



# TOXTALK

## ToxTalk Editors

Yale Caplan, Ph.D., DABFT  
Vickie Watts, M.S.

## CONGRATULATIONS TO S.O.F.T.'s 2008 ERA & YSMA AWARDEES



## Section Editors

Daniel Anderson, M.S., FTS-ABFT  
Matthew Barnhill, Ph.D., DABFT  
Dwain Fuller, B.S., DFTCB  
J. Robert Zettl, MPA

The Educational Research Award (ERA) established in 1980 was to encourage academic training and research in areas related to forensic toxicology.

The Young Scientist Meeting Award (YSMA), established in 2003, was designed to recognize bench level scientists working in the field of forensic toxicology. Both awards provide funding for awardee travel to the annual meeting to present their work / research.

The S.O.F.T. website has a link for eligibility and application information. All S.O.F.T. members are urged to persuade co-workers and accomplished students to apply for these prestigious recognition awards.

Congratulations to the following 2009 ERA and YSMA Awardees. They will each be presented a recognition plaque for their outstanding accomplishments during the S.O.F.T. business meeting at the annual SOFT meeting in October 2008 in Phoenix.

## SOFT 2008 Board of Directors

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Yale Caplan, Ph.D., DABFT

Vickie Watts, M.S.

### 2008 ERA WINNER: Meng-Yan Wu,

Department of Medical Technology, Fooyin University, Kaohsiung Hsien, Taiwan

Research Title: “Evaluation of Buprenorphine Immunoassays for Compliance Monitoring in Heroin Substitution Therapy Program”

Mentor: Ray Liu, Ph.D.



### 2008 ERA WINNER: Sherri Kacinko (no photo),

Chemistry and Drug Metabolism, Intramural Research Program, National Institute of Drug Abuse (NIDA), Baltimore, Maryland

Research Title: “Correlations Between Maternal Buprenorphine Dose, Meconium Buprenorphine and Metabolite Concentrations and Neonatal Outcomes”

Mentor: Marilyn Huestis, Ph.D.

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### 2008 YSMA WINNER: Robert Hargrove,

Office of the Chief Medical Examiner  
Chapel Hill, North Carolina

Research Title: “Oxymorphone Concentrations in Postmortem Blood”

Supervisor: Mohamed Othman



## PRESIDENT'S MESSAGE

### BY CHRISTINE MOORE, PH.D., DABCC

I begin this message with heartfelt sadness at the tragic and premature loss of our

friend and colleague Dr. Karla Moore. A full obituary for Karla appears later in ToxTalk, but it seems appropriate to begin by letting the whole SOFT family know how much she will be missed, and to be grateful for the tremendous scientific contributions she made to our field. If you ever read a paper on amphetamines, chances are that Karla had something to do with it! Our thoughts and prayers are with her husband, Dr. Barry Levine through this sad and difficult time.

SOFT 2008 in Phoenix is approaching quickly, and I know our scientific committee has been overwhelmed with Abstracts for presentation. Ann-Marie Gordon and her team are hard at work reviewing scientific content, and this promises to be one of the better meetings for

forensic quality. Sadly, Dr. Shulgin will not be able to make the 2008 meeting due to illness, but plans are unfolding for an alternative plenary speaker which will surely be equally exciting.

Over the last year, the Board has begun to address ways to improve benefits for our members, with intentions to expand interest in our field by reaching out to other organizations, increasing our membership, providing membership resources and encouraging scientific research.

For the first time at a SOFT meeting, interpreters for the deaf and hearing impaired will be available for all the scientific sessions on Wednesday and Thursday of SOFT week. If you plan on attending the SOFT meeting and need this service on another day, please contact me *immediately* so I can extend the arranged hours for our scientific interpreters.

The National Association of Medical Examiners (NAME) has estab-

lished a new committee on Forensic Toxicology. I have appointed Dr. Timothy Rohrig, to act as the liaison between SOFT and NAME to discuss a forward path regarding potential educational objectives and benefits for each society. He will report on initial progress between the groups at the Phoenix meeting. Preliminary advances to other organizations are also being discussed.

Finally, a couple of reminders. First, the inaugural EDIT Award will begin in 2009, secondly, we will be voting on increasing dues by \$10 per year at the 2008 business meeting. The financial information showing the cost for the operation of SOFT was included in the first ToxTalk issue of 2008, as well as a current Treasury Report with this issue.

I thank you for your loyal membership and hope to see you in October.

Stay cool,  
Christine



## S.O.F.T. 2008 ANNUAL MEETING

### Phoenix, Arizona, October 27-31, 2008

Hosts: Vickie Watts / Norman Wade

Site: Arizona Grand Hotel (formerly the Pointe South Mountain)



### PRELIMINARY PROGRAM

#### Sunday, October 26, 2008

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

#### Monday, October 27, 2008

- 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
- SOFT-AAFS Drugs and Driving Committee (5:00pm-6:30pm)
- Tier-One Exhibitors Hospitality (6:30pm-8:30pm)

#### Tuesday, October 28, 2008

- Continental Breakfast (7:00am-8:30am)
- Registration (7:00am-6:00pm)
- SOFT Workshops (8:00am-5:00pm)
- SOFT Board Meeting (7:00am-noon)
- ABFT Exam

- ABFT Accreditation Committee
- ABFT Board Meeting
- Exhibits Setup (noon-5:00pm)
- Exhibits Open (6:30pm-8:00pm)
- Welcoming Reception (6:30pm-8:00pm)
- Elmer Gordon Forum (8:00pm-10:00pm)
- Nite Owl Reception (10:30pm-12:30am)

#### Wednesday, October 29, 2008

- Continental Breakfast (7:30am-9:00am)
- Registration (7:30am-5:00pm)
- AAFS Steering Committee (9:00am-10:00am)
- Exhibits open (7:30am-3:30pm)
- Opening Ceremonies Plenary Session
- Scientific Sessions (8:30am-noon)
- Lunch with Exhibitors (noon-1:15pm)
- DFSA Committee Meeting (noon-1:15pm)
- Scientific Sessions (1:15pm-5:00pm)
- Exhibitor's Happy Hour (5:00 pm-6:30pm)
- "Sunset at the Oasis" Poolside Reception (7:00 pm-10:00 pm)

#### Thursday, October 30, 2008

- SOFT Fun Run/Walk (6:30am-8:00am)
- Continental Breakfast (7:30am-9:00am)
- Registration (7:30am-5:00pm)
- Exhibits open (7:30am-1:30pm)
- Exhibitor Feedback Mtg (8:00am-9:30am)
- Scientific Session (8:30am-noon)
- Lunch with Exhibitors (noon-1:15pm)
- Exhibits Breakdown (1:30pm-3:30pm)
- Scientific Session (1:15pm-2:30pm)
- SOFT Business Meeting (3:00pm-5:00pm)
- ABFT Certificate Reception Wine & Cheese (5:00pm-6:00pm)
- Presidents Banquet and Masquerade Ball (6:30pm-11:30pm)


#### Friday, October 31, 2008

- Continental Breakfast (7:30am-9:00am)
- Scientific Session (9:00am-noon)
- NSC Executive Board (1:00pm-3:30pm)

# TREASURY REPORT

The Compilation Report below tabulates income and changes to fund balances for the fiscal year ended December 31, 2007. Prepared by **Martin J. Halloran**, Certified Public Accountant, Cornelius, North Carolina.

The tables below detail revenue, expenses, and account balances for 2008 prepared by S.O.F.T. Treasurer, **Bradford Hepler, Ph.D., DABFT**

<b>Society of Forensic Toxicologists, Inc.</b> <i>Balance Sheet</i> <b>December 31, 2007</b>	<b>Society of Forensic Toxicologists, Inc.</b> <i>Statement of Income</i> <b>For Year Ended December 31, 2007</b>	<b>Treasurer Report through July 31, 2008</b>
<b>Assets:</b> <u>Current Assets:</u>  US Bank - Operations \$122,510 US Bank - ERA Account \$176,134 US Bank - Reserve Account \$52,869 Wells Fargo - Web Account \$19,267 Wells Fargo - Web Savings \$101 Wells Fargo - NC Meeting \$76,414 Prepaid 2008 Meeting Costs <u>\$3,847</u>  <b>Total Current Assets:</b> \$451,142  <b>Liab. &amp; Fund Balances:</b>  <u>Liabilities:</u>  2007 Meeting Exp. Payable \$5,181 Payroll Taxes Payable <u>\$950</u>  <b>Total Liabilities:</b> \$6,131  <u>Fund Balances:</u>  Unrestricted Fund Balances \$268,877 Restricted Fund Balances <u>\$176,134</u>  <b>Total Fund Balances:</b> <u>\$445,011</u>  <b>Total Liabilities &amp; Fund Balances:</b> \$451,142	<b>Revenues:</b>  Meetings \$470,227 Annual Dues \$56,111 Misc. Income \$11,304 ERA Contributions \$918 Interest Income <u>\$8,312</u>  <b>Total Revenue:</b> \$546,872  <b>Expenses:</b>  Accounting & Legal \$4,874 Administrative Payroll \$18,479 Payroll Taxes \$1,617 Bank Fees \$467 Insurance \$542 ERA Fund Awards \$9,000 Software Programming \$5,433 Postage \$355 SOFT Logo Items \$1,884 Office Lease \$4,545 Office Supplies \$5,330 ToxTalk Expenses \$13,917 Web Credit Card Fees \$15,059 AAFS Hospitality \$6,379 Misc. Expenses \$1,305 Telephone \$673 Website \$2,999 Other Meeting Expenses \$17,154 Annual Meeting Expenses <u>\$421,372</u>  <b>Total Expenses:</b> <u>\$531,384</u>  <b>Net Income:</b> \$15,488	<b>Revenues:</b> <span style="float: right;"><b>2008 Actual</b></span> AMEX Account \$652.00 Bankcard Account \$6,402.61 Discover Card Account \$377.00 SOFT Application Fees \$2,000.00 SOFT Application Fees: Stu. \$25.00 SOFT Dues & Subscriptions \$34,185.00 SOFT Dues & Subscrip.: Stu. \$30.00 Late Fees (Dues) \$546.00 ERA Donations \$1,848.00 Meeting Proceeds \$71,232.60 Meeting Labels Provided \$500.00 Reimbur. CE Seed Money Exp. \$8,112.60 ToxTalk Subscription \$75.00 Interest Earned ERA Fund \$1,662.71 Interest Earned Reserve Fund \$300.34 Income Misc. (overpayment) \$792.27  <b>Total:</b> <b>\$128,741.13</b>  <b>Expenses:</b> AAFS Midyear Meeting Exp. \$1,282.55 AAFS SOFT Night Out \$6,613.36 AMEX Account Maintenance \$48.50 Bankcard Account Maintenance \$179.73 Bank Service Charges \$50.75 Discover Card Account Maint. \$9.38 Internet Payment Acct. Maint. \$69.65 Office Internet Acct. Subscrip. \$457.98 Insurance \$651.03 Lease SOFT Office Space \$5,585.08 Meeting Expenses \$9,280.25 Office Supplies \$2,205.37 Payroll Expenses \$12,273.99 Postage/Shipping Expenses \$112.64 Professional Fees- Accountant \$350.00 Software Programming \$1,571.90 State of DE: Incorp. Expenses \$75.00 Telephone \$407.26 ToxTalk \$10,091.02 Website \$335.92 SOFT CE Seed Money \$8,442.60 SSEP \$4,409.00  <b>Total:</b> <b>\$64,502.96</b>  <b>Net to July 31, 2008 Income:</b> <b>\$64,238.17</b>
	<b>Society of Forensic Toxicologists, Inc.</b> <i>Statement of Fund Balance</i> <b>December 31, 2007</b>  Fund Bal. Dec. 31, 2006 \$429,523 Net Income <u>\$15,488</u> Fund Balance Dec. 31, 2007 <u>\$455,011</u>	<b>Account Totals</b> <span style="float: right;"><b>To Date:</b></span> <span style="float: right;"><b>July 31, 2008</b></span> SOFT Operations \$188,853.12 ERA Account \$182,648.53 Reserve Account <u>\$50,375.72</u>  <b>Total:</b> <b>\$421,877.37</b>

# S.O.F.T. ANNUAL MEETING UPDATE

BY VICKIE W. WATTS, MEETING CO-HOST

The 2008 planning committee WELCOMES you to beautiful Phoenix in October, just a few weeks away. Committee members and volunteers are working in full force planning, and making final decisions for the many organized meeting events scheduled for attendees of the 2008 SOFT annual meeting in Phoenix. The Arizona Grand Resort has completely sold out of rooms, with block exceeding 3300 room nights, a record sellout for SOFT meeting history. A nearby Marriott overflow hotel has been secured that will shuttle SOFT guests back & forth to the Arizona Grand as a courtesy. The SOFT 2008 Meeting Website, [www.SOFT2008.org](http://www.SOFT2008.org), is updated regularly with the latest meeting news including details on overflow room accommodations and the 2008 Preliminary Program.

**Dan Anderson**, the 2008 Workshop Chair has done an outstanding job of coordinating with the Workshop Chairs to provide twelve excellent theme oriented workshops for this meeting. Attendee registrations for all 12 workshops have been arriving at a steady

pace. **Ann Marie Gordon**, the 2008 Scientific Program Chair, has received over 160 abstract submissions. She reports that approximately 51 Platform Sessions, and 90 Poster Sessions are currently scheduled, to accommodate the extraordinary quantity and quality of papers that have been accepted.

**Peter Stout and Jeri Roper Miller** have been diligently working this year as our SOFT Exhibitor Liaisons and have secured 81 exhibitors booth registrations, approaching another record in booth sales for a SOFT meeting. SOFT enjoys a loyal following of exhibitor support at the annual meetings. Once again in 2008, these generous companies have made a commitment to sponsor a major portion of the meeting expense for attendees, allowing members and nonmembers to register with a reduced registration fee. With their contributions, exhibitors collectively provide an exhibit hall showcasing the state of the art technology their industries have to offer and support the refreshments, and entertainment for all guests during the Continental Breakfast, AM-

PM Breaks, Lunch with the Exhibitors, and Happy Hour Reception. As opportunities present themselves, please express to our dependable exhibitors how much they are appreciated.

Other Key members of the SOFT 2008 Planning Committee who have put forth extraordinary efforts in making this meeting the promise for success are our Events Chair, **Robert Herndon** and the Promotions Chairs, **Diane Mertens-Maxham** and **Cindy Hogan**. When you come by the registration desk at the annual meeting please take time to give a special thank you to **Bonnie Fulmer**, our SOFT Registration Coordinator who has been invaluable to the planning and coordination of all the SOFT-2008 annual meeting events.

For those Phoenix visitors planning to see a little more of Arizona before or after the meeting, there is a local company offering organized tours at discounted prices for SOFT guests. To receive specific tour information, call the SOFT office toll free (1-888-866-7638), email ([office@soft-tox.org](mailto:office@soft-tox.org)) or refer to [www.OPENROADTOURS](http://www.OPENROADTOURS).

## 2008 AUDIO VISUAL TEAM

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

SOFT members Frank Wallace, Dale Hart, Carl Horn, and Nikolas Lemos will be working at the meeting to make sure all the workshop and scientific presentations, and other AV functions come together to provide the high-quality workshop experience meeting attendees have come to expect.

The laptops used in the workshop will have Microsoft Office 2007 installed (backward compati-

ble with older versions). Presentations will be loaded onto the workshop laptops ahead of time and tested to make sure they run properly. The presentations will be hyperlinked from agenda slides providing a seamless flow between presentations. All files will be backed up and can be re-loaded quickly if a problem occurs.

The SOFT Audio-Visual support staff would like presenters to begin sending in their presentations as soon as possible. There are two primary ways to send in presentations:

1. Email: [Frank.Wallace.2@gmail.com](mailto:Frank.Wallace.2@gmail.com). This method works well in most instances.
2. Upload to <http://www.soft-workshops.org/uploadfile.asp>.

Sometimes presentation files are too large to send by email, multimedia files are needed, or mail server issues arise. The upload page is available if email doesn't work.

We will stop accepting presentations from email and the web upload page at noon on Friday, October 24, 2008, since we need to start loading presentations on the laptops. Registration desk volunteers can help presenters find us at the meeting. Anyone with special requests should contact us as soon as possible. We will try to accommodate presenters with last minute updates prior to each workshop if time permits.



**Frank Wallace**



**Dale Hart**



**Carl Horn**

## GRATEFUL THANKS & ACKNOWLEDGEMENT TO S.O.F.T.'s GENEROUS SPONSORS & ESTABLISHED EXHIBITORS

Each year the list of companies exhibiting and sponsoring our annual meeting becomes more impressive. The financial commit-

ment from exhibitors is absolutely essential in keeping meeting registration fees low for attendees. The 2008 list of exhibitors (as of 8-22-

08) is outlined below. Exhibitors who also have committed financial sponsorship of the 2008 meeting are in bolded print.

<p><b>Aegis Sciences Corp.</b> <b>Agilent Technologies</b> AIT Laboratories Alternative Biomedical Solutions American Solutions for Business <b>Applied Biosystems</b> <b>Axiom Diagnostics, Inc.</b> Beckman Coulter <b>Biochemical Diagnostics</b> Biotage Branan Medical Corp. Bruker Daltonics Caliper Life Sciences <b>Campbell Science</b> <b>Cerilliant Corp.</b> ChemWare, Inc. CMI, Inc. Data Unlimited Int'l., Inc. domnick hunter, a div of Parker Hannifin Corp. DPX Labs, LLC GBF Medical Group GenTech Scientific, Inc. <b>GERSTEL, Inc.</b></p>	<p>Grace Davison Discovery Sciences Hamilton Company <b>Immunoanalysis Corp.</b> <b>International Diagnostics Systems</b> JEOL USA, Inc. Justice Trax, Inc. Lawyers &amp; Judges Publishing LEAP Technologies LECO Corp. <b>Lin-Zhi International, Inc.</b> Lipomed, Inc. Microliter Analytical Supplies National Scientific <b>Neogen Corp.</b> NMS Labs <b>OraSure Technologies</b> Orochem Technologies Pharmaceutical Press Phenomenex <b>Preston Publications (JAT)</b> <b>Quality Assurance Service Corp.</b> <b>Randox Laboratories USA</b> Regis Technologies</p>	<p><b>Restek Corp.</b> <b>Roche</b> <b>RTI International</b> Rudolph Research Analytical Sciteck Diagnostics, Inc. <b>SGE Analytical Science</b> <b>Shamrock Glass Company</b> <b>Shimadzu Scientific Instruments</b> Siemens Healthcare Diagnostics Silver Dream <b>Speware Corp.</b> Springer US Standard Register <b>TASC, Inc.</b> <b>Thermo Scientific</b> <b>United Chemical Technologies</b> <b>UTAK Laboratories, Inc.</b> Varian Inc. <b>Venture Labs, Inc.</b> VertiQ Software, LLC <b>Waters Corp.</b> XLINK Bioscience</p>
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## SOFT STUDENT ENRICHMENT PROGRAM UPDATE

An educational outreach program was established in 2007 for college students (undergraduate or graduate level) to participate in a one day educational program to learn more about the field of forensic toxicology. During the annual meeting in Phoenix, students are invited to attend lectures by established leaders in the field, plus tour a local forensic laboratory.

Students interested in this free special event must submit an application demonstrating high academic achievement, and have an

interest in forensic toxicology. Application forms, instructions, and further information can be found on-line at the meeting website ([www.SOFT2008.org](http://www.SOFT2008.org)).

The application deadline for the 2008 SSEP selection has been moved up to September 30, 2008 and is limited to 100 students annually.

Students are invited to experience a "Day in the Life of a Forensic Toxicologist".



### DETAILS AT A GLANCE:

**Date of Event:** Monday, 10-27-08

**Application Due Date:** 9-30-08

**Acceptance Notification:** 10-10-08

### **SSEP Coordinators:**

**Jeri Roper-Miller, Ph.D.**

RTI International

919-485-5685

jerimiller@rti.org

**Amanda Gallegos**

Phoenix Police Dept., Lab. Services

602-262-6197

Amanda.gallegos@phoenix.gov

## NOMINATING COMMITTEE OFFERS 2009 SLATE

The 2008 S.O.F.T. Nominating Committee, Diana Wilkins (Chair), William Anderson, and Lee Hearn, respectfully submit the following slate for consideration by the membership for 2009.

**President: Anthony Costantino, Ph.D., DABFT**  
**Vice President: Bradford Hepler, Ph.D., DABFT**  
**Treasurer: Marc LeBeau, Ph.D.**  
**Director: Adam Negruz, Ph.D.**  
**Director: Fiona Couper, Ph.D.**

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

*President: (one year term)*

**Anthony Costantino, Ph.D.**

Dr. Anthony G. Costantino, is Vice President of Laboratory Operations at NMS Labs in Willow Grove, Pennsylvania. NMS is a testing laboratory whose primary focus is analytical services serving both forensic and clinical toxicology. The laboratory services clinical reference laboratories, medical examiners, coroners, police departments and pharmaceutical companies for toxicology analyses. Prior to coming to NMS in 2002, Dr. Costantino was the Sr. Vice President of Toxicology at American Medical Laboratories, Inc. in Chantilly, VA. There he was responsible for the SAMHSA laboratory as well as the Clinical Toxicology and Industrial Hygiene Laboratories.

Tony received his Ph.D. in Forensic Toxicology from the University of Maryland in Baltimore and MS in Pharmacology and Toxicology as well as a BS in Pharmacy from Duquesne University in Pittsburgh, PA. His research interests have included postmortem redistribution of drugs and their metabolites and more recently has been involved with the study of the ethanol metabolite, ethylglucuronide.

Dr. Costantino is an inspector for the National Laboratory Certification Program and has also been active as an inspector for the College of American Pathologists Forensic Urine Drug Testing Program, as well as the American Board of Forensic Toxicologists. He has been a member of the AACC and the TDM/Tox Division since 1984 and has served as the editor of the division newsletter "Therapeutics and Toxins News". He has been active in the Society of Forensic Toxicologists since 1985 (served on the Board of Directors 2002-2004, served as Secretary 2006-2007, and Vice President in 2008). He is also a Fellow

of the American Academy of Forensic Sciences and is a Diplomate of the American Board of Forensic Toxicology.

*Vice-President: (one year term)*

**Bradford Hepler, Ph.D.**

Dr. Brad Hepler is the Laboratory Director at the Wayne County Medical Examiner's Office, a position he has held since 1992. He began his career in chemistry after receiving his B.Sc. degree in Chemistry in 1969 from California State Polytechnic University at San Luis Obispo. Following graduation, Dr. Hepler then served six years in the United States Air Force. In 1981, he received his Ph.D. degree in Chemistry (Analytical) from McGill University in Montreal. He was employed at the Cuyahoga County Coroner's Office in Cleveland in 1980 where he trained under Dr. Irving Sunshine and held two university appointments.

Dr. Hepler has been with the Wayne County MEO in Detroit, MI since 1990 and holds appointments at Wayne State University in Detroit as Clinical Assistant Professor (Department of Pathology), and as an Adjunct Professor (Department of Pharmaceutical Sciences). His research interests include the analytical, clinical and forensic aspects of toxicology, as well as using computer, chromatographic and electroanalytical methods in solving problems related to these disciplines. He has authored, co-authored and presented over fifty papers on these topics.

A SOFT member for many years, Dr. Hepler has served on the Method Evaluations Committee in 1985, on the ToxTalk Editorial Board 1990-1993, and as co-editor of the 1998 Journal of Analytical Toxicology/SOFT special issue. He

was a co-host of the 2002 Annual Meeting held in Dearborn, MI, has been a member of the SOFT Board of Directors, (2004-2006) and is currently the Treasurer of the organization, a position he has held since 2006.

Dr. Hepler is a Diplomate of the American Board of Forensic Toxicology (DABFT), an AAFTS fellow, and recipient of the 1998 AAFTS Toxicology Section Ray Abernethy Award. He has been AAFTS Toxicology Section Program Chair, Section Secretary, Section Chair, a member of the AAFTS Nominating Committee and served on the AAFTS Toxicology Section Nominating Committee. He is also a member of multiple toxicology and chemistry professional organizations, including AACC, CAT, ASCP, and TIAFT, as well as a registered Medical Technologist (MT-ASCP) and a licensed Clinical Laboratory Scientist with the State of California. Dr. Hepler is a laboratory inspector for CAP, NLCP, and the ABFT laboratory Accreditation programs.

*Treasurer: (two year term)*

**Marc LeBeau, Ph.D.**

Dr. Marc LeBeau is the Chief of the FBI Laboratory's Chemistry Unit. He has worked as a Forensic Chemist and Toxicologist for the FBI since 1994 and has testified as an expert in federal, state, and county courts throughout the United States. He has a Bachelor of Arts degree in Chemistry and Criminal Justice from Central Missouri State University (1988) and a Master of Science degree in Forensic Science from the University of New Haven (1990). He was employed in the St. Louis County Medical Examiners Office (1990-1994), before beginning his career with the FBI.



In 2005, he received his doctorate in toxicology from the University of Maryland – Baltimore.

Dr. LeBeau has co-authored numerous peer-reviewed papers in scientific journals, as well as book chapters and abstracts. He has provided training to more than 10,000 law enforcement officers, forensic scientists, attorneys, medical professionals, and rape crisis counselors throughout the world. Additionally, he co-edited a book entitled Drug-Facilitated Sexual Assault: A Forensic Handbook.

Dr. LeBeau is also active in numerous scientific organizations. He has served as the chairman of the Scientific Working Group on the Forensic Analysis of Chemical Terrorism (SWGFACT) and currently serves as co-chair to the Scientific Working Group on the Forensic Analysis of Chemical, Biological, Radiological, and Nuclear Terrorism (SWGCBRN).

Dr. LeBeau has also been an active member of the Society of Forensic Toxicologists (SOFT) since 1995. He has served as Chairperson of the Drug-Facilitated Sexual Assault Committee since its inception and is currently on the Board of Directors of SOFT.

Additionally, Dr. LeBeau serves on the Executive Board of The International Association of Forensic Toxicologists (TIAFT) and sits on the Systematic Toxicological Analysis committee within TIAFT. He is also a Fellow of the American Academy of Forensic Sciences (AAFS). In 2004, Dr. LeBeau was the co-host for the FBI Laboratory Symposium on Forensic Toxicology and Joint Meeting of SOFT and TIAFT in Washington, DC.

Dr. LeBeau is on the editorial board of *Forensic Science Communications* and has been Guest Editor to the *Journal of Analytical Toxicology*, the *Journal of Chromatography B*, and *Forensic Science International*. Furthermore, Dr. LeBeau is an American Society of Crime Laboratory Directors - Laboratory Accreditation Board (ASCLD-LAB) assessor in the areas of drug chemistry and forensic toxicology, and serves on the ASCLD-LAB Toxicology Proficiency Review Committee.

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

*Director: (3 year term)*  
**Adam Negrusz, Ph.D.**

Dr. Adam Negrusz is an Associate Professor, Assistant Director of Forensic Sciences, and the Director of Animal Forensic Toxicology Laboratory, Department of Biopharmaceutical Sciences, College of Pharmacy, University of Illinois at Chicago.

Dr. Negrusz received a Masters degree in Pharmacy from Nicholas Copernicus Medical University in Krakow, Poland (1981), and a Ph.D. in Pharmaceutical Sciences from the same University in Poland (1989). In 2001 he received a Doctor Habilitatus degree from Jagiellonian University, Krakow, Poland. Adam is a registered pharmacist (1981) and licensed toxicologist (1987) in Poland. After 8 years at the Department of Toxicology Medical University in Krakow, he joined the University of Illinois at Chicago in 1990, where he was conducting several studies including the analysis of meconium, amniotic fluid and umbilical cord for cocaine and its metabolites. After completion of his postdoctoral training he worked for one year as a toxicologist at the Cook County Office of the Medical Examiner.

In 1993 he re-joined University of Illinois and in 1995 became an Assistant Professor of Forensic Sciences. In 2002 he was promoted to the rank of Associate Professor with tenure. Currently Adam is involved as a coordinator and lecturer in courses required to obtain a Master of Sciences degree in Forensic Sciences and Ph.D. in Biopharmaceutical Sciences. He also teaches professional PharmD students. His research interests include drug-facilitated sexual assault, equine testing for illicit substances, the development of state-of-the-art chromatographic methods for the determination of drugs in various biological specimens. Overall, he has 27 years of experience in academic forensic toxicology and drug analysis which has resulted in the publication of nearly 50 research articles, several book chapters, nearly 60 abstracts presented at scientific meetings, over 30 professional analytical chemistry reports for sponsors, and many standard operating procedures (SOP). Adam is an editor (with Sue Jickells) of the most recently published forensic toxicology textbook for students entitled "*Clarke's Analytical Forensic Toxicology*". He is a Fellow (Toxicology Section) of the American Academy of Forensic Sciences where he served for one year as a Section



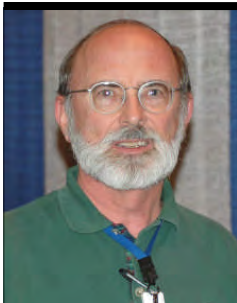
Chair, a member of the Society of Forensic Toxicologists (SOFT), The International Association of Forensic Toxicologists (TIAFT), an affiliate member of the Association of Official Racing Chemists, the Society of Hair Testing, and the Polish Society of Toxicology.

*Director: (3 year term)*  
**Fiona Couper, Ph.D.**

Dr. Fiona Couper received her B.Sc. (Honors) degree in Pharmacology/Toxicology and her Ph.D. in Forensic Medicine/Forensic Toxicology from Monash University, Melbourne, Australia. During this period, Dr. Couper also worked as a forensic toxicologist at the Victorian Institute of Forensic Medicine (VIFM) in Melbourne. After completion of her Ph.D., Dr. Couper held a postdoctoral fellowship position at the National Institute of Forensic Sciences and the VIFM, and in late 1998 became a senior research fellow at the University of Washington and the Washington State Toxicology Laboratory, in Seattle, WA. In 2001, Dr. Couper became the Chief Toxicologist and Director of Laboratory Services at the Office of the Chief Medical Examiner, Washington D.C. Most recently, Dr. Couper accepted the position of State Toxicologist with the Washington State Patrol. In this position she is responsible for overseeing the Toxicology Laboratory and the Impaired Driving Section which encompasses the Breath Test Program, the DRE Program and the Ignition Interlock Compliance Unit.

Dr. Couper's research has focused on the effects of prescription and illicit drugs on driving impairment, the use of drugs to facilitate sexual assaults, GHB and drug overdoses in the emergency room, and the prevalence of drug use in various community groups. She has over 20 articles in peer-reviewed publications. Additionally, Dr. Couper has been an active member of SOFT (previous Scientific Program Chair; former Chair and current member of the Drugs and Driving Committee, Drug-Facilitated Sexual Assault Committee member), the American Academy of Forensic Sciences (former Awards and Scholarship Committee member), and the International Association of Forensic Toxicologists (former Young Scientist Committee).





## CASE NOTES

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

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

Case Notes #1: Accidental Digitalis Glycoside Poisoning from Home Prepared Herbal Tea

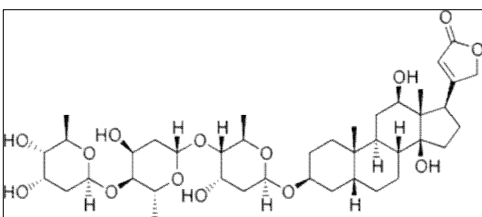
Michael J. Coyer<sup>1</sup>, Jeffrey J. Hackett<sup>1</sup>, and Michael J. Telepchak<sup>2</sup>

<sup>1</sup>Northern Tier Research, Mayfield, PA, <sup>2</sup>UCT, Bristol, PA

### Introduction

Since the days of the Roman Empire, the use of a cardiac glycosides (i.e., digitoxin, digoxin) a product of the Foxglove plant (*Digitalis purpurea* and *Digitalis lanata*), has been known. Because of the difficulty in synthesizing these digitalis glycosides, Foxglove is one of the few herbs that is still used in pharmaceutical manufacture today. These compounds have been used to treat edema and swelling associated with congestive heart failure. The drug derived from the plant increases the force of the systolic contractions and prolongs the duration of the diastolic phase in congestive heart failure.

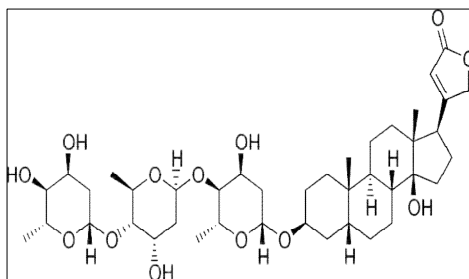
Digitoxin (Lanatoxin), can be obtained from either species of plant, has a half life of 4-10 days, and is highly protein bound. Digitoxin is better absorbed from the gastrointestinal tract than digoxin. Conversely, digoxin (Lanoxin), the 12-hydroxy metabolite of digitoxin, is not highly protein bound and has a shorter half-life of 30-45 hours. Digoxin is only present in the leaves of the *Digitalis lanata* and in much lower concentration than digitoxin.



**Digoxin**

The symptoms of acute digitalis alkaloid overdose include nausea, vomiting, atrioventricular heart block,

sinus bradycardia, ventricular tachycardia and sometimes fibrillation. The use of Digibind (anti-digoxin Fab fragments) is not particularly effective in treating Foxglove poisoning.



**Digitoxin**

### Case History

A 46 year old non-drinking Turkish woman from Pennsylvania, who had been visiting the Himalayan Institute, presented at the emergency room with symptoms of intractable nausea and vomiting. She had previously been on a raw food diet for approximately two (2) years. On the day preceding her death, the woman who smoked ½ pack of cigarettes/day had ingested a mixture of herbs and water called a "Mullen" to cleanse her bowel. (1) The cleansing of the bowel is a common practice with certain diets associated with herbal practices. The "Mullen" mixture is a combination of 2 quarts of water, 8 leaves of Foxglove, celery salt, cayenne pepper and ginger boiled for approximately one hour.

According to the deceased woman's roommate, the woman had picked wild plants the day before her admission to the hospital emergency room. She further stated that the woman had tried to identify the plants

with a wild plant reference book. The testifying roommate said she was offered some of the mixture that was made from the resulting plant and herb mixture, but she refused.

The next day the woman returned in mid-afternoon to find her roommate 'curled up in the fetal position with abdominal pain and vomiting.' She was admitted to the emergency room at 4:42 PM. Initial laboratory tests performed in the ER showed a digoxin level of 2.2 ng/ml (Normal range according to laboratory reported test range - 0.8-2.1) drawn at 8:45 PM. The patient was started on Digibind (2 vials) in 50 cc saline over 30 minute period. A total of six (6) vials were administered. A blood sample was re-drawn at 11:13 AM the next day and the resulting digoxin level was still at 2.2 ng/ml. During this time, the patient developed an acute onset of V-fibrillation and cardiac arrest. Despite aggressive efforts to resuscitate, the patient never regained consciousness and was pronounced dead at 11:34 am.

The digoxin level was performed on a Dade Behring Dimension using a Flex reagent. It is interesting to note that the cross reactivity of this method for digoxigenin at 5ng/ml is 142% and at 25 ng/ml digitoxin is 11.2% (5). This is worth mentioning since digoxigenin is a steroid found exclusively in both the flowers and leaves of the *D. purpurea* and the *D. lanata*. This may account for the seeming lack of response of the patient to the Digibind treatment due to cross reactivity of the digoxigen and digitoxin.



## CASE NOTES #1 (CONTINUED)

### Analytical Results:

<u>Sample</u>	<u>Digoxin Level (Limit)</u>	<u>Digitoxin Level</u>	<u>Units</u>
Blood (cardiac)	None Detected (0.50)	140	ng/ml
Liquid (Tea)	None Detected (0.50)	3,114	ng/ml

**No other drugs or alcohol detected.**

using standard clinical chemistry techniques. This was supported by the LC analysis of the post-mortem sample which found digoxin at levels less than 0.50 ng/ml while the digitoxin results were significant at 140 ng/ml.

### Discussion

There is much information in the literature regarding the effects of digitalis toxicity. In the literature, there are also specific references to accidental poisoning in both children and adults. In the former, the curiosity of young children has many times been responsible for these incidents. In the latter, there have been several factors, both accidental and deliberate. In reference to adult poisoning cases, both types have been seen, including an "Angel of Mercy" case where a health care practitioner was giving patients large doses of digoxin. Many cases are from wild food gatherers mistaking the plant for comfrey. (2-4)

In this particular case, there are several points of interest:

The fact that the laboratory testing, after Digibind treatment showed no change in the digoxin level indicates, as the literature mentions, that this is not always the best course of treatment for foxglove poisoning or that significant cross-reactivity has occurred in the analysis. (2-5) The use of cholestyramine alone or in conjunction with other agents, has shown varied success. (6-8)

A point that can be sometimes overlooked in toxicological analysis is the use of screening analyses. In this case, it seemed that there was interference from the Digibind, digitoxin and/or digoxigenin in the hospital analysis

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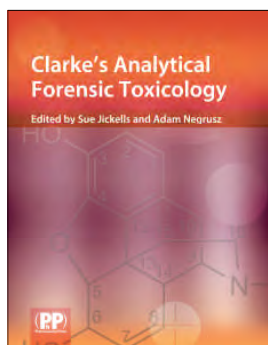
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## NEW BOOKS

### **Clarke's Analytical Forensic Toxicology**, edited by Sue Jickells and Adam Negrusz

**S.O.F.T. MEMBERS  
RECEIVE 20% DISCOUNT  
PLUS FREE SHIPPING.**

Published by Pharmaceutical Press, this textbook covers all the main elements of forensic toxicology and analytical toxicology techniques as well the important parts of pharmacokinetics, drug metabolism, chromatography and pharmacology with a particular focus on drugs of abuse. Based on Volume 1 of *Clarke's Analysis of Drugs and Poisons*, a source of analytical data for drugs and poisons, the chapters have been re-edited and



updated, with information on drug abuse and postmortem toxicology, and new chapters added on in utero exposure to drugs and drug-facilitated sexual assault.

The text is an introduction to the subject for students of forensic science, forensic toxicology and analytical chemistry. It will also be of interest to academics teaching these courses and a detailed resource for those working in forensic science laboratories.

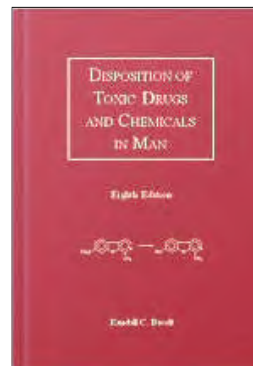
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### **Disposition of Toxic Drugs and Chemicals In Man, 8th Edition**, by Randall C. Baselt, Ph.D.

This book is a single convenient source of essential information on the disposition of the chemicals and drugs most frequently encountered in episodes of human poisoning. The data included relates to body fluid concentrations of substances in normal or therapeutic situations, in instances of toxicity, and the known metabolic rate of these substances in man.



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## IS EVERYONE READY TO GO TO COURT? A LETTER TO THE EDITOR

Contributed by **Michael L. Smith, Ph.D., DABFT, John Jemionek, Ph.D.**, Division of Forensic Toxicology, The Armed Forces Medical Examiner System, and **Catherine M. With, J.D., LLM**, Major, Judge Advocate, US Army, Legal Counsel, Armed Forces Institute of Pathology, Rockville, MD

A recent decision by the Court of Appeals of the Armed Forces (CAAF) in *U.S. v. Harcrow* (66 M.J. 154 (2008)) may be of interest to SOFT members. Decisions by the CAAF are only binding in military courts but forensic toxicologists in other jurisdictions should take notice of this decision for two important reasons. First, in the military appeals process, the CAAF sits just below the Supreme Court of the United States. Military cases that are appealed to the Supreme Court may result in judicial decisions that apply to other federal and state courts. The second reason is that many drug testing issues first appear in military courts since the “knowing use” of prohibited drugs is a criminal offense in the military. With stiff penalties, military cases are often appealed, scrutinized, and subsequently used by civilian defense attorneys as a model for their own appeals in the civilian sector.

In an appeal in *U.S. v. Magyari* (63 M.J. 123 (2006)) that preceded the *Harcrow* decision, the CAAF found that random drug testing results were non-testimonial hearsay evidence. This means that laboratory results could be introduced as a business record that is interpreted by an expert witness. The decision was based on the fact that analysts conducting the testing did not know the identity of the person from whom the specimen had been taken and also had no expectation at the time of testing that the test results would go to trial. Had

the court found in *Magyari* that the laboratory report was testimonial hearsay, each person involved in conducting the testing and producing the report could be called to testify in court and be cross-examined as required by the Sixth Amendment to the Constitution, which gives an accused the right to confront his or her accusers. This is an overwhelming thought for most forensic toxicology laboratories. With modern laboratory methods of batch processing, screening, and confirmation, many technicians are involved in conducting the testing and then there are many reviewing officials in the layered review process. One could certainly expect that with a requirement for the personal testimony of all the technicians and reviewers, that dozens of laboratory staff members frequently would be out of the laboratories and present in court testifying and thus, unable to complete their laboratories testing duties.

In *U.S. v. Harcrow*, the CAAF considered the case of U.S. Marine Lance Corporal Josh R. Harcrow, who contrary to his pleas, was convicted of several offenses, including wrongful possession of heroin and use of cocaine. Part of the evidence presented by the prosecution against Harcrow was a laboratory test performed on seized materials that was conducted by the Virginia Division of Forensic Science. The laboratory reports were introduced as business records that were interpreted by an expert. On

review, the CAAF reversed a lower appeals court decision and found that these reports were testimonial in nature. Citing the Supreme Court decision in *Crawford v. Washington* (541 U.S. 36 (2004)), the court in *Harcrow* opined that laboratory reports are testimonial if laboratory personnel producing the report would “reasonably believe that the statement would be available for use at a later trial.” They further explained that reports would be testimonial if the “primary purpose for making, or eliciting, the statement was the production of evidence with an eye toward trial.” While the *Harcrow* case involved crime laboratory testing, not forensic drug testing, one could certainly make the case that the ruling extends to all probable cause, retest, and special test results. The issue not addressed in *Harcrow* was exactly who would be subpoenaed when a forensic laboratory result is determined to be testimonial evidence. Potentially there could be numerous individuals appearing in court and testifying about a single test result in a drug case. Would it include the screening analysts? The confirmation analysts? The processing technicians? The many data reviewers? The client service employees who review the final document for administrative errors? And what about the computer that actually calculates and produces the final result? Perhaps the answers may come in subsequent cases.

In the first post-*Harcrow* civilian case, *U.S. v. Moon*, (512 F.3d 359 (2008)) the Drug Enforcement Agency (DEA) chemist who conducted the original test on the substance and concluded it was cocaine was unavailable to testify at trial. Thus, another DEA expert chemist testified at trial. This expert reviewed the raw data from the original testing, drew his own conclusions from the results, and rendered his own expert opinion. This testimony by this expert permitted the government to introduce the drug testing results at the trial. There is discussion in the appeal of this case regarding the use of raw data produced by scientific instruments and whether it is testimonial, as well as whether the interpretation of those data may be testimonial and to what extent.

Based upon discussions with counsel in a second post-*Harcrow* case (unpublished opinion), the judge in that case would not allow the prosecution to introduce results of a tetrahydrocannabinol test performed by a labo-

ratory to refute the accused's claim that his positive 9-carboxy-delta-9-tetrahydrocannabinol urine test was due to his ingesting his mother's Marinol. The court opined that the specimen processing technician and analyst must be present in court and testify as witnesses in order to introduce the laboratory test results. The judge recognized that the processing technician did not understand the reason for the test when the specimen arrived but pointed out that the Court was uncertain if a supervisor "had explained the purpose" to her prior to processing, therefore, she must be available as a witness. The two reviewers and certifying scientist, who were listed on data sheets but not on the specimen chain of custody document, were not mentioned as being required to testify.

These events may remind *Star Trek* fans of the episode where Captain James T. Kirk's defense attorney, citing the Sixth Amendment to the Constitution of the United States of America and Code of Hammurabi, planet Earth, de-

mands that the defense attorney be allowed to cross-examine the principal accuser of his client, the ship's computer. You will not have to wait until Star Date 2024.0 for some resolution of the Sixth Amendment issues, and what part of laboratory reports will be testimonial evidence. It is recommended you follow the *Melendez-Diaz v. Massachusetts* (128 S. Ct. 1647, 2008 U.S. LEXIS 2537 (2008)) being reviewed by the Supreme Court this fall. At issue is whether a state forensic analyst's laboratory report prepared for use in a criminal prosecution is testimonial evidence. For more information on this case, see the following website: <http://www.abanet.org/publiced/preview/briefs/unscheduled.html#melendez>.

*Supported in part by the American Registry of Pathology*

*Disclaimer: The opinions in this letter are those of the authors and do not necessarily reflect those of the Department of Army or Department of Defense.*

## SUNSHINE / RIEDERS SILENT AUCTION

SOFT sponsored a memorial event during the 2006 Austin meeting to honor the passing of two illustrious leaders in forensic toxicology, Dr. Irving Sunshine and Dr. Frederick Rieders. The event was named the "Sunshine / Rieders Silent Auction" and has since become an annual event that meeting attendees look forward to. A wide array of items are donated by exhibitors and individuals, then displayed with bid sheets, tracking names and bids. At a designated time, bidding closes and winners can pay and pick up their treas-

ures. Not only is the auction a fun tradition, but complete proceeds benefit students interested in forensic toxicology through the SOFT Student Enrichment Program. Since Dr. Sunshine and Dr. Rieders focused their energy on academic encouragement in this field, it is thought to be an appropriate way to acknowledge their lifetime contributions and continue their legacy of promoting education in forensic toxicology.

SOFT Member, Laurie Tobler has generously volunteered to coordinate the 2008 Sunshine / Rei-

ders Silent Auction. Anyone wishing to donate items, big or small, should contact:

**Laurie Tobler at 801-573-2409**  
**[laurie.tobler@tandemlabs.com](mailto:laurie.tobler@tandemlabs.com)**





## DRUGS IN THE NEWS

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

Please send interesting "Drugs In The News" to Section Editor, Dwain Fuller at [dwain.fuller@med.va.gov](mailto:dwain.fuller@med.va.gov)

### METABOLIC ACIDOSIS OF UNKNOWN ORIGIN (ETHYLENE GLYCOL)

Submitted by Robbie Pisana, B.S., MT(ASCP), Patricia D. Pisana, B.S.

"Metabolic acidosis of unknown origin" is a statement that should bring the consideration of *Ethylene Glycol* poisoning to the forefront. A recent headline from the Associated Press read "**Man found guilty of killing wife with antifreeze**". The article stated that a former Missouri radio reporter was convicted of killing his wife by poisoning her Gatorade with antifreeze and was sentenced to life in prison without parole. Prosecutors said James Keown slowly poisoned his wife over several months and gave her a fatal dose on September 4, 2004 because he was deeply in debt and wanted to cash in her \$250,000 life insurance policy. Julie Keown slipped into a coma and died four days later. Julie Keown, a registered nurse, was hospitalized in August 2004 after her speech became slurred and she had difficulty walking. Doctors told her she was suffering from a kidney ailment. The misdiagnosis of ethylene glycol poisoning by doctors and the missed symptoms by Julie herself (a health professional) demonstrates the lack of understanding of the mechanisms of ethylene glycol poisoning.

Ethylene glycol (monoethylene glycol, 1,2-ethanediol) is an alcohol with two OH groups. In its pure form, it is an odorless, colorless, syrupy liquid with a sweet taste. Ethylene glycol is a solvent found in products ranging from antifreeze fluid and de-icing solution to carpet and fabric cleaners. The ingested amount of ethylene glycol causing toxicity in humans is approximately 100 mL.

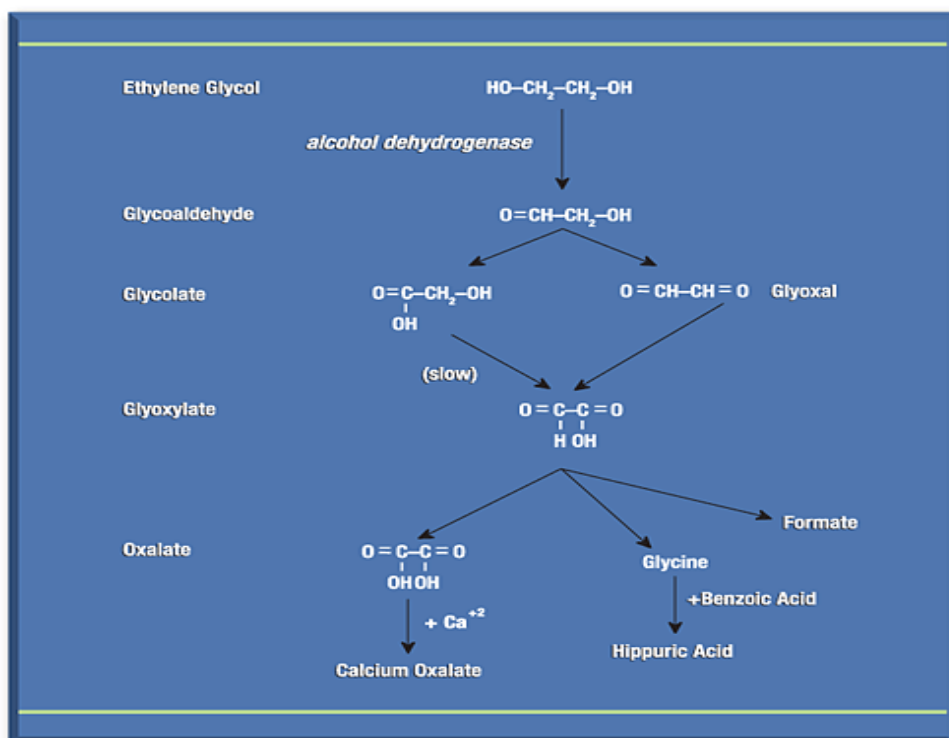
Ethylene glycol is essentially nontoxic, it is the metabolites that are responsible for the extensive cellular damage in various tissues. The kidneys are especially affected by the metabolites glycolate and oxalate (or glycolic and oxalate acid, depending on the pH).

Ethylene glycol is rapidly absorbed from the gastrointestinal tract, reaching peak blood concentrations one to four hours after ingestion. Approximately 80% of ethylene glycol is metabolized in the liver and 20% is excreted unchanged. The elimination half-life of ethylene glycol is about 3 hrs, but can be prolonged to 17-18 hrs by the inhibition of alcohol dehydro-

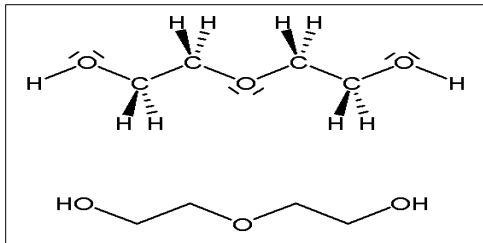
genase. The rate dependent step of ethylene glycol metabolism is the alcohol dehydrogenase catalyzed step. Ethyl alcohol binds much more readily to alcohol dehydrogenase than ethylene glycol and methanol. Because ethanol is the preferred substrate for alcohol dehydrogenase, the presence of ethanol may essentially block the metabolism of ethylene glycol.

There are three stages of ethylene glycol poisoning:

- Neurological (30 mins to 12 hrs after ingestion)
- Cardiopulmonary (12-24 hrs after ingestion)
- Renal (24-72 hrs after ingestion)



## DRUGS IN THE NEWS (CONTINUED)



**Ethylene Glycol**

### Neurological

Within minutes to several hours after ethylene glycol poisoning, transient inebriation and euphoria, similar to the symptoms of ethanol intoxication, may be observed. As ethylene glycol metabolism progresses, metabolic acidosis and CNS depression can replace earlier symptoms. Approximately 4-12 hours after ingestion, symptoms associated with toxic metabolites predominate; however, their onset can be delayed by the administration of a substantial amount of ethanol. Cytotoxicity and the deposition of calcium oxalate can lead to cerebral damage and CNS depression.

### Cardiopulmonary

Up to 24 hours later, one can expect to see nausea, vomiting, hyperventilation, muscle tetany, seizures, hypocalcemia, hypertension, and tachycardia. Most deaths occur during this stage due to severe metabolic acidosis and multiple organ failure.

### Renal

The symptoms of the third stage include oliguria, flank pain, acute tubular necrosis and renal failure. In severe cases renal failure may appear early and progress to anuria. Recovery of renal failure is often complete but may require several months of hemodialysis.

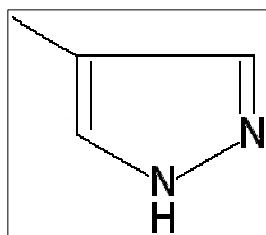
The conclusive method of diagnosing ethylene glycol poisoning is the direct measurement of serum or urine ethylene glycol. However, most medical facilities are not equipped for ethylene glycol testing and the use of off site testing may cause a delay in results for 2 to 3 days. Because ethylene glycol is not toxic itself there is little correlation

between the serum or urine concentration of ethylene glycol and the severity of the poisoning. The calculation of the osmolal gap (difference between measured and calculated osmolality) can provide relatively certain and early diagnosis of ethylene glycol poisoning and treatment can be started immediately.

The osmolal gap is achieved by obtaining electrolyte levels for Na, BUN and glucose and calculating an osmolality and subtracting the difference from the measured osmolality. Calculated osmolality is determined by the following formula,  $mOsm/kg = 1.86 \times Na^+(mEq/L) + BUN(mg/dL)/2.8 + glucose(mg/dL)/18$ . The osmolal gap should be zero, if not antidotal therapy should begin immediately.

Ethylene glycol poisoning should be suspected in patients that appear intoxicated with an anion gap acidosis, hypocalcemia, urinary crystals and a nontoxic blood alcohol concentration. Fomepizole is the preferred therapy for ethylene glycol poisoning. Fomepizole acts by blocking alcohol dehydrogenase activity. Metabolic acidosis is resolved within 3 hours of initiating therapy. Initiating fomepizole therapy before serum creatinine concentration rises can minimize renal impairment. The advantages of Fomepizole therapy over traditional ethanol treatment include lack of CNS depression and hypoglycemia. Furthermore, effective plasma levels are easier to maintain.

In conclusion, rapid diagnosis of ethylene glycol toxicity is critical



**Fomepizole**

because therapy can be effective when applied within a short period of time after ingestion. When diagnosis is delayed antidotal therapy is of little use and often results in fatal consequences.

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## THE SURVEY SAYS

SOFT now has an account with SurveyMonkey.com for use by Committee Members. Professional online surveys can now be created quickly and easily to collect suggestions for improvement of SOFT activities. Surveys can be linked, tracked, analyzed, and shared. Further details can be found on the web. This survey ability is currently available. Contact the SOFT Office for the log-in password.



# TOXICOLOGY - BITS & PIECES

*Submitted by Section Editor, J. Robert Zettl, MPA*

A.A.F.S.  
NEWS

—  
TOXICOLOGY SECTION

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

NATIONAL SAFETY  
COUNCIL—COMMITTEE  
ON ALCOHOL AND  
OTHER DRUGS

The following is redacted from the July 2008 “Academy News” by Kenneth E. Ferslew, Ph.D., Section Program Chair:

Anyone interested in assisting with the February 09 AAFS meeting in Denver, Colorado should contact Ken Ferslew, Ph.D. (ferslew@mail.etsu.edu).

The theme of this years’ AAFS Meeting is “Forensic Science: Envisioning and Creating the Future”.

A special session of the Toxicology Section on Drugs and Driving will be hosted by Michelle Spirk and Sarah Kerrigan. The subject of this special session relates to trends in drugs affecting human psychomotor performance that constantly change with new drugs coming on the market and different patterns of drug abuse occurring from region to region. These special sessions are very informative and well attended.

### ABFT CERTIFICATION

The next round of ABFT Certification Exams will be offered at the 2008 SOFT Meeting in Phoenix on October 28, 2008. Certification is based upon the candidates personal and professional record of education and training, experience, achievement, and a formal written examination. Details can be found at the ABFT website [www.abft.org](http://www.abft.org).

At this posting the committee will be meeting on Monday October 27<sup>th</sup> from 5 to 6:30 pm in the Camelback D conference room during the SOFT Annual Meeting in Phoenix, Arizona. Jennifer Limoges has been appointed as the new Drugs and Driving Committee Chair replacing Sarah Kerrigan.

Sarah, thanks for everything you have done to make this a very viable committee.

### TRY A BORKENSTEIN SAMPLER WORKSHOP

During the SOFT 2008 Meeting, one of the workshops will be the “Effects of Drugs on Human Performance and Behavior—A Borkenstein Sampler”. This workshop is a brief overview of one of the two courses held annually at Indiana University in Bloomington, Indiana. The other course is titled “The Robert F. Borkenstein Course on Alcohol and Highway Safety: Testing, Research and Litigation” which deals with all aspects of alcohol testing, research and litigation. If you have an interest in attending either or both courses or seeing what the courses have to offer refer to the course website, [www.borkensteincourse.org](http://www.borkensteincourse.org).

The Executive Board of the NSC/COAOD will meet from 1 pm to 3 pm on Friday, October 31, 2008 at this years SOFT Conference in Phoenix. The agenda will include the Executive Boards normal business with reports from its technical subcommittees. The meeting is open to anyone wishing to attend. Please refer to the SOFT 2008 program for the location of the meeting.

Committee officers for 2008 remain:

- Jerry Landau - Chair
- Mack Cowan - Vice Chair
- Laura Liddicoat – Secretary

To learn more about the committee go to [www.nsc.org](http://www.nsc.org) and type in Committee on Alcohol and Other Drugs under the search engine.

The Executive Committee will announce its latest recipient of the Robert F. Borkenstein Award at its meeting. Some hints to help you guess who will be honored are . . . The individual will be 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 their achievements are nationally recognized, and has a minimum of 10 years of active and productive involvement as a volunteer with the National Safety Council. This year’s awardee is also a past SOFT President.

## MEMBER NEWS

### A DEAR FRIEND REMEMBERED

*The following memorial was written by Joe Magluilo, a friend and co-worker at AFIP who knew Karla well.*

#### **Karla A. Moore, DVM, Ph.D, DABFT**

Sadly, in July of this year, the field of Forensic Toxicology lost a dear friend and colleague after an extended illness. After a decade in private practice as a veterinarian, Dr. Moore decided to dedicate herself to both forensic toxicology and country as an officer in the United States Air Force, ultimately earning the rank of Colonel. As an Air Force officer she mentored many younger scientists while stationed at the Armed Forces Institute of Pathology (AFIP), many of whom remain there today. She will be remembered for her love of horses, the Denver Broncos, travel and the outdoors. Active in SOFT, she was the originator of the TOX 'N PURGE 5K Fun Run/Walk. She is survived by her husband Barry S. Levine and remembered fondly by many of us who worked alongside her at the AFIP and OCME, Baltimore MD. Contributions in Karla's memory may be made to Susan G. Komen for the Cure ([www.komen.org](http://www.komen.org)).

As you may know, there is a growing need to provide continuous training for forensic science professionals. This can be expensive and involve travel and time away from the office or laboratory. This impacts the ability to attend or have staff attend needed training.

In response to this need, RTI International's Center for Forensic Sciences under a cooperative agreement with the National Institute of Justice (NIJ) is providing web-based continuing education courses to forensic science professionals available at [www.rti.org/forensiced](http://www.rti.org/forensiced). There is no fee to attend these courses. These courses cover many disciplines within the forensic sciences ranging from volumetric measurement best practices to expert testimony to courses related to tandem mass spectrometry. These courses are offered on-line in a virtual classroom environment with live instruction and individual interaction. There will also be courses offered in an on-demand format which can be taken at any time, convenient to everyone's schedule. Many of the courses offer accreditation though organizations such as the American Association for Clinical Chemistry.

All courses are interactive and of high quality. Experts who lead these courses are authorities in their field and offer years of experience. Since the virtual classroom is live, participants can ask questions directly to the instructor and receive a response immediately. Direct contact information is provided for after class questions as well. On-demand content provides the user the flexibility to participate any time.

All that is required to participate is a computer with an internet connection and speakers or headphones. Most computers already have a Flash player installed, so likely no software download is necessary to participate.

If you would like to participate in any of the FREE web-based courses that we offer, please visit our website or contact us with any questions. In addition, if you have ideas you would like us to consider for subject matter please let us know.

Jared B. Cooper, Customer Service  
RTI Int'l, Center for Forensic Sciences

<http://www.rti.org/forensiced>  
1-866-252-8415  
CFS-Forensiced@rti.org

## CONGRATULATIONS TO SOFT'S NEWEST MEMBERS

The newest members of SOFT (added in 2008) are listed below. Our Membership Committee has stayed very busy this year continually reviewing applications for SOFT membership. Big thanks to Membership Committee Members, Sarah Kerrigan, Ph.D. (Chair), Robert Osiewicz, Ph.D., Rebecca Jufer-Phipps, Ph.D., and Lauren Marinetti, Ph.D.

Brianne Akins	Sarah Cione	Jessica Jennings Smith	David Loughmiller	Naziha Nuwayhid	Joann Sell
Tammy Baker	Gary Dawson	Leonard Johnson	Jacqueline Martin	Robert Palmer	Ronald Shamo
Jennifer Bash	Tiffany Flowers	Christopher Johnston	Afton Martinez	Brianna Peterson	Kevin Shanks
Ola Bawardi	Rafael Gelpi	Judy Keene	Mark Maxwell	Huong Pham	Michael Smith
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Hannah Bunten	Thomas Graham	Erin Kolbrich	Duriel McKinsey	Kelly Rees	Michelle Upton
Jodie Callen	Bart Gray	Douglas Kramer	Miles Merrell	Joseph Rein	Carolyn Whitney
Craig Chatterton	Carrie Haglock	John Kristofic	Amy Merritt	Ryan Remek	Zachary Wiley
Kiran Chopra	Rob Herndon	Colleen Lord	Claudia Nissen	Kathryn Roche	Clifford Wong
					Stanley Wu

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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**

- 2008:** Phoenix, AZ.....Oct. 27-31, 2008.....Vickie Watts, Norman Wade
- 2009:** Oklahoma City, OK.....Oct. 18-23, 2009.....Phil Kemp
- 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



**2008 S.O.F.T. COMMITTEE CHAIRS**

The S.O.F.T. 2008 meeting in Phoenix will be here before we know it! It takes the effort of many people to ensure all events proceed smoothly. Volunteers are always needed to help ensure that meeting attendees fully enjoy their stay in the host city.



Anyone able to offer a few hours of time during the meeting as a S.O.F.T. Volunteer should contact Deb Denson, the S.O.F.T. Volunteer Coordinator to schedule times and locations desirable to help with.

Thanks to both past and future volunteers for helping make S.O.F.T. meetings efficient and enjoyable for everyone!

**Deb Denson, SOFT Volunteer Coordinator**  
Email: denson@rti.org Tele: 919-541-7265

**Committee**

- Nominating.....
- Membership.....
- Strategic Planning.....
- Budget, Finance, and Audit.....
- ToxTalk Co-Editors.....
- ByLaws.....
- Publications (JAT Special Issue) .....
- Awards.....
- Drugs & Driving.....
- Meeting Resource.....
- Policy and Procedure.....
- SOFT Internet Web-Site.....
- Continuing Education.....
- Laboratory Guidelines.....
- Ethics.....
- Drug Facilitated Rape & Sexual Assault.....
- MS/MS Guidelines.....

**Committee Chair**

- Diana Wilkins, Ph.D.
- Sarah Kerrigan, Ph.D.
- Bradford Hepler, Ph.D., DABFT
- Robert Turk, Ph.D., DABFT
- Yale Caplan, Ph.D., DABFT  
Vickie Watts, M.S.
- Yale Caplan, Ph.D., DABFT
- Dan Anderson, M.S., ABFT
- Philip Kemp, Ph.D., DABFT
- Jennifer Limoges, M.S., DABC
- Anthony Costantino, Ph.D., DABFT
- William Anderson, Ph.D.
- Bruce Goldberger, Ph.D., DABFT
- Ann Marie Gordon, M.S.
- W. Lee Hearn, Ph.D.
- Aaron Jacobs, Ph.D.
- Marc LeBeau, Ph.D.
- John Cody, Ph.D.

