Society of Forensic Toxicologists, Inc.

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TOXTALK

INSIDE THS ISSUE:

PRESIDENT'S MESSAGE

By Anthony Costantino, Ph.D., D-ABFT

I am honored and thankful that the membership will allow me to serve them as the President of SOFT in 2009. I intend to ensure that the directives and objectives set forth by the SOFT Board of Directors for the benefit of the Society and its membership in the spirit of our published purposes and goals continue to be pursued. If you would like to review Society's purpose and goals please refer to the website **http://soft-tox.org/PurposesGoals.asp**.

As President, I know that I will be able to continue to draw on the valuable advice and assistance of the entire SOFT membership as well as past and present officers and members of the Board as we move forward to meet the needs of our growing organization. In this note to you, I will share recent happenings, a few short-term deadlines and my excitement for the future and value of SOFT.

Last month we had a lively and informative Board of Directors meeting in Denver, Colorado. Thank you to all of those who were able to attend and participate in the meeting. In Denver, amongst other topics, we focused on the role of SOFT in our industry. To help guide our stance, the Board of Directors reviewed SOFT's Purposes and Goals. We used our Purposes and Goals as the backbone for our response to the National Academy of Science (NAS) Report on Forensic Science entitled ***Strengthening Forensic Science in the United States: A Path Forward.*** This report was the result of a study of forensic sciences by the NAS which was authorized by Congress under the terms of the Science, State, Justice, Commerce and Related Agencies Appropriation Act of 2006 which became law on November 22, 2005. While I will not recap the entire report here, I do strongly recommend that all of the membership download the free summary from the following link: **http://books.nap.edu/catalog.php?record_id=12589** . The full document may also be purchased from that site. The report contains observations and conclusions which resulted in a list of recommendations that are to apply to both public and private sector entities. This report was released during the AAFS annual meeting on February 18th . That timing allowed some of the forensic community to review and begin to digest at least the report summary. I am sure that it was discussed among all of the disciplines within the Academy. SOFT as well as AAFS, ABFT and ASCLD have issued independent press releases to acknowledge the report and to state their positions with respect to some of the recommendations **(http://www.soft-tox.org/docs/SOFT%20Press%20Release.pdf).**

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PRESIDENT'S MESSAGE (CONTINUED)
BY ANTHONY COSTANTINO, PH.D., D-ABFT

(Continued from Cover)

Upon reviewing the recommendations in the report it became clear to me that the Society's mission, procedures, goals and affiliations do indeed demonstrate that SOFT has recognized the importance of these fundamental areas and has embraced and addressed them for years. In the press release we referred to SOFT's role in the areas of research, education, training, accreditation and certification in forensic science.

Although we have embraced and focused on these areas for many years, the new recommendations by the NAS could have a serious impact on how influential SOFT and other member organizations will be in the future. Below is one of many recommendations made in the NAS report:

"**To promote the development of forensic science into a mature field of multidisciplinary research and practice, founded on the systematic collection and analysis of relevant data, Congress should establish and appropriate funds for an independent federal entity, the National Institute of Forensic Science (NIFS). NIFS should have a full-time administrator and an advisory board with expertise in research and education, the forensic science disciplines, physical and life sciences, forensic pathology, engineering, information technology, measurements and standards, testing and evaluation, law, national security, and public policy."**

I believe that the practices that SOFT fosters may become required mandates which will apply to scientists at all levels in both public and private forensic toxicology laboratories. Additionally, I believe there not only may be required certifications of all scientists but also required standards of practice and accreditation of the laboratories. If mandated requirements and standards which affect forensic toxicology are to be developed, SOFT must be in a position to assist NIFS with the development of such requirements and standards. Since these developments will affect all areas of forensic science, I recommend that SOFT participate with an active organization that is committed to helping NIFS with its mission to improve the field of forensic science. One such organization is the Consortium of Forensic Science Organizations (CFSO; **http://www.thecfso.org/).** The CFSO represents the American Academy of Forensic Sciences; American Society of Crime Laboratory Directors; American Society of Crime Lab Directors - Laboratory Accreditation Board; Forensic Quality Services; International Association for Identification; and National Association of Medical Examiners. They are committed to developing a strategy to work with policy makers to improve the forensic sciences forward. CFSO has an initial roundtable discussion tentatively scheduled for March 10th. I am in contact with CFSO with respect to membership for SOFT and by the time you are reading this article the Board of Directors will have made a decision. I also suggest that we work within SOFT to continually improve our current programs and establish new impactful programs that demonstrate our working knowledge and understanding of the forensic toxicology marketplace. Your thoughts and comments on this topic are welcome. I would like to hear them; please email your thoughts directly to me at (**acostantino@drugscan.com**).

In closing I would like to mention some other recent happenings and to remind the membership of some impending deadlines. As I mentioned earlier, the BOD recently had its interim meeting. The BOD continues to focus on the organization's financial health, education, management of the organization's growth, and relationships with other organizations. At that meeting I welcomed our new board members, Fiona Cooper and Adam Negrusz, as well as our new officers, Marc LeBeau (Treasurer) and Brad Hepler (Vice-President). In regard to the committees, Marc LeBeau is the new Chair of the Strategic Planning Committee, Brad Hepler will Chair the Meeting Guidelines Committee and Peter Stout will chair an ad hoc committee and will work in conjunction with the Continuing Education Committee to investigate means of improving the availability of web-based continuing education to the forensic toxicology community. Speaking of education, I would like to remind the membership that the ERA and YSMA awards are now $2000. This was increased form $1000 at the 2008 BOD meeting. The deadline for receipt of applications is Friday, April, 3rd.

Jennifer Limoges is working diligently on the SOFT/JAT Special issue. The deadline for submission of titles and abstracts is March 16th. See the SOFT website for details. From this JAT Special Issue, will emerge the first recipient of the newly established EDIT award. This award was established by Past-President, Christine Moore. The EDIT award recognizes the paper with the best experimental design and highest impact on our field.

Finally, you need to know that a lot of excitement is brewing around this year's annual meeting in Oklahoma City. Phil Kemp and his team have put together a host of great events and a wonderful line up of speakers that you won't want to miss! The meeting hosts have established a fun and informative website: **www.SOFT2009.org**. Check it out!

It looks like 2009 will be an exciting and dynamic year for me and for SOFT. Your continued support and enthusiasm for SOFT will be needed and called upon this year and for years to come. Thank you and see you in Oklahoma.

TREASURER REPORT

Submitted by Bradford Hepler, Ph.D., DABFT

The year 2008 has come to an end and our new SOFT Treasurer, Dr. Marc LeBeau, has taken up the reins for 2009-2010. In January, Dr. LeBeau, our SOFT Certified Public Accountant, Martin Halloran, SOFT Administrative Assistant, Bonnie Fulmer, and I met at the SOFT office to transfer information, records, and materials necessary to meet the commitments required to successfully perform the duties of the office of SOFT Treasurer. Additionally, the necessary SOFT bank account signatures, documentation and account access permissions for this transition in personnel were accomplished.

Dr. LeBeau has already begun acting on and improving upon proposals submitted by the Strategic Planning Committee to further streamline the mechanics of the banking and auditing processes of the organization, all of this coming with approval and input from the SOFT CPA, Mr. Halloran. This year, Dr. LeBeau will also oversee the planned independent audit to be performed by Osborne, Parsons & Rosacker, LLP, Certified Pubic Accountants. It is comforting to know that things are in good hands as we move forward.

Table 1 summarizes the 2007 and 2008 SOFT Organizational Account balances (comprised of the Operating Account, the ERA Account, and the Reserve Account) at the ending of each of those years. The net difference in the Organizational Account totals (accounting for any outstanding transactions to be processed for the accounts from the 2008 calendar year) on Dec 31, 2008, can be compared to overall detail of the Income/Expense report for calendar year 2008 seen on Table 2. The Net change in year beginning and end is a reflection of the activity of all three of the Organizational Accounts, maintained in Mesa, Arizona.

Submitted,

Bradford R. Hepler, PhD, SOFT Treasurer 2007-2008
bhepler@co.wayne.mi.us

Table 1: SOFT 2007/2008 Organizational Funds

SOFT FUNDS	Ending Balance: Dec 31, 2007	Ending Balance: Dec 31, 2008	Net Increase (Decrease)
Operational Fund: Checking Account	122,510.44	68,047.38	-54,463.06
ERA Fund	176,133.81	180,913.40	4,779.59
Reserve Fund	52,869.39	100,845.01	47,975.62
Non-Processed (Checks)/ Deposits	0.00	-11,553.57	-11,553.57
TOTALS	**351,513.64**	**338,252.22**	**-13,261.42**

*Check Returns, Designated Funds, etc.
**Seed Money and Deposit Expenses (for current and future meetings)

Table 2: SOFT 2008 Organizational Income/Expense Report

INCOME	2008 ACTUAL
AMEX Account	855.00
BankCard Account	12,271.57
Discover Card Account	577.00
SOFT Application Fees	3,140.00
SOFT Dues & Subscriptions	35,737.00
Late Fees (Dues)	546.00
ERA Donations	1,898.00
Meeting Proceeds	71,232.60
Meeting Labels Provided	500.00
Mugs/Shirts/Memorabilia Sales	360.00
Reimbursed CE Seed Money	8,112.60
ToxTalk Subscription	90.00
Silent Auction Proceeds	431.00
Interest Earned ERA Fund	2,927.58
Interest Earned Reserve Fund	769.63
Income: Misc.*	939.27
TOTAL	**140,387.25**
EXPENSES	
AAFS Midyear BOD Meeting Expenses	1,282.55
AAFS SOFT Night out	6,613.36
AMEX Account Maintenance Fees	78.00
BankCard Account Maintenance Fees	304.96
Discover Card Account Maintenance Fees	13.76
Bank Service Charges	50.75
Contract Labor	400.00
ERA/YSMA Awards	3,000.00
Internet Account Maintenance	149.40
Insurance	651.03
JAT Meeting Issue Expenses	9,257.60
Lease: SOFT Office Space	5,585.08
Meeting Expenses**	57,845.50
Office Supplies	4,047.29
Payroll Expenses	22,145.70
Postage/Shipping Expenses	112.64
Professional Fees: Accounting	2,675.00
Refund Payments	114.00
SOFT Logo'd Item Expenses	878.02
SOFT CE Seed Money	8,442.60
SOFT Student Education Program (SSEP)	4,409.00
Software Programming	2,141.90
State of Delaware: Incorporation Expenses	75.00
Telephone	739.92
ToxTalk	18,096.19
Website Expenses	4,539.42
TOTAL	**153,648.67**
Net (Loss)/ Income	**-13,261.42**

ANNUAL BUSINESS MEETING MINUTES OF THE SOCIETY OF FORENSIC TOXICOLOGISTS, INC.

The annual Business Meeting of the Society of Forensic Toxicologists, Inc. was held on October 30, 2008 at the Arizona Grand Resort in Phoenix. The following meeting minutes are published for member review.

Call to Order

The SOFT Business Meeting was called to order at 3:34 PM by President, Christine Moore. President Moore reminded the attendees that matters requiring a vote are limited to FULL and RETIRED SOFT members. ASSOCIATE and STUDENT members were requested to refrain from voting. Acting Secretary, Marc LeBeau verified that a quorum was present.

Approval of Agenda

President Moore asked if any corrections were needed to the meeting's agenda. With no corrections proposed, the agenda was approved.

Approval of the October 2007 Annual Business Meeting Minutes

President Moore asked for any corrections to the 2007 Annual Business Meeting Minutes. With no corrections suggested, the minutes were approved.

President's Report

President Moore indicated that it was an honor and privilege to serve as the 2008 President of SOFT. She expressed her appreciation to the membership for allowing her to serve as President and for the assistance that she received in this role. She reminded the membership of the activities of the SOFT BOD over the past year, particularly in the area of educational activities. She mentioned that the BOD has voted to increase the ERA awards to $2,000 and supported the second SOFT Student Enrichment Program. She thanked Jeri Ropero-Miller, as well as the faculty who helped with the whole event. President Moore thanked Dan Anderson for his service as the Guest Editor of the 2008 SOFT Special Issue of the Journal of Analytical Toxicology. She also announced a new award called the Experimental Design and Impact on Toxicology (EDIT) Award. This award will recognize the first author of the paper published in the SOFT Special Issue of JAT who is judged to show the best scientific experimental design and whose work has a wide impact on the field. She indicated that the judges for the first EDIT Award will be Edward Cone, Amanda Jenkins, and Hans Maurer. President Moore announced new liaison efforts between SOFT and other professional organizations. Tim Rohrig will serve as a SOFT liaison to the National Association of Medical Examiners. She announced that the SOFT webpage will now have a Consultant link so that members can take advantage of consulting opportunities. President Moore announced the loss of three prominent SOFT members in the past year – Karla Moore, Richard Prouty, and John Cody. A moment of silence was held to honor them. In honor of Karla Moore, the BOD approved a request to rename the annual SOFT Fun Run to the "Karla Moore Fun Run". President Moore then thanked Vickie Watts and Norm Wade, as well as their local team, for hosting the 2008 SOFT Annual Meeting. She also thanked Jeri Ropero-Miller and Peter Stout for their work with the exhibitors before and during the meeting. President Moore ended her report by thanking all of the people that have contributed to the organization over the years.

Secretary's Report

Due to the excused absence of Secretary, Sarah Kerrigan, her report was introduced under "Membership".

Treasurer's Report

Treasurer, Brad Hepler, indicated that two reports had been placed into ToxTalk during the year in an effort to keep the membership better informed of the financial status of the organization. In March of 2008, the summaries for Tax Year 2007 were provided and in September of 2008, the SOFT Accountant report was provided for membership review. A copy of the Treasurer's Report for January 1 – July 31, 2008 was also provided. Treasurer Hepler provided the current balances of the Operational Account, the Reserve Account, the ERA Fund, and the total Interest earned so far in 2008. He reported that the BOD has decided to increase the Reserve Account to $100,000. Interest on this account will go directly into the ERA Fund. Treasurer Hepler also explained that the audit process was proceeding. In addition to audits conducted by the SOFT Accountant, there will be an "audited financial statement" for tax year 2008 and an on-going "reviewed financial statement" every two years afterwards (at the change of treasurer). These additional audits will be conducted by the same firm used by the AAFS.

Vice-President's Report

Vice-President, Tony Costantino, called for committee reports as follows:

A. Bylaws

Yale Caplan reported that there was no current activity to report for this committee.

B. ToxTalk

Yale Caplan announced a call for Guest Editorials from officers and committee chairs on timely issues in forensic toxicology for issues in 2009.

C. Budget, Finance, and Audit

Bob Turk reported that the committee completed its review of the 2007 SOFT Budget and Financial Reports and that all was in order.

D. Membership

Acting Secretary, Marc LeBeau, reported there were 941 current members as of October 7, 2008. The Committee reviewed 71 new applications since January of 2008. 33 members were removed at their own request (19) or from failure to pay 2007 dues (14).

E. Publication

Dan Anderson reported that there were 33 manuscripts received for publication consideration in the 2008 SOFT Special Edition of the Journal of Analytical Toxicology; 28 of these manuscripts were finalized and accepted for publication. He thanked all of the volunteers who assisted him with the reviews, as well as President Moore, Tinsley Preston, and Julie Weber-Roark. Tinsley Preston, representing Preston Publications, thanked Dan Anderson and presented him with a plaque for his service as the Guest Editor for the 2008 issue.

F. Education Research Award

Phil Kemp reported that the committee received three applications for the Educational Research Award (ERA) for 2008 and one application for the Young Scientist Meeting Award (YSMA). Following review, one of the ERA applications was rejected due to insufficient data. Application deadlines for these awards are the first week of April.

ANNUAL BUSINESS MEETING MINUTES (CONTINUED)

G. Meeting Resource Committee
Introductions by Tony Costantino

2008 – Phoenix (Vickie Watts/Norm Wade)
Norm Wade thanked the BOD for allowing Phoenix to host the 2008 Annual Meeting. Vickie Watts reported that there were 1002 registrants for the meeting. There were also 1695 workshop registrations and 86 exhibitor booths sold.

2009 – Oklahoma City (Phil Kemp)
Phil Kemp reported that the planning for the 2009 SOFT Meeting in Oklahoma City, OK is well underway. The dates of the meeting will be October 18-23, 2009. An official budget will be provided by December 1st for BOD consideration. Sufficient hotel and meeting room space have been secured. There are plans to have a dinner at the Western Heritage Museum. A night in Bricktown is also scheduled.

2010 – Richmond (Michelle Peace)
Michelle Peace reported that the 2010 SOFT Meeting in Richmond, VA will be the 40th Anniversary Meeting for SOFT. It will be held October 18-22, 2010. Planning for the meeting is progressing well.

2011 – San Francisco (Ann Marie Gordon)
Ann Marie Gordon reported that the planning committee, as well as the scientific committee, have been established for the 2011 joint meeting with TIAFT in San Francisco, CA. The dates will be August 26 - Sept 2, 2011. The conveniently located San Francisco Marriott Hotel at Union Square will be the conference hotel.

2012 – Boston (Michael Wagner)
Michael Wagner reported that planning for the 2012 SOFT Meeting is underway. To obtain affordable hotel room rates, the 2012 meeting will be held during the week of July 4th (July 1 – 6, 2012). The Marriott-Copley Center in Boston's Back Bay area will be the conference hotel.

2013 – Orlando
Vice-President Costantino reported that the BOD accepted a proposal from Bruce Goldberger to host the 2013 SOFT Annual Meeting in Orlando, FL. It may be a joint meeting with N.A.M.E.

H. Forensic Toxicology Lab Guidelines
Lee Hearn reported no current activity for the committee.

I. Drugs and Driving
Jennifer Limoges first acknowledged the work of Sarah Kerrigan on the Drugs and Driving Committee. The committee conducted a workshop on "Critical Flicker Fusion Confusion" at the 2008 SOFT Annual Meeting and worked with the SOFT Continuing Education Committee to provide an "Interpretive DUID" workshop. An effort is underway to have a special DUID website available from the SOFT website.

J. Policy and Procedures
Bill Anderson reported that The Policy and Procedure Manual has been updated. Additionally, the related database has also been updated to reflect the most current information.

K. Web Site
Vice President Costantino reported for Bruce Goldberger that the SOFT website has been redesigned and should be available in January 2009.

L. Continuing Education
Ann Marie Gordon stated that the committee provided regional training in West Palm Beach, FL in conjunction with the Drugs & Driving Committee. The workshop was supported by a Traffic Safety Grant and was fully self-supported. The committee is also conducting a workshop during SOFT 2008 on sympathomimetic amines and tryptamines. A proposed regional workshop with CAT is being planned and discussions are underway for a co-sponsored workshop with the DFSA Committee.

M. Drug-Facilitated Sexual Assault
Marc LeBeau reported about the discussions of a joint DFSA/Continuing Education Committee Workshop. The committee will begin evaluating Survey Monkey for an online DFSA survey. A DFSA Fact Sheet has been developed and the committee would like to have a separate webpage linked to the SOFT Website for incorporation of this Fact Sheet and other committee documents. The committee has been asked to prepare a DFSA Special Issue of Forensic Science Review for 2010. Additionally, the committee is preparing standardized SOPs to allow laboratories to reach the recommended detection limits proposed in 2005.

N. Ethics
Aaron Jacobs reported no ethics violation investigations by the committee.

O. Nominating
Diana Wilkins reported that the committee received and recommended nominations for the following candidates for the 2009 SOFT Officer and Board vacancies:

Anthony Costantino, PhD, DABFT
President (One-year term)
Bradford Hepler, PhD, DABFT
Vice-President (One-year term)
Marc LeBeau, PhD
Treasurer (Two-year term)
Adam Negrusz, PhD
Director (Three-year term)
Fiona Couper, PhD
Director (Three-year term)

The nominations were forwarded to the SOFT membership via the September 2008 issue of ToxTalk for their consideration.

P. MS/MS Guidelines
Vice President Costantino reported on the sad passing of former committee chair John Cody. The loss of John delayed finalization of the draft MS/MS Guidelines. Denny Crouch will be the new committee chair and is reorganizing the committee.

Q. Finance and Long-Term Strategic Planning
Brad Hepler reported that the SOFT office has continued to implement the 2007 recommendations of the committee. No other current activity has occurred with this committee.

Announcements
President Moore asked for announcements to be provided and the following were given:

AAFS
Marilyn Huestis reported that the 2009 AAFS Annual Meeting will be held in Denver, CO February 16-21, 2009. She also told the membership that the Toxicology Section of AAFS has been targeted by the AAFS leadership to encourage more participation and membership in the organization.

ANNUAL BUSINESS MEETING MINUTES (CONTINUED)

TIAFT
Marilyn Huestis reported that the 2009 TIAFT Annual Meeting will be held August 23-29, 2009, in Geneva, Switzerland. She thanked the Continuing Education Committee, SOFT BOD, and authors of presentations that were provided to South American delegates of TIAFT and translated into their native languages.

Midwest Association of Toxicology and Therapeutic Drug Monitoring
Loralie Langman reported that the MATT Annual Meeting will be held April 9-10, 2009 in Rochester, MN.

Int'l Association of Therapeutic Drug Monitoring and Clinical Toxicology
Loralie Langman reported that the 2009 IATDMCT Annual Meeting will be held in Montreal, Canada in October.

CAT
John Hughes announced that the 2009 winter CAT meeting will be held in San Francisco, CA on January 16-17, 2009.

ABFT
Marina Stajic announced the names of the new Diplomates and the Specialists. She also reported that ABFT has lowered the cost of application fees.

FTC
Amanda Jenkins congratulated the newest members of FTC. She also acknowledged the death of John Cody. She indicated that donations could be made in John's memory to "Chromosome 18" in San Antonio, TX. Contact Amanda Jenkins for more information.

Unfinished Business
President Moore asked for any unfinished business topics. There was none.

New Business
President Moore reported that the BOD would like to increase the annual dues from $50 to $60 for regular members. The justification for the increase was provided in the March 2008 ToxTalk. There has not been a change in dues since 1994. The cost of operation of SOFT has increased over the years, so she asked for a motion to increase the dues to $60. The motion was made and seconded. An opportunity for comment was provided and there were no comments. The motion passed.

Awards
Phil Kemp presented the 2008 ERA Awards to Meng Yan-Wu and Sherri Kacinko, and the 2008 Young Scientist Meeting Award to Robert Hargrove.

Recognition of Meeting Hosts and Chairpersons.
Vickie Watts and Norm Wade were thanked and acknowledged for their hard work to put on the 2008 SOFT Annual Meeting. Vickie and Norm thanked all of the volunteers who helped with the meeting.

Recognition of Outgoing Officers
The outgoing Directors and Officers were acknowledged and thanked by President Moore.

Request to Post Meeting Photos
Tinsley Preston requested that the BOD consider posting photographs from the annual meeting on the SOFT website to capture the historical aspect of the meetings.

Elections
The following members were elected as indicated:

Anthony Costantino, PhD, DABFT
President (One-year term)
Bradford Hepler, PhD, DABFT
Vice-President (One-year term)
Marc LeBeau, PhD
Treasurer (Two-year term)
Adam Negrusz, PhD
Director (Three-year term)
Fiona Couper, PhD
Director (Three-year term)

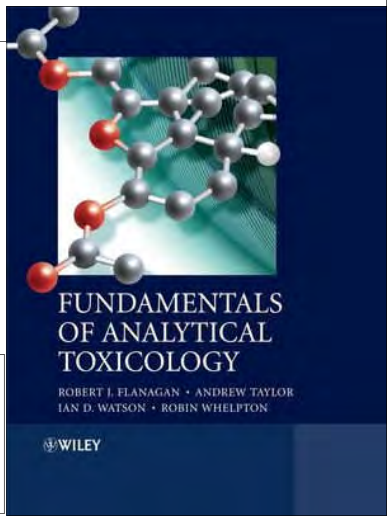
Incoming President's Remarks
Tony Costantino thanked Christine Moore for her outstanding service on the BOD and as 2008 President of SOFT. He indicated what an honor it is to be given the opportunity to serve as President in 2009. He thanked the speakers at this annual meeting and explained the importance of the ERA and YSMA to the membership. He also commented on the rapid growth of SOFT and how we need to manage that. He indicated that an online survey will be provided to assist the BOD with ideas on how to move forward. He called on members to volunteer for committees and he announced that the 2009 SOFT Special Issue of JAT will be edited by Jennifer Limoges.

Adjournment
President Moore adjourned the 2008 SOFT Annual Business Meeting at 5:09 PM.

FUNDAMENTALS OF ANALYTICAL TOXICOLOGY-BOOK REVIEW

Book Review Submitted by Randall Baselt

This is an ambitious effort to describe in detail the many and varied aspects of the science of toxicological analysis. The 17 chapters cover every foreseeable aspect, from specimen collection through analytical techniques and quality control to pharmacological principles and interpretation of results. The authors bring together a great deal of experience in the field and have succeeded admirably in achieving their goal: "to give principles and practical information on the analysis of drugs, poisons and other relevant analytes in biological specimens...". The book is very readable and quite up-to-date, and contains many illustrative figures, charts and tables. Both the student and the practicing professional would do well to study this material carefully, as there is something here for every conceivable level of interest.



Fundamentals of Analytical Toxicology by R.J. Flanagan, A. Taylor, I.D. Watson and R. Whelpton, John Wiley & Sons, Chichester, England, 2007, 505 pp., approx. $60.00

SOFT'S PRESTIGIOUS AWARDS - THE EDUCATIONAL RESEARCH AWARD (ERA) THE YOUNG SCIENTIST MEETING AWARD (YSMA)

The ERA

The ERA award has evolved over the years in both amount and scope. The annual awards are now funded from bank interest on principal funds in the ERA endowment and generous donations of our many SOFT members. Over the years, the stipend has grown from $500 for a single annual award to multiple awards earned at $1,000 each. Beginning in 2009, the award amount has been re-set to $2,000 per recipient, plus a complimentary SOFT meeting registration.

The use of the ERA award is intended for travel expenses related to the Annual Meeting. Conditions of the award would include having research suitable for presentation at the upcoming annual meeting. In addition, all proposals must be submitted by **the first Friday in April**. Award recipients will be notified by June 1 so that they can make plans to attend the annual SOFT meeting and present their findings.

Eligibility: Applicants for the ERA award must be enrolled in a Master's, Pre-Doctoral, Post-Doctoral or Medical Residency academic program and performing toxicological research. The applicant's research should have an emphasis in drug detection/quantitation, drug absorption/distribution/elimination, drugs and human performance or related areas of forensic toxicology. Additional application information can be downloaded from the SOFT website (www.soft-tox.org).

The YSMA

As forensic toxicology continues to evolve, it has become increasingly clear that the bench level scientist is the indispensable and underappreciated tool of the forensic toxicology laboratory. It is at the bench where the advancement of this complex science occurs. Unfortunately, often due to budget constraints, it is the bench level scientist that gets left behind in the laboratory at SOFT meeting time.

To compliment the ERA that is designed for students, the SOFT Board of Directors has established the Young Scientist Meeting Award (YSMA) to encourage the involvement of the bench level scientist in SOFT. Originally awarded in 2003, the award is for any bench level scientist with 5 years or less experience that is working in the field of forensic toxicology (B.S., M.S., or Ph.D.). Beginning in 2009, the award amount has been re-set to $2,000 plus a complimentary SOFT meeting registration. These funds are to be used to offset travel expenses to the annual SOFT meeting. The applicant must complete a research project that advances the field of forensic toxicology and report the findings at the annual SOFT meeting with an **ORAL** presentation.

Eligibility: The YSMA will recognize bench level scientists (B.S., M.S., or Ph.D.) with 5 years or less experience in the field of forensic toxicology. Applications will be competitive. Awardees may not reapply. Abstracts must be for ORAL presentations and must be accepted by the scientific program committee of the current year SOFT meeting.

2009 ERA Committee Members are:

Phil Kemp, Ph.D. (Chair)
Vina Spiehler, Ph.D.
Tom Kupiec, Ph.D.
Matt Lambing, MSFS
David Von Minden, Ph.D.,

Awards are to be made at the discretion of the ERA Committee based upon excellence, relevance to forensic toxicology or other criteria established by SOFT and the ERA Committee.

THANK YOU'S ARE EXTENDED TO EACH OF THE FOLLOWING 2009 CONTRIBUTORS OF ERA / YSMA FUNDING

William Anderson	Timothy Eastly	Erin Spargo-Kolbrich	Richard McGarry	Michael Slade
Timothy Appel	Mahmoud ElSohly	James Kraner	Michael McGee	Michael Smith
Fred Apple	Laurel Farrell	Thomas Kupiec	Diane Mertens-Maxham	Vina Spiehler
Cheri Baird	Alex Gantverg	Matthew Lambing	John Mitchell	Elizabeth Spratt
Michael Baylor	Dimitri Gerostamoulos	Marc LeBeau	Madeline Montgomery	Peter Stout
David Black	Ann Marie Gordon	Barry Levine	Adam Negrusz	Craig Sutheimer
Stuart Bogema	Bradford Hepler	Mark Lewis	Robert Osiewicz	Robert Turk
Donna Bush	Larry Howard	Ray Liu	Pat Pizzo	Lowell Van Berkom
Phyllis Chandler	Walter Hrynkiw	Elizabeth Marker	Jeri Ropero-Miller	Karl Verebey
Paula Childs	Marilyn Huestis	Maria Martinez	Wayne Ross	Wen-Ling Wang
Edward Cone	John Hughes	Andrew Mason	Richard Saferstein	Vickie Watts
Anthony Costantino	Daniel Isenschmid	Samuel Mathews	Robert Sears	Robert White
Leo Dal Cortivo	George Jackson	Joel Mayer	Theodore Siek	Diana Wilkins
Gary Dawson	Philip Kemp	Rod McCutcheon	Robert Simon	Robert Zettl

SOFT 2009 ANNUAL MEETING

Oklahoma City, Oklahoma

October 18 – 23, 2009

Hosts: Phil Kemp, Dennis McKinney

Site: Cox Convention Center

WELCOME TO OKLAHOMA CITY!

Welcome to Oklahoma City!

The SOFT 2009 Planning Committee wishes to extend our heartiest welcome to our national and international guests at the annual meeting of the Society of Forensic Toxicologists in Oklahoma City, Oklahoma. The Oklahoma City Renaissance Hotel in the heart of downtown will be your destination for the week of October 19th – 23rd 2009. Come prepared for a large dose of science, southwestern culture, and just plain fun!

The Renaissance Oklahoma City Convention Center Hotel is located smack dab in the middle of downtown right across the street from the Cox Convention Center where the scientific sessions and exhibitor hall will be located. Along with the elegantly appointed rooms, there are outstanding amenities like a spa, whirlpool, and indoor swimming pool for a relaxing hotel package. There are also dining options, like the Falling Water Grill and Caffeina's Marketplace. After a long day of science you can enjoy a smooth libation at the Water's Edge Lounge.

The planning committee has arranged a great conference rate of $159.00. Register early, rooms are already going fast! You can register after April 1st through the SOFT website (**www.soft-tox.org**) or the SOFT 2009 website (**www.soft2009.org**).

Weather

October in the Oklahoma City area is mild. Expect low temperatures to be in the 50's and highs to be in the low 70's. The weather should be great for golf at one of the many courses in the area or seeing some of the sites such as the Oklahoma City Bombing Memorial or Oklahoma City Museum of Art.

Chihuly Exhibit currently on display at the OKC Art Museum.

Airport and Transportation

Will Rogers World Airport is only 10 miles from the Renaissance Hotel. There are taxicabs available or you can catch a shuttle with Airport Express (reservations, 877-688-3311). If you are renting a car, valet parking is available at the hotel or there are plenty of spots at nearby parking garages.

SOFT 2009 Committee

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OKLAHOMA NEWS (CONTINUED)

Explore Oklahoma City!

Visit the beautiful Myriad Gardens in downtown Oklahoma City and experience the Crystal Bridge Tropical Conservatory. You will see plants from around the world. See the zebra long-winged butterflies and the free-roaming lizards as well. Take a walk on the Adventure Trail. The trail winds under a 35-foot waterfall and up a vine-covered mountain. Outside, meander along pathways by streams with landscape indicative of northeast Oklahoma. Enjoy the sunken lake with Japanese koi and native Oklahoma fish.

If sports are your thing, the Ford Center, just down the street from the Renaissance is home to the newest NBA franchise, the Oklahoma City Thunder. Believe it or not, hockey is popular here with the Oklahoma City Blazers playing in the Ford Center. Bring your clubs as golf courses are numerous around the Oklahoma City area.

The Omniplex center has more than 350 hands-on science exhibits to see, and if you have little ones (under 6) there is an area with all sorts of hands-on exhibits just for them. The Air and Space Museum has one of the most complete collections of this type of memorabilia in the southwest. There are several cultural and art galleries, not to mention the botanical gardens. You can also visit the Planetarium or the Omnidome, Oklahoma's only Imax-style theatre.

If you are adventurous, head down to Norman (about 20 miles south on I-35). There you will find the University of Oklahoma where you can hit the largest university based museum in the country. The Sam Noble Museum of Natural History is a 50,000 square foot museum that features five outstanding galleries depicting more than 300 million years of Oklahoma's natural history.

The Bricktown Canal and Entertainment District is only a block away. As you stroll along the canal you will find some of the finest shopping, eating and nightlife in the Midwest. Step off of the canal boats and come experience the exciting variety of restaurants, including Zio's Italian Kitchen, Chelino's Mexican Café, and Bricktown Brewery with its own microbrewery and excellent food. After supper, how about dessert at Nonna's or some good music and dancing at Toby Keith's I Love This Bar and Grill? For a quieter evening, have a nice cocktail at Maker's Cigar and Piano Lounge?

Will Rogers Wiley Post, Oklahoma History Museum

The Oklahoma History Center Museum is an architectural masterpiece. A decade in the making, the Oklahoma History Center is an 18-acre, 215,000 square-foot learning center where young and old can explore Oklahoma's unique history of geology, transportation, commerce, culture, aviation, heritage and more.

End of Trail Statue at Western Heritage Museum in Oklahoma City

So there you are! Just a select few of the places to see as you experience Oklahoma City. The SOFT 2009 cannot wait until you get here. We are planning a week of forensic toxicology workshops, sessions, and forums that will be educational and fun at the same time. The social events we have planned will be second to none as we roll out the red carpet for you. Come on down and have some fun in the heartland of America.

SOFT 2009 ANNUAL MEETING

Oklahoma City, Oklahoma

October 18 – 23, 2009

Hosts: Phil Kemp, Dennis McKinney

Site: Cox Convention Center

PRELIMINARY PROGRAM

Sunday, October 18, 2009

- Registration Opens (9:00am - 6:00pm)
- NLCP Inspector Training (2:00pm - 6:00pm)
- Dinner on your own

Monday, October 19, 2009

- Continental Breakfast (7:00am - 8:30am)
- Registration (7:00am - 6:00pm)
- SOFT Workshops (8:00am - 5:00pm)
- SOFT Student Enrichment Program (8:00am - 5:00pm)
- ABFT Exam Committee (9:00am - 12:00pm)
- Tour busses (10:00am - 7:00pm)
- Lunch On Your Own
- SOFT-AAFS Drugs and Driving Committee (5:00pm - 6:30pm)
- Dinner on your own

Tuesday, October 20, 2009

- Continental Breakfast (7:00am - 8:30am)
- Registration (7:00am - 6:00pm)
- SOFT Board Meeting (7:00am - 12:00pm)
- SOFT Workshops (8:00am - 5:00pm)
- ABFT Exam (8:00 am - 12:00pm)
- ABFT Accreditation Committee (9:00am - 12:00pm)
- Tour busses (10:00am - 7:00pm)
- ABFT Board Meeting (12:00pm - 6:00pm)
- Exhibits Setup (12:00pm - 5:00pm)
- Lunch On Your Own
- Exhibits Open (5:30pm - 7:00pm)
- Sunshine Rieders Silent Auction Opens 5:30pm
- Welcoming Reception with Exhibitors (5:30pm - 7:00pm)
- President's Banquet, Western Heritage Museum - Bus Transport (7:00pm - 12:00 pm)

Wednesday, October 21, 2009

- Continental Breakfast (8:00am - 9:30am
- Registration (8:00am - 6:00pm)
- AAFS Steering Committee (7:30am - 8:30am)
- Exhibits open (8:00am - 3:30pm)
- Opening Ceremonies Plenary Session (8:00am)
- Scientific Session (8:45am - 12:15pm)
- DFSA Committee (12:00pm - 1:15pm)
- Lunch with Exhibitors (12:15pm - 1:15pm)
- Scientific Session (1:15pm - 5:00pm)
- Exhibitor's Happy Hour (5:30pm - 6:30pm)
- ABFT Certificant Reception Wine & Cheese (5:30pm - 6:30pm)
- Dinner with Exhibitors (6:30pm - 8:00pm)
- Elmer Gordon Forum (8:00pm - 10:00pm)
- Nite Owl Reception (10:30pm - 12:30am)

Thursday, October 22, 2009

- SOFT Fun Run/Walk (6:30am - 8:00am)
- Continental Breakfast (7:30am - 8:30am)
- Registration (8:00am - 6:00pm)
- Exhibits open (8:00am - 1:30pm)
- Silent Auction Last Day (12:00pm - 6:00pm)
- Exhibitor Feedback Meeting (8:00am - 9:30am)
- Scientific Session (8:00am - 12:15pm)
- Lunch with Exhibitors (12:15pm - 1:15pm)
- Exhibits breakdown (1:30pm - 3:30pm)
- Scientific Session (1:15pm - 3:00pm)
- SOFT Business Meeting (3:00pm - 5:00pm)
- Nite on Bricktown (6:30pm - 11:30pm)

Friday, October 23, 2009

- Continental Breakfast (8:00am - 9:00am)
- Scientific Session (9:00am - 12:00pm)
- NSC Executive Board (1:00pm - 3:30pm)

SOFT Student Enrichment Program (SSEP)

Submitted by Jeri Ropero-Miller, Ph.D., SSEP Coordinator

SOFT will continue the Student Enrichment Program (SSEP) as a Monday event at the annual October meetings. SSEP is an educational outreach program designed for college students to participate in a one-day introduction to the many disciplines of forensic toxicology. The program primarily consists of a laboratory tour, lunch with SSEP faculty and lectures by SOFT members.

This year we hope to tour the state-of-the-art facilities of the Oklahoma State Bureau of Investigation and/or the Forensic Science Institute both located on the Oklahoma Central University campus in Edmond. SSEP is funded by proceeds of the annual SOFT Silent Auction and contributions from research organizations such as this year's sponsor, Analytical Research Laboratories (ARL) of Oklahoma City. Last year the SOFT Silent Auction made $5254 and this money will be available to SSEP as needed. Items for the Silent Auction are donated every year by SOFT exhibitors and members.

For the past two years SOFT members have made up a stable faculty that has enjoyed teaching at the SSEP. Their commitment is why SSEP continues to be a successful educational outreach program and SOFT would like to acknowledge them for sharing their professional experiences with the students. SSEP faculty and topics for 2007-2008 were:

Jeri Ropero-Miller
- Introduction to Forensic Toxicology

Ruth Winecker
- Postmortem Forensic Toxicology

Barry Logan
- Human Performance Toxicology

Peter Stout
- Forensic Drug Testing, Urine & Alternative Matrices

Marc LeBeau
- Drug Facilitated Crime Investigation

Larry Broussard (2007)
Donald Frederick (2008)
- Forensic Toxicology in the Clinical Setting

Marilyn Huestis
- Research in Forensic Toxicology

Matthew Slawson
- Sports & Doping - Performance Enhancing Drugs

Robert Middleberg
- Consultation and Expert Services

Most have agreed to continue as faculty, but some replacements may be needed. If you are interested in serving as SSEP faculty please contact Jeri Ropero-Miller, the SSEP Coordinator.

Students from Oklahoma will soon be notified of this SSEP opportunity through university and college faculty. However, students from all geographic locations are considered. Last year SSEP had 52 participants including three international students in attendance from the Netherlands (SOFT member / sponsor- Bruce Goldberger) and the Republic of China Taiwan (SOFT member / sponsor- Ray Liu). Participating students are chosen via an application process. Students demonstrating high academic achievement in the sciences can apply. Applications can be downloaded from SOFT 2009 Meeting website (**soft2009.org**). SOFT members are encouraged to publicize this program to students having an interest in learning more about forensic toxicology. Both undergraduate and graduate level students can apply. The SSEP committee will review all applications and contact the most qualified applicants with an invitation to attend.

SSEP Coordinator:
Jeri Ropero-Miller, RTI International
Contact: 919-485-5685
jerimiller@rti.org

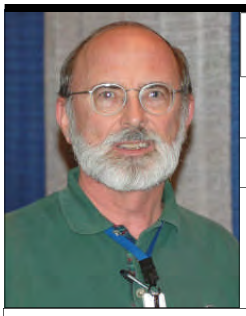
SSEP Site Coordinator:
Robert Bost, University of Central OK
Contact: (405) 974-5519
rbost@uco.edu

Application Period:
May 1, 2009 to September 30, 2009

Applications Available from:
http://www.soft2009.org/ssep.html *or* **jerimiller@rti.org**

Acceptance Notification: Oct. 2, 2009

Student participants and faculty of the 2008 SSEP program in Phoenix, Arizona



CASE NOTES

Submitted by Section Editor, Matthew Barnhill, Ph.D., DABFT

Send interesting "Case Notes" to Section Editor, Matthew Barnhill, Ph.D. at mbarnhilljr@worldnet.att.net

CASE NOTES #1: TETRAHYDROZOLINE AND DRUG-FACILITATED SEXUAL ASSAULT

Submitted by: ***Matthew E. Stillwell*** *M.S.,* ***Jerry K. Carter****, B.S., Oklahoma State Bureau of Investigation, Forensic Science Center, Forensic Toxicology Unit, Edmond, OK and* ***Phil Kemp****, Ph.D., Analytical Research Laboratories, Oklahoma City, OK*

Introduction

Considerable information about drug-facilitated sexual assault has accumulated in the past few years. In a typical scenario, the assailant surreptitiously doses the beverage of an unsuspecting victim with a substance for the purpose of producing an incapacitated or unconscious victim and subsequently sexually assaulting him/her while under the influence of this substance. A recent published paper implicating the imidazoline derivative, tetrahydrozoline, in drug-facilitated sexual assault was reported [1]. However, a delay excluded any collection of specimens in the case for analysis of tetrahydrozoline. Because of the lack of toxicological analysis, the conclusions on the case were based on the significant but circumstantial evidence presented.

Tetrahydrozoline ($C_{13}H_{16}N_2$), (2-[1,2,3,4-tetrahydro-1-naphthyl]-imidazoline), is a sympathomimetic amine with alpha$_2$-adrenergic activity which is used in over-the-counter eye and nasal preparations because of its vasoconstrictive and decongestive properties (fig. 1). When tetrahydrozoline is ingested, predominant central alpha$_2$-adrenergic receptor agonist effects lead to central nervous system depression and cardiovascular adverse effects [2, 3]. We report a case involving an alleged sexual assault linked to the use of tetrahydrozoline. A 16 year-old Caucasian female was known to have voluntarily ingested alcoholic beverages that were surreptitiously dosed with unknown amounts of Visine®, a common imidazole decongestant containing tetrahydrozoline. The victim in this case was reported to be "heavily intoxicated". Although ethanol alone may be significant to the question of whether or not the victim may have been able to give ''informed consent'' it is likely that mixing tetrahydrozoline with ethanol will result in enhanced central nervous system depressant effects. To our knowledge, this is the first report of tetrahydrozoline found in urine involving a sexual assault.

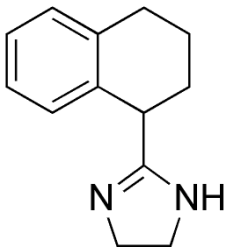


Fig. 1 - ***Structure of Tetrahydrozoline***

Case History

During a residential "party" a 16-year-old, 48 kg (105 lb) Caucasian female consumed alcoholic beverages containing unknown amounts of tetrahydrozoline. The male assailant prepared several alcoholic beverages out of view from the victim. The assailant was observed, by an eyewitness, covertly placing something from a Visine® bottle into her drink. She was reported to be "heavily intoxicated" with spontaneous emesis. The victim was later able to describe the event, recalling details of the attack during short intermittent periods of consciousness.

Upon arrival at the emergency department approximately seven hours post-ingestion, the victim was awake, alert, oriented, and able to answer questions. She had a Glasgow coma scale score of 15 indicating that she was fully conscious and aware of her surroundings. Vital signs were temperature 97.8ºF, pulse 106 beats/minute, respiratory rate 18 breaths/minute, blood pressure 130/72 mmHg and pulse oximeter 99%. The heart rhythm sounded regular. The lungs were clear and the abdomen was soft with normal bowel sounds. The skin was warm and dry and neurologic examination found no focal deficits. The results of routine chemistry and hematology tests were unremarkable except for trace ketones.

Toxicological Analysis

The toxicology laboratory of the Oklahoma State Bureau of Investigation (OSBI) encourages investigating police officers to submit blood and urine samples in all cases of alleged drug-facilitated sexual assaults (DFSA). However, only urine was collected during this hospital rape examination.

The initial screening involved an analysis for alcohol and other associated volatiles (ethanol, methanol, acetaldehyde, acetone, and isopropanol) by headspace gas chromatography with flame ionization detection (GC/FID). The analysis was carried out in duplicate on two discriminating GC columns to rule out the presence of any interfering volatile substances. Immunoassay screening for various drugs of abuse (barbiturates, benzodiazepines, carisoprodol, cocaine metabolite, marijuana metabolites, methamphetamine, opiates, and phencyclidine) was performed using Minilyser® automated liquid handling robotics in an Enzyme Linked Immunosorbent Assay (ELISA) format (Immunalysis Corp., Pomona, CA).

The qualitative screening procedure that disclosed the presence of tetrahydrozoline was a general drug screen for chemically basic drugs adapted from a previously published method described elsewhere [4]. The GC system used in the analysis was an Agilent Technologies 5973 mass selective detector (MSD) coupled to an Agilent Technologies 6890 series gas chromatograph equipped with an FID, dual split/splitless injectors and an Agilent 7683 Automatic Liquid Sampler (Agilent Technologies, Santa Clara, CA). Chromatography for FID and MSD analysis was performed with separate columns in parallel under the same oven parameters. The FID and MSD columns used were a DB-1 (100% dimethylpolysiloxane) and DB-5 (5% phenyl-95% methylsiloxane) capillary columns (30 m x 0.320 mm i.d., film thickness 0.25 µm; J&W Ltd.), respectively. The column temperature was programmed to rise from an initial temperature of 60°C

CASE NOTES #1 (CONTINUED)

to 210°C at 15°C/min then 210°C to 300°C at 10°C/min. Identification was based on retention times and retention indices on both columns, and confirmation was by GC/MS.

Discussion

Toxicological examination determined tetrahydrozoline to be present and a UAC of 0.15 g/dL. There were no other significant toxicological findings. A typical Tetrahydrozoline mass spectrum is shown in fig. 2. It is an imidazole α_2-adrenergic agonist used for the treatment of eye irritations and found in Visine® in a standard 0.05% w/v (500 mcg/mL) concentration. The α_2-adrenergic receptors are involved in regulating the autonomic and cardiovascular systems. Pharmacologic actions of tetrahydrozoline are peripheral and central α_2-adrenergic receptor stimulation. When applied topically tetrahydrozoline causes peripheral α_1-adrenergic stimulation responsible for their vasoconstrictive and decongestive actions [8]. When ingested, tetrahydrozoline stimulates the postsynaptic α_2-receptors located within the CNS causing sedation and reduces sympathetic outflow, which leads to peripheral vasodilation and lower blood pressure [9, 14]. Effects for tetrahydrozoline after oral ingestion may include drowsiness, respiratory depression, bradycardia, hypotension, hypotonia, muscle flaccidity, hypothermia and coma [1 – 3, 5 – 8]. Because of rapid absorption, symptoms develop within 15 to 30 minutes and disappear after approximately 12 to 24 hours, depending on the dose. Its elimination half life is reported to be from 2 to 4 hours [1, 5, 7, 8].

Ethanol is a selective CNS depressant at low doses and a general depressant at high doses. It decreases inhibitions, impairs perception, and may cause amnesia and/or loss of consciousness [10]. Although, there is considerable intra- and inter-individual variation [12, 13], the victim's urine alcohol concentration (UAC) of a 0.15 g/dL can be used to estimate the expected blood alcohol concentration (BAC) during the elimination phase [11 – 13]. The expected BAC can be estimated by dividing the UAC by a factor of 1.33, the presumed population average urine/blood ratio of ethanol [13]. The expected BAC in our case was estimated to be 0.11 g/dL. Had a second void been available from the victim, the UAC in the second specimen would have reflected a more accurate BAC at the time of collection. Nevertheless, the first void gives an idea of the BAC during the time that the urine was being produced and stored in the bladder.

In summary we report an unusual case of drug-facilitated sexual assault involving tetrahydrozoline and ethanol. It is highly likely that mixing an imidazoline, such as tetrahydrozoline, with ethanol will result in enhanced CNS depressant effects. It is unclear whether the effects will be potentiated or simply additive. The evidence of ethanol alone may be significant to the question of whether or not the victim may have been able to give ''informed consent''.

References

1. H. Spiller, J. Rogers, T. Sawyer, Drug facilitated sexual assault using an over-the-counter ocular solution containing tetrahydrozoline (Visine), Leg Med 9 (2007) 192–195.
2. K.C. Osterhouldt, F.M. Henretig, Sinoatrial node arrest following tetrahydrozoline ingestion, J Emerg Med 27 (2004) 313 – 315.
3. W. Klein-Schwartz, R. Gorman, G.M. Oderda and A. Baig, Central nervous system depression from ingestion of nonprescription eyedrops, Am J Emerg Med 2 (1984) 217–218.
4. E.H. Foerester, D. Hatchett, and J.C. Garriott, A rapid, comprehensive screening procedure for basic drugs in blood or tissues by gas chromatography. J Anal Toxicol., 2 (1978) 50–55.
5. J.D. Tobias, Central nervous system depression following accidental ingestion of Visine eye drops, Clin Pediatr 35 (1996) 539–40.
6. P. Jensen, B. Edgren, L. Hall and J.C. Ring, Hemodynamic effects following ingestion of an imidazoline-containing product, Pediatr Emerg Med 5 (1989), pp. 110–112.
7. A. Daggy, R. Kaplan, R. Roberge and J. Akhtar, Pediatric Visine (tetrahydrozoline) ingestion: case report and review of imidazoline toxicity, Vet Human Toxicol 45 (2003), pp. 210–212.
8. R. Lev and R.F. Clark, Visine overdose: case report of an adult with hemodynamic compromise, J Emerg Med 13 (1995), pp. 649–652.
9. G.B. Hammer, The role of alpha2 agonists in pediatric anesthesia. Can J Anesth (2005) 52: R9.
10. M.A. LeBeau, A. Mozayani, Drug-facilitated sexual assault, a forensic handbook. London: Academic Press, 2001.
11. R.C. Baselt, Disposition of toxic drugs and chemicals in man. (7th Ed.) Foster City: Chemical Toxicology Institute, 2000, pp. 883-884.
12. J.C. Garriott, Medical-legal aspects of alcohol. (4th Ed.) Tucson, AZ, USA: Lawyers & Judges Publishing Company, Inc., 2003.
13. A.W. Jones, Reference limits for urine/blood ratios of ethanol in two successive voids from drinking drivers, J. Anal. Toxicol 26 (2002) 333–339.
14. J.B. Michael, M.D. Sztajnkrycer, Deadly pediatric poisons: nine common agents that kill at low doses. Emerg Med Clin North Am. 22 (2004) 1019–1050.

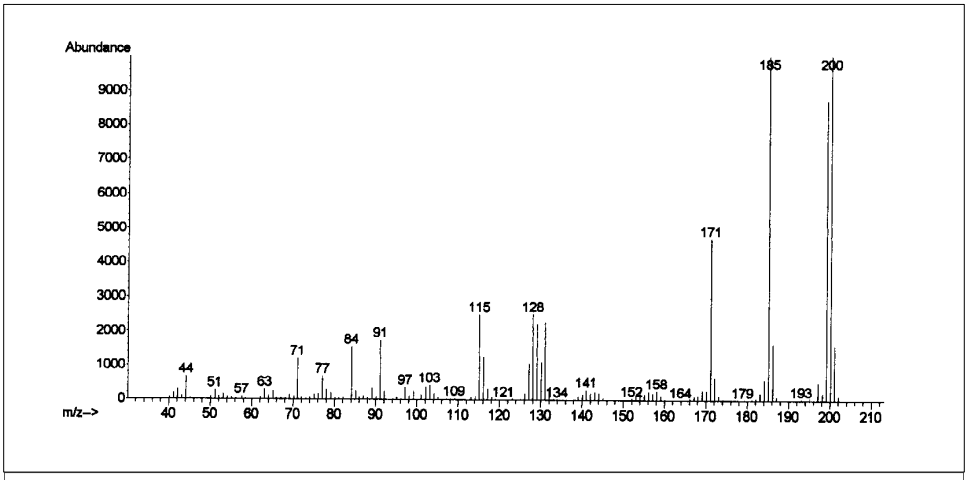


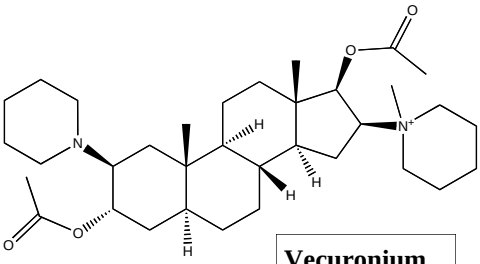
Fig. 2 - Typical electron impact mass spectrum of tetrahydrozoline

CASE NOTES #2: VECURONIUM IMPLICATED IN THE SUICIDE OF A DEPRESSED PARAMEDIC

Submitted by: ***Harris County Medical Examiner's Office****, Toxicology Laboratory, Houston, TX (HCMEToxicology@meo.hctx.net)*

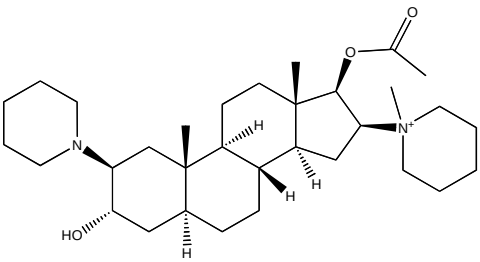
Introduction

Muscle relaxants can be involved in medicolegal investigations, either by suicide or homicide[1]. In fact, the quaternary nitrogen muscle relaxant pancuronium is often used as a component of the "lethal injection" in capital punishment.



Vecuronium

Vecuronium is an aminosteroidal nondepolarizing neuromuscular blocking agent indicated for facilitating tracheal intubation. It is an antagonist to acetylcholine receptors, which blocks motor neuron function at the end-plate. The onset of paralysis occurs within a minute, with recovery about 45 to 65 minutes after the initial intubation dose. The ED90 (dose required to produce 90% suppression of the muscle twitch response with balanced anesthesia) has averaged 0.057 mg/kg (0.049 to 0.062 mg/kg in various studies). An initial vecuronium bromide dose of 0.08 to 0.1 mg/kg generally produces first depression of twitch in approximately 1 minute, good or excellent intubation conditions within 2.5 to 3 minutes, and maximum neuromuscular blockade within 3 to 5 minutes of injection in most patients.



3-Desacetyl Vecuronium

When recovery from the effects of vecuronium begins, it proceeds more rapidly than recovery from pancuronium. Once spontaneous recovery has started, the neuromuscular block produced by vecuronium is readily reversed with various anticholinesterase agents, such as pyridostigmine, neostigmine, or edrophonium in conjunction with an anticholinergic agent like atropine or glycopyrrolate. Rapid recovery is found with vecuronium, due to its short elimination half-life, although there have been occasional reports of prolonged neuromuscular blockade in patients in the intensive care unit.

At clinical doses of 0.04 to 0.1 mg/kg, 60 to 80% of vecuronium bromide is usually bound to plasma protein. The distribution half-life following a single intravenous dose (range 0.025 to 0.28 mg/kg) is approximately 4 minutes. In addition, the metabolite 3-desacetyl vecuronium has been rarely detected in human plasma following prolonged clinical use in the ICU. The 3-desacetyl vecuronium metabolite has been recovered in the urine of some patients in quantities that account for up to 10% of injected dose. This metabolite has been judged to have 50% or more of the potency of the parent drug. Unlike other nondepolarizing skeletal muscle relaxants, vecuronium has no clinically significant effects on hemodynamic parameters, nor does it cause malignant hyperthermia, or contribute to substantial histamine release[2].

Case History

A 40 year old white male was found unresponsive at home by his teenage son. The decedent was pulled to the living room, where CPR was initiated under the recommendation of 911 operators. EMS arrived to find the decedent apneic and pulseless. ACLS protocols were initiated, and the decedent was transported to the ER. While in transit, the EMS responders administered 6 mg epinephrine, 2 mg atropine, 40 U vasopressin and 1 ampule of D50. The hospital examination revealed no signs of trauma. After several attempts to regain a pulse, he was pronounced dead.

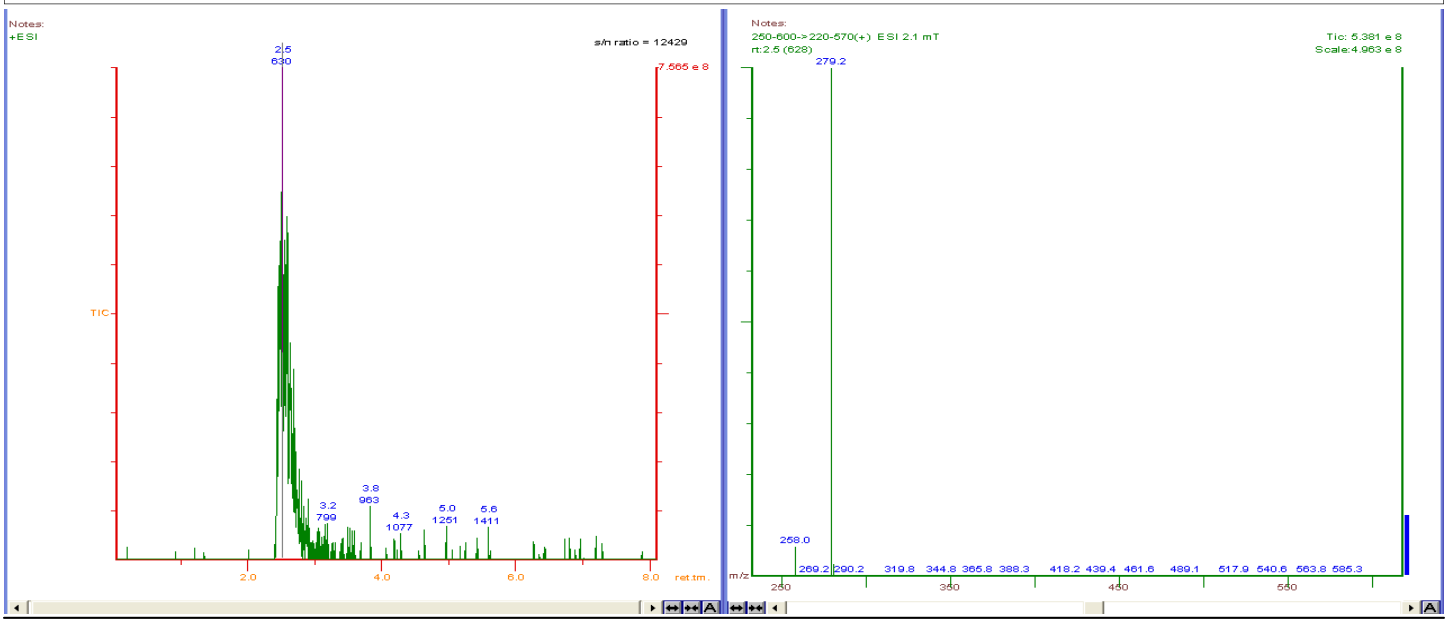
Further investigations determined that the decedent's wife had died one month prior to this event, reportedly from natural causes. He often spoke to friends and family about "going to be with his wife". The decedent was known to smoke a pack of cigarettes per day, but did not use drugs. This assertion was supported by the absence of any medication or drugs at the residence. Also, the decedent was employed as a paramedic and had always passed random drug tests.

Results

Initial screening and analysis of femoral blood excluded the presence of cocaine, amphetamines, benzodiazepines, opiates, barbiturates, or antidepressants. The only notable analytes found were chlorpheniramine and ibuprofen, which were at therapeutic levels. An examination of the vitreous humor revealed normal concentrations of electrolytes, creatinine, urea, with typical amounts of glucose and no ketone bodies. Further analysis excluded exposure to carbon monoxide, or toxic levels of acetaminophen and salicylates. An otherwise unremarkable autopsy led the pathologist to request further analyses. Since the decedent was employed as a paramedic, it was speculated that he had access to unconventional drugs such as vecuronium, which would be overlooked in routine studies.

Vecuronium is a unique analyte for LC-MS/MS analysis, since it contains two positive charges per molecule when performed under mildly acidic electrospray conditions[3]. Although the parent mass of vecuronium is 557 amu, its quaternary amine plus protonated tertiary amine contribute a mass to charge ratio of 279 m/z. Likewise, the metabolite 3-desacetyl vecuronium parent mass is 515 amu, which yields 258 m/z.

CASE NOTES #2 (CONTINUED)



An ammonium formate buffer followed by addition of methylene chloride solvent was used to extract vecuronium from femoral blood and vitreous humor. Vecuronium was not detected in the femoral blood, but it was found in the vitreous humor. Its metabolite was confirmed in both femoral blood and vitreous humor. These determinations support the assertion that vecuronium was introduced before death.

Discussion

Vecuronium has been attributed to deaths of health care workers before[4]. In that case, the decedent worked in a surgical environment and had access to intravenous needles, bags, vecuronium, and various pain medications. Apparently, the decedent was using these compounds for recreational purposes. Although the manner was accidental, it shows how dangerous vecuronium can be when used outside of a medical setting.

A seemingly non-toxicology related case has yielded unique lessons in looking for signs of suicidal poisoning. Conventional overdose cases relate information by empty prescription bottles, suicide notes, and robust signals from initial screens. In this scenario, toxicological indicators were obscured by a therapeutic amount of vecuronium, which can be fatal without assisted breathing. This case serves as a reminder that the role of the toxicologist is to evaluate the entire picture. Scene photos, interviews, intent, chemistry, biology, and physics come together in determining the cause of death.

References

1. Cirimele, V, Villain, M, Pepin, B, Ludes, B, Kintz, P, *J Chromtog B*, 2003, 107-113.
2. http://dailymed.nlm.nih.gov/dailymed/drugInfo.cfm?id=8077
3. Kerskes, CH, Lusthof, KJ, Zweipfenning, PG, Franke, JP, *J Anal Toxicol*. 2002 Jan-Feb;26(1):29-34.
4. Vorce, SP, Mallak, CT, Jacobs, A, *J Anal Toxicol* 2008, July/August 422-427.

GRAVE JUSTICE, NEW SERIES ON TRUTV

SOFT Member, M. Fredric Rieders, Ph.D., a forensic toxicologist, licensed lab director, and Chairman of the Board of Directors at NMS Labs, (a private forensic science laboratory in Willow Grove, PA), appeared on the pilot episode of Grave Justice.

Grave Justice is a new series on truTV. The show's premise is to investigate crime and justice stories. This is done through it's unique telling of haunting narratives from the victims' perspective especially in cases where the victim's own body provides crucial evidence in solving the crime.

Dr. Rieders was approached by the producers of the new series because of his expertise in forensic toxicology and asked to participate in the show highlighting the Robert Curley thallium death case. This was an exciting opportunity for Dr. Rieders, since he and his late father, Dr. Fredric Rieders, had assisted in the hair analysis investigation part of the case in the early 1990's.

Michael Fredric Rieders, Ph.D.

The overwhelming evidence of the hair analysis eventually led to the solving of the case and the confession of Mrs. Curley, the victim's wife.

DRUGS IN THE NEWS

ZOLPIDEM: ASLEEP AT THE WHEEL (AND IN THE KITCHEN, AND ON THE PHONE, AND AT THE SUPERMARKET, ETC.)

By Dwain C. Fuller, D-FTCB, TC-NRCC

If you were writing this column, which story would you open with? Perhaps the one about the man who took 10 mg of zolpidem, went to bed, then arose during the night, cooked a meal, consumed it, and returned to bed. Even after several nights of this epicurean pursuit, he would not believe the testimony of the witnesses of this activity until confronted with videotaped evidence. Or how about the one where the man took 10 mg of zolpidem at bedtime, then was witnessed by his son to leave his house, start his truck and back into a tree, return to the driveway and go back inside his house. Upon having trouble opening the bedroom door, the man kicked the door down, returned to bed and went back to sleep. The next morning he had no recollection of the events. Or, for the more tabloid-minded, perhaps the one about U.S. Representative Patrick Kennedy who reportedly took zolpidem and promethazine before driving his car into a security barricade near the U.S. Capitol, claiming he was "late for a vote". He was correct in his assertion, however -- the last vote was some six hours earlier. Or perhaps you have an even more bizarre zolpidem story of your own.

It is only fair to mention that bizarre parasomnias are not the exclusive realm of zolpidem, but are also reported with several sedative-hypnotic medications. The "Z-drugs", however, zolpidem, zopiclone and zaleplon, going by the trade names Ambien®, Lunesta®

and Sonata®, respectively, even if just anecdotally, seem to be more highly correlated to these phenomena. The Z-drugs share similar pharmacodynamic and pharmacokinetic profiles. Ambien®, however, perhaps due to its market share, estimated by some to be 52% of all new sleep-aid prescriptions and as much as 84% among the Z-drugs alone, seems to have the dubious distinction of being the leader in parasomnia reports.

Zolpidem and Driving

Several authors have reported on the increase in zolpidem-impaired driving in recent years, and a rather well-defined toxidrome of the zolpidem-impaired driver has emerged. Some of the hallmarks of zolpidem-impaired driving are as follows:

- Hitting stationary objects, including stationary vehicles
- Speed well above or below posted limits
- Lane deviation
- Leaving the roadway
- Driving wrong direction
- Eyes appear to "look right through" the officer
- Slow speech
- Unsteady gait with side to side and backward sway; often needing assistance to stand
- Horizontal gaze nystagmus.
- Amnesia for events surrounding driving/accident/reason for stop
- Unable to comprehend or remember officer's instructions

Sleep-driving

Beyond the sometimes entertaining, sleep-eating, sleep-shopping, and sleep-sex stories lies the more serious and dangerous realm familiar to the forensic toxicologist -- the sleep-driver. Defining a sleep-driver is rather elusive. Arguably, any driver exhibiting the signs and symptoms listed above, especially with amnesia for the event, could be classified as a sleep-driver. Some may wish to define a true sleep-driver as one who has not violated any of the prescribing guidelines. That is, one who has taken the drug in the proper dosage, without alcohol or other CNS depressants, and immediately prior to retiring to bed for an intended eight hours of sleep. Obviously, the latter condition is the most difficult to determine with any certainty. One must also ask the somewhat metaphysical question: What role does intent and the lack of memory of the intent play in the equation; is it intent if you don't remember having

DRUGS IN THE NEWS (CONTINUED)

the intent? This notwithstanding, the evidence seems to be clear that some people do retire to bed after taking zolpidem, only to arise and perform complex tasks including driving without remembering having done so. The exact definition, I will leave to you.

Zolpidem alone has been implicated in sleep-driving behavior, but as I have previously alluded to, there is a correlative, if not necessarily a causal, relationship with the coadministration of zolpidem and SSRI's, benzodiazepines, or other CNS depressant medications with this phenomenon. It is certainly logical to assume that co-ingestion of other medications with CNS depressant effects in addition to zolpidem would contribute to the observed impairment. However, as Reidy, Gennaro, Steele, and Walls aptly point out, "The combination of antidepressants and zolpidem is expected because of the large number of cases of depressed patients finding it difficult to sleep and requiring the coadministration of these drugs."

In these days of the internet, rumor and anecdotal accounts often feed public hysteria and take on a life of their own. Indeed, as claimed by the manufacturer, the percentage of zolpidem-related parasomnias may be quite low as a percentage; however, with nearly 30 million prescriptions for zolpidem in the U.S. alone, even statistical outliers can become prominent numbers. As one might expect, it is difficult to obtain good numbers as to the incidence of complex parasomnias such as sleep-driving and their relation to zolpidem. However, amnesia and somnambulism are both behaviors related to the events we are discussing. Gleaning from Ambien's prescribing information, there was a 1% incidence of amnesia in three placebo-controlled long-term efficacy trials involving Ambien®. Also, while being reported, somnambulism had an incidence of less than 0.1% in a clinical trial involving 3,660 subjects. To play with the math a little, if one takes the amnesia number at face value and gives the benefit of the doubt to the somnambulism number and assumes that the "less than 0.1%" is actually only 0.01%, at 30,000,000 prescriptions, one would expect 300,000 incidents of amnesia and 3000 incidents of somnambulism. This is obviously speculative and perhaps even an abuse of statistics, however, for whatever reasons, the Food and Drug Administration has taken notice.

In December of 2006 the FDA issued a request to manufacturers of multiple sleep disorder products, including the makers of Ambien® to revise the product labeling to include warnings about potential adverse events including, *"Complex sleep-related behaviors which may include sleep-driving, making phone calls, and preparing food (while asleep)."* Accordingly the package insert for Ambien® now contains this warning: *"Complex behaviors such as "sleep-driving" (i.e., driving while not fully awake after ingestion of a sedative-hypnotic, with amnesia for the event) have been reported with sedative-hypnotics, including zolpidem. These events can occur in sedative-hypnotic-naïve as well as sedative-hypnotic-experienced persons. Although behaviors such as "sleep driving" may occur with Ambien alone at therapeutic doses, the use of alcohol and other CNS depressants with Ambien appears to increase the risk of such behaviors, as does the use of Ambien at doses exceeding the maximum recommended dose. Due to the risk to the patient and the community, discontinuation of Ambien should be strongly considered for patients who report a "sleep-driving" episode. Other complex behaviors (e.g., preparing and eating food, making phone calls, or having sex) have been reported in patients who are not fully awake after taking a sedative-hypnotic. As with "sleep driving", patients usually do not remember these events."*

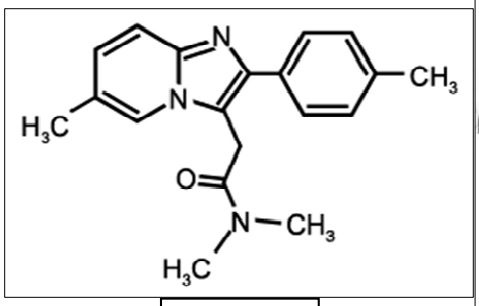
Pharmacology and Metabolism

Zolpidem is a hypnotic agent with a chemical structure unrelated to benzodiazepines, barbiturates, pyrrolopyrazines, pyrazolopyrimidines, or other drugs with known hypnotic properties. Zolpidem acts primarily at the GABA-BZ receptor complex and shares some of the pharmacological properties of the benzodiazepines. However, in contrast to the benzodiazepines, which non-selectively bind to and activate all BZ receptor subtypes, zolpidem in-vitro binds the BZ_1 receptor preferentially with a high affinity ratio of the $alpha_1$/ $alpha_5$ subunits. This selective binding of zolpidem on the BZ_1

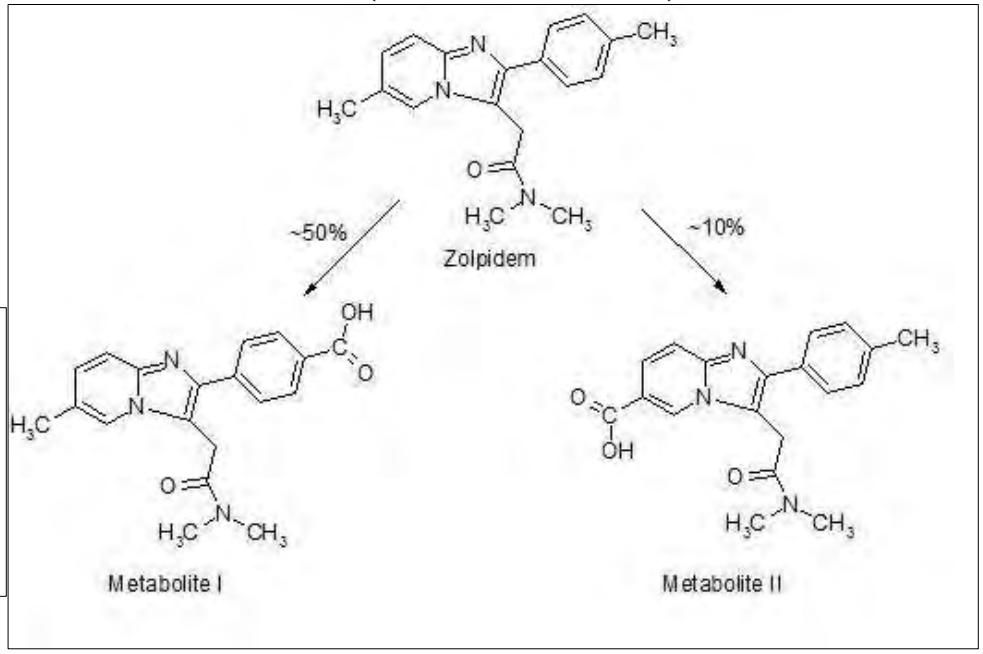
Please send *your* interesting contributions for "*Drugs In The News*" to Section Editor, Dwain Fuller, at Dwain.Fuller@va.gov

DRUGS IN THE NEWS (CONTINUED)

receptor, while not absolute, may explain the relative absence of myorelaxant and anticonvulsant effects in animal studies as well as the preservation of deep sleep (stages 3 and 4) in human studies of zolpidem at hypnotic doses.



Zolpidem



The pharmacokinetic profile of zolpidem is characterized by a rapid absorption from the gastrointestinal tract and a short elimination half-life. In a single-dose crossover study of 45 healthy subjects administered 5 and 10 mg of zolpidem tartrate tablets, the mean C_{max} were 50 (range: 29 – 113) and 121 (range: 58 – 272) ng/mL, respectively, with a mean T_{max} of 1.6 hours for both. The half-life of zolpidem is reported to be approximately 2.5 hours (range: 1.4 – 4.5 hrs). The major metabolic isoforms involved in zolpidem metabolism are CYP3A4 (~60%), CYP2C9 (~22%), and CYP1A2 (~14%). The fact that approximately 60% of zolpidem's metabolism is mediated by the CYP3A4 isoform, gives rise to the possibility that CYP3A4 inhibitors, including grapefruit juice, may prolong the elimination half-life of zolpidem.

The metabolism of zolpidem produces at least six inactive metabolites. The two major metabolites are formed by the methyl oxidation of the phenyl and imidazopyridine moieties of zolpidem.

When taken alone and as directed, that is, sleeping for a full 8 hours after use, zolpidem has been shown to exert no significant residual driving effects 10 – 11 hours after one night of bedtime treatment, which is in contrast to many benzodiazepine hypnotics.

Analytical considerations

Immunoassays are commercially available for zolpidem, however, since zolpidem is extensively metabolized and not readily excreted unchanged in the urine, immunoassays should be carefully selected for target compounds consistent with the specimens to be analyzed.

Zolpidem is readily detectable by GC or GC/MS analysis following a common Foerster-Mason type extraction for alkaline drugs. However, because both of the major metabolites of zolpidem, I and II, are amphoteric molecules, a directed SPE extraction followed by derivatization would likely be more appropriate for these compounds.

Zolpidem and the courts

As previously mentioned, zolpidem-impaired driving is becoming a major issue in the courts. Interestingly, with the advent of the FDA-requested warnings for zolpidem and related drugs, the "admission" of these possible parasomnias has become useful as a defense against DWI or DUID charges. This is known as the "Ambien Defense".

In 2007, the DWI charges against a North Texas woman, Phyllis Graham, were dropped after successfully arguing that she did not intentionally drive nor have any recollection of driving her husband's truck down the block and crashing it into a house before walking back home and returning to bed. Ms. Graham's urine test showed only zolpidem and traces of phenobarbital, the latter presumably from a gastrointestinal medication, but no alcohol.

In Massachusetts, in 2006, Ki Yong O, a pharmaceutical attorney, drove off the road onto the shoulder and struck Anthony

DRUGS IN THE NEWS (CONTINUED)

Raucci, knocking him into the middle of the highway and severing his leg. Mr. Raucci was pronounced dead at the scene. Subsequent toxicology tests showed that Mr. O's blood was positive for zolpidem. Mr. O was charged with operating under the influence and motor vehicle homicide. However, after a six day trial, Mr. O was acquitted. In his decision, Judge Kenneth Fishman wrote that "the court is unable to conclude beyond a reasonable doubt that the defendant was voluntarily intoxicated when he operated his motor vehicle."

While one would presumably be more able to take advantage of the "Ambien Defense" if the driver was taking zolpidem as directed, that is, without alcohol and without other CNS depressants, that is not always the case.

In New South Wales, Australia, Robert James Kingston was found not guilty of driving with a blood alcohol concentration of 0.105%, after Judge Colin Phegan found on appeal that there was a "real possibility" that he was "sleep-driving" after taking a Stilnox® (zolpidem) tablet. Judge Phegan said he was satisfied that the scientific evidence was now strong enough to "at least raise a possibility, a real possibility, that the explanation for what happened on this occasion was a state of sleep-driving caused by the use of the drug". Judge Phegan further explained that Mr. Kingston's state of undress, his apparent hallucination, the fact that he was on the wrong side of the road at the time of the accident, and his inability to remember anything of the incident were consistent with a state of "automatism"- where a person has no control over their actions – caused by taking the drug.

Conclusion

When taken as directed, zolpidem is apparently an effective and safe sleeping medication, as nearly 30 million prescriptions would indicate. However, as with most medications, that is not to say it is without side-effects or potential complications, especially considering the many possible interindividual differences in metabolism, etc. And while many of the driving under the influence cases involving zolpidem also involve a driver using zolpidem in a manner inconsistent with prescribing guidelines, the objective observer must concede that in some cases at least, the driver may simply be guilty of having the bad luck of being a statistical outlier in a vast population.

References

Some Sleeping Pill Users Range Far Beyond Bed. Stephanie Saul, The New York Times, March 8, 2006

DWI Charges Dropped in Ambien 'Sleep Driving' Case. Janet St. James, WFAA-TV, Monday, March 19, 2007

Landmark Ruling in Stilnox Sleep-Driving Case. Annabel Stafford, The Age, April 11, 2008

Prosecutors Concerned Ambien Use Excuses Criminal Behavior. TheBostonChannel.com, WCVB Boston, February 16, 2008

Ambien®(zolpidem tartrate) Prescribing Information, Sanofi-Aventis U.S. LLC, Bridgewater, NJ 08807, June 2008

Zolpidem Impaired Drivers in Wisconsin: A Six Year Retrospective. William Johnson, Patrick M. Harding, Amy K. Cochems, Laura J. Liddicoat, Wisconsin State Laboratory of Hygiene, Madison, Wisconsin, Presented at the Society of Forensic Toxicologists Annual Meeting, 2005

The Zzz Drugs: From Analysis to Interpretation. H Chip Walls, National Institute of Justice/RTI International, Forensic Science Education Program, RTI.org, 2009

Case Report: Zolpidem Tartrate and Somnambulism. Cpt. Jeff Harazin, Maj. Timothy R. Berigan, Military Medicine, Vol 164, September 1999

Zolpidem-induced Sleep-driving. Clinical Communication, John A. Doane; Anthony S. Dalpiaz, The American Journal of Medicine, Vol 121, Issue 11, November 2008

Residual Effects of Sleep Medication on Driving Ability. Joris C. Verster, Dieuwke S. Veldhuijzen, Edmund R. Volkerts, Sleep Medicine Reviews, Volume 8, 2004, 309-325

Zolpidem. Merck Manual Online, www.merck.com, accessed 2/4/09

Zolpidem and Driving Impairment. Barry K. Logan, Fiona J. Couper, Journal of Forensic Sciences, 46(1), 2001, 105-110

The Incidence of Zolpidem Use in Suspected DUI Drivers in Miami-Dade Florida: A Comparative Study Using Immunalysis Zolpidem ELISA KIT and Gas Chromatography-Mass Spectrometry Screening. L. Reidy, W. Gennaro, B.W. Steele, H.C. Walls, Journal of Analytical Toxicology, Vol 32, October 2008, 688-694

NEW DRUGS

Submitted by Section Editor, Dan Anderson, FTSABFT

Send interesting "New Drugs" articles to Section Editor, Dan Anderson at danderson@coroner.lacounty.gov

TAPENTADOL

Lauren L. Richards-Waugh[1,2] and James C. Kraner[2]
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[2]*West Virginia Office of the Chief Medical Examiner, 619 Virginia Street, W. Charleston, WV 25302*

Tapentadol HCl (immediate release, 50 mg, 75 mg, and 100 mg) is a new, centrally acting oral analgesic developed by Johnson & Johnson that was approved by the FDA in November 2008 for the treatment of moderate to severe acute pain in adults 18 years of age or older. The drug does not yet have a trade name and is under review by the DEA for scheduling (1). Extended release tablets are being developed for chronic pain.

Analysis

Since this drug is so new, little information could be found concerning its analysis. Using the online acid dissociation calculator at http://aceorganic.pearsoncmg.com, we found the pKa of 10.0 for the phenolic moiety, and 9.8 for the tertiary nitrogen. These values are consistent with the similar substituent groups in albuterol and dimethylamphetamine, respectively. For analysis using gas chromatography/mass spectrometry it seems likely that derivatization of the hydroxyl group will be necessary and the proposed trimethylsilyl derivative is shown below. In addition, organic extraction of tapentadol may be difficult due to the amphoteric nature of the compound. Analysis using liquid chromatography may be more readily utilized.

Pharmacology

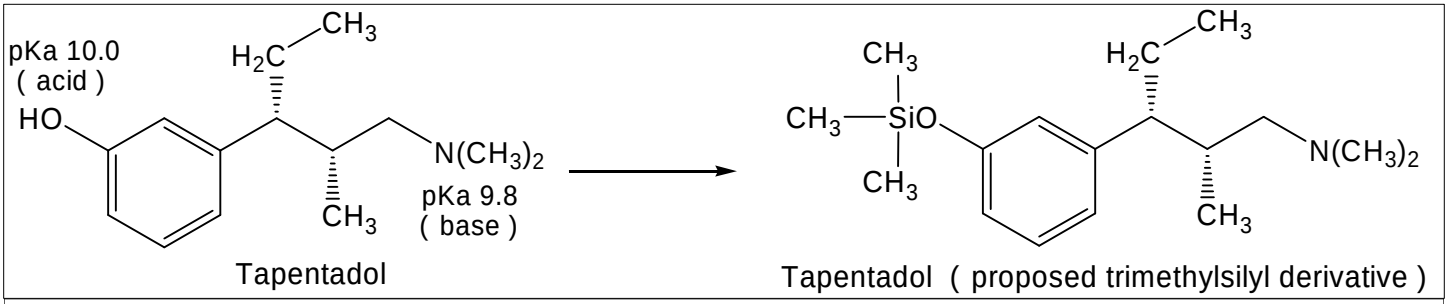
Tapentadol is a unique molecule that acts as a mu-opioid receptor agonist and a norepinephrine reuptake inhibitor. It is a pure enantiomer that does not require metabolic activation nor produce active metabolites. Data from clinical studies suggests the efficacy of tapentadol is comparable to strong opioids. Common side effects include nausea, vomiting, dizziness, headache, and somnolence. The common GI side effects of other opioids are significantly reduced with tapentadol treatment, which could potentially increase usage due to increased tolerability.

Absorption of tapentadol is rapid, with C_{max} occurring in the serum between 1.25 and 1.5 hours post-dose. Tapentadol is primarily detected as conjugated metabolites in the serum (C_{max} for conjugates is 1.25 to 2 hr). Oral bioavailability is 31.9 ± 6.8%. The main route of metabolism is glucuronidation with minor phase-1 hydroxylation and demethylation reactions. Approximately 99% of the dose is accounted for in the urine (69% as glucuronide and sulfate conjugates, 27% as other metabolites and 3% unchanged) and 1% in the feces. More than 50% of the dose is excreted after 4 h ($t_{1/2}$ = 3.93 h) and over 95% within 24 h of dosing (2).

As with other mu-opioid receptor agonists, respiratory depression is a possible side effect of tapentadol. Tapentadol presents the same potential for abuse as other opioids. Concurrent use of alcohol or other CNS depressants increases the risk of a fatal respiratory depression. There is a potential for life-threatening serotonin syndrome with Tapentadol due to the norepinephrine reuptake inhibition action. The risk of developing serotonin syndrome is increased with concomitant use of other SNRIs or other drugs that increase serotonin levels (SSRIs, TCAs, MAOIs, and triptans).

References

1. Tapentadol approved as pain reliever, 2009, Am J Health-Syst Pharm, 66:8.
2. Terlinden R, Ossig J, Fliegert F, Lange C, Goehler K. Absorption, metabolism, and excretion of 14C-labeled Tapentadol HCl in healthy male subjects. *Eur J Dru*



Chemical Name: 3-[(1*R*,2*R*)-3-(dimethylamino)-1-ethyl-2-methylpropyl]phenol
Chemical Formula: $C_{14}H_{24}NO$
Molecular Weight: 221.18 (as hydrochloride 257.80)

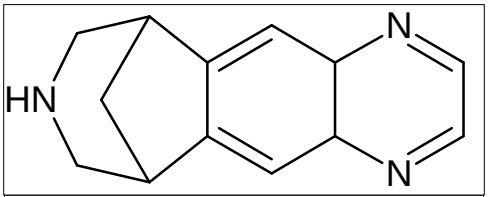
NEW DRUGS (CONTINUED)

VARENICLINE (CHANTIX®)

Robert L. Hargrove and Douglas L. Smith
North Carolina Office of the Chief Medical Examiner, Campus Box 7580, Chapel Hill, NC 27599-7580
hargrove@ocme.unc.edu; dlsmith@ocme.unc.edu

Varenicline is the active ingredient in Chantix®, the most recent anti smoking medication to be approved by the FDA (May, 2006). It is a partial

nicotinic acetylcholine receptor agonist which binds to the nicotine receptors but stimulates the receptors less than nicotine. The agonist action helps to ease nicotine withdrawal symptoms. Varenicline is administered in 0.5 mg tablets, initially 1 tablet per day for 3 days followed by a maintenance dose of 0.5 mg twice a day for 4-7 days and then 1 mg tablet twice a day for the duration of cessation of smoking. The drug is not recommended for use with any other form of smoking cessation such as nicotine patches or bupropion. In regards to pharmacology, 92% of Varenicline is excreted in the urine as unchanged parent drug. There is no evidence that Varenicline either inhibits or induces any of the cytochrome P450 system substrates.



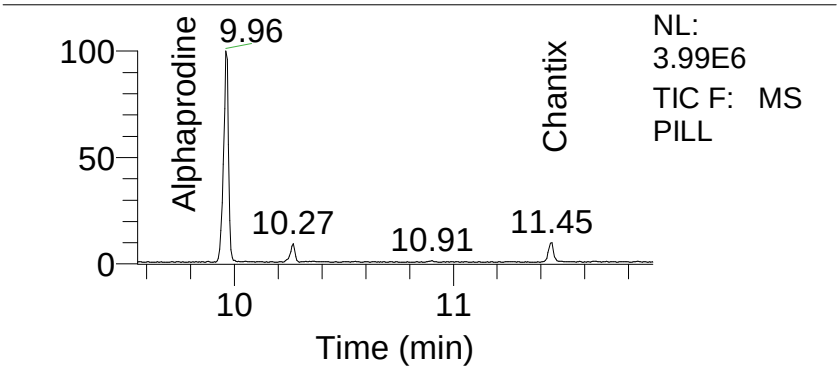
Chemical Structure of Varenicline

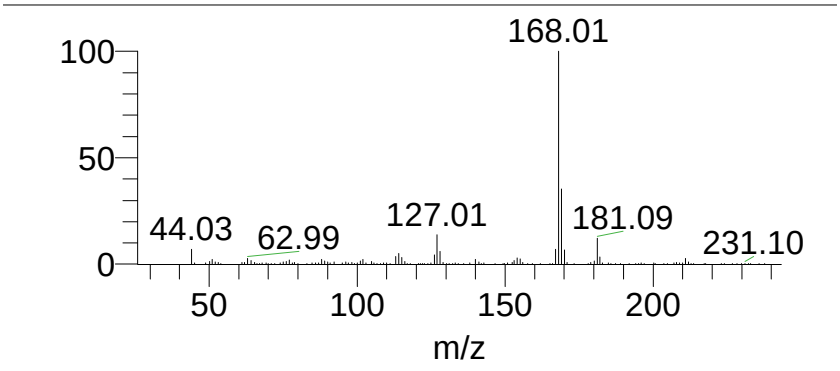
Toxicology

Extraction:

A 1 mg tablet was crushed and dissolved in 10 mL of methanol yielding a ~ 0.1 mg/mL solution. 2mL of blood was supplemented with 0.1 mL of ~ 0.1 mg/mL solution and 1 ug/mL alphaprodine as internal standard and then subjected to a basic butyl chloride/ ether (3:1) liquid/liquid extraction with acidic back extraction and hexane wash step. Extracts were split between GC-NPD and GC/MS for quantification and peak identification, respectively.

Detection: GC/MS (168, 127, 181, 44 m/z)
Elution Order (RT): Chlorpheniramine (11.16)
CHANTIX (11.45)
Venlafaxine (11.67)





Common Name:	Varenicline
Trade Names:	Chantix®
Manufacturer:	Pfizer
Chemical Name:	7,8,9,10-tetrahydro-6,10-methano- 6*H*-pyrazino (2,3-h)(3) benzazepine
Chemical Formula:	$C_{13}H_{13}N_3$
Molecular Weight:	211.26
CAS Number:	249296-44-4 & 375815-87-5
Administration:	Tablets – 0.5 and 1.0 mg tablets

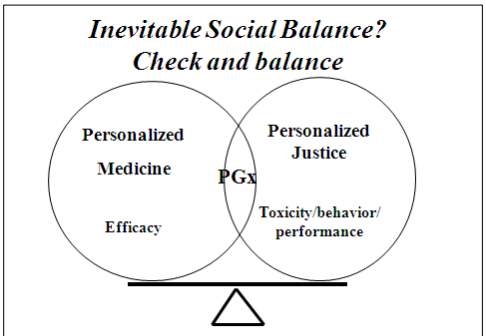
PERSONALIZED JUSTICE, TRANSLATIONAL PHARMACOGENOMICS AND PERSONALIZED MEDICINE— RELEVANT TO THE FORENSIC SCIENCES?

Guest Editorial by Steven H. Y. Wong, Ph.D. (a) and Christopher Happy, M.D. (b)

Since the completion of the Human Genome Project, translational pharmacogenomics has become one of the tangible applications for optimizing drug therapy with application to Personalized Medicine. The majority of the publications are, however, only conceptual or anecdotal. In the past few years another application of pharmacogenomics developed in the medical examiner/coroner setting, i.e., selected use for certification of drug related deaths - the so called molecular autopsy. Postmortem findings can shed light on the effect of genetic variation on drug metabolism and toxicity and these new applications can strengthen the emerging practice of Personalized Medicine. Concurrently, the use of pharmacogenomics is expanding into new area concerning drug sensitivity and resistance. The most recent focus has been on the use of pharmacogenomics testing as an adjunct to warfarin dosing by genotyping *CYP 2C9* and *VKORC1* genes[1] and for antiepileptic drugs such as carbamazepine and phenytoin by genotyping *HLA* in the Asian population. In major metropolitan areas (including San Francisco and Milwaukee), attorneys have begun to use television advertising, encouraging legal action for patients who experienced Steven Johnson syndrome as a complication of drug therapy (carbamazepine or phenytoin) and *HLA* poor genotype. In the hotly debated area of using pharmacogenomics data as an adjunct in warfarin therapy, a recent article in CAP Today[2] assessed the outcome data concluding that more well designed prospective studies would be needed prior to widespread clinical application. However, the article quoted Dr. Eby of Washington University " ---- *In the interim perhaps there will be some event we can't predict now that will rapidly accelerate the use of pharmacogenomics-based warfarin dosing—a* ***medicolegal*** *case or a high-profile individual having an adverse effect*." These events and opinions are beginning to shape and build the framework for Personalized Medicine, and in the process, will bring about the emerging practice of Personalized Justice. When contemplating whether Personalized Justice is relevant to the forensic sciences, we start by asking the following questions:

1. What might constitute the emerging practice of Personalized Justice?
2. Why is Personalized Justice relevant to forensic sciences and forensic pathology and toxicology in particular?

A proposed definition of Personalized Justice was recently presented in an international meeting in Beijing[3] (October 2007) and has since been published in some upcoming chapters and articles [4-7]. Personalized Justice may be defined as "the inclusion of molecular analyses – genomic and proteomic, in criminal and forensic proceedings, in the deliberation for possible genetic and proteomic contributions to adverse behavior/outcome. " As shown in the figure, Personalized Justice complements Personalized Medicine through the commonality of pharmacogenomics and possibly, other "omics" sciences in the future. Together, Personalized Justice and Personalized Medicine would offer a new paradigm of social balance. Whereas . . . .



Complementary relationship of Personalized Medicine and Personalized Justice (Reproduced with permission from ref. 6. Wong SHY in Clarke's Analysis of Drugs and Poisons 4th edition. In press).

Personalized Medicine advocates the use of five " rights", i.e., the patient's drug therapy might be optimized by identifying: right patient, right treatment, right diagnosis (functional testing such as TDM and toxicology, pharmacogenomics, proteomics and other "omics" such as metabolonomics, and molecular imaging), right drug dose, and right time. On the other side of the social balance, Personalized Justice would address the opposite " not rights - wrongs " which might result in suboptimal therapy, drug toxicity and other adverse outcomes. For the current assessment, it would be possible to propose a framework within which Personalized Medicine and Personalized Justice overlap, giving rise to an inevitable social balance. Such might be illustrated in the current epidemic of abuse of prescription drugs. We know the genetic

Editorial—Continued

variation of drug metabolizing genes such as *CYP 2D6* would affect drug metabolism and efficacy. For a worker with *CYP 2D6* homozygous genotype with corresponding poor phenotype, drug metabolism for opioids such as oxycodone would be impaired, affecting metabolism and pain control and leading to " poor " work performance. In the event of a workplace accident, the toxicology result might be complemented with pharmacogenomics. Together, these results would be included in medicolegal proceedings. Further, as indicated, warfarin genotyping might be "accelerated" by a medicolegal case. These are some possible scenarios that would benefit from the emerging practice of Personalized Justice.

In addressing the second question, it would be important to acknowledge the historic and well accepted practice of DNA fingerprinting which applies the genetic coding for identity testing as in genetic policing. Personalized Justice would complement and extend the use of genomics and other "omics" science in the future. As forensic scientists, we apply molecular diagnostics that advances our practice, and in so doing, enable the practice of Personalized Medicine. Along with toxicologic and pathologic findings, pharmacogenomics would serve as an adjunct to provide " value-added " interpretation. These findings may be used indirectly to optimize patient drug therapy later on. While the clinical applications of pharmacogenomics for warfarin dosing awaits more robust outcome studies, forensic pathologists and toxicologists might help by applying molecular diagnostics such as pharmacogenomics in cases where case history indicated warfarin therapy and autopsy showed hemorrhage. Genotyping *CYP 2C9* and *4F2*, and *VKORC1* genes might be helpful in the molecular autopsy to account for significant of dosage variation, and therefore to further assess the causal relationship of warfarin to hemorrhage in the case of interest. These findings might add to the justifications or might refute the use of pharmacogenomics based warfarin dosing!

By addressing the above two questions and by surveying the rapidly developing molecular diagnostic field, the emerging opportunities of Personalized Justice would enhance the profession of forensic pathology and toxicology. In chatting with budding scientists during toxicology and forensic science meetings, many of these "younger "students have already included pharmacogenomics in their studies. Just as important, it would be timely to outreach to legal colleagues in order to " build " the necessary legal, educational and scientific foundations and framework. It is time to recognize the possible emergence of Personalized Justice and its enabling effect on Personalized Medicine.

(a) Professor of Pathology, Medical College of Wisconsin, Scientific Director, Toxicology Department. Milwaukee County Medical Examiner's Office

(b) Medical Examiner of Milwaukee County and Pathology Dept., Medical College of Wisconsin

References

1. The International Warfarin Pharmacogenetics Consortium. Estimation of the Warfarin Dose with Clinical and Pharmacogenetic Data. N Engl J Med 2009;360:753-64.
2. Check W. PGx Tests for Warfarin Dosing—How Soon? CAP Today, p.1, 34-42, Jan. 2009.
3. Wong SH. Pharmacogenomic and Personalized Medicine for Drug Addiction and Toxicology: Towards Personalized Justice? 11th Asian Pacific Congress of Clinical Biochemistry, Beijing, China, Oct. 2007.
4. Wong SH, JM Jentzen, RZ Shi, and the Forensic Pathology/ Toxicology Methadone Pharmacogenomics Study Group (FPTMPGxSG). (2008). Personalized Medicine Enabling Personalized Justice: Methadone Pharmacogenomics as an Adjunct - for molecular autopsy, and for addiction and driving under the influence of drugs (DUID). CCLM, 46: A118.
5. Wong SHY, FPTMPGxSG. (2008). Pharmacogenomics for Personalized Medicine of Addiction, for Forensic Toxicology, and for the Emerging Personalized Justice. CCLM, 46: A228.
6. Wong SHY. (In press) Pharmacogenomics for Forensic Toxicology. In Olaf H. Drummer, Section Editor (Toxicology), Jamieson A, Moenssens A. Co-Ed., Wiley's Encylopedia of Forensic Science, Wiley, Chichester, UK.
7. Wong SHY. (In press). Pharmacogenomics as Molecular Autopsy- An Adjunct to Forensic Pathology/Toxicology: From Gregor Mendel to Personalized Medicine and Personalized Justice. in Clarke's Analysis of Drugs and Poisons 4th edition. Moffat, D Osselton and B Widdop, Eds. Royal Pharmaceutical Society Publishing, London.

AMERICAN BOARD OF FORENSIC TOXICOLOGY

Submitted by Marina Stajić, Ph.D., D-ABFT, President, ABFT Board of Directors

On behalf of ABFT, the Board of Directors has issued the following statement in response to the National Academy of Sciences congressionally mandated report from the National Research Council released on February 19, 2009:

STRENGTHENING FORENSIC TOXICOLOGY IN THE UNITED STATES: AMERCIAN BOARD OF FORENSIC TOXICOLOGY RESPONSE TO THE NATIONAL ACADEMY OF SCIENCES RECOMMENDATIONS

COLORADO SPRINGS, CO, FEBRUARY 23, 2009. The National Academy of Sciences (NAS) congressionally mandated report from the National Research Council released on February 19, 2009 finds deficiencies in the nation's forensic science system and calls for major reforms and new research. The report also calls for the development of accreditation standards, guidelines for quality control, proficiency testing, certification and a code of ethics for experts in all aspects of forensic science.

The report notes that the American Board of Forensic Toxicology (ABFT) provides these elements and specific educational, training and experience requirements, including a series of competency tests for certification and participation in proficiency testing in the area of forensic toxicology.

The ABFT has developed and implemented all of the standards called for by the NAS report in the field of forensic toxicology and supports the development and implementation of these standards in other forensic disciplines. In 1976, the ABFT implemented a professional certification program for toxicologists and has since certified more than 300 diplomates and specialists in the field. In 1996, ABFT introduced a comprehensive, specialized laboratory accreditation program. To date, 24 leading laboratories are ABFT-accredited, including nine laboratories in states that mandate such accreditation.

The main barrier to expanding compliance with ABFT standards in the forensic toxicology community has been the absence of a national mandate and the limited funding available to many state programs. Even when sound, accepted standards and science are available, achieving the quality, validity, and integrity of forensic testing requires a significant investment of resources. The ability to meet the goals of the NAS report will be contingent on the government's financial commitment to the forensic sciences through funding the technology, staffing, education, training, quality assurance and accreditation programs for the laboratories performing this critical public service.

Forensic toxicology encompasses the measurement of alcohol, drugs and other toxic substances in biological specimens and interpretation of such results in a medicolegal context. The purpose of the American Board of Forensic Toxicology is to establish and enhance voluntary standards for the practice of forensic toxicology and for the examination and recognition of scientists and laboratories providing forensic toxicology services. Please visit www.ABFT.org for more information. **Contact Dr. Marina Stajić at (212) 447-2637 or Dr. Bruce Goldberger at (352) 494-7569 for additional information.**

ABFT NEWS (CONTINUED)

REMINDERS:

- ABFT Board of Directors has restructured the certification application, re-certification application and continuing education fees. Effective January 1, 2009, a non-refundable fee of $150 is to be applied to all new applications, replacing the previous $300 fee. The re-certification fee of $300 is no longer required every five years. Instead, a fee of $100 is required with the annual submission of continuing education credits. Certificants will still need to submit a re-certification application every five years in order to remain in good standing.

- ABFT no longer has the USA/Canada residency requirement for certification. All other requirements remain the same. The examination is administered (in English only!) twice each year, at the American Academy of Forensic Sciences (AAFS) Annual Meeting and at the Society of Forensic Toxicologists (SOFT) Annual Meeting. Additionally, a candidate may request to have an examination administered at a different location under the direction of a member of the Board of Directors. We welcome and encourage our international colleagues to consider applying for ABFT certification. Please visit www.ABFT.org for more information.

CONGRATULATIONS:

- The staff of the Forensic Toxicology Program at the **Wisconsin State Laboratory of Hygiene** has successfully met all the requirements and became the latest ABFT accredited laboratory.

- The following four toxicologists have successfully met all the requirements and joined the ranks of ABFT certificants since October 2008:

  LeAndra Higginbotham, Ph.D., D-ABFT
  Sherwood Lewis, Ph.D., D-ABFT
  Kathy Erwin, M.S., FTS-ABFT
  Xiaoqin Shan, Ph.D., FTS-ABFT

- The ABFT Board elected the following officers in February 2009 to a one-year term (July 1, 2009 – June 30, 2010):

  President:
  Marina Stajić, Ph.D., D-ABFT
  Vice President:
  Bruce Goldberger, Ph.D., D-ABFT
  Secretary:
  Daniel Isenschmid, Ph.D., D-ABFT
  Treasurer:
  Robert Middleberg, Ph.D., D-ABFT

- At the ABFT annual meeting in February 2009, the following Directors were elected to a three year term (July 1, 2009 – June 30, 2012):

  Bruce Goldberger, Ph.D., D-ABFT
  Graham Jones, Ph.D., D-ABFT
  Barry Logan, Ph.D., D-ABFT
  Susan Mills, M.S., FTS-ABFT
  Jeri Ropero-Miller, Ph.D., D-ABFT

- The above re-elected and newly elected Directors join the following Directors currently serving their respective terms:

  Yale Caplan, Ph.D., D-ABFT
  Daniel Isenschmid, Ph.D., D-ABFT
  Frederick Fochtman, Ph.D., D-ABFT
  Joseph Manno, Ph.D., D-ABFT
  J. Rod McCutcheon, B.S., D-ABFT
  Robert Middleberg, Ph.D., D-ABFT
  Theodore Shults, J.D., M.S, Public Member
  Elizabeth Spratt, M.S., D-ABFT
  Marina Stajić, Ph.D., D-ABFT

APPRECIATION:

Directors McCurdy and Osiewicz will be leaving the Board on June 30, 2009, having indicated that they do not wish to be considered to serve another term. The ABFT Board expresses their gratitude to Drs. McCurdy and Osiewicz for many years of dedicated service.

TOXICOLOGY - BITS & PIECES

Section Editor, J. Robert Zettl, MPA

A.A.F.S. NEWS TOXICOLOGY SECTION

Submitted by Jeri Ropero-Miller, Ph.D., DABFT

From February 16th to 23rd of this year, more than 3200 forensic scientists traveled to Denver, Colorado to attend the 61st annual AAFS meeting themed "Forensic Science: Envisioning and Creating the Future". The Toxicology Section had a little over 100 of its almost 500 members in attendance this year, down almost 10% from last year's Academy meeting.

Ken Ferslew was Toxicology Section Program Chair for 2009. He put together a very interesting and worthwhile program of 31 scientific posters and 30 scientific platform presentations. Phil Kemp was the Workshop Chair and his hard work was rewarded with six great workshops that were toxicology specific or multidisciplinary with toxicology involvement.

The Tox Section had special sessions on Drugs and Driving and one on Postmortem Pediatric Toxicology and a multidisciplinary session with Path/Bio. The Tox Section sponsored Dr. Daniele Piomelli from the University of California at Irvine to speak as the Annual Lecturer focusing on The Endocannabinoid Signaling System.

As usual the Open Forum hosted by Chip Walls was a big hit after seating and desert rooms got combined.

The Toxicology Section Business Meeting was run by the Chair, Peter Stout, and Secretary, Jeri Ropero-Miller. The Chairman's report by Dr. Stout urged members to strive to be current and active AAFS members by seeking promotions and getting involved; to read and discuss the newly released National Academy of Sciences (NAS) report entitled **"Strengthening Forensic Science in the United States: A Path Forward".** Dr. Stout updated members on judicial news surrounding the Crawford and Meledez-Diaz court cases that may affect those serving as Expert Witnesses. Other Section news included a host of Chair reports from each of the standing committees and liaison organization reports, revisions and approval to the Section's Policy and Procedures. Tox Section Abstracts from the last 10 years are now available on CDs by contacting Kathy Reynolds of the Academy office (KReynolds@aafs.org).

Newly elected officers for 2010 include:

- Chair- Jeri Ropero-Miller
- Secretary- Kenneth Ferslew
- Program Chair- Phil Kemp
- Workshop Chair- Ruth Winecker

Tox Section Awards presented in February include:
Dr. Barry Levine was presented the ***Alexander O. Gettler Award***
Dr. Timothy Rohrig was presented the ***Rolla N. Harger Award***
Teresa Gray was given the ***June K. Jones Award***

If you are not a member of AAFS Toxicology Section we welcome you to join. And if you are a member and need to update your membership to Fellow see one of the Section Officers.

NATIONAL SAFETY COUNCIL —COMMITTEE ON ALCOHOL AND OTHER DRUGS

Submitted by Laura Liddicoat

The Executive Board of the NSC/CAOD met Sunday afternoon, February 15, 2009 at the American Academy of Forensic Sciences Conference in Denver, Colorado. The full committee of the NSC/COAD met Monday morning, February 16.

Officers for the coming year include:

- Chair- Mack Cowan
- Vice Chair- Dr. Dennis Canfield
- Secretary- Laura Liddicoat

Laurel J. Farrell was the recipient of the *Robert F. Borkenstein Award* which was conferred upon her Monday evening. As always, Dr. Kurt M. Dubowski presented the award and did a marvelous job of filling in the attendees on Laurel's childhood, marriage, children and illustrious career in Forensic Science. The Borkenstein Award is given to one who has a minimum tenure of 25 years of active service in the area of alcohol/drugs and traffic safety, has contributed to that field to a degree that his/her achievements are nationally recognized and has a minimum of 10 years of active and productive involvement as a volunteer with the National Safety Council.

The committee adopted the following position statement regarding access to the Source Code of the software for evidential breath-alcohol analyzers:

> **It is the position of the National Safety Council's Committee on Alcohol and Other Drugs that access to the Source Code of the software of an evidential breath-alcohol analyzer is not pertinent, required, or useful for examination or evaluation of the analyzer's accuracy, scientific reliability, forensic validity, or other relevant characteristics, or of the trustworthiness and reliability of analysis results produced by the analyzer. These matters can be and have been fully assessed and examined by multiple other well established and recognized methods and procedures in common use worldwide; and many other adequate and appropriate means exist to challenge evidential breath-alcohol analysis results.**

For a copy of the full statement including introduction, comment and references, please contact Laura Liddicoat at ll@mail.slh.wisc.edu.

The next joint meeting of the NSC CAOD and Executive Board will be held at the SOFT conference in Oklahoma City, Oklahoma on Friday, October 23, 2009. Exact time and location will be announced later. To access CAOD policies, previous Borkenstein Award recipients or learn more about the committee go to www.nsc.org and type in Committee on Alcohol and Other Drugs under the search engine.

TOXICOLOGY - BITS & PIECES (CONTINUED)

A.A.F.S./S.O.F.T. JOINT DRUGS & DRIVING COMMITTEE

Submitted by Jennifer Limoges

The AAFS/SOFT Drugs & Driving Committee met during the American Academy of Forensic Sciences annual meeting in Denver, Colorado on Wednesday, February 18, 2009. The website continues to be the main focus of the committee, along with maintaining the special sessions and workshops. Once the website project is completed, the committee will reorganize around new goals.

Thanks to Michelle Spirk for another excellent DUID Special Session at the AAFS meeting. Amy Cochems will be coordinating the session at the SOFT 2009 meeting. The committee will also be submitting a workshop proposal for SOFT 2009, coordinated by Michelle Spirk and Ann Marie Gordon.

Another offering of the joint Continuing Education Committee "Interpretive DUID Workshop" will be hosted by Ashraf Mozayani in Houston, TX.

Congratulations to Chip Walls who will be receiving the honorary designation of "DRE Ambassador" at the annual DRE conference this year. The designation honors an individual who has contributed significantly to the DRE program, but is not a certified DRE.

MEMBER NEWS

FOND FAREWELL

Submitted by Cathy Jolin

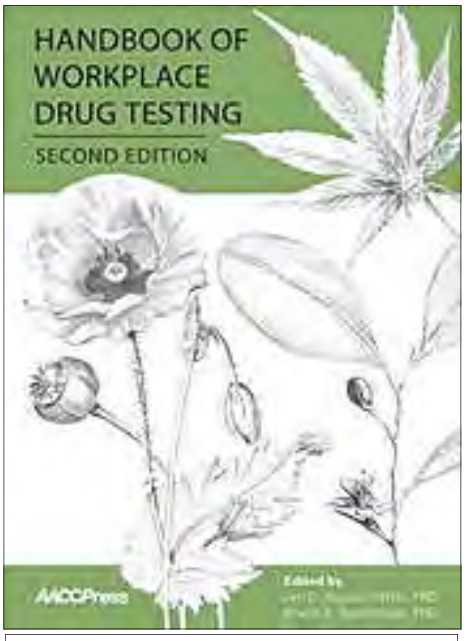
In June of 2008 a long standing member of SOFT, **Robert Wayne Wall** passed away. He is survived by his wife Anne C. Wall and his children Robert, Gordon and Rachael. Wayne, as he was known to his friends and family, obtained his BS in Biology from Christopher Newport University and his MS in Biology from Western Kentucky University. He was a member of Phi Beta Kappa Society and AAFS. He served in the United States Army from 1970 to 1973. As a civilian, he worked at the 10th Medical US Army Laboratory in Landstuhl, Germany in the Virology Section of the laboratory followed by a position in the Toxicology Section. In 1985 Wayne started working at the U.S. Army Forensic Toxicology Drug Testing Laboratory spending a few years in the Quality Control Section before becoming a Laboratory Certifying Scientist and Expert Witness for Military separation boards and court proceedings. Wayne was always eager to share his knowledge with new employees and was often consulted regarding drug cases. He routinely volunteered to lead briefings and lab tours and was just as eager to educate the visitor to the lab as he was the new employee. His knowledge, positive attitude, humor, and guidance will be sorely missed.

HANDBOOK OF WORKPLACE DRUG TESTING SECOND EDITION

Edited by Jeri D. Ropero-Miller, PhD. And Bruce A. Goldberger, PhD

Workplace Testing is a specialty area of forensic toxicology and in such has a complex set of elements unique to the specimen selection and analytical techniques necessary for a successful testing outcome. Workplace testing is performed primarily as a deterrent to drug abuse and in such the emphasis is placed on the reliability of the drug testing both in accuracy and validity of the analysis but with the use and application of the reported results in the workplace arena. Prominent practicing forensic toxicologists cover the factors in the interpretation of the drug test results including drug screening and confirmatory methodologies, the cutoff concentrations, the administrative or legally mandated rules, the pharmacology and metabolism of drugs, the limitations of type of specimen to predict drug use or impairment. Individual chapters are included for the five drug classes most often included in the workplace drug-testing panel: amphetamines, cannabinoids, cocaine opiates and phencycline. New topics presented in the 2nd edition include quality assurance, laboratory accreditation and regulation. In addition there are comprehensive chapters on the subject of alternative matrices including discussions on testing of hair, oral fluid and sweat. This 2nd Edition of Workplace Drug Testing provides a comprehensive concise resource that provides information on the complex elements of workplace drug testing for both the practitioner and the public.

Published by AACCPress @ 485pgs.



Book Review Submitted by Vickie W. Watts, Co-Editor of ToxTalk

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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

ToxTalk is the official publication of the Society of Forensic Toxicologists, Inc., mailed quarterly (bulk mail) to its members. It is each member's responsibility to report changes of address to the SOFT Administrative Office. Non-members may receive ToxTalk for $15 per calendar year. Checks payable to SOFT may be mailed to the SOFT Administrative Office. To submit articles or address ToxTalk issues please email to ToxTalk@soft-tox.org.

Future S.O.F.T. Meeting Info

2009: Oklahoma City, OK……Oct. 18-23, 2009……..Phil Kemp, Dennis McKinney

2010: Richmond, VA……Oct. 18-22, 2010…..…..Michelle Peace, Lisa Tarnai Moak

2011: San Francisco, CA……...Aug. 29-Sep. 2, 2011…….……Nikolas Lemos

2012: Boston, MA…….June 30-July 6, 2012…..…….……...…Michael Wagner

2013: Orlando, FL…….Oct. 26-Nov.3, 2013 …….…….Bruce Goldberger

DUID Workshop

The Harris County Medical Examiner Office - Toxicology Laboratory is hosting a SOFT DUID Workshop in Houston, Texas on May 12-13, 2009. A brochure and registration form can be downloaded at **www.soft-tox.org**.

Please contact Dr. Ashraf Mozayani for further information **(Ashraf.Mozayani@meo.hctx.net)**. Registration deadline is March 31, 2009.

2009 Directory

The enclosed 2009 Directory has been prepared for the exclusive, personal use of SOFT members. The contents were obtained from individual 2009 dues payment forms and the on-line updates of contact information as of February 28, 2009.

It is the responsibility of each member to keep his/her contact information current. Please notify the SOFT Office as corrections are needed.

Call for Papers

Scientific abstract papers for poster and (15 minute) platform presentations have a submission deadline of July 7, 2009. Enclosed with this ToxTalk mailing are complete instructions and details needed to submit papers. Instructions can also be downloaded at the SOFT 2009 website **www.soft2009.org).** Questions and submissions are to be made to **SOFT2009@uco.edu**.

The **Renaissance Hotel** is ready to begin accepting reservations. The on-line link is:
http://www.marriott.com/hotels/travel/OKCBR?groupCode=socsoca&app=resvlink&fromDate=10/16/09&toDate=10/24/09

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Committee	Committee Chair
Nominating	Christine Moore, Ph.D., DABCC
Membership	Sarah Kerrigan, Ph.D.
Strategic Planning	Marc LeBeau, Ph.D.
Budget, Finance, and Audit	Robert Turk, Ph.D., DABFT
ToxTalk Co-Editors	Yale Caplan, Ph.D., DABFT Vickie Watts, M.S.
ByLaws	Yale Caplan, Ph.D., DABFT
Publications (JAT Special Issue)	Jennifer Limoges, M.S., DABC
Awards	Philip Kemp, Ph.D., DABFT
Drugs & Driving	Jennifer Limoges, M.S., DABC
Meeting Resource	Bradford Hepler, Ph.D., DABFT
Meeting Guidelines	Bradford Hepler, Ph.D., DABFT
Policy and Procedure	William Anderson, Ph.D.
SOFT Internet Web-Site	Bruce Goldberger, Ph.D., DABFT
Continuing Education	Ann Marie Gordon, M.S.
Web Based Continuing Ed	Peter Stout, Ph.D., DABFT
Laboratory Guidelines	W. Lee Hearn, Ph,D.
Ethics	Aaron Jacobs, Ph.D.
Drug Facilitated Rape & Sexual Assault	Marc LeBeau, Ph.D.
MS/MS Guidelines	Dennis Crouch, M.S.