



# Society of Forensic Toxicologists, Inc.

P.O. Box #5543, Mesa AZ 85211-5543 Telephone/ FAX: 602-839-9106

## ToxTalk

**VOLUME 20, No. 2**

**JUNE 1996**

### PRESIDENT

H. Chip Walls, B.S.  
5043 S. Onondaga Rd  
Nedrow, NY 13120  
Tel: 315-498-4437  
FAX: 305-232-7461  
e-mail: HChipW@aol.com

### VICE PRESIDENT

Vickie W. Watts, M.S.  
1851 W. Obispo  
Mesa, Arizona  
Tel: 602-831-8091  
FAX: 602-839-9106  
e-mail: Toxilady@aol.com

### SECRETARY

Marilyn A. Huestis, Ph.D.  
Lab of Chem. & Drug Metabolism  
Addiction Research Center  
NIDA, NIH  
4940 Eastern Ave Bldg. C  
Baltimore, MD 21224  
Tel: 410-550-2711  
FAX 410-550-2971  
e-mail: MHuestis@irp.nida.nih.gov

### TREASURER

Joseph J. Saady, Ph.D., DABFT  
Virginia Commonwealth University  
Medical College of Virginia Station  
Richmond, VA 23298-0165  
Tel: 804-828-8165  
FAX: 804-828-7722  
e-mail: Saady@gems.vcu.edu

### ADDITIONAL DIRECTORS

W. Lee Hearn, Ph.D.  
Michael L. Smith, Ph.D., DABFT  
J. Robert Zettl, B.S., M.P.A.  
Laurel J. Farrell, B.A.  
Daniel Isenschmid, Ph.D.  
*ex officio:*  
Vina Spiehler, Ph.D., DABFT  
(Past President)  
Joseph R. Monforte, Ph.D., DABFT  
(ToxTalk Editor)

### 1996 ANNUAL MEETING HOSTS

Laurel Farrell/Robert Zettl  
Colorado Department of Health  
4210 E. 11th Ave.  
Denver CO 80220  
TEL: 303-691-4727  
FAX: 303-393-7881

**EDITOR:** Joseph R. Monforte, PhD DABFT **EDITORIAL BOARD:** H. Chip Walls, BS, Jim Wigmore, BSc, Carl Selavka, PhD  
**PUBLISHER:** Patricia Mohn-Monforte

### IN THIS ISSUE

**REGULAR FEATURES:** Journal Club ✂ Professional Calendar ✂ Career Opportunities  
Blutalkoholkonzentration ✂ From the Editor's Desk  
Elmer Gordon

**TECHNICAL NOTES:** Latex Allergy (Farrell) ✂ What Constitutes an Appropriate Chain  
of Custody Document, and Why Does It Matter?  
(Selavka/Middleberg)

### INSERTS:\*

\*If available at time of mailing

1996 SOFT Meeting Information & Call for Papers  
1996 SOFT Member Directory (*to members only*)

### CALENDAR CHECK!

6/01/96 SOFT Meeting Abstracts

8/01/96 ToxTalk deadline

7/01/96 Free T-shirt for meeting registration

9/10/96 Meeting registration, no late fee

Make those hotel reservations, too!

10/1/96 Mail registration for meeting

### ON DECK: PLANNED FOR THE NEXT ISSUE

President's Message (Walls) ✂ From the Editor's Desk (Monforte) ✂ Closer Look at SOFT -  
Nominating Committee (Spiehler) ✂ Journal Club (Walls) ✂ Case Notes: (Selavka et al. all  
members) ✂ Blutalkoholkonzentration (Wigmore) ✂ Health & Safety Committee (Isenschmid et al)  
✂ 1996 SOFT Meeting, including list of papers (Farrell) ✂ Treasurer's Annual Report 1995 (Saady)  
✂ 1995 Annual Meeting Minutes (Watts) ✂ YOUR CONTRIBUTION! ✂

**Submit your items for ToxTalk to:**

**Joseph Monforte, Ph.D., DABFT, ToxTalk Editor**  
846 Smoki Dr (HP), Prescott, AZ 86301-7347

ToxTalk is mailed quarterly (bulk mail) to members of the *Society of Forensic Toxicologists, Inc.* It is each member's responsibility to report changes of address to the SOFT mailing address (Mesa, AZ - above). Non-members may now receive ToxTalk for \$15 per calendar year. Make your check payable to SOFT, and mail it to the ToxTalk Editor.

All members and others are encouraged to contribute to ToxTalk. Mail material to:

Joseph R. Monforte, Ph.D., DABFT, ToxTalk Editor, 846 Smoki Drive (H.P.), Prescott, AZ 86301  
Phone/FAX: 520-717-0617 (*after 11 a.m. E.S.T.*)

**DEADLINES:** Feb. 1, May 1, Aug. 1, and Nov. 1.

**NEXT DEADLINE:** Aug 1, 1996

SOFT is a supporting organization of the American Board of Forensic Toxicology

# PRESIDENT'S MESSAGE . . . . . H. Chip Walls, B.S.

WOW! Twenty five years; one score and five. It is hard to imagine the time has passed so quickly since a group of toxicologists gathered around a kitchen table and began the traditions leading to the formation of the Society of Forensic Toxicologists. It is now time to prepare for the next quarter century.

The main thrust for this Society has always been the education and training of forensic toxicologists. The atmosphere for this meeting will be informal, informal, and informal. No ties or coats! Let's go back to the old days of SOFT when, around a table, information was exchanged which helped to solve our real, everyday problems. So bring your rips and tidbits of everyday practice to share at the Elmer Gordon Open Forum and throughout the meeting this October in Denver. As you will see when you read the meeting-related information in this issue of ToxTalk, SOFT's 1996 Annual Meeting promises to uphold this quarter century tradition of service to our profession. Kudos to Laurel Farrell and Bob Zettl who have put together an outstanding program and secured excellent and affordable facilities. Dan Isenschmid has coordinated a great series of workshops, and Amanda Jenkins is eagerly awaiting your abstracts. Some meeting arrangement highlights include:

- ♣ A \$92 per night room rate (current government rate).
- ♣ A registration fee of \$135 - yes, there is a free lunch and more.
- ♣ Seven affordable pre-meeting workshops.

The third annual Tox Trivia Contest will be held on Thursday night. Send me your questions to add to the challenge. Remember, start now, form your team to challenge the reigning "Past Presidents" team. Need more reasons to attend the 1996 SOFT Annual Meeting? Meet with your professional colleagues in the foothills of the beautiful Rocky Mountains. Renew old friendships and develop new ones. Spend an October week learning from and with the best in the business.

One of the reasons SOFT has held a premier position in forensic toxicology is the work of its many committees. I am grateful that the committee chairs noted in the March issue of ToxTalk have accepted these leadership positions. Of particular interest is the Policy and Procedures ad hoc committee chaired by Bill Anderson whose mission it is to produce a Policy and Procedures Manual. SOFT is 25 years old, and it is time we had a manual for the officers and other board members to follow in conducting the business of SOFT. In addition to this effort, VP Watts will be culminating efforts of the past several years to produce a Meeting Resources Committee Policy and Procedures Manual to serve as the guidebook for those who wish to host a SOFT annual meeting.

SOFT is great because of its members and their contributions to the profession. Let's continue the tradition. I look forward to serving you along with the other officers and board members. We would like to hear from you concerning your desire for SOFT as well as any active part you might want to take in this organization (such as serving on a committee).

I hope you have a great year, and I am looking forward to seeing you this fall in Denver. ♣

## FROM THE EDITOR'S DESK . . . Joseph R. Monforte, Ph.D., DABFT

This issue of ToxTalk is arriving slightly ahead of schedule because it contains important meeting information and related deadlines. We want to provide the membership with the most current meeting information and provide the opportunity to register early for those events of interest. Early registration is strongly encouraged.

My thanks to ToxTalk contributors for meeting the May 1st deadline for this issue. Only through their efforts could we provide this information in a timely fashion.

ToxTalk is now in its 20th year of publication. You may be interested in information retrieved from an earlier edition and noted below. ♣

## EXCERPTS FROM TOXTALK (PROBABLY 8/77)

"This Newsletter will be published on a quarterly basis as the official communication of the Society of Forensic Toxicologists. For this first year we will send the newsletter to all registrants of previous SOFT meetings and to other forensic toxicologists whose names appear on other regional mailing lists. As of January 1978 only dues paying members will continue to receive the newsletter. A portion of the annual dues has gone to support this publication and mailing costs."

SOFT Treasurer's Report: \$2,703.78 Total Income; Balance as of 9/1/77 was \$1,364.64 (Tom Manning, Treasurer)

First official membership roster dated 8/1/77 listed 63 members.

Membership application fee was \$5, and dues were \$20 per year.

"Toxicologist \$15,800, B.A. in chemistry and 1 year experience in Toxicology." (This was the highest paid position listed.) ♣

# 1996 SOFT ANNUAL MEETING

DENVER, COLORADO

OCTOBER 14-18

Submitted by Laurel Farrell

*"Murphy's Law . . . Best laid plans . . . Change is inevitable . . . Expect the unexpected . . ."*

We have two significant changes for the SOFT 1996 annual meeting:

**Change #1 - Workshop No. 1 has been changed to "USE OF LIMS IN A FORENSIC TOXICOLOGY DRUG TESTING LABORATORY.** This looks like an exciting workshop, and we thank LTC Aaron Jacobs, Ph.D., for coordinating and moderating this workshop. If you have already registered for the previously scheduled "Drugs and Driving" workshop, you will be contacted directly regarding choosing an alternate workshop or a refund.

**Change #2 -** The federal government raised their hotel per diem to \$92 per day, including taxes. This change was not expected, but since we were fortunate to have the Marriott (Denver Tech Center) agree to accept the prevailing government rate for all SOFT attendees, the hotel rate will be changed to \$92 per night.

All updated pre-registration information for SOFT 1996 is included (as inserts) in this issue of **ToxTalk**. To all of you who are planning to submit an abstract but just haven't gotten around to it yet - **DON'T DELAY!** Remember, the deadline for abstracts has been moved up one month to June 1, 1996. The forms needed to submit an abstract are also included in the inserts.

Calling all committee chairs or other individuals who need to schedule a group get-together during SOFT 1996... Please contact Bob or Laurel at your earliest convenience. We will make all necessary arrangements with the hotel and publish your meeting in the agenda.

We are looking forward to having you come to colorful Colorado. Plan for a scientifically stimulating meeting. Dress code for the meeting will match the casual Colorado lifestyle.

If you need additional information, please contact the meeting committee members listed below:

Co-hosts:	Laurel Farrell (303-691-4727) and Bob Zettl (303-691-4738)
Scientific Program:	Amanda Jenkins and Bruce Goldberger
Workshops:	Dan Isenschmid and Dennis Crouch
Exhibitors:	Lisa O'Dell

## Workshop topics:

**Revised #1: Use of LIMS in a Forensic Toxicology Drug Testing Laboratory (Monday 1-5) - A. Jacobs, Moderator**

**#2: Toxicology of Inhalants (Monday 1-5) - L. Farrell, Moderator**

**#3: Isoenzyme-specific Metabolism of Drugs of Forensic Interest (Tuesday 8:30-noon) - D. Moody, Moderator**

**#4 Capillary Chromatography Training Seminar (Tuesday 8:30-5:00) - R. Morehead, Moderator**

**#5 Toxicology and the Internet (Tuesday 1-5) - D. Frederick, Moderator**

**#6 Fundamentals of Medical Examiner Toxicology (Wednesday 8:30 - noon) - W. Anderson, Moderator**

**#7 Current Issues in Forensic Urine Drug Testing - FUDT (Wednesday 8:30 - noon) M. Baylor, Moderator**

**NOTE: original #1: Drugs & Driving (Monday 1-5) - D. Crouch, Moderator HAS BEEN CANCELLED. See above for details.**

**Hotel: Denver Marriott Tech Center 1-800-228-9290 or 303-779-1100**

**Special reduced room rate: \$92 (new rate) including tax (same as current federal government rate)**

**Shuttle service from Denver International Airport: \$15 one way.**

## **FINAL CALL FOR PAPERS** *submitted by Amanda Jenkins, Ph.D.*

This issue of **ToxTalk** contains the last abstract forms you will receive for the 1996 SOFT meeting in Denver. The Scientific Program Committee encourages all members to consider submitting a paper for presentation. Remember, the deadline for abstract submissions this year is **June 1st**. All submissions and correspondence regarding abstracts should be addressed to Dr. Amanda Jenkins, 1996 SOFT Scientific Program Co-Chair.

# NOTES FROM THE 2/21/96 SOFT BOARD MEETING

Submitted by Marilyn Huestis, Ph.D., SOFT Secretary

SOFT President H. Chip Walls presided over the Board of Directors meeting on Wednesday morning, February 21, during the AAFS annual meeting in Nashville, TN. As of 12/31/95, SOFT has 495 active members. Thirty-five applications for membership were approved from October to December of 1995. After failing to respond to two personal letters during 1995, 43 members who were delinquent with their 1994 dues were changed to an inactive status. The Board is considering a change in the bylaws to permit changing members to an inactive status after six months of delinquent dues and after notification by mail of non-receipt of payment. This would reduce expenses of the organization for mailing ToxTalk newsletters to members who have not paid their membership fees. Past President Vina Spiehler announced that members of the 1996 Nominating Committee are Jim Garriott, Yale Caplan, and Vina Spiehler, Chair. Ed Cone, Special Guest Editor, announced that submission deadlines for the 16th annual October special issue of the Journal of Analytical Toxicology are March 11, 1996, for abstracts and March 25, 1996, for the manuscripts. More than 50 SOFT members have volunteered to review manuscripts. Dr. Cone requested that an independent committee be named to select one manuscript as the lead article. Members of the 1996 Educational Research Award Nominating Committee are Daniel Isenschmid, Barbara Manno and David Moody, Chair. Interested parties are encouraged to apply.

Yale Caplan reported on the scientifically, socially, and financially successful 1995 SOFT annual meeting in Baltimore, MD. For the first time, abstracts accepted for the scientific program were published in the Journal of Analytical Toxicology, thereby, providing authors with citable references and highlighting the important scientific information presented at the meeting. The 1996 SOFT annual meeting will be held at the Denver, Colorado Marriott Tech Center from October 14-20, 1996. Co-hosts Bob Zetl and Laurel Farrell have negotiated a government rate. Seven workshops will be presented, in addition to two and one half days of scientific sessions. A special evening at the Lazy H ranch will be held on Thursday evening, as well as an optional excursion to Central City, CO. Abstracts are due June 1, 1996. All members are encouraged to attend what appears to be another wonderful meeting. Looking ahead to 1997 and 1998, SOFT annual meetings will be held in Salt Lake City, UT, with Denny Crouch and Dave Moody hosting, and a joint SOFT-TIAFT meeting will be held during the internationally famous Balloon Fiesta in Albuquerque, NM, in 1998. N.G.S. Rao and Ron Backer will be hosts for SOFT, and Vina Spiehler will be the TIAFT host.

Graham Jones reported on the progress of an accreditation program for forensic toxicology laboratories. ABFT will be administering the inspection and accreditation processes and hope to begin accepting applications this year. The JCETT committee has completed preparation of an extensive toxicology bibliography and is considering means for making database available to members. The lending library has extensive materials available for members - contact Vickie Watts for borrowing information. Lee Hearn, director of the visiting scientist program, encouraged interested parties and laboratories to contact him and take part in this important training opportunity. Bill Anderson was appointed chair of the new policies and procedures committee which will endeavor to develop a useful policy manual for SOFT. Treasurer Joe Saady announced that as of 12/31/95, SOFT has \$29,438.63 in the general account, \$25,000.00 in the emergency account in the form of a treasury bill maturing in July, 1996, and \$62,213.08 in the ERA fund. &

**REGISTER FOR THE 1996 SOFT MEETING BY JULY 1st FOR A FREE T-SHIRT**

## TREASURY NOTES

Submitted by: Joseph Saady, Treasurer

**ERA FINANCIAL INFORMATION:** Your Educational Research Award (ERA) Endowment Fund receives all the interest from SOFT accounts. This is a report for the ERA Fund for 1995.

<b>\$10,713.08</b> 1995 ERA Fund Receipts:	<b>\$ 1,500.00</b> 1995 ERA Fund Expenditures:
\$ 526.00 Donations	\$ 750.00 Student Award No. 1
3,807.00 Interest on 53K Treasury Bill	750.00 Student Award No. 2
1,360.00 Interest on 25K Treasury Bill	
869.70 1994 Carry-over	
2,711.48 Interest on 53K Treasury Bill	
1,438.53 1995 Bank Interest	<b>\$ 62,213.08</b> ERA Fund Balance as of 12/31/95

**OFFICIAL 1995 FINANCIAL REPORT** - to appear in the September issue of ToxTalk. &

## **MEMBERSHIP COMMITTEE**

*Submitted by: Marilyn Huestis, Ph.D.*

Members of the 1996 Membership Committee include: Andrew Mason, Deb Rector, Amanda Jenkins, and Marilyn Huestis, Chair. Applicants for full membership must have the following educational degrees and experience in forensic toxicology: Ph.D. and 2 years of experience, or M.S. and 4 years experience, or B.S. or B.A. and 6 years experience. Applicants who do not qualify for full membership but who demonstrate interest in forensic toxicology are eligible for associate membership. Also, students pursuing degrees and careers in disciplines related to forensic toxicology may apply for membership as student affiliate members.

Applicants should call or fax their request for application materials to the SOFT administrative office (602-644-2478). After receipt of all application materials, including completed application form, fee, curriculum vitae, and two references from full SOFT members for a full member application, the entire Membership Committee reviews the application. The Secretary, who serves as chair of the membership Committee, notifies the applicant of the committee's determination.

SOFT provides its members many continuing education opportunities and a forum for discussion of common interests and problems. SOFT is a friendly, helpful group of toxicology professionals, and the Membership Committee encourages all interested parties to apply for membership. Please feel free to contact any committee member for further information. ☺

## **SOFT ADMITS THREE NEW MEMBERS IN 1996**

Membership Committee Chairperson Marilyn Huestis reports that, to date, three new members have been welcomed into the organization in 1996:

Kevin B. Hawkins, Corning Clinical Laboratories, Pittsburgh, PA  
Boyd Lasater, Contra Costa County Sheriff-Coroner Department, Martinez, CA  
Tamizuddin Khan, Bendiner and Schlesinger, Inc., New York, NY

We look forward to their active participation in SOFT. ☺

## **FIFTY-SIX JOIN SOFT IN 1995!**

Past Secretary Vickie Watts wants to announce the following 56 persons whose applications for SOFT membership or promotion were approved by the Membership Committee in 1995.

Full members: Kathryn Kalasinsky, Ira S. Dubey, Janice Gangwer, Marc A. Lebeau, Gwyndolin G. Linthicum, Steven H. Wong, David Henry Eagerton, Patrick S. Ng, Heesun Chung, Louis Kuykendall, Jasbir Singh, Prentiss Jones, Alan Wu, Diana Wilkins, Edwin K. Armitage, John Guy Fisher III, William A. Joern, Catherine K. Okono, Rudolf M. Brenneisen, Robert S. Fogerson, Jr., Robert M. Secars, Donald J. Rynbrandt, David A. Green, Manfred R. Moeller, Phyllis K. Rosenthal, Judith E. Driskell, Philip M. Kemp, Ron Armstrong, Larry D. Bowers, Marc F. Deveaux, Barry K. Logan, Daniel Y.K. Chan, Kenneth K. Sun, James A. Bourland, Edward L. Smith, Xiaofang Jaing, Howard Ollick, Robert M. Kelly, Samuel E. Mathews, and Syed Zakir Ali.

Associate members: Imad Kazem Abukhalaf, Mary F. Benson, Barbara Diane McClennon, Shan Hales, A. Carmen Taylor, Barry S. Levine, Danny W. Glidewell II, and Jennifer O'Donnell.

Student members: Tracy Williams, Karin Hold, Jeffrey Paul Brendler, Roy D. Sineo, and Joseph Avella.

Promotions: Patrick Carpenter and Susan C. Vondrak to Full Members and William Bruce Walker to Associate Member.

Reinstatement: Angela Springfield.

Vickie Watts also wants to express her appreciation to her Membership Committee members Teri Stockham, Andrew Mason, and Deb Rector for all their hard work in 1995. ☺

### **DO A COLLEAGUE A FAVOR - INVITE HIM OR HER TO JOIN SOFT**

Application requests should be directed to: SOFT, P O Box 5543, Mesa, AZ 85211-5543  
Telephone/Fax: 602-839-9106

# FROM THE HEALTH AND SAFETY COMMITTEE

*Members: Daniel Isenschmid (Chair), John Cody, Laurel Farrell and Elizabeth Marker*

Please feel free to submit comments or suggestions to: Daniel Isenschmid, Ph.D., Wayne County Medical Examiner's Office, 1300 E. Warren, Detroit, MI 48207

## LATEX ALLERGY

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

Latex, a usually white milky, viscous sap of certain trees and higher plants such as the rubber plant, is found in specialized cells called lactiferous cells and coagulates on exposure to air. Latex is used in the production of approximately 40,000 products, a primary one being latex gloves used in the laboratory. The use of latex gloves has grown dramatically due to increased awareness of AIDS, the implementation of universal precautions, and the enforcement of OSHA regulations. Glove manufacturing in the mid-to-late 1980's lacked strict QC guidelines allowing inexperienced manufacturers to produce poor quality gloves containing many potential allergens. The boom in the use of latex products led to increased reports of latex allergy. For the laboratory employee the most common reaction to latex gloves is in fact not an allergy at all but rather a skin irritation caused by the chemical added to the latex during the manufacturing process or to the glove powder. This reaction is called contact dermatitis, an inflammation of the skin or derma. Contact dermatitis is an acute or chronic skin inflammation triggered by substances that come in contact with the skin. The characteristic skin inflammation can progress to blisters if the condition is acute. Allergic contact dermatitis may be due to delayed hypersensitivity and is the second most common type of latex allergy. This reaction is comparable to the allergic contact dermatitis caused by poison ivy and is characterized by redness, swelling (edema), oozing, crusting, scaling, burning pain and itching. Scratching or rubbing may lead to thickening of the skin with changed markings (lichenification).

Contact dermatitis can almost always be prevented by a combination of environmental, personal, and medical measures. The first step in treatment is removing the causative agent. Low-allergen latex gloves are available as are non latex gloves made of polyvinyl chloride or Neoprene®. These gloves do not provide the barrier protection against transmission of viruses. One of my employees had success by wearing cotton gloves underneath her latex gloves. The FDA has suggested wearing a latex glove between two vinyl gloves. Personal preventive measures include 1) not using petroleum products other skin protectants when wearing latex gloves as these substances break down the latex and decrease the barrier integrity and 2) limiting your exposure to its allergens by routinely washing your hands, and avoiding contact with your eyes, nose or mouth to prevent direct contact with mucous membranes. For treatment of mild contact dermatitis, over-the-counter hydrocortisone creams may be applied to the affected areas. For acute, severe cases, prednisone may be prescribed. Antihistamines may be used to decrease itching, and antibiotics may be prescribed to treat secondary bacterial infections. If a latex allergy develops, notify your health care provider and follow his/her suggestions regarding precautions and treatment. ☼

## ABFT NEWS

**4th ANNUAL A.B.F.T. BREAKFAST SCHEDULED DURING S.O.F.T. MEETING:** ABFT Diplomates and Forensic Toxicology Specialists are invited to attend the ABFT breakfast on Thursday, October 17, 1996, at 7 a.m. Certificates will be presented to those newly-certified since the last breakfast as well as those who were requalified in 1996. You may register for the breakfast (\$20) on your SOFT meeting registration form.

**REQUALIFICATION REMINDER:** Of the 46 ABFT Diplomates whose certificates expire June 30, 1996, 12 have yet to submit their application packets. Dr. Monforte, ABFT Vice President and Chairman, Committee on Requalifications, advises those Diplomates that they have already missed the deadline and they should submit their applications directly to him immediately. If your ABFT certificate expires, you are then subject to the reinstatement process and an additional fee.

**IMPORTANT DATES:** The following are scheduled for Tuesday, Oct. 15, during the SOFT annual meeting in Denver:

**Board Meeting:** noon to 6 pm (with lunch)

**Exams:** 8:30 to noon (must pre-arrange with Dr. Poklis)

**CERTIFICATION PROGRAMS:** Forensic toxicologists with a doctorate or masters degree who are interested in certification by the American Board of Forensic Toxicology should contact the ABFT Administrative Office (address at bottom of next page). ☼

# Technical Notes: BLUTALKOHOLKONZENTRATION No. 13

Submitted by: J.G. Wigmore, B.Sc., Toxicology Section, Centre of Forensic Sciences, Toronto, Ontario, Canada

## ALCOHOL EVAPORATION FROM BLOOD STORED IN UNSTOPPERED TUBES

G. Weiler and A. Klöppel, *Blutalkohol* 13:45-54, 1976

German title: *Die Alkohol Verdunstung bei offen gelagerten Vanulen*

Occasionally, blood samples obtained from clinical laboratories in hospitals for medicolegal alcohol determination will have been stored in open, unstoppered tubes for various periods of time. It has been suggested that the alcohol concentration in blood stored in unstoppered tubes will increase as it is exposed to microorganisms in the air.

In this study, blood which had only anticoagulant added was spiked to 6 different BACs between 0.144 and 0.362 g/100 mL. The blood was then stored in open 8 mL glass vials for 4 weeks at 22 C and 5C. The BACs were determined by the ADH and GC methods.

For the blood stored in open tubes at room temperature, there was an exponential decrease in BAC. After 5 to 7 days' storage, the BAC had decreased to 50% of the initial concentration. After 14 days, the BAC had decreased to 25% of the initial BAC. A zero BAC was obtained after 4 weeks storage. The per cent decrease in BAC was independent of the initial spiked BAC. There was a slightly greater decrease in BAC (approximately 10%) in tubes that were only half-filled with blood (i.e., 4 mL) compared to full tubes (i.e., 8 mL).

For blood stored in open tubes at 5°C, there was a 9% decrease in initial BAC after 3 days and a 20% decrease after 7 days. In blood stored in an open dish that had a surface area 4.7 times greater than that of the tubes, the decrease in BAC was much greater, and a zero BAC was obtained after 3-5 days storage.

No increases in BACs were observed due to microbial action and the non-sterile conditions. The authors attribute this to the aerobic conditions in which the blood samples were stored and note that large alcohol increases occur mainly under anaerobic conditions. The authors conclude that the loss of alcohol is mainly dependent on the surface area, temperature, and air circulation and that the BAC determined in blood stored in open containers can still have evidentiary value.. &

### WHY DON'T YOU SUBMIT A CASE NOTE FOR THE NEXT ISSUE OF TOXTALK?

#### CALL FOR CASE NOTES

Your case note should be about 1/2 page in length, no more than a full page. Material or a disk (using Microsoft Works/Word 2.0) may be mailed to: **Joseph R. Monforte, Ph.D., DABFT, ToxTalk Editor**  
**846 Smoke Dr. (H.P.), Prescott, AZ 86301-7347**  
- or - **Telephone/FAX: 520-717-0617 (after 11:30 a.m., E.S.T.)**

Other items of interest to SOFT members are also welcome.

Next deadline: **AUGUST 1, 1996**

## A.B.F.T. LABORATORY ACCREDITATION PROGRAM

The American Board of Forensic Toxicology, Inc., will be accepting applications for laboratory accreditation by ABFT. It is anticipated that application forms will be available after July 1, 1996, and the review and processing of applications will occur no later than September 1, 1996.

The first ten laboratories to apply will be eligible for a reduced application fee. The application fee will be nominal to pay for expenses involved with the application and inspection process. The first group of inspectors, who are reimbursed for expenses only, have been identified and trained.

If your laboratory is interested in this accreditation program, contact:

ABFT Administrative Office  
P.O. Box 669, Colorado Springs, CO 80901-0669  
(Telephone: 719-636-1100)



# Case Notes: What Constitutes an Appropriate Chain of Custody Document, and Why Does It Matter?

*Submitted by: Carl M. Selavka and Robert A. Middleberg*

In a case we have been presented, it has become clear that while there was a strong "External" chain of custody documenting the collection of urine specimens from two individuals, this chain of custody ends at the laboratory door. Inside the lab, there is a summary form which lists examinations which are normally performed in the course of testing, with a space for " " to denote that the test was performed, as well as a space for the initials of the person who (purportedly) performed the test. On the bottom of this summary form, there is a spot for the reviewing official to initial and date that all actions were reviewed and found acceptable (or, ostensibly, not), and to write the laboratory accession number for specimens determined to be positive for a controlled substance / metabolite(s).

The questions posed to us seemed innocent enough: "Is this summary form an acceptable chain of custody document?" and "If not, what harm is possible due to its insufficiency?." Based on HHS, US Military, CAP FUOT, SOFT/AAFS and ASCLD-LAB standards and guidelines, the answer to the first question is an emphatic NO. On the other hand, none of the guidance documents or standard checklists provides a detailed discussion of why an appropriate internal chain of custody document is so important. Having been trained and/or having worked in labs operating under most of these guidance documents, maybe we have been brainwashed into thinking that this is the only acceptable way to run a lab?!

As we thought through the implications of an insufficient chain of custody, we were struck that in a fully automated ("paperless") laboratory, there is a similar summary form of specimen handling and testing generated in the automated tracking process, but no hand-written initials, dates, and notes of activities. Logically, certain levels of security control could exist in the software to limit access to handling and testing modules - thereby leading to some level of control over the creation of the electronic audit trail - but these could not be considered to be foolproof. Barring retinal scan stations and similar esoteric verification techniques, it would be possible on most automation platforms to circumvent the access control in such a way that manipulation of the apparent chain of custody would be undetectable.

Unlike with a computer, the ability to circumvent the appropriate manual chain of custody process is possible, but is much more difficult to perform without detection. Forging another person's signature or even initials is difficult at best (for most of the scrawlers at our lab, nearly impossible), and this difficulty serves as a deterrent to the attempt. When the requirements for multiple notations of dates, initials and codes/entries describing activities are considered in their entirety, it becomes obvious that the manual chain of custody is far superior to any automated approaches that can be imagined in allowing for an accurate reconstruction of the chain of custody / events for evidence and its testing.

There is a Quality Assurance axiom which states "What gets documented gets done." This simple statement describes the truth of the laboratory setting, in which there are competing priorities of quality, speed, cost reduction and minimization of labor. When activities are reviewable (and routinely reviewed), these activities are more likely to be performed accurately and with appropriate safeguards for the specimen's (and aliquots') integrity. In addition, since the forensic laboratory must build in systems to allow for legal review of laboratory actions, the chain of custody documents serve as the sole verification of testimonial assurances by laboratory staff regarding their actions in a given case. Further, the chain of custody serves as a tool for laboratorians to refresh their own recollections, given the common delay between the time of receipt, testing and the eventual use of lab results in investigations and litigations.

The range of possible consequences which can befall a specimen in an uncontrolled laboratory environment (in which no chain of custody documents are used) can be summarized as those involving administrative errors and those involving analytical errors. Administrative errors include incorrect accessioning, mis-aliquoting of a specimen, sample mis-identification during extractions (and other manipulations) and analyses, the performance of tests by unqualified personnel, inattention to failed quality control criteria, transcription errors in result recording, and incorrect transmission of results to the client. Analytical errors include the use of inappropriate volumes of specimens, standards, controls or reagents, the use of incorrect or contaminated reagents or other materials, cross-contamination of specimens, the use of unvalidated or outdated methods or materials, the use of inappropriate conditions during sample manipulations and analyses, and the artifactual creation of a false positive or false negative due to analytical conditions.

It could be argued that having a manual chain of custody document does not free the laboratory from possibly generating these administrative or analytical errors. Without this documentation, however, the laboratory doesn't have a prayer of adequately testing its performance, systems and integrity. The adequacy of review by the laboratory and of the laboratory (by other scientists and the legal system) is directly linked to the adequacy of the chain of custody notation at the time of the action, by the person who performed the action, detailing the action performed. Like it or not, the forensic laboratory and its results must be capable of bearing the most rigorous scrutiny under the least favorable condition of "benefit of the doubt", because the results of our tests are often used to take away someone's employment, children, liberty, property or life.

Without the appropriate, manual chain of custody documents, the laboratory should rightfully cave in during this scrutiny, and the "benefit of the doubt" should be given to the defendant / suspect or otherwise affected party. Given the simplicity of the chain of custody documentation process, there can be no excuse for failing to perform this vital function, regardless of the size of the lab or the simplicity of its services. If it is called forensic, it deserves the best, most explicit chain of custody handling and documentation.



# ELMER GORDON OPEN FORUM

## AN OPPORTUNITY FOR INFORMAL DIALOGUE

**A COLLEAGUE PASSES:** Beth Marker reports the death of Wendell G. Krasselt on March 20th, in Portland, Oregon, only days after his fiftieth birthday. Mr. Krasselt began working in the laboratory of The Oregon Health Sciences University while still in medical technology school and remained with the University until his retirement in 1994. He was a kind and caring man who will be missed by all who knew him. Contributions may be made to Our House, 2727 S.E. Alder, Portland, OR 97214. ☪

## CAREER OPPORTUNITIES

*Positions available are listed for the consideration of SOFT members. There is no fee for this service. The information will be repeated in the next issue only if the information is confirmed by the person who submitted it.*

**CHEMIST** Wyoming statewide drug/alcohol program, \$1887-\$2359, bachelor's degree and 2 yrs experience or master's degree. Contact Gene Rugotzke, Supervisor (307-777-7868) or State of Wyoming Personal Management Division (307-777-7188).

**FORENSIC TOXICOLOGIST** for Virginia Forensic Science Laboratory in Richmond. Ph.D. in toxicology, chemistry or related scientific field with certification as ABFT Diplomate (or eligibility). Experience in toxicology analysis required and expert witness testimony experience preferred. Must have a valid driver's license and pass background security check. Contact Diane Brown at 804-786-5305 for application. Deadline 6/28/96. ☪

## PROFESSIONAL CALENDAR

**California Association of Toxicologists (CAT)** quarterly meetings and workshops. For information contact Vickie Watts at 602-644-2077, FAX 602-644-2478. 8/3/96 San Diego, CA, 11/9/96 San Francisco, CA.

**American Academy of Forensic Sciences (AAFS)** annual meeting: Contact Brenda Papke, 719-636-1100. Future AAFS meetings: 2/17-22/97 New York City.

**Analytical and Molecular Biological Techniques in Environmental Toxicology and Forensic Sciences: September 11-12, San Juan, Puerto Rico.** Sponsored by Puerto Rico Chemists Assoc and the American Registry of Pathology, \$200. Contact Dr. Jose Centeno, AFIP, 14th & Alaska Ave. NW, Washington, DC 20306-6000. Ph 202-782-2839, Fax 202-782-9215

**SOFT Annual Meeting: Oct. 14-18, 1996, Denver, Colorado.** Co-hosts: Laurel J. Farrell and J. Robert Zetti, CDPHE - Division of Laboratories, P O Box 17123, Denver, CO 30217. Phone: 303-691-4727/4738. Fax: 303-393-7881. ☪

**FUTURE SOFT MEETINGS:**

1997	Salt Lake City, UT	Dennis Crouch & David Moody
1998	Albuquerque, NM	NGS Rao & Ronald Backer (Joint with TIAFT)

### REMINDER - S.O.F.T. CONTACT INFORMATION:

① VOICE MAIL & FAX 602-839-9106  
MAILING ADDRESS P.O. Box 5543, Mesa, AZ 85211-5543

Submit your items for ToxTalk to:

**Dr. Joseph Monforte, ToxTalk Editor**  
846 Smoki Dr (HP)  
Prescott, AZ 86301-7347

Phone: 520-717-0617 (after 11:30 a.m., E.S.T. please) FAX: phone first

(ToxTalk print date: 5/05/96)

## **JOURNAL CLUB**, Prepared by H. Chip Walls for May, 1996 TOXTALK .

This set has been arranged in alphabetical Order by Article Title.

If You would like to see a specific search let me KNOW. HCHIPW@AOL.COM or 305-232-7461 (fax)

- Steele, T. D., McCann, U. D. and Ricaurte, G. A. **3,4-Methylenedioxymethamphetamine (MDMA, "Ecstasy"): pharmacology and toxicology in animals and humans** *Addiction* 89 (5): 539-551 1994.
- Anonymous **1995 North American Congress of Clinical Toxicology Annual Meeting. Rochester, New York; Saturday, September 16-19, 1995. Abstracts** *Journal of Toxicology Clinical Toxicology* 33 (5): 487-561 1995.
- Rowlands, J., Morrow, T., Lee, N. and Millman, A. **ABC of medical computing. Online searching** *Bmj* 311 (7003): 500-504 1995.
- Nielsen, J. C., Nicholson, K., Pitzner-Jorgensen, B. L. and Uden, M. **Abuse of Ecstasy (3,4-methylenedioxymethamphetamine). Pharmacological, neuropsychiatric and behavioral aspects** *Ugeskrift for Laeger* 157 (6): 724-727 1995.
- Gautami, S., Rao, R. N., Raghuram, T. C., Rajagopalan, S. and Bhat, R. V. **Accidental acute fatal sodium nitrite poisoning** *Journal of Toxicology - Clinical Toxicology* 33 (2): 131-133 1995.
- Balabanova, S and Albert, W **Accumulation and stability of drugs in hair** *Archiv fur Kriminologie* 193 (3-4): 100-112 1994.
- Anker, A. L. and Smilkstein, M. J. **Acetaminophen. Concepts and controversies. [Review]** *Emergency Medicine Clinics of North America* 12 (2): 335-349 1994.
- Nordin, C. and Bertilsson, L. **Active hydroxymetabolites of antidepressants. Emphasis on E-10-hydroxy-nortriptyline** *Clinical Pharmacokinetics* 28 (1): 26-40 1995.
- Robbe, H. W. and O' Hanlon, JF **Acute and subchronic effects of paroxetine 20 and 40 mg on actual driving, psychomotor performance and subjective assessments in healthy volunteers** *European Neuropsychopharmacology* 5 (1): 35-42 1995.
- Berkovitch, M., Akilesh, M. R., Gerace, R., Verjee, Z., McGuigan, M., Whyte, H. **Acute digoxin overdose in a newborn with renal failure: use of digoxin immune Fab and peritoneal dialysis** *Therapeutic Drug Monitoring* 16 (5): 531-533 1994.
- Wilkinson, C. J. **The acute effects of zolpidem, administered alone and with alcohol, on cognitive and psychomotor function** *Journal of Clinical Psychiatry* 56 (7): 309-318 1995.
- Mills, K. C. and Curry, S. C. **Acute iron poisoning. [Review]** *Emergency Medicine Clinics of North America* 12 (2): 397-413 1994.
- June, H.L., Stitzer, M.L. and Cone, E. **Acute physical dependence: time course and relation to human plasma morphine concentrations** *Clin. Pharmacol. Ther.* 57 (3): 270-280 1995.
- Merigian, K. S., Park, L. J., Leeper, K. V., Browning, R. G. and Giometi, R. **Adrenergic crisis from crack cocaine ingestion: report of five cases** *Journal of Emergency Medicine* 12 (4): 485-490 1994.
- Goodwin, D. W. **Alcohol amnesia [editorial]** *Addiction* 90 (3): 315-317 1995.
- Stritzke, W. G., Patrick, C. J. and Lang, A. R. **Alcohol and human emotion: a multidimensional analysis incorporating startle-probe methodology** *Journal of Abnormal Psychology* 104 (1): 114-122 1995.
- Young, M. E., Rintala, D. H., Rossi, C. D., Hart, K. A. and Fuhrer, M. J. **Alcohol and marijuana use in a community-based sample of persons with spinal cord injury** *Archives of Physical Medicine & Rehabilitation* 76 (6): 525-532 1995.
- Koelega, H. S. **Alcohol and vigilance performance: a review** *Psychopharmacology* 118 (3): 233-249 1995.
- Lamminpaa, A. **Alcohol intoxication in childhood and adolescence** *Alcohol & Alcoholism* 30 (1): 5-12 1995.
- Fong, W. P. **Alcohol metabolizing enzymes in the liver and stomach of the hamster** *Biochemistry & Molecular Biology International* 35 (1): 197-203 1995.
- Haberman, P.W., Noble, J.A. and Dufour, M.C. **Alcohol use in combination with cocaine, heroin and methadone by medical examiner cases** *J. Stud. Alcohol* 56 (3): 344-347 1995.
- Hansen, A. C., Kristensen, I. B., Dragsholt, C. and Hansen, J. P. **[Alcohol, drugs and narcotics in suicides in the Aarhus police district]** *Ugeskrift for Laeger* 157 (11): 1524-1527 1995.
- Mercer, G. W. and Jeffery, W. K. **Alcohol, drugs, and impairment in fatal traffic accidents in British Columbia** *Accident Analysis & Prevention* 27 (3): 335-343 1995.
- Nutt, D. J. and Peters, T. J. **Alcohol: the drug. [Review]** *British Medical Bulletin* 50 (1): 5-17 1994.
- Mincis, M. **Alcoholic liver diseases: current review [editorial]** *Revista Paulista de Medicina* 112 (2): 529-533 1994.
- Moore, K. A., Lichtman, A. H., Poklis, A. and Borzelleca, J. F. **Alpha-Benzyl-N-methylphenethylamine (BNMPA), an impurity of illicit methamphetamine synthesis: Pharmacological evaluation and interaction with methamphetamine** *Drug & Alcohol Dependence* 39 (2): 83-89 1995.
- Mumford, G.K., Evans, S.M., Fleishaker, J.C. and Griffiths, R.R. **Alprazolam absorption kinetics affects abuse liability** *Clin. Pharmacol. Ther.* 57 (3): 356-365 1995.
- Sziraki, I., Kardos, V., Patthy, M., Patfalusi, M., Gaal, J., Solti, M. **Amphetamine-metabolites of deprenyl involved in protection against neurotoxicity induced by MPTP and 2'-methyl-MPTP** *Journal of Neural Transmission. Supplementum* 41 : 207-219 1994.

- Ferenchick, G. S., Hirokawa, S., Mammen, E. F. and Schwartz, K. A. **Anabolic-androgenic steroid abuse in weight lifters: evidence for activation of the hemostatic system** *American Journal of Hematology* 49 (4): 282-288 1995.
- DuRant, R. H., Escobedo, L. G. and Heath, G. W. **Anabolic-steroid use, strength training, and multiple drug use among adolescents in the United States** *Pediatrics* 96 (1 Pt 1): 23-28 1995.
- Nishikawa, M., Nakajima, K., Tatsuno, M., Kasuya, F., Igarashi, K., Fukui, M. **The analysis of cocaine and its metabolites by liquid chromatography/atmospheric pressure chemical ionization-mass spectrometry (LC/APCI-MS)** *Forensic Science International* 66 (3): 149-158 1994.
- Low, A.S. and Taylor, R.B. **Analysis of common opiates and heroin metabolites in urine by high-performance liquid chromatography** *J. Chromatogr. B-Bio. Med. Appl.* 663 (2): 225-233 1995.
- Logan, B.K., Friel, P.N., Peterson, K.L. and Predmore, D.B. **Analysis of ketorolac in postmortem blood** *J. Anal. Toxicol.* 19 : 61-64 1995.
- Watts, V.W. and Rector, D. (1995). **Analysis of the diazolo- and triazolobenzodiazepines and their metabolites in blood and urine using GC/MS.** *American Acad. Forensic Sci., Seattle, WA.*
- Staub, C. **Analytical procedures for determination of opiates in hair; a review** *Forensic Sci. Int.* 70 : 111-123 1995.
- Petersen, P. H., Fraser, C. G., Baadenhuijsen, H., Libeer, J. C. and Ricos, C. **Analytical quality specifications in clinical chemistry [letter; comment]** *Clinical Chemistry* 40 (4): 670-671 1994.
- Aerts, M.M.L., Hogenboom, A.C. and Brinkman, U.A.T. **Analytical strategies for the screening of veterinary drugs and their residues in edible products** *J. Chromatogr. B-Bio. Med. Appl.* 667 (1): 1-40 1995.
- Analyzing on the internet** *Analytical Chemistry* 67 : 255A-259A 1995.
- Patel, F. **Ancillary autopsy--forensic histopathology and toxicology** *Medicine, Science & the Law* 35 (1): 25-30 1995.
- Volz, H. P. and Sturm, Y. **Antidepressant drugs and psychomotor performance. A review [Review]** *Neuropsychobiology* 31 (3): 146-155 1995.
- Power, B. M., Hackett, L. P., Dusci, L. J. and Ilett, K. F. **Antidepressant toxicity and the need for identification and concentration monitoring in overdose [Review]** *Clinical Pharmacokinetics* 29 (3): 154-171 1995.
- Jick, S. S., Dean, A. D. and Jick, H. **Antidepressants and suicide** *Bmj* 310 (6974): 215-218 1995.
- JF, O' Hanlon and Ramaekers, J. G. **Antihistamine effects on actual driving performance in a standard test: a summary of Dutch experience, 1989-94** *Allergy* 50 (3): 234-242 1995.
- Tharion, W. J., McMenemy, D. J. and Rauch, T. M. **Antihistamine effects on the central nervous system, cognitive performance and subjective states** *Neuropsychobiology* 29 (2): 97-104 1994.
- Rosse, R. B., Alim, T. N., Johri, S. K., Hess, A. L. and Deutsch, S. I. **Anxiety and pupil reactivity in cocaine dependent subjects endorsing cocaine-induced paranoia: preliminary report** *Addiction* 90 (7): 981-984 1995.
- O' Hanlon, JF, Vermeeren, A., Uiterwijk, M. M., van Veggel, L. M. and Swijgman, H. F. **Anxiolytics' effects on the actual driving performance of patients and healthy volunteers in a standardized test. An integration of three studies** *Neuropsychobiology* 31 (2): 81-88 1995.
- Medinsky, M. A. **The application of physiologically based pharmacokinetic/pharmacodynamic (PBPK/PD) modeling to understanding the mechanism of action of hazardous substances** *Toxicology Letters* 79 (1-3): 185-191 1995.
- Marshall, M. D., Kales, S. N., Christiani, D. C. and Goldman, R. H. **Are reference intervals for carboxyhemoglobin appropriate? A survey of Boston area laboratories** *Clinical Chemistry* 41 (10): 1434-1438 1995.
- Espinoza, E. O., Mann, M. J. and Bleasdel, B. **Arsenic and mercury in traditional Chinese herbal balls [letter]** *New England Journal of Medicine* 333 (12): 803-804 1995.
- de Peyster, A. and Silvers, J. A. **Arsenic levels in hair of workers in a semiconductor fabrication facility** *American Industrial Hygiene Association Journal* 56 (4): 377-383 1995.
- Kleemann, W. J., Seibert, M., Tempka, A., Wolf, M., Weller, J. P. and Troger, H. D. **Arterial and venous alcohol elimination in 10 polytrauma patients [german]** *Blutalkohol* 32 (3): 162-173 1995.
- Kouri, E., Pope, H. G., Jr., Yurgelun-Todd, D. and Gruber, S. **Attributes of heavy vs occasional marijuana smokers in a college population** *Biological Psychiatry* 38 (7): 475-481 1995.
- Karkkainen, M., Sippola, E., Pikkarainen, A.-L., Rautio, T. and Himberg, K. **Automated gas chromatographic amphetamine profiling** *Forensic Sci. Int.* 69 : 55-64 1995.
- Fuller, P. G., Jr. and Cavanaugh, R. M., Jr. **Basic assessment and screening for substance abuse in the pediatrician's office** *Pediatric Clinics of North America* 42 (2): 295-315 1995.
- Benignus, V. A. **Behavioral effects of carbon monoxide: meta analyses and extrapolations** *Journal of Applied Physiology* 76 (3): 1310-1316 1994.
- Nishikawa, T., Suzuki, S., Ohtani, H., Eizawa, N. W., Sugiyama, T., Kawaguchi, T. **Benzodiazepine concentrations in sera determined by radioreceptor assay for therapeutic-dose recipients [published erratum appears in Am J Clin Pathol 1995 Mar;103(3):376]** *American Journal of Clinical Pathology* 102 (5): 605-610 1994.
- Michel, K. and Spuhler, T. **Benzodiazepine fatal poisonings [letter; comment] [published erratum appears in Br J Psychiatry 1994 Mar;164:422]** *British Journal of Psychiatry* 164 (1): 128-129 1994.

- Meatherall, R. **Benzodiazepine screening using EMIT II and TDx: urine hydrolysis pretreatment required** *Journal of Analytical Toxicology* 18 (7): 385-390 1994.
- Foy, A., D. O. Connell, Henry, D., Kelly, J., Cocking, S. and Halliday, J. **Benzodiazepine use as a cause of cognitive impairment in elderly hospital inpatients** *Journal of Gerontology. Serials A. Biological Sciences & Medical Science* 50 (2): M99-106 1995.
- Ramcharitar, V., Levine, B. and Smialek, J.E. **Benzoyllecgonine and ecgonine methyl ester concentrations in urine specimens** *J. Forensic Sci.* 40 : 99-101 1995.
- Baraona, E., Gentry, R. T. and Lieber, C. S. **Bioavailability of alcohol: role of gastric metabolism and its interaction with other drugs** *Digestive Diseases* 12 (6): 351-367 1994.
- Thadani, P. V. **Biological mechanisms and perinatal exposure to abused drugs** *Synapse* 19 (3): 228-232 1995.
- Aasmundstad, T. A., Xu, B. Q., Johansson, I., Ripel, A., Bjorneboe, A., Christophersen, A. S. **Biotransformation and pharmacokinetics of ethylmorphine after a single oral dose** *British Journal of Clinical Pharmacology* 39 (6): 611-620 1995.
- Baraona, E., Gentry, R. T. and Lieber, C. S. **Blood alcohol levels after prolonged use of histamine-2-receptor antagonists [letter; comment]** *Annals of Internal Medicine* 121 (1): 73-74 1994.
- Schoknecht, G. and Barduhn, B. **[Breath alcohol measuring equipment: principles for calibration]** *Blutalkohol* 32 (2): 74-82 1995.
- Derogis, V., Bourrier, P., Douay, O., Turcant, A. and Perroux, D. **Breath alcohol versus blood alcohol. 204 cases in an emergency unit** *Presse Medicale* 24 (23): 1067-1070 1995.
- Trafford, D. J. and Makin, H. L. **Breath-alcohol concentration may not always reflect the concentration of alcohol in blood [see comments]** *Journal of Analytical Toxicology* 18 (4): 225-228 1994.
- Johnson, Rf, Herman, N, Arney, Tl, Gonzalez, H, Johnson, Hv and Downing, Jw **Bupivacaine transfer across the human term placenta. A study using the dual perfused human placental model** *Anesthesiology* 82 (2): 459-468 1995.
- Nixon, A. L., Long, W. H., Puopolo, P. R. and Flood, J. G. **Bupropion metabolites produce false-positive urine amphetamine results [letter]** *Clinical Chemistry* 41 (6 Pt 1): 955-956 1995.
- Proano, L., Chiang, W. K. and Wang, R. Y. **Calcium channel blocker overdose** *American Journal of Emergency Medicine* 13 (4): 444-450 1995.
- Tagliaro, F., Smyth, W. F., Turrina, S., Deyl, Z. and Marigo, M. **Capillary electrophoresis: a new tool in forensic toxicology. Applications and prospects in hair analysis for illicit drugs** *Forensic Science International* 70 (1-3): 93-104 1995.
- Baischer, W., Wagner, A., Seidler, D., Musalek, M. and Laggner, A. **[Carbamazepine poisoning: protracted course with development of intestinal atony and hepatic toxicity]** *Wiener Klinische Wochenschrift* 106 (1): 27-29 1994.
- Hopkins, Ro and Weaver, Lk **Carbon monoxide controversies: neuropsychologic testing, mechanism of toxicity, and hyperbaric oxygen [letter; comment]** *Annals of Emergency Medicine* 25 (2): 272-273 1995.
- Weaver, Lk, Hopkins, Ro and Larson-Lohr, V **Carbon monoxide poisoning: a review of human outcome studies comparing normobaric oxygen with hyperbaric oxygen [letter; comment]** *Annals of Emergency Medicine* 25 (2): 271-272 1995.
- Benignus, V. A. and Annau, Z. **Carboxyhemoglobin formation due to carbon monoxide exposure in rats** *Toxicology & Applied Pharmacology* 128 (1): 151-157 1994.
- Mouhaffel, A. H., Madu, E. C., Satmary, W. A. and Fraker, T. D., Jr. **Cardiovascular complications of cocaine [Review]** *Chest* 107 (5): 1426-1434 1995.
- Foltin, R. W., Fischman, M. W. and Levin, F. R. **Cardiovascular effects of cocaine in humans: laboratory studies** *Drug & Alcohol Dependence* 37 (3): 193-210 1995.
- Yoshida, M., Watabiki, T., Tokiyasu, T., Akane, A. and Ishida, N. **Case of death by fire with kerosene--analysis of contents of trachea and stomach. [Jap.]** *Nippon Hoigaku Zasshi - Japanese Journal of Legal Medicine* 48 (2): 96-104 1994.
- Mena, I., Giombetti, R. J., Miller, B. L., Garrett, K., Villanueva-Meyer, J., Mody, C. **Cerebral blood flow changes with acute cocaine intoxication: clinical correlations with SPECT, CT, and MRI** *NIDA Research Monograph* 138 : 161-173 1994.
- Tai, S. S., Christensen, R. G., Paule, R. C., Sander, L. C. and Welch, M. J. **The certification of morphine and codeine in a human urine standard reference material** *Journal of Analytical Toxicology* 18 (1): 7-12 1994.
- LeBelle, M. J., Savard, C., Dawson, B. A., Black, D. B., Katyal, L. K., Zrcek, F. **Chiral identification and determination of ephedrine, pseudoephedrine, methamphetamine and methcathinone by gas chromatography and nuclear magnetic resonance** *Forensic Science International* 71 (3): 215-223 1995.
- Romach, M., Busto, U., Somer, G., Kaplan, H. L. and Sellers, E. **Clinical aspects of chronic use of alprazolam and lorazepam** *American Journal of Psychiatry* 152 (8): 1161-1167 1995.
- Adelizzi, R. A. **Clinical implications of NSAID pharmacokinetics: special populations, special considerations** *Journal of the American Osteopathic Association* 94 (5): 396-398, 401-393 1994.
- Olkkola, K. T., Hamunen, K. and Maunuksela, E. L. **Clinical pharmacokinetics and pharmacodynamics of opioid analgesics in infants and children** *Clinical Pharmacokinetics* 28 (5): 385-404 1995.
- Bailey, L, Ward, M and Musa, Mn **Clinical pharmacokinetics of benzodiazepines** *Journal of Clinical Pharmacology* 34 (8): 804-811 1994.
- Davies, N. M. **Clinical pharmacokinetics of flurbiprofen and its enantiomers** *Clinical Pharmacokinetics* 28 (2): 100-114 1995.

- Perucca, E., Gatti, G. and Spina, E. **Clinical pharmacokinetics of fluvoxamine. [Review]** *Clinical Pharmacokinetics* 27 (3): 175-190 1994.
- Nemeroff, Cb **The clinical pharmacology and use of paroxetine, a new selective serotonin reuptake inhibitor** *Pharmacotherapy* 14 (2): 127-138 1994.
- Remy, C. **Clobazam in the treatment of epilepsy: a review of the literature** *Epilepsia* 35 (Suppl 5): S88-91 1994.
- Armbruster, D. A., Hubster, E. C., Kaufman, M. S. and Ramon, M. K. **Cloned enzyme donor immunoassay (CEDIA) for drugs-of-abuse screening** *Clinical Chemistry* 41 (1): 92-98 1995.
- Welber, M. R. and Nevins, S. **Clozapine overdose, a case report** *Journal of Emergency Medicine* 13 (2): 199-202 1995.
- Jatlow, P. **Cocaethylene. What is it? [editorial; comment]** *American Journal of Clinical Pathology* 104 (2): 120-121 1995.
- Rose, J. S. **Cocaethylene: a current understanding of the active metabolite of cocaine and ethanol** *American Journal of Emergency Medicine* 12 (4): 489-490 1994.
- Meehan, S. M. and Schechter, M. D. **Cocaethylene-induced lethality in mice is potentiated by alcohol** *Alcohol* 12 (4): 383-385 1995.
- Madden, J. A., Konkol, R. J., Keller, P. A. and Alvarez, T. A. **Cocaine and benzoylecgonine constrict cerebral arteries by different mechanisms** *Life Sciences* 56 (9): 679-686 1995.
- Bailey, D. N. **Cocaine and cocaethylene binding in human serum [see comments]** *American Journal of Clinical Pathology* 104 (2): 180-186 1995.
- Iyer, R. N., Nobilette, J. B., Jatlow, P. I. and Bradberry, C. W. **Cocaine and cocaethylene: Effects on extracellular dopamine in the primate** *Psychopharmacology* 120 (2): 150-155 1995.
- Dungy-Poythress, L. J. **Cocaine effects on pregnancy and infant outcome: do we really know how bad it is?** *Journal of the Association for Academic Minority Physicians* 6 (1): 46-50 1995.
- Simone, C., Derewlany, L. O. and Koren, G. **Cocaine transfer across a cocaine exposed placental cotyledon perfused in vitro** *Life Sciences* 57 (12): L137-PL140 1995.
- Trabulsky, M. E. **Cocaine washed out syndrome in a patient with acute myocardial infarction** *American Journal of Emergency Medicine* 13 (5): 538-539 1995.
- Billman, G. E. **Cocaine: A review of its toxic actions on cardiac function [Review]** *Critical Reviews in Toxicology* 25 (2): 113-132 1995.
- Buehler, B. A. **Cocaine: how dangerous is it during pregnancy?** *Nebraska Medical Journal* 80 (5): 116-117 1995.
- Hollander, J. E., Hoffman, R. S., Burstein, J. L., Shih, R. D. and Thode, H. C., Jr. **Cocaine-associated myocardial infarction. Mortality and complications. Cocaine-Associated Myocardial Infarction Study Group** *Archives of Internal Medicine* 155 (10): 1081-1086 1995.
- Hollander, J. E., Burstein, J. L., Hoffman, R. S., Shih, R. D., Wilson, L. D. and Cocaine Assoc Myocard Infarc Stdy, Grp **Cocaine-associated myocardial infarction: Clinical safety of thrombolytic therapy** *Chest* 107 (5): 1237-1241 1995.
- Hurt, H., Brodsky, N. L., Betancourt, L., Braitman, L. E., Malmud, E. and Giannetta, J. **Cocaine-exposed children: follow-up through 30 months** *Journal of Developmental & Behavioral Pediatrics* 16 (1): 29-35 1995.
- Folpini, A. and Furfori, P. **Colchicine toxicity--Clinical features and treatment. Massive overdose. Case report** *Journal of Toxicology Clinical Toxicology* 33 (1): 71-77 1995.
- Breen, Ph, Isserles, Sa, Westley, J, Roizen, Mf and Taitelman, Uz **Combined carbon monoxide and cyanide poisoning: a place for treatment** *Anesthesia & Analgesia* 80 (4): 671-677 1995.
- Fuller, Rw, Hemrick-Luecke, Sk, Littlefield, Es and Audia, Je **Comparison of desmethylsertraline with sertraline as a monoamine uptake inhibitor in vivo** *Progress in Neuro-Psychopharmacology & Biological Psychiatry* 19 (1): 135-149 1995.
- Rasanen, I., Ojanpera, I. and Vuori, E. **Comparison of four homologous retention index standard series for gas chromatography of basic drugs** *J. Chromatogr. A* 693 (1): 69-78 1995.
- Neumann, H. **Comparison of heroin by capillary gas chromatography in Germany** *Forensic Science International* 69 (1): 7-16 1994.
- Foltz, R.L., Botelho, C., Reuschel, S.A., Kuntz, D.J., Moody, D.E. and Bristow, G.M. (1995). **Comparison of immunoassays for semi-quantitative measurement of benzoylecgonine in urine.** *NIDA Research Monograph*. Rockville, MD, U.S. Government Printing Office.
- Rasanen, I., Ojanpera, I. and Vuori, E. **Comparison of internal and external retention index standards in drug screening by gas chromatography** *HRC-J. High Res. Chromatogr.* 18 (1): 66-67 1995.
- Michel, K., Waeber, V., Valach, L., Arestegui, G. and Spuhler, T. **A comparison of the drugs taken in fatal and nonfatal self-poisoning** *Acta Psychiatrica Scandinavica* 90 (3): 184-189 1994.
- Romberg, R.W. and Lee, L. **Comparison of the hydrolysis rates of morphine-3-glucuronide and morphine-6-glucuronide with acid and  $\beta$ -glucuronide** *J. Anal. Toxicol.* 19 : 157-161 1995.
- Bosse, G. M., Barefoot, J. A., Pfeifer, M. P. and Rodgers, G. C. **Comparison of three methods of gut decontamination in tricyclic antidepressant overdose** *Journal of Emergency Medicine* 13 (2): 203-209 1995.

- Lepore, M., Vorel, S. R., Lowinson, J. and Gardner, E. L. **Conditioned place preference induced by delta 9-tetrahydrocannabinol: comparison with cocaine, morphine, and food reward** *Life Sciences* 56 (23-24): 2073-2080 1995.
- Altman, D. G. **Confidence intervals in Clinical Chemistry [letter]** *Clinical Chemistry* 40 (1): 161-162 1994.
- Thompson, W. C. and Dasgupta, A. **Confirmation and quantitation of cocaine, benzoylecgonine, ecgonine methyl ester, and cocaethylene by gas chromatography/mass spectrometry: Use of microwave irradiation for rapid preparation of trimethylsilyl and T-butyldimethylsilyl derivatives** *American Journal of Clinical Pathology* 104 (2): 187-192 1995.
- Felby, S. and Nielsen, E. **Congener production in blood samples during preparation and storage** *Blutalkohol* 32 (1): 50-58 1995.
- Jonsson, J., Kronstrand, R. and Hatanpaa, M. (1995). **A convenient derivatization method for the determination of central stimulants in urine.** *American Acad. Forensic Sci., Seattle, WA.*
- Hodgson, B. T. **Convention for breath-alcohol units [letter; comment]** *Journal of Analytical Toxicology* 19 (2): 131 1995.
- Buckley, N. A., Whyte, I. M., Dawson, A. H., McManus, P. R. and Ferguson, N. W. **Correlations between prescriptions and drugs taken in self-poisoning. Implications for prescribers and drug regulation [see comments]** *Medical Journal of Australia* 162 (4): 194-197 1995.
- Huhn, K. M. and Rosenberg, F. M. **Critical clue to ethylene glycol poisoning** *Canadian Medical Association Journal* 152 (2): 193-195 1995.
- Barnabas, I.J., Dean, J.R. and Owen, S.P. **Critical review: supercritical fluid extraction of analytes from environment samples - a review** *Analyst* 119 (11): 2381-2394 1994.
- Stewart, M.J., Borland, W.W. and Shanley, S. **Cross-reactivity of morphine-6-glucuronide with EMIT d.a.u. screening test for opiates** *Clin. Chem.* 40 : 953-954 1994.
- Woods, J. H. and Winger, G. **Current benzodiazepine issues** *Psychopharmacology* 118 (2): 107-115; discussion 118, 120-101 1995.
- Cardeal, Z.L., Gallet, J.P., Astier, A. and Pradeau, D. **Cyanide assay: statistical comparison of a new gas chromatographic calibration method versus the classical spectrophotometric method** *J. Anal. Toxicol.* 19 : 31-34 1995.
- Barillo, D. J., Goode, R. and Esch, V. **Cyanide poisoning in victims of fire: analysis of 364 cases and review of the literature. [Review]** *Journal of Burn Care & Rehabilitation* 15 (1): 46-57 1994.
- Newton, E. H., Shih, R. D. and Hoffman, R. S. **Cyclic antidepressant overdose: a review of current management strategies** *American Journal of Emergency Medicine* 12 (3): 376-379 1994.
- Pimentel, L. and Trommer, L. **Cyclic antidepressant overdoses. A review. [Review]** *Emergency Medicine Clinics of North America* 12 (2): 533-547 1994.
- Nogue, S., Pujol, L., Sanz, P. and Delatorre, R. **Datura stramonium poisoning. identification of tropane alkaloids in urine by GC/MS** *J. Int. Med. Res.* 23 (2): 132-137 1995.
- Squire, C. J. **De inertia urbanorum. First law of thermodynamics applies [letter; comment]** *Bmj* 310 (6981): 741 1995.
- Uemura, K. and Komura, S. **Death caused by triazolam and ethanol intoxication** *American Journal of Forensic Medicine & Pathology* 16 (1): 66-68 1995.
- Prahlow, J. A. and Davis, G. J. **Death due to cocaine intoxication initially thought to be a homicide** *Southern Medical Journal* 87 (2): 255-258 1994.
- MacDonald, T. K., Zanna, M. P. and Fong, G. T. **Decision making in altered states: effects of alcohol on attitudes toward drinking and driving** *Journal of Personality & Social Psychology* 68 (6): 973-985 1995.
- Wu, A. H., Kelly, T., McKay, C., Ostheimer, D., Forte, E. and Hill, D. **Definitive identification of an exceptionally high methanol concentration in an intoxication of a surviving infant: methanol metabolism by first-order elimination kinetics** *Journal of Forensic Sciences* 40 (2): 315-320 1995.
- Baker, G. B., Coutts, R. T. and Holt, A. **Derivatization with acetic anhydride: applications to the analysis of biogenic amines and psychiatric drugs by gas chromatography and mass spectrometry. [Review]** *Journal of Pharmacological & Toxicological Methods* 31 (3): 141-148 1994.
- Stockl, D., Baadenhuijsen, H., Fraser, C.G., Libeer, J.C., Petersen, P.H. and Ricos, C. **Desirable routine analytical goals for quantities assayed in serum** *Eur. J. Clin. Chem. Clin. Biochem.* 33 (3): 157-169 1995.
- Moeller, M. R. and Mueller, C. **The detection of 6-monoacetylmorphine in urine, serum and hair by GC/MS and RIA** *Forensic Science International* 70 (1-3): 125-133 1995.
- Rohrich, J., Schmidt, K. and Bratzke, H. **[Detection of amphetamine derivatives in chemical toxicological studies 1987-1993 in the greater Frankfurt area]** *Blutalkohol* 32 (1): 42-49 1995.
- Couper, F. J., McIntyre, I. M. and Drummer, O. H. **Detection of antidepressant and antipsychotic drugs in postmortem human scalp hair** *Journal of Forensic Sciences* 40 (1): 87-90 1995.
- Mullen, Kd **Detection of benzodiazepine in hepatic encephalopathy [letter; comment]** *Hepatology* 21 (2): 604-605 1995.
- Peterson, K. L., Logan, B. K. and Christian, G. D. **Detection of cocaine and its polar transformation products and metabolites in human urine** *Forensic Science International* 73 (3): 183-196 1995.
- Joo, S. **[Detection of drugs and pharmaceuticals in suspected drivers]** *Blutalkohol* 32 (2): 84-91 1995.

- Moriya, F., Chan, K. M., Noguchi, T. T. and Parnassus, W. N. **Detection of drugs-of-abuse in meconium of a stillborn baby and in stool of a deceased 41-day-old infant** *Journal of Forensic Sciences* 40 (3): 505-508 1995.
- Nakahara, J., Kikura, R., Takahashi, K. and Foltz, R.L. (1994). **Detection of LSD and nor-LSD in rat hair and human hair.** TIAFT-SOFT 1994, Tampa, FL.
- Rop, P.P., Grimaldi, F., Burle, J., De Saint Leger, M.N. and Viala, A. **Determination of 6-monoacetylmorphine and morphine in plasma, whole blood and urine using HPLC with electrochemical detection** *J. Chromatogr., B: Biomed. Appl.* 661 : 245-253 1994.
- Fadiran, E.O., Leslie, J., Fossler, M. and Young, D. **Determination of clozapine and its major metabolites in human serum and rat plasma by liquid chromatography using solid-phase extraction and ultraviolet detection** *J. Pharmaceut. Biomed. Anal.* 13 (2): 185-190 1995.
- Schulz, E., Fleischhaker, C. and Remschmidt, H. **Determination of clozapine and its major metabolites in serum samples of adolescent schizophrenic patients by HPLC** *Pharmacopsychiatry* 28 (1): 20-25 1995.
- de la Torre, R., Ortuno, J., Gonzalez, M. L., Farre, M., Cami, J. and Segura, J. **Determination of cocaine and its metabolites in human urine by gas chromatography/mass spectrometry after simultaneous use of cocaine and ethanol** *Journal of Pharmaceutical & Biomedical Analysis* 13 (3): 305-312 1995.
- Trener, V. C., Robertson, J. and Wells, R. J. **The determination of cocaine and related substances by micellar electrokinetic capillary chromatography** *Electrophoresis* 15 (1): 103-108 1994.
- Selavka, C.M. and Rieders, F. **The determination of cocaine in hair: A review** *Forensic Sci. Int.* 70 : 155-164 1995.
- Ascalone, V., Locatelli, M. and Malavasi, B. **Determination of diltiazem and its main metabolites in human plasma by automated solid-phase extraction and high-performance liquid chromatography: a new method overcoming instability of the compounds and interference problems** *Journal of Chromatography B: Biomedical Applications* 657 (1): 133-140 1994.
- Thomas, B.F., Jeffcoat, A.R., Myers, M.W., Mathews, J.M. and Cook, C.E. **Determination of l-alpha-acetylmethadol, l-alpha-noracetylmethadol and l-alpha-dinoracetylmethadol in plasma by gas chromatography-mass spectrometry** *J. Chromatogr. B-Bio. Med. Appl.* 655 : 201-211 1994.
- Yoo, Y., Chung, H., Kim, I., Jin, W. and Kim, M. **Determination of nalbuphine in drug abusers' urine** *J. Anal. Toxicol.* 19 : 120-123 1995.
- Miller, S. R., Salo, A. L., Boggan, W. O. and Patrick, K. S. **Determination of plasma cocaine and ethylcocaine (cocaethylene) in mice using gas chromatography-mass spectrometry and deuterated internal standards** *Journal of Chromatography B: Biomedical Applications* 656 (2): 335-341 1994.
- Saito, K., Takayasu, T., Nishigami, J., Kondo, T., Ohtsuji, M., Lin, Z. **Determination of the volatile anesthetics halothane, enflurane, isoflurane, and sevoflurane in biological specimens by pulse-heating GC-MS** *Journal of Analytical Toxicology* 19 (2): 115-119 1995.
- Yu, D., Gordon, J. D., Zheng, J., Panesar, S. K., Riggs, K. W., Rurak, D. W. **Determination of valproic acid and its metabolites using gas chromatography with mass-selective detection: application to serum and urine samples from sheep** *Journal of Chromatography B: Biomedical Applications* 666 (2): 269-281 1995.
- Constanzer, M., Chavez, C. and Matuszewski, B. **Development and comparison of HPLC methods with tandem mass spectrometric and ultraviolet absorbance detection for the determination of cyclobenzaprine in human plasma and urine** *J. Chromatogr. B-Bio. Med. Appl.* 666 (1): 117-126 1995.
- Feng, N., Vollenweider, F.X., Minder, E.I., Rentsch, K., Grampp, T. and Vonderschmitt, D.J. **Development of a GC/MS method for determination of ketamine in plasma and its application to human samples** *Ther. Drug Monit.* 17 (1): 95-100 1995.
- Obafunwa, J. O., Busuttill, A. and al-Oqleh, A. M. **Dextropropoxyphene-related deaths--a problem that persists?** *International Journal of Legal Medicine* 106 (6): 315-318 1994.
- Rotenberg, M., Shefi, M., Dany, S., Dore, I., Tirosh, M. and Almog, S. **Differentiation between organophosphate and carbamate poisoning** *Clinica Chimica Acta* 234 (1-2): 11-21 1995.
- Fushimi, R., Yamanishi, H., Inoue, M., Iyama, S. and Amino, N. **Digoxin immunoassay that avoids cross-reactivity from Chinese medicines** *Clinical Chemistry* 41 (4): 621 1995.
- Myers, L. E., McQuay, L. J. and Hollinger, F. B. **Dilution assay statistics** *Journal of Clinical Microbiology* 32 (3): 732-739 1994.
- Radulovic, L. L., Turck, D., von Hodenberg, A., Vollmer, K. O., McNally, W. P., DeHart, P. D. **Disposition of gabapentin (neurontin) in mice, rats, dogs, and monkeys** *Drug Metabolism & Disposition* 23 (4): 441-448 1995.
- Helander, A., Beck, O. and Jones, A.W. **Distinguishing ingested ethanol from microbial formation by analysis of urinary 5-hydroxytryptophol and 5-hydroxyindoleacetic acid** *J. Forensic Sci.* 40 : 95-98 1995.
- Pipkin, G. A., Mills, J. G. and Wood, J. R. **Does ranitidine affect blood alcohol concentrations?. [Review]** *Pharmacotherapy* 14 (3): 273-281 1994.
- Albery, I. P. and Guppy, A. **Drivers' differential perceptions of legal and safe driving consumption** *Addiction* 90 (2): 245-254 1995.
- Skurtveit, S., Christophersen, A. S. and Morland, J. **Driving under the influence of benzodiazepines. Sale differences in the counties are reflected among drivers suspected of driving under the influence of a drug[norwegian]** *Tidsskrift for Den Norske Laegeforening* 115 (2): 200-203 1995.



- Myers, P. J. **Drug abuse** *Rdh* 14 (3): 26-28, 46 1994.
- Sadowski, D. C. **Drug interactions with antacids. Mechanisms and clinical significance** *Drug Safety* 11 (6): 395-407 1994.
- DuPont, R.L. and Baumgartner, W.A. **Drug testing by urine and hair analysis: complementary features and scientific issues** *Forensic Sci. Int.* 70 : 63-76 1995.
- Chan, S.C. and Petruzelka, J. (1995). Drug testing of athletes. *Anal. Addict. Misused Drugs*. J. A. Adamovics. New York, Dekker: 293-326.
- Eidelman, A. I. and Schimmel, M. S. **Drugs and breast milk [letter; comment]** *Pediatrics* 95 (6): 956-957; discussion 957-958 1995.
- Alvarez, F. J. and del Rio, M. C. **Drugs and driving** *Lancet* 344 (8918): 282 1994.
- Cook, A. **Ecstasy (MDMA): alerting users to the dangers** *Nursing Times* 91 (16): 32-33 1995.
- Simonsson, P., Liden, A. and Lindberg, S. **Effect of beta-glucuronidase on urinary benzodiazepine concentrations determined by fluorescence polarization immunoassay** *Clinical Chemistry* 41 (6 Pt 1): 920-923 1995.
- Min, D. I., Noormohamed, S. E. and Flanigan, M. J. **Effect of erythromycin on ethanol's pharmacokinetics and perception of intoxication** *Pharmacotherapy* 15 (2): 164-169 1995.
- Simonsson, P., Liden, A. and S., Lindberg. **Effect of  $\beta$ -glucuronidase on urinary benzodiazepine concentrations determined by FPIA** *Clin. Chem.* 41 : 920-923 1995.
- Finnigan, F., Hammersley, R. and Millar, K. **The effects of expectancy and alcohol on cognitive-motor performance** *Addiction* 90 (5): 661-672 1995.
- Appleby, L., Luchins, D. J. and Dyson, V. **Effects of mandatory drug screens on substance use diagnoses in a mental hospital population** *Journal of Nervous & Mental Disease* 183 (3): 183-184 1995.
- Wood, J. M. and Troutbeck, R. **Elderly drivers and simulated visual impairment** *Optometry & Vision Science* 72 (2): 115-124 1995.
- Rehm, C. G. and Ross, S. E. **Elderly drivers involved in road crashes: a profile** *American Surgeon* 61 (5): 435-437 1995.
- Gomez, H. F., Moore, L., McKinney, P., Phillips, S., Guven, H. and Brent, J. **Elevation of breath ethanol measurements by metered-dose inhalers** *Annals of Emergency Medicine* 25 (5): 608-611 1995.
- Neuvonen, P. J. and Kivisto, K. T. **Enhancement of drug absorption by antacids. An unrecognised drug interaction** *Clinical Pharmacokinetics* 27 (2): 120-128 1994.
- Omenn, G. S. **Enhancing the role of the scientific expert witness** *Environmental Health Perspectives* 102 (8): 674-675 1994.
- Ploekinger, B, Ulm, Mr, Chalubinski, K and Gruber, W **Epidural anaesthesia in labour: influence on surgical delivery rates, intrapartum fever and blood loss** *Gynecologic & Obstetric Investigation* 39 (1): 24-27 1995.
- Andreasson, R. and Jones, A. W. **Erik M.P. Widmark (1889-1945): Swedish pioneer in forensic alcohol toxicology** *Forensic Science International* 72 (1): 1-14 1995.
- Wiest, D. **Esmolol. A review of its therapeutic efficacy and pharmacokinetic characteristics** *Clinical Pharmacokinetics* 28 (3): 190-202 1995.
- Smith, T. and Levitt, M. D. **Ethanol concentration and gastric alcohol dehydrogenase activity [letter]** *Gastroenterology* 109 (2): 663-664 1995.
- Traves, C. and Lopez-Tejero, D. **Ethanol elimination in alcohol-treated pregnant rats** *Alcohol & Alcoholism* 29 (4): 385-395 1994.
- Iwahashi, K., Miyatake, R., Nakamura, K., Suwaki, H., Kinoshita, H., Ameno, K. **The ethanol elimination pharmacokinetics--the effects of genotypes of ALDH2 and CYP2E1 on the ethanol metabolism [japanese]** *Arukuru Kenkyu-To Yakubutsu Ison Japanese Journal of Alcohol Studies & Drug Dependence* 30 (2): 63-68 1995.
- Brennan, D. F., Betzelos, S., Reed, R. and Falk, J. L. **Ethanol elimination rates in an ED population** *American Journal of Emergency Medicine* 13 (3): 276-280 1995.
- Becker, J., Desel, H., Schuster, H. P. and Kahl, G. F. **[Ethanol ingestion following Antabus overdose: acetaldehyde-induced cardiological emergency]** *Therapeutische Umschau* 52 (3): 183-187 1995.
- Pozzato, G., Moretti, M., Franzin, F., Croce, L. S., Lacchin, T., Benedetti, G. **Ethanol metabolism and aging: the role of "first pass metabolism" and gastric alcohol dehydrogenase activity** *Journal of Gerontology. Serials A. Biological Sciences & Medical Science* 50 (3): B135-141 1995.
- Nickel, B., Szelenyi, I. and Schulze, G. **Evaluation of physical dependence liability of l-deprenyl (selegiline) in animals** *Clinical Pharmacology & Therapeutics* 56 (6 Pt 2): 757-767 1994.
- Friel, P. N., Logan, B. K. and Baer, J. **An evaluation of the reliability of Widmark calculations based on breath alcohol measurements** *Journal of Forensic Sciences* 40 (1): 91-94 1995.
- Couper, F.J., McIntyre, I.M. and Drummer, O.H. **Extraction of psychotropic drugs from human scalp hair** *J. Forensic Sci.* 40 : 83-86 1995.
- Pulini, M. **False-positive benzodiazepine urine test due to oxaprozin [letter]** *Jama* 273 (24): 1905-1906 1995.
- Camara, P.D., Audette, L., Velletri, K., Breitenbecher, P., Rosner, M. and Griffiths, W.C. **False-positive immunoassay results for urine benzodiazepine in patients receiving oxaprozin** *Clin. Chem.* 41 : 115-116 1995.

**Society of Forensic Toxicologists  
Denver, Colorado  
October 14 - 18, 1996**

**D**

**Denver International Airport is a 30 minute/\$15 shuttle ride from the Denver Marriott Tech Center hotel. You can also fly into the Colorado Springs airport and catch a shuttle to Denver ( they have had some great airfare wars lately!)**

**E**

**EATING!! Your registration covers attendance to all scientific sessions, lunch on Thursday and Friday, Tuesday evening Welcoming Reception, Hors d'oeuvres and later dessert on Wednesday, Evening activity on Thursday, and breakfast on Friday.**

**N**

**Never stop learning! SOFT 1996 has workshops designed for the beginner and the veteran. Seven to choose from. See the insert sheet that gives a description of each workshop and the moderator if you would like additional information.**

**V**

**Very soon it will again be time to pull out those western clothes and bring them to Colorado! We're heading out to enjoy western hospitality at the Lazy H on Thursday evening. Good food, great fun, line dancing, and gun fights are in order for this evening.**

**E**

**Eat, Drink and Gamble all for \$10.00 - The optional Friday evening activity is a trip to Central City, Colorado for dinner, sightseeing, and gambling. The \$10.00 fee for the evening includes bus transportation, an all you can eat buffet dinner, \$5 returned to you for gambling, 2 free drinks, and other discount coupons.**

**R**

**Register early! Those who do will receive a free T-shirt and avoid late fees. Make your hotel registration directly with the Marriott Denver Tech Center. (303) 779-1100. Mention S.O.F.T. to guarantee the government rate of \$92 including tax.**

## PRELIMINARY WORKSHOP PROGRAM

### **WORKSHOP #1 USE OF LIMS IN A FORENSIC TOXICOLOGY DRUG TESTING LABORATORY**

**Aaron J. Jacobs, Ph.D., M.B.A.**

**Monday 1:00 p.m. - 5:00 p.m.**

This workshop covers the design, implementation, use, benefits, and lessons learned from the integration of a LIMS designed specifically for a drug testing laboratory. Presentations will be made on the current DOD system, training tools, experiences of newly implemented sites, integration of testing instruments, and future directions. The target audience would be individuals responsible for or participating in designing, procuring, developing, implementing, or thinking about a LIMS in a forensic drug testing environment.

### **WORKSHOP #2 TOXICOLOGY OF INHALANTS**

**Laurel Farrell, B.A., Moderator**

**Monday 1:00 p.m. - 5:00 p.m.**

This workshop will provide an overview of the toxicology of inhalants. Topics to be presented include the epidemiology of inhalant abuse, the acute effects and neurotoxicology of inhalants, analytical issues and case reports as well as new technologies. This workshop is being sponsored by Medtox Laboratories.

### **WORKSHOP #3 ISOENZYME-SPECIFIC METABOLISM OF DRUGS OF FORENSIC INTEREST**

**David E. Moody, Ph.D., Moderator**

**Tuesday 8:30 a.m. - 12 noon**

This workshop has been designed to provide an introduction to specific isoenzymes involved in human metabolism of drugs of interest to forensic toxicologists. A discussion of the enzyme classes including their function, known isoenzymes, and subjectivity to genetic defects or drug-interactions will be followed by examples of specific drugs, including pharmacokinetics, involvement of isoenzyme specific pathways and case reports where isoenzyme-specific genetic defects or drug interactions played a role.

### **WORKSHOP #4 CAPILLARY CHROMATOGRAPHY TRAINING SEMINAR**

**Rick Morehead, Moderator**

**Tuesday 8:30 a.m. - 5:00 p.m.**

This one-day workshop will be an intensive course on the "ins and outs" of capillary gas chromatography. The course will include discussions on inlet systems and injections techniques, detection systems, column selection and column installation, operation and maintenance. This workshop is being sponsored by Restek Corporation.

### **WORKSHOP #5 TOXICOLOGY AND THE INTERNET**

**Donald L. Frederick, Ph.D., Moderator**

**Tuesday 1:00 p.m. - 5:00 p.m.**

This workshop will discuss the history of the Internet while defining the terminology associated with on-line communications. The speakers will explain the various types of services available on the Internet and examine the world wide web and the various methods of access to the information in detail. Toxicology resources found on these on-line services will be presented including the experiences of a publication firm and a commercial laboratory that have on-line services. The workshop will be accompanied by a live Internet session to illustrate the topics presented.

### **WORKSHOP #6 FUNDAMENTALS OF MEDICAL EXAMINER TOXICOLOGY**

**William Anderson, Ph.D., Moderator**

**Wednesday 8:30 a.m. - 12 noon**

This workshop is designed to present analytical techniques and interpretive concepts that will assist forensic toxicologists in the day to day practice of their profession. Although the primary focus of the workshop is post mortem forensic toxicology, the presented material should be of interest to all analytical toxicologists. Topics to be presented include analysis and pharmacokinetics of morphine and cocaine with a special emphasis on their metabolites, the routine use of chemical ionization mass spectrometry in postmortem toxicology, identification, quantitation and interpretation of SSRI antidepressants, and the current state of the art in LC including microbore columns, diode array detectors, and LC/MS.

### **WORKSHOP #7 CURRENT ISSUES IN FORENSIC URINE DRUG TESTING (FUDT)**

**Michael Baylor, Ph.D., Moderator**

**Wednesday 8:30 a.m. - 12 noon**

The objective of this workshop will be to focus on current issues of general interest concerning forensic urine drug testing. The morning's discussion will include presentations on the NLCP Blind Performance Testing Program in FUDT Laboratories; Amphetamine Precursors and OTC Medications; and Minimum Doses, Detection Times, and Creatinine Normalization in Drugs of Abuse Testing. New Perspectives as well as comments to controversial topics will provide the participants with useful information to supplement their knowledge of forensic toxicology.

**PRELIMINARY MEETING SCHEDULE**  
(as of May 1, 1996)

**SUNDAY OCTOBER 13, 1996**

8:00 a.m. - 4:30 p.m.

FUDT Inspector Training

**MONDAY OCTOBER 14, 1996**

7:00 a.m. - 12 noon

8:00 a.m. - 5:00 p.m.

1:00 p.m. - 5:00 p.m.

1:00 p.m. - 5:00 p.m.

SOFT Board of Directors Meeting

Registration

Workshop #1 Use of LIMS in a Forensic Toxicology Drug Testing Laboratory

Workshop #2 Toxicology of Inhalants

**TUESDAY OCTOBER 15, 1996**

8:00 a.m. - 5:00 p.m.

8:30 a.m. - 12 noon

8:30 a.m. - 5:00 p.m.

1:00 p.m. - 5:00 p.m.

6:00 p.m. - 10:00 p.m.

Registration

Workshop #3 Isoenzyme-specific Metabolism of Drugs of Forensic Interest

Workshop #4 Capillary Chromatography Training Seminar

Workshop #5 Toxicology and the Internet

Welcoming Reception

**WEDNESDAY OCTOBER 16, 1996**

8:00 a.m. - 5:00 p.m.

8:30 a.m. - 12 noon

8:30 a.m. - 12 noon

9:00 a.m. - 1:00 p.m.

1:30 p.m. - 4:30 p.m.

1:30 p.m. - 6:00 p.m.

4:30 p.m. - 6:00 p.m.

8:00 p.m. - 10:00 p.m.

Registration

Workshop #6 Fundamentals of Medical Examiner Toxicology

Workshop #7 New Concepts in Forensic Urine Drug Testing

Exhibit set-up

Scientific Session

Exhibits Open

Happy hour/appetizers - Exhibit Hall

TOX Trivia/Elmer Gordon

Dessert bar and drinks

**THURSDAY OCTOBER 17, 1996**

7:00 a.m. - 8:30 a.m.

8:00 a.m. - 5:00 p.m.

8:00 a.m. - 4:30 p.m.

8:30 a.m. - 12 noon

12 noon - 1:30 p.m.

1:30 p.m. - 3:00 p.m.

3:00 p.m. - 4:30 p.m.

5:00 p.m. - 10:00 p.m.

ABFT Breakfast

Registration

Exhibits Open

Scientific Session

Lunch Provided

Business Meeting

Scientific Session - Posters

Evening Activity - Lazy H

**FRIDAY OCTOBER 18, 1996**

8:00 a.m. - 5:00 p.m.

8:30 a.m. - 1:30 p.m.

8:30 a.m. - 10:00 a.m.

10:00 a.m. - 12 noon

12 noon - 1:30 p.m.

1:30 p.m. - 5:00 p.m.

1:30 p.m. - 4:30 p.m.

5:30 p.m. - 10:30 p.m.

Registration

Exhibits Open

Scientific Session - Posters

Continental breakfast

Scientific Session

Lunch Provided

Scientific Session

Exhibit breakdown

Optional Evening Activity - Central City

**SATURDAY OCTOBER 19, 1996**

8:00 a.m. - 12 noon

NLCP Inspectors Workshop

## REGISTRATION FORM

Fed ID # 51-0233801

Name \_\_\_\_\_  
 Last \_\_\_\_\_ First \_\_\_\_\_ Degree \_\_\_\_\_  
 Agency \_\_\_\_\_  
 Address \_\_\_\_\_  
 Telephone \_\_\_\_\_ FAX \_\_\_\_\_  
 Guest(s) \_\_\_\_\_  
 Member \_\_\_\_\_ Non-Member \_\_\_\_\_

### MEETING REGISTRATION:

	<u>MEMBER</u>	<u>NON-MEMBER</u>	<u>TOTAL ENCLOSED</u>
Includes admission to all scientific sessions, Welcome Reception, Wednesday Happy Hour & Dessert, Thursday Evening, and two Luncheons (Th. & Fri.)	\$135.00	\$165.00	_____
WORKSHOP #1 Use of LIMS in a Forensic Labortory (10/14, 1:00 p.m. - 5:00 p.m.)	\$ 35.00	\$ 45.00	_____
WORKSHOP #2 Toxicology of Inhalants (10/14, 1:00 p.m. - 5:00 p.m.)	\$ 35.00	\$ 45.00	_____
WORKSHOP #3 Isoenzyme-specific Metabolism (10/15, 8:30 a.m. -12 noon)	\$ 35.00	\$ 45.00	_____
WORKSHOP #4 Capillary Chromatography (10/15, 8:30 a.m. - 5:00 p.m.)	\$ 70.00	\$ 90.00	_____
WORKSHOP #5 Toxicology and the Internet (10/15, 1:00 p.m. - 5:00 p.m.)	\$ 35.00	\$ 45.00	_____
WORKSHOP #6 Fundamentals of M.E. Toxicology (10/16, 8:30 a.m. -12 noon)	\$ 35.00	\$ 45.00	_____
WORKSHOP #7 New Concepts in FUDT (10/16, 8:30 a.m. -12 noon)	\$ 35.00	\$ 45.00	_____
ABFT Breakfast ( Diplomates and Forensic Toxicology Specialists Only) 10/ 17 7:00 - 8:30 a.m.	\$ 20.00		_____
Extra Tickets: Welcoming Reception # _____	\$31.00		_____
Happy Hour/Drinks # _____	\$22.00		_____
Dessert /Drinks # _____	\$11.00		_____
Lazy H # _____	\$35.00		_____
Optional Friday Evening Activity # _____	\$10.00		_____
Meeting T-shirt: (1 free if register by July 1st) Large _____ X-Large _____ XX - Large _____			_____
\$10.00 for extra shirts # of extra shirts _____			_____
LATE FEE: for all registrations received after September 10, 1996		\$ 35.00	_____
No mail registrations accepted after 10/1/96			_____
On-site registration fee	\$215.00	\$215.00	_____
		<b>TOTAL ENCLOSED</b>	_____

Payment by check or money order, no P.O.s (US funds only) Make payable to S.O.F.T. 1996  
 Refund Policy: Refunds may be honored upon written request prior to 10/1/96, minus a \$10 processing fee.  
**MAIL TO:** Laurel Farrell/ Bob Zetti 4210 E. 11th Avenue, Denver, CO 80220  
 Phone: 303-691-4727/303-691-4738 FAX: 303-393-7881

# SOCIETY OF FORENSIC TOXICOLOGISTS

DENVER '96 - October 14-18, 1996

## Instructions for Abstract Preparation

### General Instructions:

The program committee solicits abstracts on all forensic toxicology topics, but is especially interested in papers on the analysis of drugs and metabolites in biofluids and tissues, drug interactions, drug-metabolism, pharmacology, pharmacokinetics and case reports involving drug toxicity/overdose. An original and three copies of the abstract must be submitted on the official abstract form. All abstracts must also be submitted on computer disk. Any IBM or Macintosh word processing format, or ASCII format can be accommodated. Please label the disk with the presenting author's name, IBM or Macintosh, and the word processing program utilized. The deadline for submission of abstracts is June 1, 1996. Late abstracts will not be accepted. The presenting author will be required to register for the meeting.

Scientific papers selected for presentation will be divided into two groups: Platform Presentations (15 min including questions, limit of one per presenter) and Poster Presentations (4 ft high by 8 ft wide). Tack boards and thumb tacks will be provided. Only abstracts written in English will be considered.

### Content of Abstract:

1. Author(s) name(s) and address(es)
2. Short specific title
3. Statement of paper's objectives
4. Statement of experimental design
5. Statement of methods, if pertinent
6. Summary of results.
7. Statement of conclusion

### Sample Abstract:

### Format of Abstract:

Your abstract must be typed and submitted in a neat and legible format following the instructions and style provided in the sample below. Type the entire abstract within the boxed area, single spaced with 12 point font. Type the title in upper and lower case, followed by the author(s) name(s) and address(es). Use an asterisk to identify the presenting author. Separate the author(s) name(s) from the body of the abstract by a single blank line. Indent each paragraph three spaces. Identify three key words at the bottom of the abstract.

### Notification of Acceptance:

The presenting author will be notified upon receipt of the abstract. Notification of acceptance of the abstract and selection of the type of presentation will be mailed or sent by facsimile to the presenting author no later than August 15, 1996.

### Specific Instructions:

Complete the attached form and follow the sample provided below. Proofread all information provided. Return original, three additional copies, and an IBM or Macintosh disk with the abstract to:

Mail Address: Dr. Amanda Jenkins  
Chemistry and Drug Metabolism Section  
Addiction Research Center, NIDA, NIH  
P.O. Box 5180  
Baltimore, MD 21224

Street Address: Dr. Amanda Jenkins  
Chemistry and Drug Metabolism Section  
Addiction Research Center, NIDA, NIH  
4940 Eastern Avenue, Building C  
Baltimore, MD 21224

Submissions by Federal Express, Airborne, DHL, other commercial carriers or Priority Mail should utilize the street address.

**Title:** Type upper and lower case. Use significant words descriptive of subject content.

**Author(s) name(s) and address(es):** Type upper and lower case; spell out first and last name and use middle initial, e.g. Amanda J. Jenkins. Specify presenting author with an asterisk. Specifying degrees is unnecessary.

Indent each paragraph three spaces. Type the entire abstract within the boxed area, single spaced in 12 point font. Do not use all capital letters. Capitalize and punctuate exactly as you wish the abstract to appear.

**Key Words:** Type three key words or short phrases in upper and lower case.



# SOCIETY OF FORENSIC TOXICOLOGISTS

DENVER '96 - October 14-18, 1996

## Abstract of Paper

Presenting Author Name and Mailing Address:

---

---

---

---

Telephone: \_\_\_\_\_

FAX: \_\_\_\_\_

SOFT Member

SOFT Non-Member

Presentation Preference:

Oral

Poster

Co-author(s) and Business Affiliation(s):

---

---

---

---

---

---

Has this paper been presented before?

yes  no; if yes, where and when?

Available Audio-Visual Equipment: 35 mm slide projector & pointer; overhead projector will not be provided

Mail Address: Dr. Amanda Jenkins  
Chemistry and Drug Metabolism Section  
Addiction Research Center, NIDA, NIH  
P.O. Box 5180  
Baltimore, MD 21224

Street Address: Dr. Amanda Jenkins  
Chemistry and Drug Metabolism Section  
Addiction Research Center, NIDA, NIH  
4940 Eastern Avenue, Building C  
Baltimore, MD 21224

The abstract review committee reserves the right of final placement of the paper. The presenting author will be required to register for the meeting.

Signature of presenting author