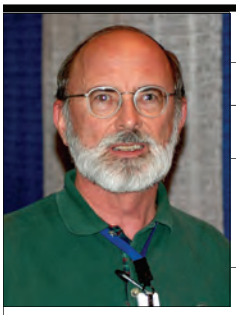
2C-T-7, http://en.wikipedia.org/wiki/2C-T-7

2C-T-2, http://en.wikipedia.org/wiki/2C-T-2

2C-I, http://en.wikipedia.org/wiki/2C-I

2C-I Vault, http://www.erowid.org/chemicals/2ci/



CASE NOTES

Section Editor, ***Matthew Barnhill****, Ph.D., DABFT*

Send interesting "Case Notes" to Section Editor, Matthew Barnhill (mbarnhilljr@worldnet.att.net)

CASE NOTES #1: PSILOCIN RELATED ACCIDENTAL DEATH: A CASE STUDY

Submitted by ***Jeff Knoblauch****, B.S., NRCC-TC*[1]*,* ***Mary Dudley*** *M.D., M.S.,R.N.*[2]***,***
Adrian Baron*, M.D.*[2]***, C. Clinton Frazee III****, MBA, NRCC-TC*[1]*,* ***Uttam Garg*** *Ph.D DABFT DABCC*[1]
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Introduction:

The use of hallucination producing mushrooms has been around for thousands of years and was often used to produce "visions" in religious rites and ceremonies of ancient times. Over the last one hundred years or so, hallucinogenic mushrooms are not used as much as elements in religious ceremonies, but more as recreational diversions. This case study describes the use of psilocybin in an accidental death.

Psilocybin is a phosphate derivative of N,N-dimethyl tryptamine that occurs in about a dozen of the psilocybe genus of mushrooms (sometimes referred as "magic mushrooms") as well as some species of panelous an concybe genera. It is converted in the body to psilocin, a pharmacologically active moiety of psilocybin (1).

The psilocin undergoes glucuronide conjugation and is also converted through deamination to the carboxylic acid 4-hydroxyindole-3-acetic acid (HIAA) (Figure 1) (2). Both HIAA and psilocin glucuronide are inactive metabolites. After oral ingestions of "magic mushrooms", the onset of symptoms begins within 30 minutes and subsides after about 6-12 hours. Clinical manifestations of psilocin toxicity include visual and auditory hallucinations, fear, ataxia, agitation, confusion, and psychosis. Sympathomimetic like activities include midriasis and tachycardia. Lesser known symptoms include severe rhabdomyolysis, acute renal failure, and posterior encephalopathy (3). In exposed children, hyperpyrexia and seizures have been observed (4).

Psilocybin has been cited in literature studies as a secondary cause of death in motor vehicle accidents and other accidental deaths while under the influence of psilocybin. A typical single dose is about 10 mg of psilocybin or approximately 1 gm of fresh psilocybe cubensis mushroom (1).

Psilocybin is a Schedule 1 substance under the controlled substance act in the United States (5). In addition, possession of psilocybin can lead to severe penalties in many other countries around the world.

Case History:

The decedent is a 34 year old white male visiting from out of town and staying at a friend's house. A witness stated that when they were out for dinner and drinks with some other people, the subject was acting "strange". The witness reported that the subject had only a couple of drinks that

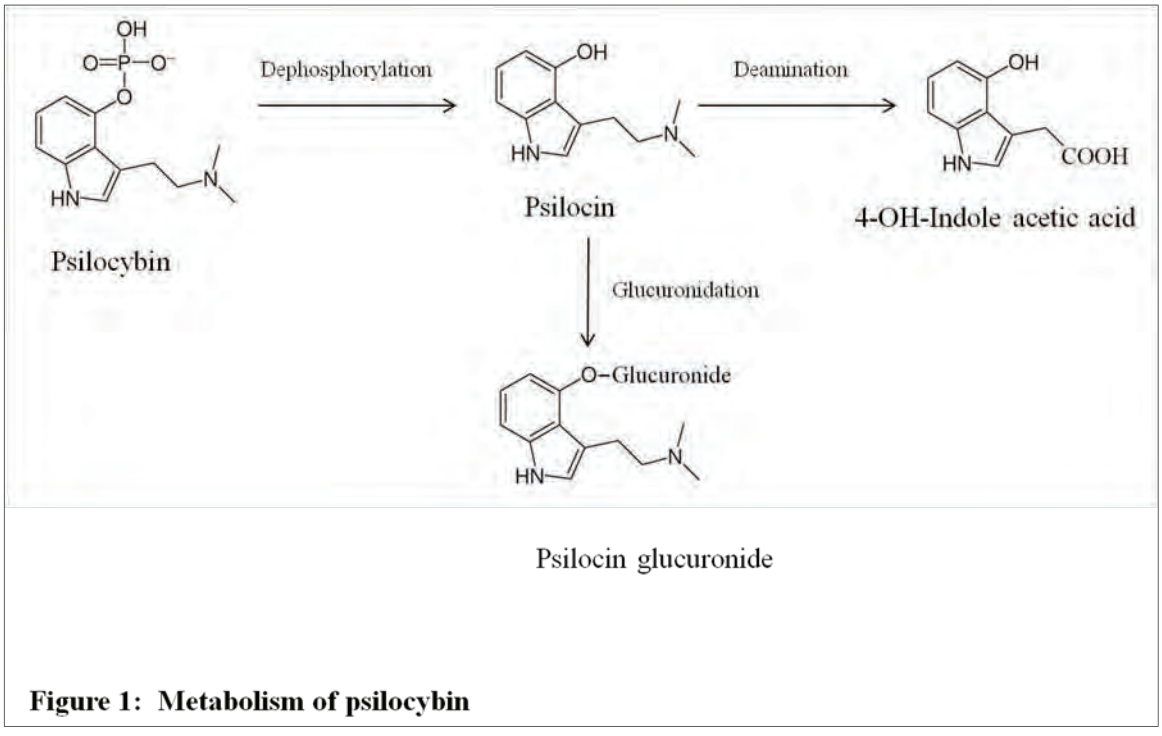

Figure 1: Metabolism of psilocybin

CASE NOTES: PSILOCIN (CONTINUED)

evening. They returned home around 0100 and the subject was last seen around 0230 in bed eating some "old" pizza. When the subject was not seen by 1400 the next day, the witness went to check on him and discovered him unresponsive and cold to the touch. The witness observed a prescription bottle belonging to a girl who had spent the night one week prior and a bag of mushrooms on the night stand. The witness said that he got scared and flushed the mushrooms down the toilet before calling 911. The on-scene investigator noted vomit around the subject's mouth and on the pillow next to his head. There were no signs of injury. The investigator also noted that the aforementioned prescription bottle had two different kinds of pills present. In addition, the investigator discovered what appeared to be a mushroom stem floating in the toilet (Image 1). The mushroom stem and the pizza found on the scene were collected by Crime Scene Investigator (Image 2).

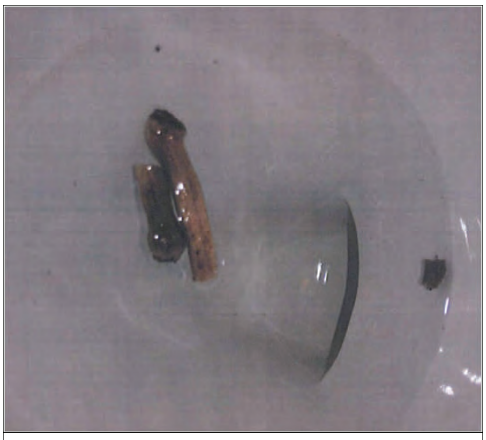

Image 1: Mushroom stems found floating in the toilet bowl.

Image 2: Pizza, with mushroom, found on the scene.

Results:

The autopsy showed mild cerebral edema and pulmonary congestion, each of which is frequently seen in drug and ethanol intoxications. The gastric contents of the subject contained intact slices of undigested mushrooms. The scene investigation and history suggested the ingestion of hallucinogenic mushrooms and toxicology testing for psilocybin was requested. Postmortem femoral blood, vitreous fluid, and urine samples were submitted for toxicological analysis. Analysis of the femoral blood included enzyme immunoassay (EIA) for drugs of abuse, volatile screen for ethanol, acetone, isopropanol, and methanol by GC-FID, and broad spectrum drug screening by GC-MS.

An 18 analyte benzodiazepine panel was performed by LC-MS/MS and yielded alprazolam and diazepam at therapeutic or below concentrations. An 8 analyte panel of free opiates was performed by GC/MS. Hydromorphone was suspected from the decedent's clinical history, but no free opiates were detected. A screen for total psilocin, performed by LC-MS/MS in urine, resulted in a positive finding. Blood quantitation of psilocin was not available. The toxicology results are summarized in the Table 1.

Discussion:

Psilocybin toxicity is from its active metabolite psilocin which acts as a $5HT_{2A}$, $5HT_{2C}$ and $5HT_{1A}$ agonist. The major clinical manifestations of psilocin toxicity include visual and auditory hallucinations, ataxia and tachycardia. A review of literature reveals fatalities due to psilocybin toxicity are rare, but they have been reported. One case involved intentional intoxication with psilocybin mushrooms in Poland. An 18 year old man ingested plilocybe semilanceata resulting in Wolff-Parkinson-White syndrome, arrhythmia, and myocardial infarction (6). In this case, psilocybin was the only agent involved.

A 6 year old child who accidentally ingested psilocybe mushrooms developed hyperthermia, seizures and eventually died (7). Another case involved a mushroom "party" in France in 1993. A 22 year old man harvested and prepared psilocybin mushrooms for his friends. He had already ingested some mushrooms while picking them. When he met his friends in the bar, he was already intoxicated from the mushrooms. He brought some of the mushrooms with him, eating some in front of his friends and then invited them to join in. The 22 year old subject, together with 4 of his friends, then made a tea with 20 to 40 mushrooms. Each of the friends drank the tea along with the subject. All of them had various euphoric and symptomatic experiences. After about an hour and a half, the subject went into convulsions and fell into a coma. The friends took him to a hospital, but emergency services were not available. A duty doctor was called in and tried to resuscitate him, but to no avail. Postmortem toxicological results drawn 36 hours after death revealed a blood concentration of 4 ug/mL of psilocin. All other toxicology tests were negative (8).

Most psilocybin fatalities reported have been mixed drug toxicities. The drugs most often ingested with psilocybin include ethanol, cocaine, and cannabis. Interestingly, no toxic concentration levels of psilocybin have been published. The rare case of psilocin toxicity that we report was determined by a team approach including a careful scene investigation by medicolegal death investigators, forensic autopsy by the forensic pathologist, and postmortem toxicology analyses by the forensic toxicologists. The toxicology results supported the cause of death as a mixed drug toxicity resulting from the combination of ethanol, benzodiazepines and psilocin. The manner of death was ruled as accidental.

CASE NOTES: PSILOCIN (CONTINUED)

Table 1: Postmortem Toxicology Results:

Femoral Blood (EIA)	**Result**	**Femoral Blood GC-MS**
Amphetamine	Negative	Caffeine
Barbiturates	Negative	
Benzodiazepines	**Positive**	**Femoral Blood LC-MS-MS**
Cannabinoids	**Positive**	Alprozolam 44 ng/mL
Cocaine metabolite	Negative	Diazepam 51 ng/mL
Methadone	Negative	
Opiates	**Positive**	**Femoral Blood**
Phencyclidine	Negative	**Opiates GC-MS**
Propoxyphene	Negative	Negative Panel
Femoral Blood GC-FID	**Vitreous Fluid GC-FID**	**Urine LC-MS-MS**
Ethanol 169 mg/dL	Ethanol 207 mg/dL	**Psilocin Screen**
Acetone < 5 mg/dL	Acetone < 5 mg/dL	Positive
Methanol < 5 mg/dL	Methanol < 5 mg/dL	
Isopropanol < 5 mg/dL	Isopropanol < 5 mg/dL	

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CASE NOTES #2:
DISTRIBUTION OF RANOLAZONE (RANEXA) IN A POST MORTEM CASE

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Introduction:

Ranolazine (Ranexa) is used for the treatment of chronic angina. The mechanism of action for ranolazine is reported to reduce ischemia of the myocardium by affecting sodium dependent calcium channels thus preserving ionic homeostasis.[1] Daily dosage can range from 500 mg up to 1000 mg twice daily. Ranolazine is counter-indicated for co-administration with drugs that induce, or inhibit CYP 3A, and may affect metabolism of drugs eliminated via CYP 2D6.[2] Due to the relatively short period of time this drug has been on the market little information is available regarding toxicity and post mortem concentrations.[3] The authors present this case report with the hope that when combined with future reports interpretation of post mortem ranolazine concentrations will be facilitated.

Case History:

A 62 year old man who was last known alive 12 hours prior was found dead in bed. His reported medical history included chronic obstructive pulmonary disease, asthma, and congestive heart failure. During the postmortem examination, the decedent's heart blood, femoral blood, vitreous, urine, liver, and gastric contents were collected. Several medications were collected from the scene and submitted along with the specimens to the Toxicology Laboratory.

Methodology:

Screens for drugs of abuse (ELISA), benzodiazepines, (LC-MS/MS), weakly basic drugs (GC-MS), alcohols and other light volatiles (Headspace GC-FID) were performed using the decedent's heart blood. A multi-opiate screen/quant was performed by GC/MS SIM analysis using femoral blood and solid phase extraction followed by derivatization. The quantitation for ranolazine was accomplished using an alkalinized liquid/liquid extraction with butyl chloride followed by an acid back extract, and a final alkalinized butyl chloride extraction step. The extracts were then analyzed by GC-FID. Five calibrators over the concentration range of 1.0 to 16.0 mcg/mL were used yielding a coefficient of determination of 0.999 with trazodone as an internal standard. A ranolazine standard was purchased from Sigma-Aldrich.

Discussion/Results:

After a positive opiate result by immunoassay, the GC-MSD opiate assay demonstrated a low level of morphine and hydrocodone present in the femoral blood. A large peak eluting after cholesterol (HP-1MS) with an unidentified spectra was detected on the screen for basic compounds. In pursuit of the unknown peak, two of the medications the decedent was prescribed, Ranexa and Cefuroxime, were selected as potential candidates. Our office has had little experience, or data involving these two drugs, so samples of the medications were diluted and injected onto the GC/MS for identification. The results from the dissolved Ranolazine tablet, precisely matched the retention time and spectrum of the unidentified component detected in the case blood. Quantitation of Ranolazine was performed by alkaline liquid/liquid extraction on the submitted case specimens followed by analysis on GC-FID.

In addition to the drugs previously mentioned three other drugs were detected, but were judged to be incidental findings, and were not confirmed, or quantitated. The screen results are presented in Table A and the Ranolazine results in Table B.

Conclusions:

We present here what we believe to be the first report of post mortem ranolazine concentrations. Ranolazine is easily detectable by a standard screening method used for weakly basic compounds. The reported therapeutic plasma concentrations range up to 2.3 mcg/mL at 2000 mg/day.[4] The lack of published post mortem data, including a blood versus plasma ratio, makes interpretation of these results problematic, and any contribution or lack of contribution to the cause of death in this case is unclear. In one published study that looked at the drug interaction in human subjects of ranolazine with three other drugs including ketoconazole, subjects were monitored for adverse events

CASE NOTES: RANOLAZONE (CONTINUED)

and steady state drug concentrations. Items of interest from this paper are the inclusion in the study design of a 10 mcg/mL safety limit for plasma levels, a measured $C_{ss\ max}$ of 7.3 mcg/mL for 1000 mg bid dosing, when combined with ketoconazole compared to 2.3 mcg/mL for the same dosing with Ranolazine alone, and an apparent increase in mild adverse events with the higher plasma levels.[4] The probable cause of death in this case was ruled as due to atherosclerotic cardiovascular disease and the manner natural.

References:

1. The mechanism of ranolazine action to reduce ischemia-induced diastolic dysfunction, L. Belardinelli ,et al, Eur Heart J Suppl (Feb 2006) 8 (suppl A): A10-A13. doi: 10.1093/eurheartj/sui091.

2. Physician's Desk Reference, pp 1255-1257 , 2010 Ed. (PDR), PDR Network LLC, Montvale NJ

3. Disposition of Toxic Drugs in Man, 8th ed., pp 1371-1372, R.C. Baselt, Biomedical Publications, Foster City CA. (2008)

4. Studies to Investigate the Pharmacokinetic Interactions Between Ranolazine and Ketoconazole, Diltiazem, or Simvastatin During Combined Administration in Healthy Subjects, M. Jerling, B. Huan, K. Leung, N. Chu, H. Abdullah, Z. Hussein, J Clin. Pharmacol. 2005; 45; 422-433

Table A

Screens	Results
Alcohols	None detected
ELISA	Opiates positive
Benzodiazepine Screen	Lorazepam (est. < 50ng/mL)
Alkaline Drug Screen	Paroxetine, Metoclopramide, unidentified peak
Opiates Screen/ SIM Quant	Morphine (0.03ug/mL), Hydrocodone (<0.05ug/mL)

Table B

Ranolazine Quantitative Results	
Heart Blood	37 mcg/mL
Femoral Blood	21 mcg/mL
Vitreous Humor	14.7 mcg/mL
Urine	122 mcg/mL
Liver	120 mcg/g
Gastric Contents (54g TTL)	35 mg TTL

CLASSICAL COLOR & TEST-TUBE TECHNIQUES FOR TODAY'S TOXICOLOGY LAB

Screening for Inorganic **Anions** of Toxicological Interest

*Submitted by **Theodore J. Siek,** Ph. D., DABFT*

Quick tests to screen for toxic anions are occasionally needed to rule in or rule out the possibility of various ionic inorganic and organic poisons. Should the case history indicate any of the anions in Table 1 or there is a need to rule out certain possibilities, these anion screening tests can be carried out by simple test-tube observations. Specimens which can be tested include gastric lavage, gastric contents (in fatalities), suspected aqueous liquids, and urine. Previous articles in Tox-Talk have presented methods for azide ion (Vol 33, No. 2), cyanide & thiocyanate (Vol 34, No. 4), and salicylate plus acetaminophen (Vol 34, No. 2). These organic anions are not covered here.

Chloride, iodide, and other anions:

Prepare aqueous 0.1N $AgNO_3$ for inorganic anion precipitation. Chloride, cyanide, thiocyanate, give white precipitates; AgBr is pale yellow, and AgI is yellow. Sulfide ion (rarely present) gives a black precipitate. Note the approximate detection limits in **Table 1.**

Borate/boric acid reagent:

Add excess (slightly more than will dissolve) curcumin powder to 95% ethanol and filter; store the filtrate in a clear screw-cap bottle. Test for boric acid or its borate salts in a porcelain spot plate well: to 2 drops of test fluid add 2 drops of 1N HCl, and 2 drops of curcumin reagent (the filtrate above); heat and borate/boric acid if present will become red brown. Heat to dryness, then to the residue add concentrated NH_4OH and observe the color changes (blue to green to dark green if positive for borate). F. Rieders (1) gives more details on borate testing. Curcumin powder is supplied by Sigma-Aldrich for the borate screening test as described. Alternately, Turmeric paper which contains curcumin may be purchased from Sigma-Aldrich.

Bromide reagent:

Prepare aqueous 0.5 mg/mL gold chloride and aqueous bromide standards from 4.7 mg of KBr/mL (equivalent to 3.0 mg bromide/mL). From 3.0 mg/mL make dilutions to of 0.3, 0.9 and 1.5 mg bromide/mL, To 1 part of the test solution add 0.2 part of the $AuCl_3$ reagent and observe deep yellow-brown color. For serum or blood, precipitate protein with 2 volumes of 10% aq. trichloroacetic acid, centrifuge, and test the supernatant. Bromide is acutely toxic above 3 mg/mL. Bromide is an obsolete anticonvulsant. Iodide will also intensify the $AuCl_3$ color (interferes with bromide test). I. Sunshine (2) provides additional details on bromide.

Table 1. Screening for anions of toxicological importance in appropriate fluids.

Anion	Symbol	Reagent Name	Type of Test	Detection Limit	Ref
Borate	BO_3^-	Turmeric paper	Color	0.02 mg/L	1
Bromide	Br^-	Gold chloride	Color intensity	0.1 mg/mL	2
Cyanide	CN^-	o-Dinitrobenzene	Diffusion-color	.05 mg/mL	3
Ferricyanide	$Fe(CN)_6^{-3}$	Ferrous sulfate	Color intensity	1 mg/mL	5
Fluoride	F^-	Amadac F	Pink color	0.02 mg/L	4
Halides	Cl^-, Br^- , I^-	Silver nitrate	Preciptn.	0.1 mg/mL	5
Oxalate	$C_2O_4^{-2}$	0.1 M $CaCl_2$	Preciptn.	0.3 mg/mL	4
Phosphate	PO_4^{-3}	0.1 M $CaCl_2$	Preciptn.	0.1 mg/mL	5
Sulfate	SO_4^{-2}	0.1 M $CaCl_2$	Preciptn.	20 mg/mL	5
Sulfite	SO_3^{-2}	0.1 M $CaCl_2$	Preciptn.	20 mg/mL	5

Oxalate, phosphate, sulfate & sulfite testing:

0.1 M calcium chloride ($CaCl_2$) will precipitate oxide radicals including the 4 named here. High concentrations of fluoride also will precipitate with calcium ion. Inorganic anions other than those in **Table 1** can be tested for by simple laboratory observations. Soluble sodium and potassium carbonate salts can be recognized by addition of concentrated HCl, producing fizzing. Sulfite salts will fizz and produce a sharp odor. Soluble sulfide salts on the addition of strong acid will produce hydrogen sulfide gas and its characteristic odor. **Cyanide** and **thiocyanate** were presented in the previous issue of **Tox-Talk** (vol 34, No. 4) Equations involving iron salts are shown below and can be used to detect thiocyanate, cyanide, and to distinguish between ferric and ferrous anion radicals.

$FeCl_3 + 3\ SCN^- \rightarrow Fe(CN)_3 + 3Cl^-$ Deep red color

$4Fe^{+3} + 3\ Fe(CN)_6^{-4} \rightarrow Fe_4[Fe(CN)_6]_3$ Prussian blue to detect ferric ion (Fe^{+3})

$3Fe^{=2} + 2\ Fe(CN)_6^{-3} \rightarrow Fe_3[Fe(CN)_6]_2$ Turnbull's blue to detect ferrous ion ($Fe^{=2}$)

Fluoride screening:

Dissolve 0.3 g of Amadac F (Fisher or Sigma/Aldrich) in 6 mL of deionized water, then add 9 mL isopropanol. This reagent is stable 2 weeks in a brown bottle. Adjust 0.5 mL of aqueous test solution.to pH 6-7 with acetate buffer. Add 5 drops of Amadac reagent and let stand for up to 20 minutes. A pink color proportional to fluoride develops, with a detection limit of approximately 20 mg/L or 20 ppm. Fluoride is relatively non-toxic; toothpaste can have as much as 1100 ppm fluoride.

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CLASSICAL COLOR & TEST-TUBE TECHNIQUES (CONTINUED)

Other anions:

Other anions include nitrate, nitrite, phosphate, phosphite, chlorates, chlorite, and iodates. These require very detailed procedures and will be presented in a separate article. Carbonate (sodium carbonate and bicarbonate) can be recognized by foaming on addition of strong mineral acid (hydrochloric or sulfuric acid), but no odor is produced.

Summary:

The utility of these tests is chiefly to detect possible anions or rule them out. A positive reaction should be confirmed by appropriate instrumental techniques. The detection limits are sufficient for testing the specimens listed in **Table 1.** The intent of the testing is to narrow the range and complexity of testing by eliminating possibilities and presumptive testing in the case of positive tests.

References

1. F. Rieders: **Methodology for Analytical Toxicology**, CRC Press, p. 51, 1975.
2. I. Sunshine: *ibid*, p. 54.
3. WA Dunn & TJ Siek, **J Analyt. Tox.,** 14, p.256,1990.
4. I. Sunshine: **Handbook of Analytical Toxicology**, CRC Press, p. 402-408, 1975.
5. WE Caldwell & GB King, **A Brief Course in Semimicro Qualitative Analysis,** American Book Company, NY, NY, 1953.

Screening for Inorganic **Cations** of Toxicological Interest

*Submitted by **Theodore J. Siek,** Ph. D., DABFT*

Inorganic cations which are acutely toxic include the "heavy metals" which include antimony, arsenic, bismuth, and mercury. The famous Reinsch test for heavy metals is useful to detect the above metals in gastric contents or in suspect aqueous poison solutions. The reactions of other metal cations by precipitation reactions is summarized in **Table 1.**

Reinsch test for heavy metals:

Spiral a small gage copper wire about a pencil to produce 4-8 loops and rinse the wire sequentially in (1) isopropanol, (2) water, and (3) 10% concentrated HNO_3, (4) then water again. Make the test solution approximately 10% by volume in concentrated HCl, add the cleaned copper wire and heat at 60-80 C for up to 1 hour. Mercury salts ($Hg^{+1/+2}$) are the fastest reacting and are recognized by a bright silvery deposit on the wire at 5 ppm and greater within 10 minutes. Bismuth salts (Bi^{+3}) give a shiny black stain at 2 ppm; arsenic ($As^{+3/+5}$) salts give a dull black deposit at 2 ppm; and antimony salts ($Sb^{+3/+5}$) produce a black deposit with a hint of purple. Sydney Kaye (ref. 1, p. 395) gives details of follow-up testing procedures to differentiate the heavy metals. Other metal ions can be characterized by precipitation tests which are relatively easy to perform without atomic absorption, specific ion electrodes, and other complex equipment. The K_{sp} values are from reference 2 and would be found in an inorganic chemistry handbook or textbook.

Thioacetamide (Sigma), prepared 8% wt/vol in water, provides sulfide ion when heated. To 1 mL of thioacetamide solution add 1 mL of test solution plus 2-3 drops of concentrated HCl and heat to boiling to precipitate metal sulfide ions (known as Group II cations **in Table 1**. To a second 1 mL of thioactamide add 1 mL of test solution plus 1/3 volume of conc. NH_4OH, and solid ammonium chloride to bring pH to about 9-10; then bring to boiling. Group III cation metals will precipitate as sulfides.

The degree of specificity for the cation metals in **Table 1** varies, and significant positive testing would normally require confirmation with standard instrumentation such as atomic absorption, flame photometry or ion specific electrodes. Nonetheless, presumptive positives are very helpful in focusing further testing or in ruling out acutely toxic concentrations of metal ions in **Table 1.** The first step in detecting the cations would be to add 5% aqueous NaCl to test for Group I forming chloride precipitates. If there is no reaction, then treat with thioacetamide reagent in the acidic and alkaline forms to distinguish Group II and Group III metal ions. Group IV metal ions are barium, calcium, and strontium, all of which form insoluble carbonates. The completely soluble cations forming Group V include sodium, potassium, magnesium and ammonium. Group V soluble cations require special reagents for screening, making this testing impractical for smaller forensic toxicology laboratories.

References

1. S. Kaye: **Methodology for Analytical Toxicology**, CRC Press, p. 395, 1975.
2. WE Caldwell & GB King, **A Brief Course in Semimicro Qualitative Analysis,** Amer. Book Co, NY, NY, 1953.

Table 1. Metal ion reactions with chloride, sulfide & hydroxide w. properties.

Metal ion ppt.	Group	Reaction color	K_{sp}	Other reactions
AgCl	I	White/gray	1.2×10^{-10}	Solu. In NH_4OH
$PbCl_2$	I	White	2.4×10^{-4}	Ppt. with CrO_4^{-2}
Hg_2Cl_2	I	White	2.0×10^{-18}	Insolu. In NH_4OH
As_2S_3/As_2S_5	II	Yellow	$<10^{-50}$	Reinsch
Bi_2S_3	II	Black	1.4×10^{-72}	Reinsch
CuS	II	Black	8.5×10^{-45}	Cu blue in soln.
CdS	II	Yellow	3.6×10^{-29}	Ppt. with OH^-
HgS	II	Black	4×10^{-52}	Reinsch
PbS	II	Black	4.2×10^{-28}	Ppt. with PO_4^{-3}
Sb_2S_3/Sb_2S_5	II	Orange	very small	Reinsch
SnS/SnS_2	II	Yellow	8×10^{-29}	Ppt. with OH^-
$Al(OH)_3$	III	White	1.9×10^{-33}	Ppt. with PO_4^{-3}
$Cr(OH)_3$	III	Green	6.7×10^{-32}	Oxidize to Cr^{+6}
FeS	III	Black	1.5×10^{-18}	Ferricyanide rxn.
$Fe(OH)_3$	III	Brown-red	1.1×10^{-36}	Ferrocyanide rxn.
MnS	III	Pink	1.4×10^{-19}	Oxidize to Mn^{+4}
Tl_2S_3	III	Black	1.2×10^{-24}	Ppt, with OH^-
ZnS	III	Gray/white	1.2×10^{-23}	Solu. In NH_4OH

Abbreviations are: ppt. for precipitate; insol. for insoluble; solu. for soluble.

TOXICOLOGY RESEARCH
SEARCH TIPS FROM A FORENSIC LIBRARY

SYNTHETIC CANNABINOIDS: RESOURCE LIST

*Submitted by **Jeff Teitelbaum, MLIS,** Forensic Library Service, Washington State Patrol (jeff.teitelbaum@wsp.wa.gov)*

Over the past year and a half, there has been a flurry of published information regarding the phenomenon of synthetic cannabinoids. Although they were first synthesized in the 1990s, they have become recently fashionable as a legal alternative to marijuana. Until the recent DEA ban, they have been legally sold over-the-counter and over the internet, generally in small packets of herbal incense with brand names such as **Spice** and **K2**. I thought it might be useful to compile a list of the most oft-cited and credible articles and reports on this subject.

Please find the list below, divided into 4 groups:

1) **Early/Foundational journal articles** (many of these are articles written by Dr. John W. Huffman, the Clemson University chemist who first synthesized and named JWH-018)
2) **Current journal articles**
3) **Reports and websites**. Hyperlinks are provided whenever possible
4) **Mass Spectral databases**

Early/Foundational Articles

Huffman, J. W., D. Dai, et al. (1994). "Design, synthesis and pharmacology of cannabimimetic indoles." Bioorganic & Medicinal Chemistry Letters **4**(4): 563-566.

Huffman, J.W. (1996) "Synthesis and pharmacology of a very potent cannabinoid lacking a phenolic hydroxyl with high affinity for the CB2 receptor." Journal of Medical Chemistry **39**(20): 3875-3877.

Huffman, J.W., Duncan, S. Jr. (1997). "Synthesis and pharmacology of the 1',2'-dimethylheptyl-delta8-thc isomers: exceptionally potent cannabinoids." Bioorganic & Medicinal Chemistry Letters **7**(21): 2799-2804

Lainton, J. A. H., J. W. Huffman, et al. (1995). "1-Alkyl-3-(1-Naphthoyl)Pyrroles – A new class of cannabinoid." Tetrahedron Letters 36(9): 1401-1404.

Weissman A., Milne G.M., et al. (1982) "Cannabimimetic activity from CP-47,497, a derivative of 3-phenylcyclohexanol." J Pharmacol Exp Ther **223**(2):516-23.

Wiley, J., Compton., D., Huffman, J., et al. (1998) "Structure-Activity Relationships of Indole- and Pyrrole-Derived Cannabinoids." The Journal of Pharmacology and Experimental Therapeutics **285**(3): 995-1004

Current Articles

Atwood, B., Huffman, J., et al. (2010). "JWH018, a common constituent of 'Spice' herbal blends, is a potent and efficacious cannabinoid CB1 receptor agonist." British Journal of Pharmacology, **160**(3), 585–593.

Auwärter, V., S. Dresen, et al. (2009). "'Spice' and other herbal blends: harmless incense or cannabinoid designer drugs?" Journal of Mass Spectrometry : JMS **44**(5): 832-837.

Brandt, S. D., H. R. Sumnall, et al. (2010). "Analyses of second-generation 'legal highs' in the UK: initial findings." Drug Testing and Analysis **2**(8): 377-382.

Combs, M., Morris, J. (2010) "Analytical Profile of Two Synthetic Cannabinoids – JWH–018 and JWH–073." Journal of the Clandestine Laboratory Investigating Chemists, **20**(2); 2-7.

Dowling, G. and L. Regan (2011). "A method for CP 47, 497 a synthetic non-traditional cannabinoid in human urine using liquid chromatography tandem mass spectrometry." Journal of Chromatography B, Analytical Technologies in the Biomedical and Life Sciences **879**(3-4): 253-259.

Dresen, S., N. Ferreiros, et al. (2010). "Monitoring of herbal mixtures potentially containing synthetic cannabinoids as psychoactive compounds." Journal of Mass Spectrometry **45**(10): 1186-1194.

Dresen, S., S. Kneisel, et al. (2011). "Development and validation of a liquid chromatography-tandem mass spectrometry method for the quantitation of synthetic cannabinoids of the aminoalkylindole type and methanandamide in serum and its application to forensic samples." Journal of Mass Spectrometry **46**(2): 163-171.

Emanuel, C. E. J., B. Ellison, et al. (2010). "Spice up your life: screening the illegal components of 'Spice' herbal products." Analytical Methods **2**(6): 614-616.

Gibbons, S. and M. Zloh (2010). "An analysis of the 'legal high' mephedrone." Bioorganic & Medicinal Chemistry Letters **20**(14): 4135-4139.

Hudson, S., Ramsey, J., et al. (2010). "Use of high-resolution accurate mass spectrometry to detect reported and

previously unreported cannabinomimetics in "herbal high" products." Journal of Analytical Toxicology, **34**(5):252-60.

Hudson, S., Ramsey, J. (2011). "The emergence and analysis of synthetic cannabinoids." Drug Testing and Analysis Epub ahead of print

Huffman, J. W., J. Z. Lu, et al. (2000). "Synthesis and pharmacology of a hybrid cannabinoid." Bioorganic & Medicinal Chemistry **8**(2): 439-447.

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Huffman, J. W., A. L. Thompson, et al. (2008). "Synthesis and pharmacology of 1-deoxy analogs of CP-47,497 and CP-55,940." Bioorganic & Medicinal Chemistry **16**(1): 322-335.

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Lindigkeit, R., A. Boehme, et al. (2009). "Spice: a never ending story?" Forensic Science International **191**(1-3): 58-63.

Möller, I., A. Wintermeyer, et al. (2010). "Screening for the synthetic cannabinoid JWH-018 and its major metabolites in human doping controls." Drug Testing and Analysis. Epub ahead of print.

Nakajima, J., Takahashi, M., et al. (2010). "Identification and quantitation of cannabimimetic compound JWH-250 as an adulterant in products obtained via the Internet." Forensic Toxicology **29**(1): 51-55.

Neukmann, M.A., Mürdter, T., et al. (2009) "Quantitative detection of the active "spice" ingredient JWH-018 in serum by means of liquid chromatography-tandem mass Spectrometry." Blutalkohol; **46**; 373-379.

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Schmidt, M. M., A. Sharma, et al. (2010). "Legal highs" on the net - evaluation of UK-based websites, products and product information." Forensic Science International. Article in Press.

Schneir, A. B., J. Cullen, et al. (2010). ""Spice" girls: synthetic cannabinoid intoxication." The Journal of Emergency Medicine. Epub ahead of print.

Sobolevsky, T., I. Prasolov, et al. (2010). "Detection of JWH-018 metabolites in smoking mixture post-administration urine." Forensic Science International **200**(1-3): 141-147.

Teske, J., Weller, J-P., et al. (2010) "Sensitive and rapid quantification of the cannabinoid receptor agonist naphthalen-1-yl-(1-pentylindol-3-yl)methanone (JWH-018) in human serum by liquid chromatography–tandem mass spectrometry." Journal of Chromatography B. Article in press.

Uchiyama, N., R. Kikura-Hanajiri, et al. (2009). "Identification of a cannabimimetic indole as a designer drug in a herbal product." Forensic Toxicology **27**(2): 61-66.

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Uchiyama, N., M. Kawamura, et al. (2010). "Identification and quantitation of two cannabimimetic phenylacetylindoles JWH-251 and JWH-250, and four cannabimimetic naphthoylindoles JWH-081, JWH-015, JWH-200, and JWH-073 as designer drugs in illegal products." Forensic Toxicology **29**(1): 25-37.

Vardakou, I., Pistos, C., Spiliopoulou, C. (2010). "Spice drugs as a new trend: mode of action, identification and legislation." Toxicology Letters **197**(3); 157-62.

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Reports and Websites

Advisory Council on the Misuse of Drugs:

July 16, 2009 - An independent expert body that advises the British government on drug related issues in the UK, they issued a report with their recommendations for dealing with the new synthetic cannabinoids that were just hitting the market. The report was considered by many to be a more balanced response to the synthetics than was the response by the DEA.

Their report, **Consideration of the Major Cannabinoids Agonists**, can be found here.

DEA Moves to Emergency Control Synthetic Marijuana:

On November 24, 2010, the DEA announced plans to temporarily control JWH-018, JWH-073, JWH-200, CP-47,497, and cannabicyclohexanol. Please find the DEA's announcement here.

DEA - Temporary Placement of Five Synthetic Cannabinoids into Schedule I:

Federal Register, March 1, 2011 – please find the Final Order here.

The EMCDDA (European Monitoring Centre for Drugs and Drug Addiction):

This organization was established in 1993 to provide the EU and its Member States with a factual overview of European drug problems and a solid evidence base to support the drugs debate.

In 2009, the EMCDDA issued a report titled **Understanding the "Spice" phenomenon.** This report is still considered by many to be one of the most useful documents about the new synthetic cannabinoids. The report can be found here.

The EMCDDA website also has an updated section about synthetic cannabinoids.

National Alliance for Model State Drug Laws:

The NAMSDL is 'a resource for governors, state legislators, attorneys general, drug and alcohol professionals, community leaders, the recovering community, and others striving for comprehensive and effective state drug and alcohol laws, policies, and programs.'

The NAMSDL (home page is here) has a nice compilation of state bills and statutes related to synthetic cannabinoids.

Reports on synthetic substances are here. Of particular interest are the following reports:

1. Cathinone and Cathinone Derivatives - State Bills, Statutes and Regulations

2. Controlled Substance Analogs – State Statutes

3. Synthetic Cannabinoids – State Bills, Statutes and Regulations

4. Synthetic Cannabinoids - State Legislative Update

National Conference of State Legislatures:

The NCSL is 'a bipartisan organization that serves the legislators and staffs of the nation's 50 states, its commonwealths and territories. NCSL provides research, technical assistance and opportunities for policymakers to exchange ideas on the most pressing state issues.'

The NCSL (home page is here) compiles lists of state laws that pertain to synthetic cannabinoids.

State legislation on synthetic cannabinoids – find the report here.

Bath Salts State Action – find the report here.

Wikipedia:

As always, material found on Wikipedia should be corroborated with other sources, but their posting on synthetic cannabis (and related compounds such as JWH-018, HU-210, etc.) is worth a look. One nice segment to this article is a rundown of the legal status of these synthetic cannabinoids in various countries around the world.

Please find their article on "synthetic cannabis" here.

Mass Spectral Databases

ForensicDB

RTI International launched a new database library to aid in searching for spectral information. Approximately 2,500 records are currently in the database, much of them culled from the AAFS (American Academy of Forensic Sciences) mass spec database.

From the ForensicDB home page introduction: *Forensicdb.org is a publicly available cheminformatics data library providing the ability to search a given spectra against a Web-accessible database of reviewed spectra and have spectra from multiple spectral methods available in the same database. The database seeks to include FTIR, EI-MS and accurate mass data on compounds of forensic interest. Users can search the database from the Web without any other software and users are also encouraged to strengthen the database by contributing spectral data.*

Please find the database here.

TOXICOLOGY RESEARCH (CONTINUED)

SWGDRUG Mass Spectral Library

SWGDRUG (Scientific Working Group for the Analysis of Seized Drugs) has released a searchable mass spectral library which, by several accounts, is very robust and very useful, particularly with the various incarnations of the newer synthetic cannabinoids. There are currently 1371 spectra in the library, and there will be updates on a regular basis.

From the SWGDRUG website: *SWGDRUG has compiled a mass spectral library from a variety of sources, containing drugs and drug-related compounds. All spectra were collected using electron impact mass spectrometry systems. This library is available for download from this website. Although SWGDRUG makes an effort to review the accuracy of spectra prior to entry, this library should only be used as an analytical tool. SWGDRUG recommends the use of traceable reference materials to support identifications of drugs .*

Please find the database here.

The field of synthetic cannabinoids is rapidly changing and it is vital that scientists remain abreast of new research. There are already hundreds of variations to the 5 compounds that the DEA recently banned, and manufacturers simply drop down to the next drug on the list in their efforts to avoid legal ramifications. Please look for an updated list of synthetic cannabinoid resources in a future column.

IN MEMORIUM—WILLIAM RANDALL LYNN, PH.D.

Dr. William Randall (Randy) Lynn died May 28, 2011 in Wake Forest, NC. Dr Lynn joined LabCorp (then Roche) in 1992 as Associate Director for the Memphis/Southaven facility. In 1999, he transferred to Houston as Laboratory Director. Having made numerous improvements in both of those locations, he was chosen to lead the Occupational Testing Division (OTS) for all of LabCorp as Laboratory Director and at the Research Triangle Park, North Carolina facility.

During his tenure at Research Triangle Park (RTP) from 2003 Dr Lynn oversaw the operations of one of the largest labs in the country while fulfilling the role of Technical Director for the OTS Division. The RTP lab flourished under Dr Lynn's leadership and added testing for hair, oral fluids, and pain management during that time.

Dr Lynn was licensed as a medical technologist through the American Society of Clinical Pathologists. He also held certification with the American Board of Bioanalysis. He was a member of the American Association of Clinical Chemistry and the American Association of Bioanalysts.

Dr Lynn will be sadly missed by many people in the scientific community.

INFO FOR YOUNG FORENSIC TOXICOLOGISTS

*Submitted by YFT Chair, **Teresa Gray**, Ph.D.*

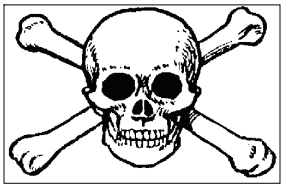
Teresa Gray, Ph.D.
YFT Chair

The Young Forensic Toxicologists Committee is planning several activities at the 2011 joint SOFT/TIAFT meeting in San Francisco. We invite all young forensic toxicologists to participate and ask everyone to share this information with their co-workers.

A competition for the **best poster presentation** by a young forensic toxicologist, will again take place this year. Once abstracts are accepted, interested individuals will have the opportunity to enter their abstract into our poster competition. Eligibility requirements, judging criteria and submission instructions are posted on the Young Toxicologists page of the SOFT website (www.soft-tox.org). Please note that the judges will consider all aspects of the poster (i.e., the submitted abstract, the poster, and the author's presentation).

We are hosting the **Young Forensic Toxicologists Symposium** during the San Francisco annual meeting, on Sunday, September 25, 2011. Last year's YFT program was a lot of fun and some great conversations occurred. Several US and International guest speakers will be discussing **"DUI / DUID Legislation and Emerging Drugs".**

It is an extraordinary opportunity for young scientists to attend, meet, and learn from the world's leaders during this free event.



FROM THE LITERATURE

*Submitted by **Barry Levine**, Ph.D., DABFT*

Journal of Analytical Toxicology 2011: Vol. 35

March issue

Johnson and Botch presented an LC/MS/MS screening method for acid/neutral and basic drugs in postmortem specimens. A total of 359 compounds, including both therapeutic and abused drugs, were detected by the method. For each compound, retention time, precursor ion, product ion and detection limit were provided. They also demonstrated the report formats that they used to summarize the data collected.

The use of ethyl glucuronide (EtG) and ethyl sulfate (EtS) as markers of ethanol consumption was evaluated in a study by Reisfield et al. Eleven volunteers washed their hands with a commercial hand sanitizer (62% ethanol) every 5 minutes for 10 hours; this was done for 3 consecutive days. Urine specimens were collected at the beginning and end of each day and tested for EtG and EtS by LC/MS/MS. EtG concentrations showed great inter-subject variability. Interestingly, one of the subjects produced no EtG. Four subjects were negative (LOD 50 ng/mL) at the end of at least one of the sessions while 4 produced at least one specimen with an EtG concentration greater than 1000 ng/mL. No subject had an EtS concentration greater than 100 ng/mL.

April issue

Juhascik and Jenkins compared tissue quantitations by the method of standard additions with the direct extraction using blood calibrators. Twenty two tissue specimens and one blood clot were used for the comparison. Quantitative results were within 30% of each other in 22 of the 23 quantitations.

Morey et al described the design of a prototype for measuring alcohol using a miniature gas chromatograph. The carrier gas was derived from ambient air, thus eliminating the need for gas cylinders. The entire system occupies 96 cubic inches and consists of an injection valve, column oven with 2 columns, carrier gas generator, sampling pump, a metal oxide detector and related computer and electronics. Breath samples from drinking subjects were tested on the prototype and compared favorably with the results obtained on an Intoxilyzer 400 PA.

May issue

Kronstrand et al presented data from a series of accidental fatalities from the herbal blend Krypton. Krypton consists of the μ-receptor agonists mitragynine, an alkaloid in Kratom and O-desmethyltramadol. Blood mitragynine concentrations ranged from 0.02 to 0.18 mg/kg and O-desmethyltramadol concentrations ranged from 0.4 to 4.3 mg/kg. The authors hypothesized that the addition of the O-desmethyltramadol to the mixture likely contributed to these accidental deaths.

Journal of Forensic Sciences 2011: Vol 56

May issue

Wyman et al studied the changes in tissue concentrations of 16 drugs in decomposing pigs. Decomposition occurred in the summer in an outside environment. After 2 days, the only specimens available for analysis were muscle and liver. There were increases in muscle drug concentration over a week period, but only changes in amitriptyline concentrations reached statistical significance. There were statistically significant increases in liver drug concentrations of 10 of the 16 drugs during this same time frame. They also documented decreases in liver weights over the week period, but even after normalizing tissue concentrations for decreased weight, increases in drug concentrations were still observed. The authors warned of caution in interpreting drug concentrations in decomposed livers by comparing them with data collected from fresh livers.

American Journal of Forensic Medicine and Pathology 2011: Vol 32

March issue

Molina and Hargrove reviewed cocaine deaths in Bexar Co., TX over a 13 year period to determine whether co-ingested drugs appeared to increase or decrease toxicity from cocaine. Not surprising, they found that cocaine used in combination with ethanol, narcotics, antidepressants and neuroleptics increased cocaine lethality as indicated by decreased concentrations of cocaine and benzoylecgonine (BE) in cases where these drugs were present in comparison to cocaine and BE concentrations in cases where these drugs were not present. For each class, the authors speculated as to potential pharmacokinetic and pharmacodynamic reasons for these observations.

Forensic Science International 2011: Vol 208

May issue

Gosselin et al reviewed the use of insects as an alternative species in forensic toxicology. The review included a discussion of the life cycle of insects and how it is influenced by environmental conditions. Two extensive tables were included in the review; one had a list of toxic substances reported in the literature as having been detected in insects. The second table gave published specimen preparation and analytical procedures for detecting toxic substances in insects.

Vinamaki et al. examined the postmortem production of formic acid in decomposed blood and urine specimens. In 30 putrefied cases, the mean formic acid concentrations in blood and urine specimens were 0.24 and 0.26 g/L respectively. This compared to mean concentrations of 0.04 and 0.06 g/L in fresh blood and urine specimens, respectively. In cases of known methanol ingestion, the mean formic acid concentrations in blood and urine specimens were 0.8 and 3.4 g/L respectively. No changes in formic acid concentrations were seen over a 3-4 month period in specimens treated with fluoride.

2011 SOFT-TIAFT Meeting AV Team

Instructions for Guest Speakers & workshop Faculty

The SOFT Audio-Visual support staff are tasked with making sure all the workshop and scientific presentations run smoothly. Attendees and presenters expect to focus on the information provided in the presentation, not on making the computers and peripherals run properly.

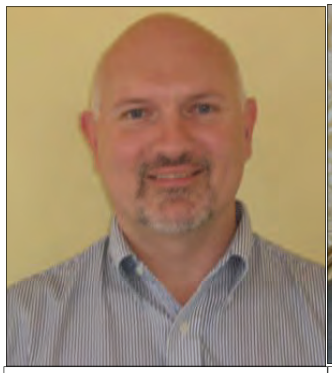
SOFT members, Frank Wallace, Dale Hart, and Carl Horn will assist all presenters with their digital presentations. ALL DIGITAL FILES will be loaded onto laptop computers ahead of time and tested to make sure everything runs properly. All files will be backed up and can be re-loaded if a problem occurs.

All presentations will be hyperlinked from agenda slides to provide a seamless flow between presentations.

Presenters are requested to send in their presentations as soon as possible, but before September 15th, 2011. There are two primary ways to send in presentations:

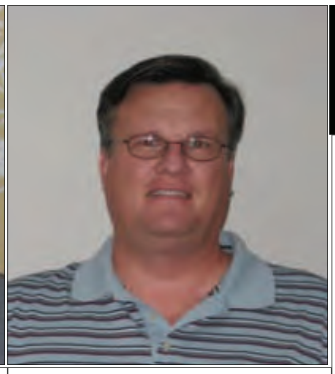
- Email Frank (frank.wallace2@gmail.com). This method works well in most instances.
- Upload to http://www.soft-workshops.org/uploadfile.asp. (Use if presentation files are too large to send by email, if multimedia files are needed, or if mail server issues arise.)
- Thursday, September 15, 2011 will be the last day to accept presentations via email and web uploads.

Anyone with special requests should contact us as soon as possible.



Frank Wallace

Dale Hart



Carl Horn

Scientific Program Now Posted

The 2011 Scientific Program has just been posted to the meeting website (www.toxicology-2011.org), so that speakers can make preparations knowing the exact date and time of their presentation.

Save The Date—SOFT2012

The 2012 SOFT Annual Meeting will happen over the 4th of July holiday in Boston MA, a full three months earlier than the normal October timing. Please mark your calendars now to "Save The Date" for the week of June 30—July 6th, 2012.

Boston is famous for its "Independence Day" festivities. Meeting Host, Michael Wagner & the entire 2012 Planning Committee look forward to hosting the next science packed conference and add some fireworks to it! To research many other Boston summer events (that may be of interest to the family), find the Boston Events website— http://www.boston.world-guides.com/events.html

The venue for the Boston meeting will be the Marriott Copley Place.

2011 Preliminary Conference Schedule
SOFT-TIAFT 2011
September 25-30, 2011

*This schedule is tentative and may change – please visit www.toxicology2011.org for the most up-to-date scheduling information.

Sunday, 25 September 2011

0700-1800	Registration Desk Open
0900-1130	TIAFT Board Meeting
0900-1300	NSD-COAD General Meeting
1000-1200	Forensic Toxicology Council Meeting
1130-1230	TIAFT Regional Representatives Meeting
1230-1400	Young SOFT-TIAFT Lunch
1400-1800	NLCP Inspector/Director Training
1400-1830	Young SOFT-TIAFT Symposium
1900 -	Young SOFT-TIAFT Happy Hour

Monday, 26 September 2011

0700-0800	Continental Breakfast
0700-1800	Registration Desk Open
0800-1730	Workshops (0800-1200 & 1330-1730)
0900-1200	FTCB Examinations
0900-1700	Exhibit Hall Staging
1200-1330	Lunch for Workshop Attendees
1330-1630	FTCB Board Meeting
1730-1830	SOFT/AAFS Drugs & Driving Committee Meeting
1900-2200	Tier I Sponsor Receptions

Tuesday, 27 September 2011

0700-0800	Continental Breakfast
0700-1200	SOFT Board Meeting
0700-1800	Registration Desk Open
0800-1200	ABFT Examinations
0800-1730	Workshops (0800-1200 & 1330-1730)
0900-1200	ABFT Accreditation Committee Meeting
0900-1700	Exhibit Hall Staging
1200-1330	Lunch for Workshop Attendees
1200-1800	ABFT Board Meeting
1730-1830	DFSA Committee Meeting
1800-1900	ABFT Certificate Reception
1800-1900	Happy Hour in Exhibit Hall
1800-2100	Sunshine/Rieders Silent Auction Open

Tuesday, 27 September 2011 (continued)

1900-2100	Welcoming Reception in Exhibit Hall
2100-2230	Historical Lecture & Elmer Gordon Forum
2230-0030	Night Owl XII Reception

Wednesday, 28 September 2011

0730-0830	Continental Breakfast
0730-1530	Registration Desk Open
0830-0950	Opening Ceremony & Plenary Sessions
0830-1530	Exhibit Hall Open
0830-1530	Sunshine/Rieders Silent Auction
1010-1210	Parallel Scientific Sessions
1210-1340	Lunch & Poster Session 1 in Exhibit Hall
1340-1440	Parallel Scientific Sessions
1440-1630	SOFT Business Meeting
1730-2300	"Escape *TO* Alcatraz" & San Francisco Bay Cruise

Thursday, 29 September 2011

0600-0730	SOFT "Karla Moore" Fun Run/Walk
0730-0830	Continental Breakfast
0730-0900	AAFS Steering Committee Meeting
0730-1600	Registration Desk Open
0830-1235	Parallel Scientific Sessions
0830-1330	Sunshine/Rieders Silent Auction Bidding Ends at 1330
0830-1500	Exhibit Hall Open
1100-1200	Exhibitors' Feedback Session
1235-1400	Lunch & Poster Session 2 in Exhibit Hall
1400-1530	Parallel Scientific Sessions
1530-1730	TIAFT Business Meeting
1830-2400	Uniting Nations Presidential Gala Dinner

Friday, 30 September 2011

0730-0830	Continental Breakfast
0830-1235	Parallel Scientific Sessions
1235-1400	Lunch & Poster Session 3
1400-1600	Parallel Scientific Sessions
1630-1800	Award Presentations & Closing Ceremony

SOFT-TIAFT 2011

SEPTEMBER 25-30, 2011

*Submitted by **Nikolas P. Lemos**, PhD & **Ann Marie Gordon**, MS*

INTRODUCTION

San Francisco, the unique metropolis by the bay, is getting ready to host the 41st Annual Meeting of the Society of Forensic Toxicologists, which will be jointly offered with the 49th Annual Meeting of The International Association of Forensic Toxicologists. **The conference dates are Sunday, September 25 to Friday, September 30, 2011.** You should expect to have an didactic and rewarding scientific program that will educate and inspire, as well as a rejuvenating social calendar to entertain all. The average daytime temperature this time of the year is 72°F (22°C) but it can drop to a rather low 56°F (13°C) at night. You should expect clear days and little fog as this is one of the best times of year to visit San Francisco!

REGISTRATION INFORMATION

Registration for the 2011 Joint SOFT-TIAFT International Conference and Expo on Forensic & Analytical Toxicology is well underway, and can still be accomplished on-line, by visiting www.toxicology-2011.org and selecting the "Registration" tab. Organizers are expecting a total of 1300+ meeting participants from around the globe to attend this extraordinary meeting.

Many types of registrations are offered to all delegates. The traditional SOFT types of registration will be offered (i.e., meeting only, workshops only, etc.) but this year and at par with typical all-inclusive TIAFT meeting registration style, there will also be a **COMBINED Full Meeting AND Workshop Registration** available to all delegates. More details about each of our registration types can be found online at www.toxicology 2011.org under the tab "Registration."

AWARDS AND TRAVEL GRANTS

Each year the two organizations recognize various levels of achievement in the field of forensic toxicology by means of awards and grants. If you wish to be considered for any of these awards, you must follow each organization's instructions, use the appropriate application forms and meet the requirements and deadlines.

LETTERS OF INVITATION

Upon request, Vina R.Spiehler, PhD, will be pleased to provide you with an official Letter of Invitation if required by your organization, university, institute or immigration authorities. Please contact her directly via email at vina@toxicology2011.org It is understood that such letter does not constitute a commitment on the part of the Organizing Committee to provide any further support to the delegate requesting this letter.

SCIENTIFIC PROGRAM

An exciting, educational and diverse scientific program is being readied by our scientific program chair, Marilyn Huestis, PhD. Topics cover many areas of toxicology including postmortem toxicology, human performance toxicology, analytical techniques & methods, interpretative challenges, case reports, Driving under the influence of alcohol and/or drugs, clinical toxicology, drug facilitated crimes, and alternative biological specimens. Dr. Huestis has reported that 106 Oral Presentations have been scheduled, and 300 Poster Presentations will be displayed during the 2011 annual conference.

HOST INSTITUTES/LABORATORIES

Ashraf Mozayani, PhD, will be pleased to assist you in identifying a host institute or laboratory in the USA if you so require. Please inquire directly with her (ashraf@toxicology2011.org) about the possibility of arranging such a short educational visit before or after the 2011 Joint SOFT-TIAFT Meeting.

It is understood that such assistance is intended to help delegates make the most of their trip to the USA, however, this is not a commitment on the part of the Organizing Committee to provide any further financial or immigration support to the delegate.

SOFT-TIAFT 2011

THE CONFERENCE HOTEL

The conference hotel is the San Francisco Marriott Marquis, a downtown San Francisco landmark hotel rising 39 floors high into the city skyline. The discounted "room block" is currently full, but rooms at the regular rate remain available as do rooms at neighboring hotels. A listing of nearby hotels can be found at the meeting website, under the Accommodations tab.

The Marriott is located just south of Market Street, and situated steps away from the city's top attractions, including the historical Cable Cars, world class shopping on Union Square and Westfield's San Francisco Centre featuring Bloomingdale's. Enjoy magnificent views of downtown San Francisco from a number of the 1,499 luxurious guest rooms.

DRIVING IN

If you are driving to the conference venue, you may wish to consider the various parking options at or near the hotel.

The hotel offers valet parking to all registered guests and day visitors. The current daily rate is $ 55.86 and the current hourly rate is $13.

Diagonally across from the hotel at the corner of Fourth and Mission Streets, is the Fifth & Mission Garage, the largest parking garage in San Francisco and the **economical alternative** to the hotel valet parking service. The hourly and daily rates at this Parking Garage are $3.50 and $32, respectively. Please note that these prices are only accurate at the time of printing and may change without notice.

FLYING IN

If you are flying into the San Francisco Bay Area, please note that the conference hotel does not provide shuttle service to/from airports. It is, however, easy to get to and from the two main international airports serving the San Francisco Bay Area:

- **San Francisco International Airport (SFO)** is located 13 miles from the conference hotel.

Rentals Cars, Airport Shuttles, Subway Service (BART) or Taxis may be used to reach the hotel from this airport. BART is the most convenient and economical way to travel between SFO and the conference hotel. Single, One-Way Ticket from SFO to Powell Street is $8.10. The hotel is only one block from the nearest BART stop: Powell Street. TAXIS are available to transport you from SFO to the conference hotel. The average cost for a single, one-way trip from SFO to the hotel is $50 (excluding surcharges and tip).

- **Oakland International Airport (OAK)** is located 19 miles from the conference hotel.

Rentals Cars, Airport Shuttles, Subway Service (BART) or Taxis may be used to reach the hotel from this airport. BART is the most convenient and economical way to travel between OAK and the conference hotel. Single, One-Way Ticket from OAK to Powell Street is $3.80. The hotel is only one block from the nearest BART stop: Powell Street. TAXIS are available to transport you from OAK to the conference hotel. The average cost for a single, one-way trip from OAK to the hotel is $60 (excluding surcharges and tip). Please note that these prices are only accurate at the time of printing and may change without notice.

ABOUT SAN FRANCISCO

San Francisco is often called "Everybody's Favorite City," a title earned by its scenic beauty, cultural attractions, diverse communities, and world-class cuisine. Measuring only 49 square miles, this very pedestrian-friendly city is dotted with landmarks like the Golden Gate Bridge, cable cars, Alcatraz and the largest Chinatown in the United States. A stroll of the City's streets can lead to Union Square, the Italian-flavored North Beach, Fisherman's Wharf, the Castro, Japantown and the Mission District,

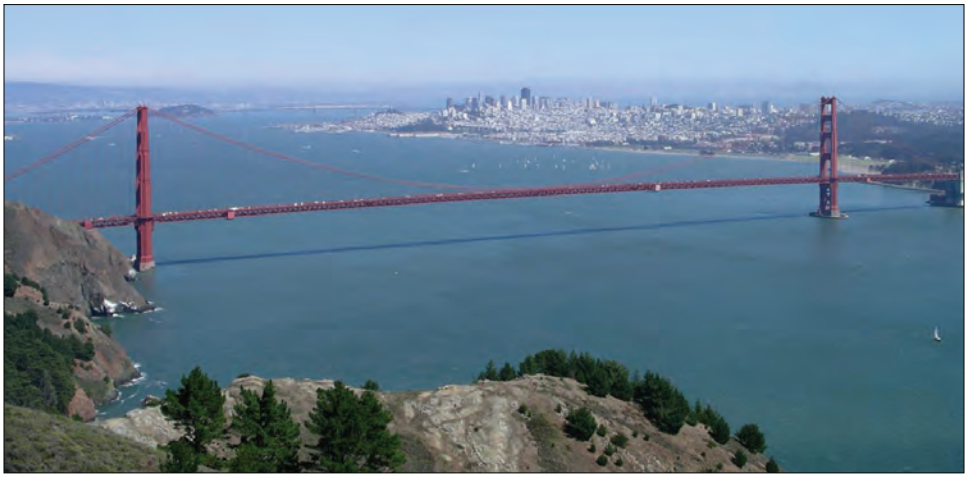
with intriguing neighborhoods to explore at every turn.

Views of the Pacific Ocean and San Francisco Bay are sometimes laced with fog, creating a romantic mood in this most European of American cities. The City has a colorful past, growing from a small village to a major city nearly overnight as a result of the 1849 Gold Rush. The writers of the "beat" generation, the hippies of the Summer of Love in the late 1960's and the large gay/lesbian population have all contributed to making San Francisco the fascinating place it is today.

The City is home to world-class theatre, opera, symphony and ballet companies and often boasts premieres of Broadway-bound plays and culture-changing performing arts. San Francisco is one of America's greatest dining cities. The diverse cultural influences, proximity of the freshest ingredients and competitive creativity of the chefs result in unforgettable dining experiences throughout the City.

Here are the **top 10 things** not to miss in San Francisco, according to the San Francisco Travel Association:

- Golden Gate Bridge, the most famous bridge in the world, manages to impress even the most experienced travelers with its stunning 1.7-mile span. Approximately 120,000 automobiles drive across it every day. A pedestrian walkway also allows the crossing on foot, and bikes are allowed on the western side. Golden Gate Bridge is said to be one of the most photographed objects on Earth.
- Cable cars have been transporting people around San Francisco since the late 19th century. The cars run on tracks and are moved by an underground cable on three routes. Their familiar bells can be heard ringing from blocks away. Tickets may be purchased at the cable car turnarounds at the ends of each route. Each one-way ride will provide spectacular views of the city's celebrated hills as well as exhilarating transportation.



- Alcatraz, the notorious former prison, is located on an island of the same name in the middle of San Francisco Bay. Some of the United States' most notorious criminals were incarcerated there. Though several tried, no inmate ever made a successful escape from "The Rock." The prison was closed in the 1960's and stories about Alcatraz are legendary. A visit to Alcatraz today is fascinating. Recorded cell-house tours are available, allowing visitors to learn about the prison as they explore the buildings and grounds. We will have the pleasure of visiting 'The Rock" on Wednesday evening during our Escape *TO* Alcatraz and San Francisco Bay Cruise.
- Fisherman's Wharf is also home to Pier 39, a festive waterfront marketplace that is one of the city's most popular attractions. A community of California sea lions has taken up residence on the floats to the west of the pier and visitors line the nearby railing to watch their antics. From there it's a short walk to the Wax Museum, Ripley's Believe It or Not! and the famous crab vendors selling walk-away crab and shrimp cocktails.
- Union Square is the place for serious shoppers. Major departments stores and the most exclusive designer boutiques line streets like Post, Sutter, Geary, Grant, Stockton and Powell. The Westfield San Francisco Shopping Centre houses the largest

Bloomingdale's outside of New York and the second largest Nordstrom in the U.S.

- North Beach, the city's Italian quarter, isn't a beach at all. It's a neighborhood of romantic European-style sidewalk cafes, restaurants and shops centered near Washington Square along Columbus and Grant avenues. The beautiful Church of Saints Peter and Paul is a beloved landmark. Coit Tower atop Telegraph Hill offers a splendid vantage point for photos of the bridges and the Bay. Inside the tower, floor-to-ceiling murals painted in the 1930s depict scenes of early San Francisco.
- The entrance to Chinatown at Grant Avenue and Bush Street is called the "Dragon's Gate." Inside are 24 blocks of hustle and bustle, most of it taking place along Grant Avenue, the oldest street in San Francisco. This city within a city is best explored on foot; exotic shops, renowned restaurants, food markets, temples and small museums comprise its boundaries. Visitors can buy ancient potions from herb shops, relax and enjoy a "dim sum" lunch or witness the making of fortune cookies.
- Dining in San Francisco is an attraction in itself. Known as America's best restaurant city, San Francisco chefs excel at combining the freshest local ingredients, authentic international flavors and a touch of creative genius. Choose your cuisine – Chinese, Japanese, French, Italian, Spanish, Moroccan, Indian, Malaysian, Thai, Mexican, Greek, Russian, German or "fusion," a combination of any or all of these influences.
- Nightlife in San Francisco is a constantly changing scene. The "hottest" clubs currently are in the South of Market and Mission districts, with live and recorded rock and Latin music. Jazz, blues, swing and "oldies" music can be found all over town and the famous
- A visit to San Francisco would not be complete without a cultural experience. The city is home to internationally recognized symphony, opera and ballet companies. Playwrights such as Sam Shepherd and Tom Stoppard introduce their works in San Francisco and avant-garde theatre and dance companies dot the city. The San Francisco Museum of Modern Art, the Asian Art Museum, the de Young Museum, the Palace of the Legion of Honor and other museums and galleries are devoted to the finest of classical and contemporary arts.

MEETING EVENTS

- Young Toxicologists Day
- YFT Symposium
- Two Full Days of Workshops
- Three Full Days of Parallel Scientific Sessions—Platform and Poster Sessions
- "**The Streets of San Francisco**" Welcoming Reception
- "**Escape To Alcatraz**" Trip
- "**Uniting Nations**" President's Gala Dinner
- Elmer Gordon Open Forum
- 5k Fun Run
- SOFT/TIAFT Business Meetings
- Exhibit Hall (68+ co. represented)

SOFT TIAFT 2011
SAN FRANCISCO
CALIFORNIA, USA

MANY EXHIBITORS SUPPORT THE SOFT ANNUAL MEETINGS

"THANK YOU" TO MEETING EXHIBITORS / **SPONSORS**

Each year the list of exhibiting companies and financial sponsorships of the SOFT annual meeting becomes more impressive.

The financial commitment from exhibitors is absolutely essential in keeping meeting registration fees lower for attendees. Many of the following exhibiting companies have partnered with SOFT for many years. Exhibitors appreciate the opportunity to demonstrate their latest technologies and show off the most recent advancements in laboratory instrumentation and related products, and their sponsorships fund the meeting lunches, happy hours, and social functions. Please acknowledge their collective generous contributions and extend your appreciation and business toward these indispensable associates in business.

Those companies who committed additional financial sponsorship funding for SOFT-TIAFT 2011 are in bolded print.

AB Sciex
Absolute Standards
Advanced Chemistry Development (ACD)
Aegis Sciences Corp.
Agilent Technologies
Alere
American Registry of Pathology
American Solutions for Business
Anton Paar USA
ApolloLIMS
Axiom Diagnostics, Inc.
Biochemical Diagnostics
Biophor Diagnostics
Biotage
Branan Medical Corp.
Bruker Daltonics
BUHLMANN Laboratories AG
Calibrate, Inc.
Campbell Science
Cerilliant Corp.
ChemWare, Inc.
Data Unlimited International, Inc.
DPX Labs.
Express Diagnostics International, Inc.
GBF, Inc.
Geneva Bioinformatics
GenTech Scientific, Inc.
GERSTEL, Inc.
Greiner Bio One GmbH
iChrom Solutions
Immunalysis Corp. (Alere)
Journal of Analytical Toxicology (JAT)
JEOL USA, Inc.
Justice Trax, Inc.
LabMedia Partners
LECO Corp.
Lin-Zhi International, Inc.
Lipomed
LGC Limited
Microliter Analytical Supplies, Inc.
Neogen Corp.
NMS Labs.
OraSure Technologies, Inc.
Parker—domnick hunter
Peak Scientific
Perkin Elmer
Pharmaceutical Press
Phenomenex
Phytronix Technologies, Inc.
Preston Publications (JAT)
Quality Assurance Service Corp.
Randox Laboratories, Ltd.
Regis Technologies, Inc.
Restek Corp.
Roche
RTI International
Rudolph Research Analytical
Sciteck Diagnostics, Inc.
Sensa Bues
SGE Analytical Science
Shamrock Glass Company, Inc.
Shimadzu Scientific Instruments, Inc.
Siemens
Speware Corp.
Thermo Scientific
United Chemical Technologies (UCT)
UTAK Laboratories, Inc.
Venture Labs, Inc.
VertiQ
Waters Corp.
X-Link Bioscience, Inc.

2011 JOINT MEETING OF SOFT & TIAFT *(CONTINUED)*

2011 Planning Committee

2011 HOSTS
Nikolas P. Lemos, PhD, FRSC
Ann Marie Gordon, MA

SCIENTIFIC PROGRAM
Marilyn A. Huestis, PhD

WORKSHOPS
Dimitri Gerostamoulos, PhD
Laureen Marinetti, PhD

TREASURER
Daniel S. Isenschmid, PhD

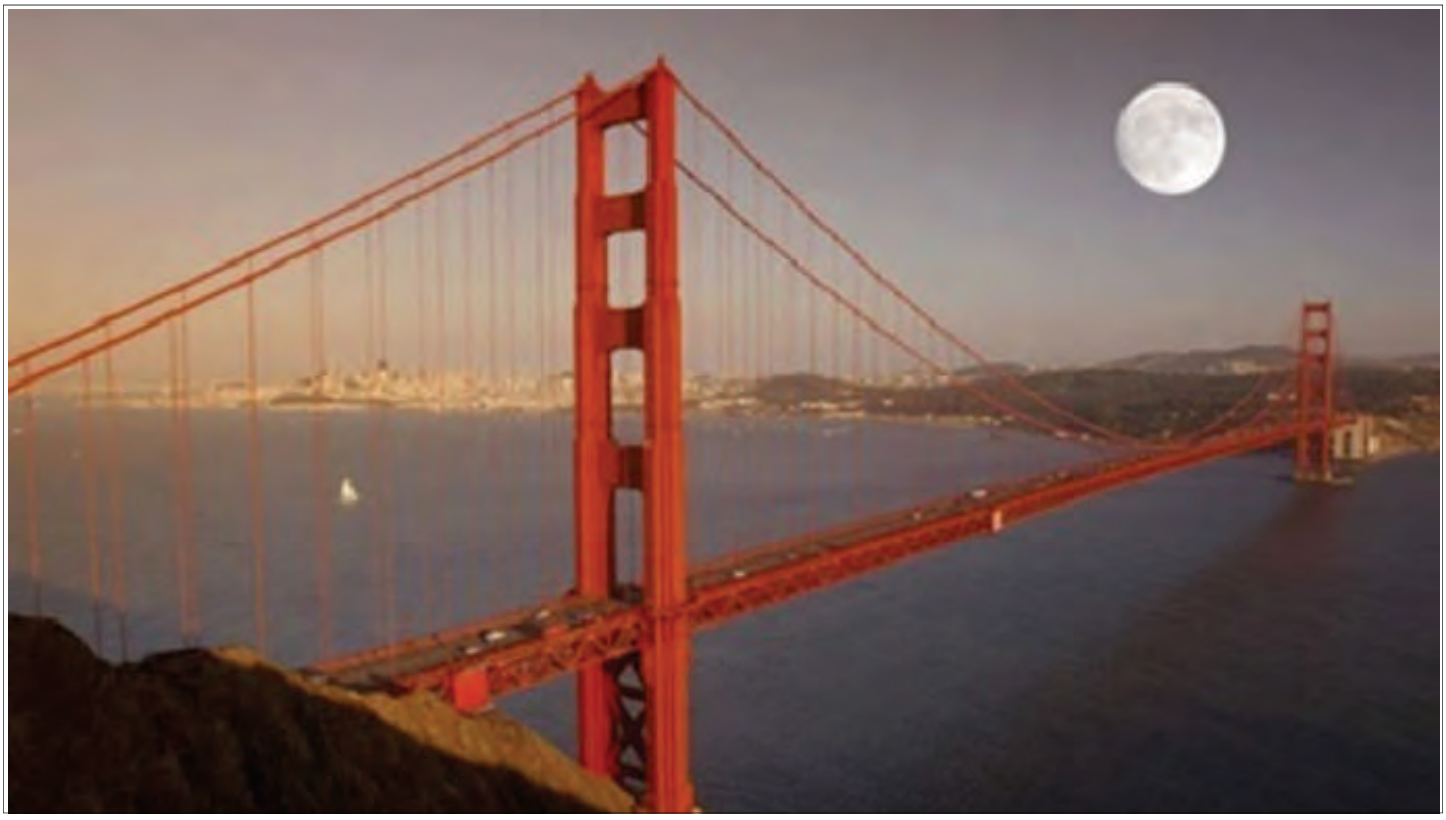
LOCAL ARRANGEMENTS
Vina R. Spiehler, PhD

EXHIBITORS/SPONSORS
Peter R. Stout, PhD
Jeri D. Ropero-Miller, PhD

International Advisory Board

The many individuals listed below have agreed to serve on the 2011 International Advisory Board. These individuals will be involved with many meeting decisions.

- Dan T. Anderson, MS - USA
- Robert A. Anderson, PhD - UK
- Sotiris Athanaselis, PhD - Greece
- Jochen Beyer, PhD - Australia
- Federica Bortolotti, MD, PhD - Italy
- Jennifer Button, BS - UK
- Hee-Sun Chung, PhD - Korea
- Marc Deveaux, PhD - France
- Olaf H. Drummer, PhD - Australia
- Simon Elliott, PhD - UK
- David W. Holt, PhD - UK
- Alan Wayne Jones, PhD - Sweden
- Sarah Kerrigan, PhD - USA
- Pascal Kintz, PhD - France
- Robert Kronstrad, PhD - Sweden
- Marc LeBeau, PhD - USA
- Hans H. Mauer, PhD - Germany
- Manfred R. Möller, PhD - Germany
- Christine Moore, PhD - USA
- Ashraf Mozayani, PhD - USA
- IIkka Ojanperä, PhD - Finland
- David Osselton, PhD - UK
- Anya Pierce, MBA - Ireland
- Nikolaos Raikos, MD - Greece
- Marina Stajic, PhD - USA
- Osamu Suzuki, MD, PhD - Japan
- Franco Tagliaro, MD - Italy
- Alain G. Verstraete, MD - Belgium
- Robert Wennig, PhD - Luxembourg



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ToxTalk **Deadlines** for Contributions:

February 1 for March Issue
May 1 for June Issue
August 1 for September Issue
November 1 for December Issue

Future S.O.F.T. Meeting Destinations:

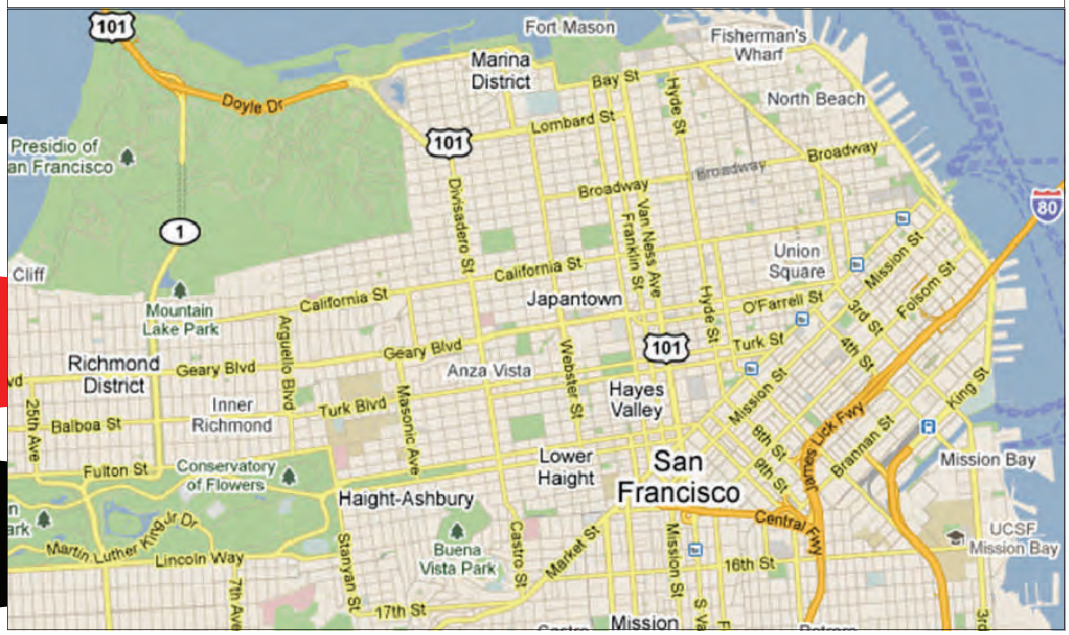
2011: San Francisco, CA…....Sep. 25-Oct. 1, 2011…….Nikolas Lemos, Ann Marie Gordon
2012: Boston, MA……...June 30-July 6, 2012……..……...……Michael Wagner
2013: Orlando, FL……...Oct. 26-Nov. 3, 2013……..……...Bruce Goldberger
2014: Grand Rapids, MI……Oct. 18-25th, 2014……...Ben Kuslikis
2015: Atlanta, GA……...Oct. 17-25, 2015……..…...to be determined

VISIT SAN FRANCISCO!

SOFT 2011
www.toxicology2011.com

We're on the Web!
www.soft-tox.org

SOFT-TIAFT 2011 - SEPTEMBER 25-30, 2011



SOFT 2011 PLANNING COMMITTEE MEMBERS

Hosts:
Nikolas Lemos (nikolas.lemos@sfgov.org)
Ann Marie Gordon (ann.gordon@sfgov.org)

Treasurer:
Daniel Isenschmid (pointetox@aol.com)

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Dimitri Gerostamoulos (dimitrig@vifm.org)
Laureen Marinetti (marinettil@mcohio.org)

Scientific Program:
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Local Arrangements:
Vina Spiehler (spiehleraa@aol.com)

Exhibitor Coordination:
Peter Stout (pstout@rti.org)
Jeri Ropero-Miller (jerimiller@rti.org)

JAT Special Editor for 2011:
Jarrad Wagner (jarred.wagner@okstate.edu)

2011 S.O.F.T. COMMITTEE CHAIRS

Committee	Committee Chair
Advocacy	Bruce Goldberger, Ph.D., DABFT
ByLaws	Yale Caplan, Ph.D., DABFT
Budget, Finance, and Audit	Robert Turk, Ph.D., DABFT
Membership	Dan Anderson, M.S., FTS-ABFT, DABC
ToxTalk Editors	Yale Caplan, Ph.D., DABFT Laura Liddicoat, B.S.
Publications (JAT Special Issue)	Jarrad Wagner, Ph.D.
Awards	Philip Kemp, Ph.D., DABFT
Meeting Resource	Marc LeBeau, Ph.D., DABFT
Drugs & Driving	Jennifer Limoges, M.S., DABC
Policy and Procedure	William Anderson, Ph.D.
SOFT Internet Web-Site	Bruce Goldberger, Ph.D., DABFT Matthew Juhascik, Ph.D., DABFT
Continuing Education	Ann Marie Gordon, M.S.
Young Forensic Toxicologists	Teresa Gray, Ph.D.
Drug Facilitated Sexual Assault	Laureen Marinetti, Ph.D., DABFT
Ethics	Aaron Jacobs, Ph.D.
Nominating	Bradford Hepler, Ph.D., DABFT
Strategic Planning	Peter Stout, Ph.D., DABFT Marc LeBeau, Ph.D., DABFT
Consortium of Forensic Science Organ	Laurel Farrell, B.A.

SOME SOFT HISTORY

1990

Robert Bost, Ph.D., DABFT

- President: Robert Bost, PhD, DABFT
- Meeting/Host: Long Island / Michael McGee
- ERA Winners: Nancy Haley, University of Rhode Island; Gary Kunsman, Louisiana State University Medical Center; MaryAnn Suero, Illinois Institute of Technology

- Dr. Bost says planning and hosting an international conference on drug testing in hair was the most significant activity of his presidency. In addition to over 30 years with SOFT, he is a Fellow of AAFS, and a member of the American Chemical Society, the International Assoc. of Forensic Toxicologists (TIAFT), and CAT. Dr. Bost has been an associate professor of chemistry at the University of Central Oklahoma since 2002. He has also taught at the UT Southwestern Medical Center at Dallas (1982-1992) and the Case Western School of Medicine (1975-1982). Concurrently, he served as chief or associate toxicologist at the Southwestern Institute of Forensic Sciences and the Cuyahoga County Coroner's Office. In the private sector, he has been a consultant since 1982 and served as laboratory director for PharmChem Laboratories. Dr. Bost has bachelor's and master's degrees in chemistry from UT-Austin, and a PhD in chemistry from the University of Houston.

1991

William Anderson, Ph.D.

- President: William Anderson, PhD
- Meeting/Host: Montreal / William Robinson with CSFS

- Dr. Anderson joined the SOFT board of directors in 1987 before becoming vice president and then president. He has also chaired the Budget, Finance & Audit committee (1987-1989) and the Policy & Procedures committee (since 1996). In addition to membership in SOFT, Dr. Anderson has been an active AAFS member. He received the Toxicology Section's 2008 Gettler Award. Dr. Anderson has been a practicing forensic toxicologist since 1972. He is currently Chief Toxicologist for the Washoe County Sheriff's Office in Reno. Earlier positions included Chief or Deputy Chief Toxicologist for the North Carolina OCME, the Oklahoma OCME, and the Tennessee Bureau of Criminal Identification. CONNECTIONS: Dr. Anderson worked with former SOFT president Dick Prouty at the Oklahoma OCME from 1982 to 1987.

1992

- President: Jeanne Beno, PhD
- Meeting/Host: Hartford / Neil Reading
- ERA Winners: William Walker, University of Saskatchewan; Philip Kemp, Louisiana State University Medical Center

- Dr. Beno attended her first SOFT meeting in 1980. The first person she met was Dick Prouty and he encouraged her to get involved in committees, which ultimately led her to the board of directors and the role of president. Dr. Beno has also been with the Monroe County ME's Office in Rochester, NY, since 1980. In addition to serving as Chief Toxicologist for 12 counties in this regional system, Dr. Beno holds an appointment as clinical assistant professor of pathology and laboratory medicine at the University of Rochester School of Medicine. She was also director of the Substance Abuse Laboratory for Eastman Kodak from 1989 to 1997. Dr. Beno has a bachelor's degree from Cornell and earned her master's and doctorate in pharmacology from the University of Rochester. CONNECTIONS: Dr. Beno's predecessor at the Monroe County ME's Office was none other than SOFT's Elmer Gordon.

SOME SOFT HISTORY

1993

- President: Alphonse Poklis, PhD, DABFT
- Meeting/Host: Phoenix / Vickie Watts with CAT
- ERA Winner: Amanda Jenkins, University of Maryland

- Dr. Poklis cites 1993 as SOFT's first "mega meeting," noting the increasingly national flavor of the organization. Dr. Poklis received a BS in pharmacy from the University of Maryland in 1969. As a US Public Health Service Fellow, he studied forensic toxicology under Dr. Henry Freimuth at the Maryland OCME in Baltimore, receiving his PhD from the University of Maryland in 1974. Currently, he is the director of the toxicology laboratories at VCU Medical Center, and an affiliate professor of pharmacology/toxicology. Previously, he was a toxicologist at the OCME in Wilmington (DE); North Dakota State University and Office of the State Toxicologist; and director of the forensic and environmental toxicology laboratory at the St. Louis University School of Medicine. Dr. Poklis has offered expert testimony nationwide and contributed to over 200 peer-reviewed publications and book chapters. He is a Fellow and past chairman of the AAFS Toxicology Section. In 1998, he received AAFS's Rolla N. Harger Award. A Diplomate of the ABFT since its inception, he received ABFT's Distinguished Service Award in 2005. CONNECTIONS: Dr. Poklis and Yale Caplan were contemporaries at the Maryland OCME.

Mark Lewis, B.S., E/DABFT (left)
Alphonse Poklis, Ph.D., DABFT (right)

1994

- President: Mark Lewis, BS, EABFT
- Meeting/Host: Tampa / Horton McCurdy & Marilyn Huestis with TIAFT
- ERA Winners: Karla Moore, Medical College of Virginia; Amanda Jenkins, University of Maryland

- Mr. Lewis is a charter member of SOFT and has served as treasurer, a member of the board of directors, and committee member/chair in addition to being a past president. He is also a charter member and past president of the Northeastern Association of Forensic Scientists, a Fellow of AAFS, and member of CSFS, TIAFT, and the National Safety Council's Committee on Alcohol and Other Drugs. Mr. Lewis has testified as an expert witness more than 100 times. He completed his bachelor's degree in medical technology at SUNY-Buffalo in 1968. He worked as a technologist and toxicologist at the Erie County Laboratory until 1973 when he joined the New York State Police Forensic Investigation Center. Mr. Lewis retired from the NYSP lab after 20 years of service.

Vina Spiehler, Ph.D., DABFT

1995

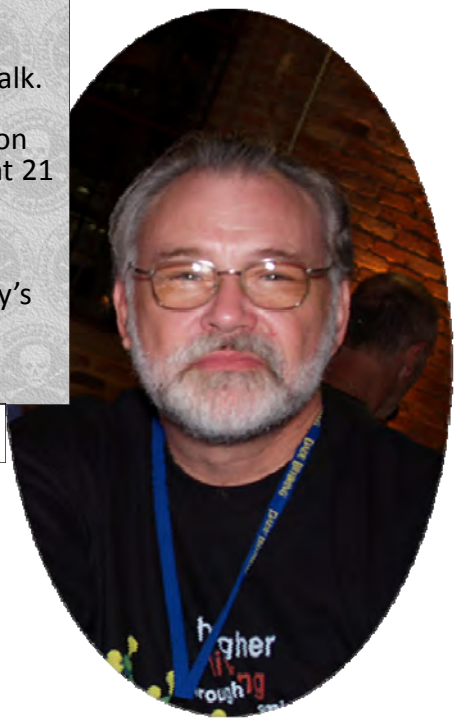
- President: Vina Spiehler, PhD, DABFT
- Meeting/Host: Baltimore / Yale Caplan
- ERA Winners: Gina Cassella, University of Connecticut; John Pablo, University of Miami
-
- Dr. Spiehler has a private toxicology consulting practice and has provided expert witness testimony in over 100 cases. She began her career as a forensic toxicologist with the Orange County (CA) Office of the Sheriff-Coroner (1981-1986) and was a Fulbright Fellow assigned to the Home Office Forensic Science Service in Aldermaston, UK, in 1986 and 1987. Dr. Spiehler was the Technical Director for drugs of abuse testing products at Diagnostic Products Corporation from 1988 to 1993. In 2009, she received TIAFT's Alan Curry Award. Dr. Spiehler's education includes a master's in analytical chemistry from California State University in Fullerton and a PhD in pharmacology and toxicology from the School of Medicine at the University of California at Irvine.

SOME SOFT HISTORY

1996

- President: Chip Walls, BS
- Meeting/Host: Denver / Robert Zettl & Laurel Farrell
- ERA Winners: Robert Joseph, University of Maryland; Matthew Slawson, University of Utah; Tracy Williams, University of Connecticut; George Behonick, St. John's University

- Mr. Walls joined the SOFT board of directors in 1991 and subsequently served as vice president, president, and on the editorial board of Tox Talk. He has also served and/or chaired the following committees: driving under the influence of drugs, meeting resources, the joint committee on education and training in toxicology, and health/safety. Mr. Walls spent 21 years with the Alabama Department of Forensic Sciences-Birmingham Division toxicology section and the Onondaga County (NY) ME's Office laboratories before moving to the University of Miami. He is currently technical director of the forensic toxicology laboratory at the University's School of Medicine. Mr. Walls himself graduated with a bachelor of science from the University of Alabama at Birmingham in 1972.



H. Chip Walls, B.S.

Vickie Watts, M.S.

1997

- President: Vickie Watts, MS
- Meeting/Host: Salt Lake City / Dennis Crouch & David Moody
- ERA Winner: Rebecca Jufer, University of Maryland

- An ERA winner in 1988, Ms. Watts was president of the organization a mere 9 years later. She has also been an editor of Tox Talk since 2007. As an undergraduate at Augustana College, Ms. Watts double majored in chemistry and biology. She completed her master's in the areas of analytical chemistry, biochemistry, and pharmacology at the University of Montana. She began her career as a toxicologist with the State of Montana Crime Laboratory (1977-1980), then moved to Arizona where she worked for the Dept. of Public Safety Crime Laboratory (1980-1983) and Mesa Police Crime Lab (1983-1995) as a toxicologist. She has been a private consultant since 1996.

SOME SOFT HISTORY

1998

- President: Joseph Saady, PhD, DABFT
- Meeting/Host: Albuquerque / NGS Rao & Vina Spiehler with TIAFT
- ERA Winners: Brad Hall, University of Texas at Austin; Rebecca Jufer, University of Maryland; Tessa Long, East Tennessee State University; Jeri Ropero-Miller, University of Florida

- Dr. Saady served as SOFT's treasurer (1993-1996) and vice president before becoming president. He has also chaired SOFT's visioning workgroup and ERA committee. His other affiliations include AAFS, TIAFT, ACGIH and the Biology Exposure Index Committee (13 years), ACS, and the editorial review board of the Journal of Analytical Toxicology. Dr. Saady has a BS in chemistry from the University of Richmond, and completed both his master's and PhD (pathology/toxicology) at the Medical College of Virginia. He was a toxicologist at MCV(1977-1987) and subsequently became an assistant professor and Director of Forensic Testing (1987-1996). In 1996, he joined the Virginia Department of Forensic Science where he held the positions of Chief Toxicologist and Toxicologist Manager until he retired in 2009. Currently, he has a private toxicology consulting practice. CONNECTIONS: Dr. Saady's graduate student advisor was Bob Blanke (1978 SOFT president). He worked for Dr. Blanke for 15 years. Dr. Saady was also assistant director while former SOFT president Al Poklis was the director of toxicology in the MCV Department of Pathology.

Joseph Saady, Ph.D., DABFT

Marilyn Huestis, Ph.D.

1999

- President: Marilyn Huestis, PhD
- Meeting/Host: San Juan, PR / Flor Mattos
- ERA Winners: Robin Evans, University of Maryland; Sandra Valtier, University of Texas, San Antonio

- During Dr. Huestis's presidency, five ad hoc committees were established (Continuing Education, Drug Facilitated Sexual Assault, Ethics, Meeting Host Guidelines, and Visioning). She says, "I am particularly proud of the Continuing Education Committee that offers excellent, inexpensive courses for toxicologists unable to attend annual meetings." Dr. Huestis herself has taught at the University of Maryland School of Medicine since 1995. She also joined NIH in 1995 and has been Chief of the Chemistry and Drug Metabolism Intramural Research Program at NIDA since 1998. Dr. Huestis has an AB in biochemistry from Mount Holyoke, a master's in clinical chemistry from the University of New Mexico, and a PhD in toxicology from the University of Maryland. In addition to her SOFT activities, she has been president of TIAFT and chaired the AAFS Toxicology Section. She received the Rolla N. Harger Award in 2005. CONNECTIONS: Dr. Huestis is married to 2001 SOFT president Mick Smith. She also did her graduate work with Mandy Jenkins and Dan Isenschmid, and Yale Caplan was on her doctoral committee. She has worked with 22 other SOFT presidents through the NLCP.