



SAT Newsletter

News of the Southwestern Association of Toxicologists

Volume 23, Number 1

Spring 2001

Dallas, Texas



You are cordially invited to attend and participate in the 2001 Spring Meeting of the Southwestern Association of Toxicologists. The meeting will be held April 5-7, at the Sheraton Suites close to downtown Dallas.

The theme of our Spring meeting will focus on Pharmacology and Toxicology. While the theme may sound generic and obvious since this is the Southwestern Association of Toxicologists there are several members that expressed interest and would benefit from a workshop focusing on the basic concepts of Pharmacology. This workshop will be given by the University of Texas Southwestern Medical School Pharmacology Department.

If there is enough interest we will try and attend a baseball game at the Ballpark in Arlington. It is a great baseball experience. Thursday April 5, 2001 the Rangers will play the Anaheim Angels. On Friday April 6, 2001 the Rangers will play the Seattle Mariners.



Another interesting place to visit is the Sixth Floor Museum. This details everything you ever wanted to know about President John F. Kennedy. It is in the old Book Depository Building in downtown Dallas (West End Marketplace). There are group rates available if you are interested. Please indicate your interest on the registration form.

Join old friends and meet new ones at the President's Reception Thursday evening from 6:30 p.m. to 8:30 p.m.

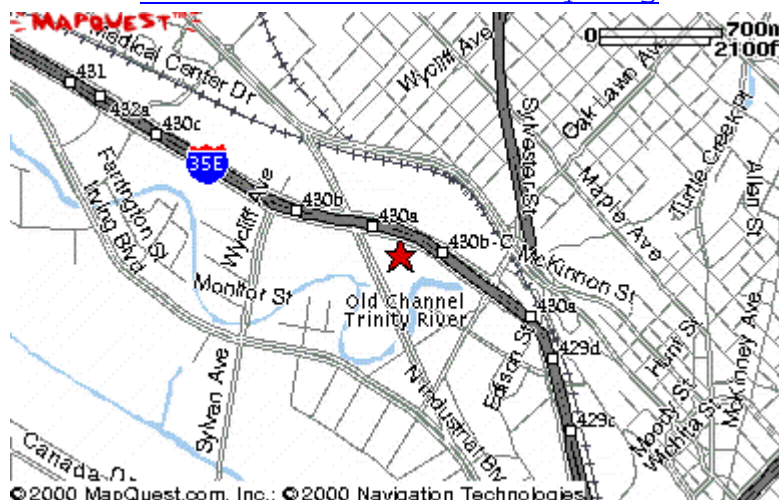
Our Spring Meeting of the Southwest Association of Toxicologists will be held near downtown Dallas at the Sheraton Suites Hotel, 2101 Stemmons Freeway, Dallas, Texas 75207 (1-800-325-3535).

Rooms are available to meeting attendees at a special rate of \$65.00 (15% tax not included) per night for a suite. Each Suite contains a king bed and a double pull out sofa. Reservations must be made no later than March 6, 2001. When making reservations, you must identify yourself as an attendee of the meeting of the Southwestern Association of Toxicologists.

Travel Information

Dallas is located at the junction of I-35 and I-30 if you're traveling by car. DFW and Love Field airports are major airline hubs.

Questions?: Please contact Chris Heartsill or Sandra Grey at 214-920-5810 or 5809, or email at cheartsill@dallascounty.org.



SOUTHWESTERN ASSOCIATION OF TOXICOLOGISTS

2001 Spring Meeting
April 5-7, 2001

Sheraton Suites Marketplace Hotel
Dallas, Texas

TENTATIVE MEETING SCHEDULE

Thursday, April 5, 2001

3:00 p.m. - 6:00 p.m.	Registration
6:30 p.m. - 8:30 p.m.	President's Reception
8:30 p.m.	Dinner & Entertainment on your own

Friday, April 6, 2001

8:00 a.m.	General Business Meeting
9:00 a.m. - 12:00 p.m.	Pharmacology Workshop
12:00 p.m. - 1:00 p.m.	Lunch
1:00 p.m. - 2:00 p.m.	Open Discussion
2:00 p.m. - 5:00 p.m.	Scientific Sessions
5:00 p.m.	Entertainment & Dinner on your own

Saturday, April 7, 2001

8:30 a.m. - 12:00 p.m.	Scientific Sessions
12:00 p.m.	Conclusion

SOUTHWESTERN ASSOCIATION OF TOXICOLOGISTS

**2001 Spring Meeting
April 5-7, 2001**

**Sheraton Suites Marketplace Hotel
Dallas, Texas**

REGISTRATION FORM

Name (As it will appear on badge) _____

Phone: _____ FAX: _____ Email: _____

Title: _____

Agency: _____

Address: _____

SAT Member: _____ Non-Member: _____

MEETING REGISTRATION:

Please register by March 6, 2001 to avoid late fees! Registration includes admission to all scientific sessions, workshops, exhibits, and the President's Reception.

	Member	Non-member	Student	Total
Prior to March 6th:	\$40.00	\$45.00	\$15.00	_____
After March 6th:	\$45.00	\$55.00	\$ 25.00	_____
Extra Meal Tickets	\$15.00			

TOTAL ENCLOSED: _____

Note: Registration fee will be waived for paper presenters.

I plan to attend the Tour of the Sixth Floor Museum Yes [] No []

I plan to attend the Texas Ranger Baseball game Yes [] No []

Please make payment by check or money order, payable to SAT, and mail to:

**Chris Heartsill
Southwestern Institute of Forensic Sciences
5230 Medical Center Drive
Dallas, TX 75235**

HOTEL INFORMATION:

**Sheraton Suites Marketplace Hotel
2101 Stemmons Freeway
Dallas, Texas 75207
Reservations 1-800-325-3535**

SOUTHWESTERN ASSOCIATION OF TOXICOLOGISTS

**2001 Spring Meeting
April 5-7 , 2001**

**Sheraton Suites Marketplace Hotel
Dallas, Texas**

CALL FOR PAPERS

Please complete the following form and submit along with a copy of your abstract (200 words or less). Please submit form and abstracts prior to March 15, 2001.

Please Print or Type:

Author(s): _____

Title: _____

Agency: _____

Address: _____

Telephone: _____ Fax: _____ E-mail: _____

AV Equipment Required: _____ 35 mm Slide Projector
 _____ Overhead Projector
 _____ LCD Projector (Power Point PC Presentation)
 _____ Other (please specify)

Time slots will be 20-30 minutes unless otherwise requested.

Please return completed form and abstracts to:

Chris Heartsill
Southwestern Institute of Forensic Sciences
5230 Medical Center Drive
Dallas, TX 75235

214-920-5810 or 5809
214-920-5812 (FAX)
email = cheartsill@dallascounty.org

Southwestern Association of Toxicologists

Meeting Grants Application

The SAT Meeting Grant (\$300.00 plus meeting registration) may be awarded to two individuals per meeting (at the approval of the board). It may be applied toward the current meeting or one of the next two meetings.

Guidelines for Meeting Grant:

SAT Member in good standing.

Presenting paper at meeting.

Non-supervisory position.

Sponsoring letter from laboratory or section manager.

Application for the SAT Meeting Grant should be forwarded to:

Lori A. Flores
9302 Antwerp Cove
Houston, TX 77070

Phone: (281) 374-6063.
email Loriaflores@yahoo.com

Applicant's Name: _____

Position: _____

MailingAddress: _____

Phone: _____

Sponsor: _____ Title: _____

NOTE: Title and abstract must be received by program chair prior to application.

Applicant Signature: _____

Date: _____

Date Application received: _____ SAT member verified: _____

Recommendation of committee: _____ Approve _____ Disapprove

Action of Board: _____ Fund _____ Do Not Fund Date: _____

Southwestern Association of Toxicologists
Board of Directors:

President: 2000-2001	Michael Carlo, Ph. D. 124 Kilt Road San Angelo, TX 76901-9512 915-942-0263
President-Elect: 2000-2001	Lori A. Flores 9302 Antwerp Cove Houston, TX 77070 281-374-6063
Past President: 1999-2000	Robert Rodriguez Bexar Co. Forensic Sciences Center 7337 Louis Pasteur Dr. San Antonio, TX 78229 210-335-4033
Secretary: 1999-2001	Sheryl Peyton TX Department of Public Safety P.O. Box 4143 Austin, TX 78765 512-424-2105
Treasurer: 2000-2002	Robert G. Schoenfeld, Ph.D. 7204 Aztec Road, N.E. Albuquerque NM 87110 505-884-4997
Counselor: 2000-2002	Mike Frontz Bexar County Forensic Sciences Center 73337 Louis Pasteur Dr. San Antonio, TX 78229 210-335-4031
Counselor: 2000-2001	Chris Heartsill Dallas Co. Inst. Of Forensic Sciences 5230 Medical Center Drive Dallas, TX 75235 214-920-5810
Membership Chair:	Brenda Snodgrass 519 Fleetwood Dr. Norman, OK 73072 Hm. 405-360-6103 wk. 405-522-5440

President's Message

March 16, 2001

Dear SAT Members:

First, let me apologize for the lateness of this correspondence.

Second, many thanks to Nancy Gowen Kropp and her professional colleagues (Charla Jenkins, Judy Green, Valorie Rawlings, Dr. Michael Fowler, Dr. Phil Kemp, Dr. Arvind Chaturvedi, and Dr. John Soper) for a well planned, very informative, and most enjoyable meeting in Oklahoma City this past November. They truly did a great job!

Third, I encourage all SAT members to attend the Dallas SAT meeting (April 5th-7th) and especially to attend the Business Meeting on Friday, April 6th. As the newsletter indicated, changes to our Constitution and By-Laws will be discussed and your input is vital and greatly needed as to approval or disapproval of the recommended changes. Ken Peck has done an outstanding job in preparing these changes for our discussion. Should you have comments prior to attending the Dallas meeting, please do not hesitate to contact me (Phone: 915-942-0263, FAS: 915-942-0777, email: mcarlo@gte.net).

Please know that I look forward to seeing you in Dallas!

Michael J. Carlo, Ph.D.
SAT President

TOXICOLOGY EXCHANGE

At the Fall Meeting of the Southwestern Association of Toxicologists, November 2-4, in Oklahoma City, Ken Peck was appointed to draft an update to the constitution and bylaws of our association. The following proposed changes are shown in boxes:

Constitution:

ARTICLE V OFFICERS AND THE BOARD OF DIRECTORS

Officers of this Corporation shall consist of a President, a President-Elect, a Secretary, a Treasurer, and the immediate Past-President. (The Secretary and the Treasurer may be the same person.) These officers and two counselors shall constitute the Board of Directors.

Proposed changes are:

To include the person heading the communication committee. This would include changes to both the constitution and the bylaws. In the bylaws, this office would need to be defined in Chapter III – Officers and Board of Directors.

Bylaws:

CHAPTER II MEMBERSHIP

SECTION 1: MEMBERSHIP CATEGORIES

- A. Regular Members: Any qualified person of professional competency who is actively engaged in the field of toxicology or who has advanced the interests of toxicology in a significant manner shall be eligible for membership in the Corporation. Only regular members shall be entitled to vote and hold office. In order to retain regular membership status, a member must attend at least one meeting out of every six consecutive meetings of the Corporation during each three consecutive calendar years.
- B. Corresponding Members: Any regular member who fails to maintain the attendance requirement stated in Chapter II, Section 1, of the Bylaws shall be reclassified as a corresponding member, by the secretary, on July 1 next following the end of the above missed-meeting schedule for such member. Regular member status shall be re-established automatically on July 1 next following and upon satisfying the above-listed membership requirements. Any person meeting the requirements for regular member status may elect to be classified as a corresponding member upon application.

- C. Affiliate Members: Persons who have an interest in toxicology or who have contributed to the cause of toxicology but who do not meet the requirements for regular membership may be considered for affiliate. Affiliate members may be proposed for regular membership the requirements for regular membership.

- D.* Emeritus Members: A regular, corresponding or affiliate member may apply to the Board of Directors through the Secretary for transfer to emeritus membership if that person (1) has reached the age of 65 and is retired from regular employment or (2) has been forced to retire from regular employment because of illness or disability. An emeritus member may be restored to regular membership status on request to the Board of Directors. Retired members shall pay no membership fee(dues)or other assessments and shall retain all the rights and privileges of full dues-paying members except that retired members shall not be eligible to hold elective office.

- E.* Honorary Members: Any person who has attained exceptional distinction by their service to the field of toxicology may be elected as an Honorary Member of the Corporation upon nomination by the Board of Directors. Such member shall neither vote nor hold office in the Association and is exempt from payment of fees (dues) and assessments.

* Amendments: April 1987

Proposed changes are:

Deletion of the last sentence in section A. - In order to retain regular membership status, a member must attend at least one meeting out of every six consecutive meetings of the Corporation during each three consecutive calendar years.

Deletion of Section B and C – see above Sections D and E would become B and C.

SECTION 3: TERMINATION OF MEMBERSHIP

- A. A member may voluntarily terminate his membership in the Corporation at any time by written notification to the Secretary. The Secretary shall inform the members of the Corporation of such termination at the next regular meeting.
- B. Membership in the Corporation shall be suspended automatically when a member is delinquent in dues payment for one full year. At this time the Secretary will notify the delinquent member of his suspension. If within sixty (60) days of the receipt of such written notification the delinquent member has failed to pay delinquent dues plus the annual dues for the current year, membership will be terminated.
- C. The Board of Directors, for appropriate reasons, may decide that it is in the best interests of the Corporation to expel a member. In such a case, the member shall be notified in writing and given an opportunity for a hearing before the Board of Directors; such hearing to be held no sooner than sixty (60) days following such notification. If a majority of the Board of Directors favor expulsion, the Board shall so recommend to the voting membership of the Corporation who may expel the member by two thirds affirmative vote.

Proposed changes are:

Change Secretary to Treasurer in the Second sentence. Proposed change would read: The Treasurer shall inform the members of the Corporation of such termination at the next regular meeting.

Deletion of section B. Section C would become B.

SECTION 2: SECRETARY/TREASURER

A . Secretary and a Treasurer of the Corporation shall be elected by a majority vote. He (they) shall serve for a term of two years beginning July 1 next following their election, and shall be eligible for re-election to one additional consecutive term of two years. The Secretary and the Treasurer shall respectively have custody of the records and funds of the Corporation and the latter shall have the authority to disburse and collect funds in the name of the Corporation. The Secretary shall keep the minutes of the meetings of the Corporation and the Board of Directors and shall notify members of all meetings.

Proposed change: deletion of - to one additional consecutive term of two years. From the second sentence.

SECTION 10: INFORMAL ACTION BY DIRECTORS AND OFFICERS

Any action required by law to be taken at a meeting of officers and directors, or any action which may be taken at a meeting of officers and directors may be taken without a meeting if a consent in writing** setting forth the action so taken shall be signed by all the officers and directors.

Proposed change – inclusion of “, phone conference and/or electronic media” after consent in writing**

CHAPTER VII MEMBERSHIP DUES, FISCAL YEAR AND MEETINGS

SECTION 1: DUES

Annual membership dues shall be determined by the Board of Directors subject to approval by the majority vote of the voting membership.

Proposed change – Deletion of “subject to approval by the majority vote of the voting membership.”

Additional Proposals: Change length of term of President, President-elect and Past President to two year terms.

Proposed changes to the SAT constitution and bylaws. These proposals will be discussed at the spring Board Meeting and then presented at the business meeting for the final wording. After the proposal is moved and seconded, it must be voted on and approved by the members present. After approval it will be mailed to the entire membership for final approval as a change to the constitution and bylaws. This will take approximately 6 months (two meetings.) If you would like to have the present constitution, bylaws and articles of incorporation either e-mailed or faxed please contact Kenneth Peck at k-peck@tvmidl.tamu.edu or at 979-845-9014.

SAT Business Meeting
Oklahoma City, Westin Hotel
November 3-4, 2000
Minutes taken by Nancy Gowen Kropp

- I. Introduction:
The meeting was called to order by President Mike Carlo. Gratitude was expressed to Nancy Gowen Kropp for hosting the meeting.
- II. Secretary's Report:
It was moved and seconded that the reading of the minutes of the last meeting be waived since they had been published in the newsletter. All were in favor
- III. Treasurer's Report:
- A. *Dr. Robert Schoenfeld presented the Treasurer's Report.

*Note: Copy of Treasurer's report is available to any member upon request!

- B. The two \$300 meeting grant checks will be written out at the present meeting.
- C. Reminder that dues will be increased to \$30.00/year on July 1st.
- D. **Dr. Shoenfeld suggested that the bylaws be amended to delete the section that dictates that a member be automatically dropped from the roles for nonpayment of dues for a period of one year or greater. This suggestion will be forwarded to the Parliamentarian.

**Note: Refer to suggested changes to the constitution and bylaws as outlined on page 9-12 of this newsletter.

- IV. Committee Reports:
- A. Meeting Grant – Lori Flores
- It was moved and seconded to approve the following 2 Meeting Grant applications. All were in favor.
1. Tiffany Flowers –Bexar Co. M.E.
 2. Brad Hall – Travis Co. M.E.
- B. Membership – Brenda Snodgrass:
- The membership committee received eight applications for membership to the Southwestern Association of Toxicologists. The applications were reviewed by the Membership Committee and the following eight applicants are recommended for membership to SAT.
1. Patrick Cardona, Chemist, FAA, Toxicology & Accident Research Laboratory, Oklahoma City, Oklahoma
 2. Tiffany Flowers, Toxicology Graduate Student, University of Texas Health Science Center, San Antonio, Texas
 3. Lana Goodson, Forensic Chemist, Sedgwick County Regional Forensic Science Center, Wichita, Kansas
 4. Brandy Greenhill, Toxicology Graduate Student, University of Texas Health Science Center, San Antonio, Texas
 5. Connie Huber, Forensic Chemist, Sedgwick County Regional Forensic Science Center, Wichita, Kansas
 6. Eduardo Padilla, Criminalist, Texas Dept. of Public Safety Crime Lab, Austin, Texas
 7. Robbie Pisana, Chemist, VA Medical Center, Dallas, Texas

8. April Rodriguez, Toxicology Graduate Student, University of Texas Health Science Center, San Antonio, Texas

It was moved and seconded to accept the above applications into membership. All were in favor.

C. Audit Committee:

1. The following were appointed to the audit committee;
Dan Rios
Paola Rodriguez
Rod McCutcheon

It was moved and seconded to accept the appointments. All were in favor.

2. The audit will take place at the spring meeting in Dallas.

D. Awards – Lori Speaker Flores:

The Charles Tripp Millenium Award was awarded to Ken Peck for his professional contributions to the field of Toxicology, for his contributions and service to SAT, and especially for his talent of “coming through in a pinch” when a host needs a last minute speaker!

E. Nomination Committee – Mike Carlo:

1. President- Elect - Mike Frontz
2. Counselor - Phil Kemp
Chris Heartsill

It was moved and seconded to accept the above nominations. It was moved and seconded to close nominations. All were in favor.

Ballots will be mailed out before the spring meeting.

F. Teller Committee:

Paola Rodriguez
Carrie Presses

It was moved and seconded to accept the above as teller committee. All were in favor.

V. Old business

A. Communications:

Glenn: The only address for the SAT Website is now SAT-TOX.org. A survey of the membership, as to whether they have modem or high speed, shows that there is still a significant number of users using the slower connection. Glenn will try to avoid adding slow loading pages to the web page. Future possibilities for the web page include registration, dues paying online, listing old equipment for sale.

Mike: Update on the list server: SAT-TOX@egroups.com. Mike has been working with Alan Barbour of CAT to separate Cat & SAT messages. He suggested adding a line on the membership application for email address. List passed around at meeting to update business addresses and email addresses of attending members. Data handling survey results: Insufficient Response.

Nancy: Suggestion to ask for job listings to publish in newsletter.

- B. A new membership list will be published by the Fall of 2001. All members are asked to update their business and email addresses:

VI. New Business:

A. Future Meetings:

1. Spring 2001:

Date: April 5-7

Site: Dallas

Host: Chris Heartsill & Sandra Gray

Hotel: Sheraton Suites – Market Center

\$65/night 214-747-3000

Workshop: "Introduction to Pharmacology" Univ. TX SW Med School

Possible Entertainment: Arlington Ball Park

2. Fall 2001:

Date: November 1,2

Site: San Antonio

Host: Gary Kunsman

Hotel: Menger Hotel near River Center Mall, Alamo

\$116/night

Possible Workshop: Diamond Mike, Solid Phase Extraction

3. Spring 2002: Wichita, Kansas – Tim Rohrig

4. Fall 2002: Louisiana Manno/Singletary (Shreveport/Baton Rouge)

5. Spring 2003: Albuquerque – Dr. Shoenfeld

6. Fall 2003: Houston/Kennah – Lori Flores

B. Parliamentarian:

Ken Peck was appointed as Parliamentarian. He was assigned the task of revising the constitution and bylaws to reflect changes in policy regarding membership status, increased dues, and adding the communication committee as a standing committee. Proposed changes will be published in the spring newsletter and then presented to the membership for a vote of acceptance.

C. ABFT Certification:

We have information from Yale Kaplan that Certification by the American Board of Forensic Toxicology is now available at the Bachelor Level (as well as the Master's level). The academy will meet in February 2001. Gary Kunsman will bring back more information from this meeting. The possibility exists that SAT could sponsor a workshop on preparation for certification at one of our meetings, and possibly host the exam itself at one of our meetings. Gary Kunsman and Tim Rohrig both have offered to sponsor a workshop.

Requirements for certification will include:

a. \$300

b. 3 letters of recommendation

c. Transcripts

d. A time frame of probably 6 months to gather necessary paperwork.

VII. Adjournment:

Dr. Carlo thanked the Oklahoma City hosts and gave a special thanks to all the vendors who supported the meeting.

It was moved and seconded to adjourn the meeting. All were in favor.

Abstracts
from the
SOUTHWESTERN ASSOCIATION OF TOXICOLOGISTS
Fall Meeting
November 2-4, 2000
Okalahoma City, Oklahoma

The Scope of Routine Drug Testing for DRE Cases

Gary W. Kunsman, Ph.D., Tiffany Flowers, B.S., Carolyn Presses, B.S.,
and Paola Rodriguez, B.S.
Forensic Toxicology Laboratory, Bexar County Medical Examiner's Office,
San Antonio, TX
(LCD)

The Bexar County Forensic Toxicology Laboratory performs drug analyses in support of local Drug Recognition Expert (DRE) Programs. Urine specimens collected from suspects at the conclusion of the DRE Evaluation are submitted for toxicological analysis with a request form listing the specific drug category suspected to be present. The laboratory additionally requests that the Drug Influence Evaluation (DIE) form be submitted with the sample to aid in determining which analytical procedures to perform. Case samples are routinely screened for the drug class requested using FPIA followed by quantitation and confirmation by GC/MS, however, additional testing may be performed based on information from the DIE form.

A review of 168 cases submitted over a 31 month period was conducted to determine if performing an alkaline drug screen on every DRE submission would provide sufficient additional information to warrant routine performance of this analysis on every case. 156 alkaline screens were performed of which 40% were positive. In 87% of the cases the alkaline screen simply confirmed the results obtained using the routine analytical approach. Additional information was obtained from the alkaline screen in 13% of the cases. Of the 168 cases submitted, only 4 (2.4%) had negative results from the routine analysis yet yielded a positive result on the alkaline screen. This study suggests that, apart from cases for which the DIE form indicates the use of a drug detectable only by an alkaline drug screen, there is not sufficient reason to perform this analysis on all DRE cases within the context of the routine analytical methodology.

"Recent Advances in Fast Chromatography for Drugs of Abuse"

Fred Feyerherm
Application Chemist
Agilent Technologies
2000 West Loop South
Houston, Texas
(LCD)

Many laboratories have asked us for tools for higher productivity to handle the increased sample loads that they encounter. We have responded with both fast GC techniques and intelligent software for the forensic laboratory

Death Due To A Suicidal Ingestion of Propoxur

J. Rod McCutcheon, BS, Patricia Schroeder, MT(ASCP), Brad J. Hall, Ph.D.
Travis County Office of the Medical Examiner
Austin, Texas
(LCD)

A 38 year old Caucasian male was found unresponsive in the garage by his roommate. The decedent was depressed after being arrested the previous week for sexual assault and DWI. There were no visible signs of injury at the scene. The autopsy was unremarkable except for an unusual black-red coloration to the cut surfaces of the lung and heart tissue. The stomach contained fluid with the same coloration, and had a diesel-fuel like odor. The lungs were edematous and congested. The other viscera were severely congested.

Toxicological evaluation revealed the following:

Blood Volatiles: Ethanol - 0.02%; Acetone - 0.11%; Isopropanol - 0.09%
Vitreous Volatiles: Ethanol - 0.01%; Acetone - 0.16%; Isopropanol - 0.07%
Urine EIA: Negative for seven drug classes
Blood AN-ALK: No drug detected

A large peak that matched "propoxur" in the Wiley Library of mass spectra, was detected in the acid neutral and alkaline fractions. A sample of propoxur was obtained and the identification was confirmed.

Propoxur is a non-systemic, carbamate class, insecticide. It acts by blocking the production and action of cholinesterase.

The following distribution of propoxur was determined:

Blood, heart (14.5 mg/L); urine (2.1); vitreous (4.7); brain (7.4); gastric (detected)

The death was ruled a suicide due to acute propoxur poisoning.

Forensic Applications for Inductively coupled Argon Plasma-Mass Spectrometry.

Ernest D. Lykissa
ExperTox Inc.
Deer Park, Texas
(35mm – overhead)

Metals are unique among toxins that cause adverse health effects in that they occur naturally and, in many instances, are ubiquitous in the environment. Regardless of how metals are used in consumer products or industrial processes, some level of human exposure is, in most instances, inevitable.

Furthermore, many are biologically essential but become toxic with increasing dosage. The preponderance of our testing in the last 6 years has been in industrial exposure cases, which are usually in the ppm range, or environmental exposures, which are usually encountered in the ppb range of significance. This presentation will discuss a number of cases though that, do not fit this norm, and in addition demonstrate the versatility of the ICP-MS technology coupled to ion chromatography that has assisted us in achieving resolution of otherwise puzzling case scenarios. Those cases have involved most often the elements of Mercury, Lead, Arsenic, Chromium, and Platinum. In the cases of Arsenic, Chromium, and Platinum the speciation of the particular element's valence(s) by ion chromatography and detection and quantitation of the particular metal mass by ICP-MS have assisted us in determining the causation of these toxic exposures

Occurrence of Veterinary Drugs in Medical Examiner Cases in Travis County: Three Case Reports

Brad J. Hall*, Patricia Schroeder, J. Rod McCutcheon, Forensic Toxicology Laboratory, Travis County Medical Examiner's Office, Austin, Texas.

In the period of January 2000 – September 2000, there have been a total of approximately twenty-six burglaries of veterinary offices in Travis and surrounding counties. This presentation discusses the veterinary drugs encountered and toxicological findings in three isolated cases involving the ingestion of veterinary drugs, all resulting in accidental death.

Case 1: A 43 year old female with a history of drug abuse was found unresponsive on her bed by NOK shortly after death. Investigative reports indicate blood coming out of nostril and vomitus on facial area. Ethanol was detected in the heart blood at 0.06 g/dL and vitreous humor at 0.08 g/dL. Tiletamine and zolazepam (components of the veterinary anesthetic Telazol) were detected at the following levels (mg/L):

	Blood, heart	Bile	Urine	Vitreous Humor
Tiletamine	0.38	0.73	0.72	0.27
Zolezapam	1.52	2.24	0.61	0.53

Notably, no benzodiazepine was detected in both urine and blood enzyme immunoassays. Death was caused by aspiration of gastric contents due to mixed drug toxicity.

Case 2: A 20 year old male was found on the floor unresponsive by his roommate at approximately 17:55. The decedent had bragged of taking several hydrocodone and phenobarbital pills with liquor the night before. The decedent was pronounced at 18:09 the same date found. Toxicology on postmortem heart blood found diazepam (0.23 mg/L), nordiazepam (0.35 mg/L), hydrocodone (0.13 mg/L), and phenobarbital (16 mg/L). Cocaine, cocaethylene, benzoylecgonine and marijuana metabolite were detected in the urine. No ethanol was detected in the blood or vitreous humor, however bile ethanol was 0.05 g/dL and urine ethanol was 0.03 g/dL. The cause of death was ruled mixed drug intoxication.

Case 3: An 18 year old male was found unresponsive by friend and EMS was summoned. Decedent was pronounced DOS. Numerous veterinary medications were found at the scene. Toxicology on postmortem heart blood found diazepam (0.62 mg/L), nordiazepam (0.14 mg/L), pentobarbital (53 mg/L), and phenytion (2.7 mg/L). Marijuana metabolite was detected in urine and ethanol was not detected in the heart blood and vitreous humor. Cause of death was ruled a pentobarbital overdose. Pentobarbital is a component of Euthasol, a common euthanasia agent used in veterinary clinics.

"Determination of Heavy Metals in Clinical and Forensic Samples Using Inductively Coupled Plasma Mass Spectrometry (ICP-MS)"

Elzbieta (Ela) Bakowska

Agilent Technology
2850 Centerville Road
Wilmington, DE 19808

ICP-MS is a very powerful analytical technique allowing simultaneous determination of major, trace, and ultratrace elements in biological, clinical, pharmaceutical and forensic samples. ICP-MS accommodates the determination of any element or suite of elements, regardless of their essentiality, toxicity or other effects on humans or animals. Use of ICP-MS for the analysis of trace metals in whole blood, serum, urine and hair samples will be discussed. The samples can be analyzed either as a liquid or in a solid form. Each of those approaches has its pros and cons. Both ways of the analysis of clinical and forensic samples will be discussed. The challenges of determination of low levels of metals in biomedical samples will be presented. The methods of sample preparation can vary from very simple to complicated and time consuming. The combination of the ICP-MS with the chromatographic methods for the sample delivery allows for the determination of different species of arsenic, chromium, and other elements.

Citalopram Distribution in Postmortem Cases

Michael E. Frontz¹, MSFS, Gary W. Kunsman¹, PhD, Barry Levine², PhD, Xiang Zhang², MD, and John E. Smialek², MD

¹Bexar County Medical Examiner's Office, 7337 Louis Pasteur, San Antonio, TX 78229

²Office of the Chief Medical Examiner, State of Maryland, 111 Penn St., Baltimore, MD (LCD)

Citalopram (Celexa, Cipramil) is a highly selective serotonin reuptake inhibitor used therapeutically as an antidepressant. This is a report of the analytical findings in 26 postmortem cases where citalopram was identified. Citalopram was quantitated in fluid or tissue specimens by gas chromatography and confirmed by full scan electron ionization gas chromatography/mass spectrometry. In 17 of the 18 cases in which both blood and urine specimens were received, the urine citalopram concentration exceeded the blood concentration, indicating that urine is an appropriate specimen for citalopram screening. The average liver to blood citalopram concentration ratio was 10 (range 3.1-29, n=12). A higher concentration of drug in the liver is consistent with most antidepressants. Eight cases had blood concentrations less than 0.2 mg/L, which is in the reported ante mortem therapeutic range of the drug. Twenty Two cases, in which citalopram was determined to be an incidental finding, had blood concentrations less than 1.3 mg/L. Two cases yielded blood concentrations exceeding 4 mg/L. Quantitation of citalopram and the metabolite desmethylcitalopram yielded an average parent to metabolite ratio of 4.3. The higher concentration of parent in relation to the metabolite in these "therapeutic" postmortem cases is consistent with data collected from clinical blood specimens.

A Fatal Case of Tranylcypromine Toxicity

Philip Kemp Ph.D. Kay Ramsey, Darrell Jeffries
Office of the chief Medical Examiner
Oklahoma City, Oklahoma 73117

A 22 year old male with an 11 year history of psychiatric problem presented to a local emergency room with a heart rate of 178, blood pressure of 113/90 and respiratory rate of 38. He was agitated, combative, diaphoretic and his speech was slurred Toxicological testing at the hospital was negative. After 2.5 hours, he became profoundly hypotensive and died following vigorous resuscitative efforts. A complete autopsy revealed no trauma and there was no pathology that would result in death. Postmortem toxicological examination was positive for tranylcypromine (Parntate), a monoamine oxidase inhibitor, used for the treatment of depression. The concentration of tranylcypromine heart and femoral blood was 0.16 and 0.18 mcg/mL, respectively. Although not in the reported toxic range for this drug, the deceased was exhibiting symptoms of tranylcypromine toxicity over the 48 hour period prior to his death. The cause of death was ruled tranylcypromine toxicity and the manner as accident.

Milrinone Analysis and Postmortem distribution in a Fatal Case

Byron Curtis and Philip M. Kemp.
Department of Pharmaceutical Sciences,
University of Oklahoma School of Pharmacy
and
Office of the Chief Medical Examiner,
Oklahoma City, Oklahoma

Milrinone is a positive inotropic cardiac drug given for its vasodilatory activity. The absence of fluid and tissue distribution data in the literature prompted this study. An elderly male presenting with chest pains was given a loading dose of milrinone approximately 10x the usual dose. The patient experienced a hypotensive crisis and eventually succumbed despite emergency resuscitative procedures. Analysis of antemortem and postmortem specimens was accomplished with a liquid-liquid extraction followed by quantitation using high-performance liquid chromatography. Antemortem serum was found to contain 1.4 ug/ml of milrinone. Postmortem concentrations were 0.73 ug/ml, 0.59 ug/ml, < 0.25 ug/ml, < 1.0 ug/ml, and 3.2 ug/ml for heart blood, femoral blood, vitreous humor, liver and bile, respectively. This report will discuss the application of a new analytical protocol for the analysis of milrinone and the forensic implications of the observed data.

**A Fatality Caused by Hydrogen Sulfide
Produced from an Accidental Transfer of Sodium Hydrogen Sulfide into a
Tank Containing Dilute Sulfuric Acid.**

Arvind K. Chaturvedi, Dudley R. Smith, and Dennis V. Canfield
Toxicology and Accident Research Laboratory
FAA Civil Aeromedical Institute
P. O. Box 25082 (AAM-610)
Oklahoma City, OK 73125-5066.

The National Transportation Safety Board has an agreement with the Federal Aviation Administration (FAA) that the FAA's Civil Aeromedical Institute (CAMI) provide toxicological services for selected surface transportation accidents. Under this agreement, postmortem biosamples from a hazardous chemical accident fatality were submitted to CAMI for toxicological evaluation. The victim succumbed from breathing the hydrogen sulfide (H_2S) gas produced by an accidental transfer of sodium hydrogen sulfide (NaHS) from a tanker truck to a tank containing 4% sulfuric acid (H_2SO_4) and iron(II) sulfate (FeSO_4). After inhaling the gas, the 55-year old male Caucasian truck driver was dead at the scene. Autopsy examination of the decedent's body revealed pulmonary edema and passive congestion in lungs, spleen, kidneys, and adrenal glands. The submitted samples were analyzed for carbon monoxide, cyanide, alcohols, and drugs. Since a potential exposure to H_2S was involved, blood was also analyzed for sulfide (S^{2-}). The analysis entailed isolating S^{2-} from blood as H_2S using 0.5 M H_3PO_4 , trapping the gas in 0.1 M NaOH , and determining the electromotive force using a sulfide ion specific electrode. Carbon monoxide, cyanide, or ethanol was not detected in blood, but acetaminophen at a therapeutic concentration of 14.3 $\mu\text{g}/\text{mL}$ of blood was found, and metoprolol was detected in the blood, liver, and kidney samples. Analysis further revealed the presence of S^{2-} in blood at the level of 1.68 $\mu\text{g}/\text{mL}$. This S^{2-} concentration is approximately 2 times higher than that reported in the blood of 2 separate fatalities associated with accidental exposures to H_2S . The blood S^{2-} value in the present case was about 34 times higher than the blood S^{2-} concentration ($< 0.05 \mu\text{g}/\text{mL}$) in normal subjects. The observed pulmonary edema and the passive congestion in various organs were also in agreement with the pathological characteristics of H_2S poisoning. Since H_2S toxicity manifests rapidly by inhibiting the cytochrome oxidase system, causing histotoxic cellular hypoxia, death occurs quickly. Based on the case history, pathological findings, and blood S^{2-} concentration, it is concluded that the cause of death was H_2S poisoning associated with a hazardous material accident in an industrial situation.

The First Seven Years (1991-1998) of the FAA's Postmortem Forensic Toxicology Proficiency-Testing Program.

Arvind K. Chaturvedi, Toxicology and Accident Research Laboratory
FAA Civil Aeromedical Institute, P. O. Box 25082 (AAM-610)
Oklahoma City, OK 73125-5066.

Postmortem biosamples from the victims of aviation accidents are submitted to the Civil Aeromedical Institute (CAMI) for forensic toxicology, wherein acquiring accurate and authentic analytical data is the primary objective. Adherence to quality assurance/quality control (QA/QC) procedures is essential to achieve that objective, and proficiency-testing (PT) is an integral part of QA/QC of laboratories. However, there was previously no suitable PT program that could address the complexity of forensic toxicology. Existing PT programs do not include decomposed samples and solid tissues, and the majority of aviation (and to some extent, even medical examiner and coroner) case samples are putrid and of multiple types. Therefore, CAMI in July 1991 started such a needed PT program. This program is used to (i) professionally develop and maintain technical currency on a voluntary, interlaboratory, and self-evaluation basis and (ii) quantifiably assess methods in the absence and presence of interfering substances. There are currently about 30 laboratories in the program, including CAMI's Toxicology and Accident Research Laboratory. Functioning under various governmental/non-governmental agencies and academic institutions, these laboratories represent a broad cross-section of the country. PT samples are distributed quarterly, and result summaries are sent to the participants, while maintaining their anonymity. Since the inception of the program, 28 PT samples encompassing whole blood, plasma, urine, kidney, or liver, with (or without) drugs and common chemicals (nicotine, caffeine, β -phenylethylamine, etc.) have been evaluated by the participants. Analytical findings were generally consistent with the anticipated values, but they were dependent on the nature and conditions of the specimens and types of the added analytes. Some incidences of false positives of concern were noted, as well. This is a nationally recognized PT program: It is one of the few programs recommended by the American Board of Forensic Toxicology in which laboratories may participate for their accreditation by the Board. Although participation in this program is currently free of charge, it has a potential for commercialization through the private sector. Whether the program is in the private or public sector, it will continue to play a critical part in supporting the QA/QC component of forensic toxicology, thereby enhancing operational performance.

GC/MS
Open Forum on Troubleshooting & New Products

Gary Murphy
Agilent Technologies

This session will allow participants to learn more about Agilent's new model of GC/MS (5973N). New products such as liners will be discussed. The last part of the session will be devoted to audience participation.

DEVELOPMENTS IN RECREATIONAL PHARMACOLOGY

Herman Jones

Dr. Herman Jones is a Neuropsychologist and Associate Professor in the departments of Neurology & Psychiatry at the OU Health Sciences Center. He is also a consultant to the Oklahoma Bureau of Narcotics and Dangerous Drugs. One of his research interests is neurologic violence and he has worked with 160 youth between the ages of ten and 16 who have committed murder.

There have been recent changes in usage of mood/mind altering drugs in the last two years. The presentation will focus on recent developments in usage with depressants (marijuana, rohypnol), stimulants (asenlix, Ritalin, nazi meth), hallucinogens (LSD, morning glory seeds), and deliriogens (PCP, toluene). Motives for the patterns and changes in neuro-behavioral functions will be discussed.

**Determination of Gabapentin in Postmortem Cases
Using Extractive Benzoylation
and GC/MS Analysis**

Robert G. Rodriguez, B.Sc. and Gary W. Kunsman, Ph.D.
Forensic Toxicology Laboratory, Bexar County Medical Examiner's Office,
San Antonio, TX 78229

A simple method for the analysis of gabapentin (Neurontin[®]) is described. Gabapentin is an anticonvulsant used in multi-drug seizure therapy, chronic migraine prophylaxis, and chronic pain management. The method is based on the Schotten-Baumann reaction involving the formation of a benzoyl-drug complex readily extracted from biological matrices. The derivatized drug complex chromatographs well and is amenable to identification and quantitation by gas chromatography/mass spectrometry operated in the electron impact mode. The decedent in nineteen cases investigated by the Bexar County Medical Examiner was reported to have taken gabapentin. Thirteen of these cases yielded positive gabapentin concentrations ranging from 0.94 mg/L to 40.2 mg/L; these results correlated well with reported antemortem "therapeutic" gabapentin concentrations. The limit of detection for this assay was 0.5 mg/L with a linear range from 0.5 to 800 mg/L. As well as offering a suitable approach for the analysis of gabapentin, this method may find application as a generic approach to the analysis of other multipolar, water-soluble compounds.

Considerations During Solid Phase extraction of Fentanyl Group Drugs

K.E. Peck, V. Philip, M.M. Rao and A.C. Ray

Texas Veterinary Medical Diagnostic Laboratory
College Station, Tx 77843
(35mm slide)

Analysis of fentanyl and metabolites in horse urine presently requires a lengthy extraction and acid hydrolysis protocol prior to GC/MS confirmation. Recently our laboratory has detected alfentanil and fentanyl on several occasions at very low concentrations in horse urine. Analysis of some split samples (referee) by other labs failed to confirm our findings, suggesting a need for a more reliable method. Modifications of the eluting solvent during solid phase extraction resulted in a significant increase in recovery.

Fentanyl suspects in urine require an acid hydrolysis to convert metabolites to despropionylfentanyl. Present methodology requires autoclaving extracted urine in 4N HCl for 1 hr. Alternatively, sufficient conversion can be obtained by hydrolysis in 4N HCl overnight at 75-80° C. Urine containing fentanyl is first acidified to a pH of 2 or less with 6N HCl and saturated with NaCl. The urine is extracted twice with 100 ml DCM:Isopropanol 10:1. Sodium sulfate is added to dry the sample prior to filtration. The sample is evaporated to dryness and the residue is re-suspended in 6 ml 4N HCl. The sample can then be refluxed or autoclaved for 1 hr or alternatively held at 75-80° C for 16 hr. After hydrolysis the acid is neutralized and sample is diluted with 0.2 M Phosphate buffer pH 6.5. This solution is loaded onto a mixed bed (C8/benzene sulphonic acid) column, which is washed with phosphate buffer, 1N acetic acid and methanol. The column is dried under vacuum, washed with hexanes, and again with methanol. Fentanyl class drugs are eluted with DCM:MeOH:Ammonia (60:40:4). The residue, after evaporation, may be oily, is re-suspended in 1M carbonate buffer and extracted by DCM:Iso 10:1. This procedure allows for the detection of fentanyl class drugs by GC/MS at low concentrations with a minimum of interference.

The Development of Biosensors for Determination of Biological Markers and Other Even Smaller Compounds.

Authors: Bowen, J.M.*, Sullivan, B. P., Noe, L. J., Morris, K., Donnalley, G., Al-Batati, A.
*University of Central Oklahoma Department of Chemistry
(LCD)

Research into the production of a marketable, low cost, rapid biosensor for the determination of chemical compounds including drugs, proteinaceous oncogenic markers and other compounds in water or air will be presented. This biosensor itself consists of antibodies immobilized onto a specially prepared metal film. Antibodies capable of binding with several small molecules including dioxin, PCBs, prostate specific antigen (PSA) and even TNT have been examined. The antibody-antigen interaction is detected using surface plasmon resonance (SPR) spectroscopy. This method is designed to replace the ELISA test for certain applications. Possible utilization of the method for the analysis of dangerous drugs and oncologic markers in body fluids will be discussed

Butalbital: A case of DWI or was it?

Michael Carlo Ph.D.

Late one warm, muggy night in June 1999, a white male was stopped by local Law Enforcement Officials in Weatherford, Texas for driving his automobile erratically. He submitted to a field sobriety test & a breathalyzer test. Both tests were negative but he was arrested and taken to the local hospital for a blood test. Then, he was taken to jail, allowed one phone call and incarcerated for the night. The blood sample was sent to the Texas Department of Public Safety for analysis and came back positive for a high level of butalbital. He was charged with DWI! But, was this a true case of DWI? Stay tuned!

Round Table On Proficiency Testing, Inspections, Compliance (Dedicated to the memory of Rick Kelly)

Michael Fowler Ph.D. Moderator
John W. Soper Ph.D., Rod McCutcheon B.S. ,
Gary W. Kunsman Ph.D., Joseph Manno Ph. D.

The round table will be open to discussion about Proficiency Testing, regulations, on-site inspections and the challenge of meeting compliance with certifying agencies such as ASCLD, HHS, CAP, AAFS, or ABFT.



B. Rick Kelly September 5, 1951 – June 3, 1998

Rick Kelly was involved in many facets of toxicology and racing chemistry during his 24 years as a Forensic Chemist. Rick worked early in his chemistry career at Children's Hospital and the Oklahoma City Medical Examiners Office. He also worked for Hewlett Packard Analytical. Rick later was commissioned by the Oklahoma State Bureau of Investigation as a Senior Criminalist where he was involved with responding to and analyzing substances from clandestine drug labs. During this time he was also involved in training officers on firearm use. He won several awards for his pistol marksmanship. Rick set up and started the operation of the Official Equine Testing Laboratory for the Oklahoma Horse Racing Commission at the Oklahoma City Police Department. This laboratory under his direction and research was the first lab in the United States to quantify and report lasix in equine blood. Rick was a member of Southwestern Association of Toxicologists. Rick was a charter member and served on several sub committees of Testing Integrity Program a racing chemistry quality assurance group. Rick also was a member of the Association of Official Racing Chemists for which he was serving a current term as President for the United States Section.

Rick was loved and respected by many colleagues in his field and will be deeply missed.

Southwestern Association of Toxicologists, Inc.
Application for Membership



Please type or print neatly.

Name: _____				
	Last	First	Middle	
Home Address: _____				
	Street	City	State	Zip
Date of Birth: _____		Place of Birth: _____		
		City	State/Country	
Citizenship: U.S. <input type="checkbox"/> Other: <input type="checkbox"/> Occupation: _____				
Firm Name: _____				
Title: _____				
Address: _____				

Business Phone: _____			FAX: _____	
Home Phone: _____			email: _____	
Preferred Mailing Address: (check one) <input type="checkbox"/> Business <input type="checkbox"/> Home				

EDUCATION

Institution:	Dates Attended:		Degree	Major Field
	From	To		
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Dissertation Title and Advisor, if any: _____

Publications and Patents: (append additional sheets if necessary): _____

Specialization, Board Certification, Honors, and Award: _____

-Please complete the other side-

Professional Experience

(Present position first – use additional sheets if necessary.)

Organization/ Address:	Position	From	To	Supervisor Reference:
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

I certify that the above information is correct to the best of my knowledge.

Signature

Date

The two SPONSORS listed below, who are full members of the Southwestern Association of Toxicologists, recommend the applicant and recognize that one major objective of the Association is the development of technical knowledge and furthering of the professional standing of technical people in the field of Toxicology. If the applicant does not know two full members of the Association, a curriculum vitae or resume with the names of two professional references, should be submitted to the Membership Chairman for review by the Executive Board of the Association.

Sponsor #1

Sponsor #2

Name:

Position:

Organization:

Signature:

Phone Number:

This application will be presented to the SAT Board of Directors and membership at the next semi-annual meeting. After acceptance of membership by SAT members, annual dues will begin with the next fiscal year (July).

Return this completed application and a non-refundable application fee of \$20.00 to:

Brenda Snodgrass
519 Fleetwood Dr.
Norman, OK, 73072

Charles Tripp Millennium Award



Nomination Form

Candidates Name: _____

Organization: _____

Position: _____

Years of SAT membership: _____

Please detail in the space below the contributions the above candidate has made in the field of Toxicology and in service to the Southwestern Association of Toxicology:

The Board of the Southwestern Association of Toxicologists has established the Charles Tripp Millennium Award to honor at least one member a year (at the discretion of the board) for outstanding service. Consider the following criteria:

- a. Professional contributions to the field of Toxicology
- b. Contributions and Service to SAT
- c. Years of membership
- d. "Coming through in a Pinch"

Any member can submit the name of a deserving member to the board using the form above.