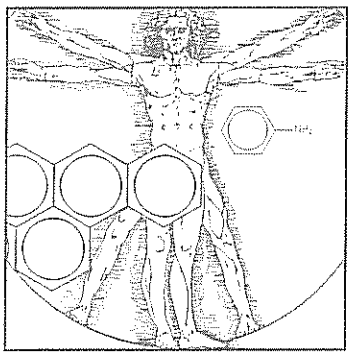


SOCIETY OF TOXICOLOGY

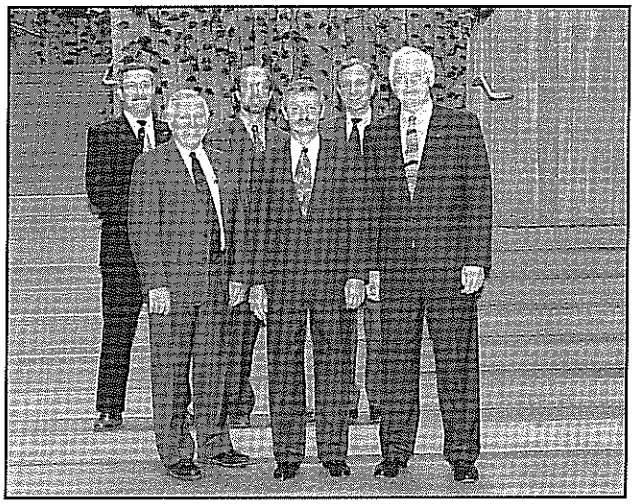
Communiqué

September/October 1995

ICT-VII Meeting A Huge Success

The Society of Toxicology (USA) hosted the Ninth International Congress of Toxicology in Seattle, Washington, July 2-6, 1995. ICT-VII was a scientific and social success.

ICT-VII was the first International Toxicology Congress to offer continuing education courses. Ten half-day courses were taught on Sunday with 771 attendees.



Executive Committee of ICT-VII. Front left: Don Reed (Scientific Program Committee Chair), Curtis Klaassen (President), Roger McClellan (Treasurer and Finance Committee Chair). Rear left: Kendall Wallace (Continuing Education Chair), Dave Eaton (Local Arrangements Chair) and James Woods (Secretary).

On Sunday evening, Curtis Klaassen, President of ICT-VII as well as President of IUTOX, welcomed all participants of ICT-VII, on behalf of the host society, the Society of Toxicology (USA). After President Klaassen made introductions and informed the attendees of the status of IUTOX and ICT-VII, Donald Reed, Chairman of the Scientific Program Committee, introduced the keynote lecturer, Leroy Hood of the University of Washington. Dr. Hood gave a most thought provoking lecture on "Human Genomes, Biotechnology and Medicine of the 21st Century." Immediately following the opening ceremony, a welcoming reception with Seattle-style food and beverage was enjoyed by all.

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Have You Submitted Your Abstract Yet?

The abstract deadline is looming around the corner (**October 2**); have you submitted your abstract yet? The SOT Annual Meeting is the largest toxicology meeting in the world attracting more than 4,800 scientists. Presenting an abstract ensures that your research receives critical exposure. In addition, the Annual Meeting abstracts are published as a special edition of *Fundamental and Applied Toxicology*, an SOT journal.

Abstract forms were included in the July/August Communiqué. If you did not receive a packet or need additional forms, please contact the SOT Headquarters office.

INSIDE

SOT Has FAX ON DEMAND

Call the SOT information line

508-230-2015

for the following SOT materials:

- **Registration Forms**
- **Travel Forms**
- **Membership Forms**
- **Hotel Forms**
- **Student Award Forms**

Post-Docs: Associate Member or Student Member?

Historically, the Student membership category has been reserved for students with an interest in toxicology who are enrolled in a graduate degree program or who are within a 12-month period following completion of a graduate degree program. According to this definition, a Post-Doctoral toxicologist is allowed to be a Student member for one year, but is required to apply for Associate membership during that year.

Council realizes that advancing to the Associate member level can add financial strain. Therefore, beginning with the 1996 calendar year, Council has decided that 1) Post-Docs who have advanced to Associate membership may now be allowed to drop back to Student membership and 2) Post-Docs who are currently applying for membership may decide whether to select Associate or Student level membership. As a Student member, Post-Docs will pay the Student membership fee, which does not include subscriptions to the Society journals. Student membership is available to these individuals for as long as they are Post-Docs.

Post-Docs who are currently Associate members will receive their Associate membership dues renewal form in September. At the bottom of the form there will be a statement regarding your wish to drop back to the Student member level. You may choose to check the box next to this statement, select whether you would like to receive the journals, sign the form and enclose a check for the appropriate amount. (Keep in mind that if you choose to return to Student membership, you will be required to reapply for Associate membership once you are no longer a Post-Doc.) Or you may choose to continue as an Associate Member and return the form with the Associate membership payment.

For the Post-Doc who is currently applying, the process is very straightforward. Simply select on the Membership Application the category for which you would like to apply and follow the appropriate instructions. Your application (and the associated dues billing) will be processed according to your selection. The Student membership fee is $18; the Associate membership fee (which includes subscriptions to the two official SOT journals) is $131.

The Council took this action to allow Post-Docs more flexibility and financial ease.

Awards

Risk Assessment Section Offers Specialty Awards: Best Presentation and Best Paper

The Risk Assessment Specialty Section will present two awards at the 1996 SOT Annual Meeting in Anaheim: the Best Presentation in Risk Assessment and the Risk Assessment Paper of the Year. These are in addition to the Graduate Student award (advertised in the July/August Communiqué). Award nominated papers for the Paper of the Year award should have appeared in print during the 1995 calendar year and should directly concern some aspect of toxicological risk assessment. Papers from any peer-reviewed journal are eligible for nomination.

Submissions will be judged on quality, creativity and innovation, and potential for lasting impact on risk assessment. Applicants for the Best Presentation award should submit a copy of their SOT abstract. Nominations for the Best Paper award should include a copy of the paper.

Send all submissions to the following address by **January 1, 1996**: Rory Conolly, Chemical Industry Institute of Toxicology, 6 Davis Drive, Research Triangle Park, NC 27709, (919) 558-1330, Fax: (919) 558-1300.

Remember to submit applications for the following awards:

SOT Awards

- Public Communications Award
- Toxicology Education Award
- Achievement Award
- Arnold J. Lehman Award
- Merit Award
- Board of Publications Award

SOT Student Awards

- Graduate Student Fellowship Award
- Graduate Student Travel Grant
- Specialty Section Awards

Sponsored Awards

- Zeneca Traveling Award
- Burroughs Wellcome Fund Toxicology Scholar Award
- Colgate-Palmolive Visiting Professorship

Other Awards

- Burroughs Wellcome Fund Career Awards
- Scala Award and Lectureship

If you need more information about any of the above award programs, please contact SOT Headquarters.

Speaking of Animal Use

Submitted by ***Andrea K. Hubbard****, Animals in Research Committee*

With the beginning of a new school year, many scientists and parents will be asked to address school children about a scientist's education and profession. For many researchers, scientific investigation involves the use of animals in research. The Foundation for Biomedical Research recently noted several differences between an adult's and a CHILD's perception and understanding of animal use in research. If you are called upon to address elementary or middle school children, you may wish to keep the following in mind:

- Children are more likely than adults to give equal value to human and animal life.
- Children do not want to hurt animals, but at the same time they do not want themselves or those around them to get or be sick.
- Only a minority of children realize that animal research is involved in developing cures/treatments for illness.
- "Experiments to find cures for human disease" garners the greatest support with children for using animals in research.
- Children believe that their parents are the most trustworthy sources of information, ranking just barely ahead of their physicians.
- The majority of children have never heard of animal activists groups.
- Most children are uncertain about the use of animals in research and younger children are more undecided than older children.

In addition, the American Medical Association has material (text and slides) entitled "Communicating Science & Medicine to Children" that is appropriate for students in grades 2-5. For more information, please contact:

Massachusetts Society for Medical Research
1440 Main Street
Waltham, MA 02154
(617) 891-4544

Debate on the Relevance of Life-long Rodent Exposures to Screen for Possible Carcinogens

Submitted by ***Vincent Castranova****, Animals in Research Committee*

As part of the program of the International Congress of Toxicology-VII held in Seattle in July, a "debate" was held on the topic of "Resolved: The rodent bioassay is no longer needed." Speaking in favor of the resolution was **Jay Goodman** of Michigan State University while **Roger McClellan** of CIIT spoke in opposition. Before the presentations began, a show-of-hands of the audience was taken, and the majority felt that the bioassay should be retained.

Dr. Goodman stated that the rodent bioassay as presently conducted, e.g., an emphasis on testing at high doses, reveals nothing about the possible hazard posed to people under realistic exposure conditions and, thus, does not provide the information needed for a meaningful risk assessment. He proposed flexible testing protocols that emphasize delineating the mechanism of action, and using this information to reach rational decisions, e.g., regarding thresholds and safety factors. He stated that this approach is more relevant to human risk assessment than providing only a yes or no answer to the question of chemical carcinogenicity.

Dr. McClellan advocated maintaining the rodent bioassay approach but indicated that it needs to be improved. He felt the bioassay to be important because it is the only nonhuman research approach that provides the opportunity to observe cancer after long-term exposure to chemicals. He believes that while short-term assays are valuable in screening compounds for biological activity, these often provide overly simplistic answers and must be complemented by long-term rodent bioassays to understand exposure-dose-response relationships over a range of exposure concentrations.

Following the presentations, the audience and speakers participated in a lively discussion on the issue. Strong points were made on both sides of the question. At the end of the

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Jay I. Goodman, Ph.D.
Deadlines for Upcoming Issues:
October 3, 1995
December 3, 1995
February 3, 1996
April 3, 1996

Toxicology Salary Survey: What Do Toxicologists Earn?

Survey Conducted by Shayne Gad

The 1995 Triennial Toxicology Salary Survey was conducted as a joint project by the American College of Toxicology and the Society of Toxicology. In addition to the two parent organizations, 19 others (the Teratology Society, the Society of Toxicology of Canada, the Association of Government Toxicologists, and all 16 regional chapters of SOT) supported the project by providing mailing labels for their membership.

A total of 7276 survey instruments were mailed in April, 1995, with 92 of these returned as undeliverable, making the effective mailing 7184. As of August 31, a total of 2952 responses had been received for a response rate of 41.1%. This is comparable to the response rates for the 1988 (1) and 1991 (2) salary surveys.

2286 of the total respondents (1671 males and 615 females) are employed full time and recipients of doc-

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MINORITY STUDENT PROGRAM

Graduate Program Recruiting Materials Sought

During the Minority Student Program and the Visiting Student Poster Session at the 1996 Anaheim Annual Meeting, the Education Committee will again provide space for literature about individual graduate programs. The Program will include information about graduate training in toxicology and will provide tables for colleges and universities to display literature describing their graduate programs in toxicology. Additionally, there will be tables available during the Visiting Student Poster Session on Monday morning. If you wish to display literature, you may do so by placing the materials on the provided tables approximately a half hour prior to the program (check the Annual Meeting Program for the room location).

Representatives of the programs are welcome to attend the sessions and answer questions about graduate opportunities during an informal gathering after the program.

1995 Minority Student Programs Huge Success

The Minority Student Programs were again highly attended and well received by minority students, advisors and SOT host/mentors at the SOT meeting in Baltimore. A total of 46 students and 13 advisors were supported by a grant from NIH through the MARC program, the R.W. Johnson Pharmaceutical Research Institute, and the Society of Toxicology; 24 toxicologists kindly served as host/mentors for the students and advisors. Programs in Baltimore included: 1) a bus tour of Baltimore sponsored by Exxon Biomedical Sciences; 2) an Educational Program for Minority Students on Sunday afternoon that was attended by 250 people, with pizza provided by SmithKline Beecham; and 3) a Poster Session for Visiting Students on Monday morning with refreshments provided by Rhone-Poulenc. The students, advisors and hosts also attended the Graduate Student Luncheon on Monday, which was sponsored by Eli Lilly & Company, Hoffmann-LaRoche, Sanofi Winthrop, Schering-Plough and SmithKline Beecham.

Wanted: "Host/ Mentors" for 1996 Minority Student Programs

The SOT Education Committee will be making a strong effort to introduce toxicology to minority undergraduate science majors and their advisors at the 1996 SOT Annual Meeting in Anaheim. For this effort, the Education Committee is requesting assistance from SOT members, post doctoral students and others willing to serve as "host/mentors" for these students between their arrival on Saturday and departure on Monday. An Introductory Session will be held Saturday evening, March 9, at which all mentors should be present. Other sessions include an educational program for minority students on Sunday afternoon, a poster session on Monday morning, and a student luncheon on Monday afternoon. Host/mentors will help students find the rooms in which their special sessions will be held on Sunday and Monday and will generally make these students feel welcome at SOT.

About 20-30 volunteers are needed with responsibility for two to four students each. Anyone willing to volunteer for this important function should contact **Dawn Caruso** at SOT Headquarters.

"SOT 1995 - The Challenge"

Editor's Note: This article is the third and final in a continuing series. It is written by a Charter Member of the Society, and provides perspective on the changes in the SOT and science of Toxicology. Previous articles have discussed decreased research funding and the need to support development of all fundamental science.

By Charles D. Proctor, PhD, DSc (Hon.)

The quality our effort should have is well described in the August, 1994 paper resulting from the Forum on Science in the National Interest held January 31-February 1, 1994 (Executive Office of the President, Office of Science and Technology Policy). A particularly cogent excerpt from that report follows here:

"America's future demands investment in our people, institutions and ideas. Science is an essential part of that investment, an endless and sustainable resource with extraordinary dividends. This investment strategy was clearly articulated fifty years ago in Vannevar Bush's seminal report, "Science: the Endless Frontier."

"The Government should accept new responsibilities for promoting the flow of new scientific knowledge and the development of scientific talent in our youth. These responsibilities are the proper concern of the Government, for they vitally affect our health, our jobs and our national security."

"The bedrock wisdom of this statement has been demonstrated time and again in the intervening half century. The return from our public investments in fundamental science has been enormous, both through the knowledge generated and through the education of an unmatched scientific and technical work force. Discoveries in mathematics, physics, chemistry biology and other fundamental sciences have seeded and have been driven by important advances in engineering, technology, and medicine."

"The principal sponsors and beneficiaries of our scientific enterprise are the American people. Their continued support, rooted in the recognition of science as the foundation of a modern knowledge-based technological society, is essential. The nation's investment has yielded a scientific enterprise without peer, whether measured in terms of discoveries, citations, awards and prizes, advanced education, or contributions to industrial and informational innovation. Our scientific strength is a treasure which we must sustain and build on for the future."

"To fulfill our responsibility to future generations by ensuring that our children can compete in the global economy, we must invest in the scientific enterprise at a rate commensurate with its growing importance to society. That means we must provide the physical infrastructure that facilitates world class research, including access to cutting-edge scientific instrumentation and to world class information and communication systems. We must provide the necessary educational opportunities for each of our citizens. Failure to exercise our responsibility will place our children's future at risk."

If meeting our responsibility to future generations is to be ensured we have to readjust our priorities for support of basic scientific research upward. Over the long term, U.S. investment in fundamental research must be commensurate with our national goals. The Gross Domestic Product (GDP) provides the benchmark for total economic activity and thus the most meaningful measure of the Research and Development (R & D) investment. Total U.S. support of nondefense R & D is about 1.9 percent of GDP, below that of Germany (2.5 percent) and Japan (3.0 percent). Including all defense R & D (most of which is applied research, development, testing and evaluation), the U.S. total becomes 2.6 percent. The dominant part of the nondefense R & D investment is industrially sponsored applied research and development, that is, activity relatively close to the marketplace. The special responsibility of the Federal investment in sponsoring fundamental research is highlighted by noting that about two-thirds of fundamental research support is Federal, in comparison to about one-third of the applied research and development support (including defense R & D). Still, the Federal expenditure for basic research, the "venture capital" of our national enterprise, is only 0.27 percent of the GDP! This sorry state of our Federal investment in our nation's future should be reversed promptly.

Reviewing the progress which SOT has made in its first 34 years has been heartening. One perceives the development of a level of sophisticated operation in SOT that could enable it to make great contributions to fostering enhancement of support for basic research. The presence of this kind of operational strength is a good argument in favor of SOT undertaking that endeavor.

In June, 1994 the Defense Subcommittee of the House Appropriations Committee proposed a $ 900 million cut to the $ 1.8 billion Department of Defense (DOD) budget for basic research. It was the opinion of the SOT Council that this cut would be devastating to university research and that the Society should take action to prevent it. Because of the urgency of the situation about 1,500 society members, predominantly in jurisdictions that would be primarily affected, were selected to be informed of the proposed cut via fax. They asked to respond to their Congressperson immediately. The SOT member response was overwhelming. With very little turnaround time, numerous members joined with others in the scientific community and sent letters protesting the cut to Congress. Thanks to all who participated, the end result was that in the bill finally sent to the President in September, $ 825 million of the proposed $ 900 million cut had been restored. Since the President didn't have a line item veto power (in 1994) and he did not veto the budget sent from the last Congress, the restored cut prevailed. SOT Regulatory Affairs and Legislative Assistance Committee is developing a mechanism to prioritize and respond to issues with short turn around times. This activity provides tangible proof of the ability of SOT to operate with positive effect on the maintenance of Federal appropriations for basic research.

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35th SOT Annual Meeting 1996

March 10-14, 1996, Anaheim, CA

While activity heightens at Headquarters and among various committees with the approach of the 1996 Annual Meeting in Anaheim, SOT members should begin thinking about their own plans for the meeting. A Preliminary Information Packet, which included registration, hotel, travel, and abstract forms, was included in the July/August Newsletter. Continuing Education course descriptions are included in this newsletter; Symposia and Special Session descriptions will be published in the November/December newsletter; a Preliminary Program with complete Continuing Education course descriptions as well as Symposia, Workshop, and Roundtable abstracts will be sent in December to members who have not yet registered for the Annual Meeting; the Final Program and The Toxicologist (the special edition of *Fundamental and Applied Toxicology*) will be mailed to members in February.

Exhibits

Everyone knows that to sell, you have to reach the decision makers. If your products are science-related, the decision makers you need to reach will be at the 1996 Society of Toxicology Exhibition.

The SOT Annual Meeting Exhibition offers your organization several opportunities to bring your name to the attention of toxicologists. Come and see for yourself why your competitors continue to exhibit at the SOT Annual Meeting.

If you would like an Exhibition Package sent to you, please contact the SOT Headquarters office. **Exhibit space is already over 60% sold out.**

Reserve Space for Your Ancillary Meeting Now

Committees, Specialty Sections, Regional Chapters, alumni organizations, and others who wish to hold a meeting or social function during the week of the meeting should complete the enclosed Ancillary Meeting Form and return it to **Clarissa Russell** at SOT Headquarters no later than November 10, 1995. Space will be assigned on a first-come, first-served basis, after SOT scientific and social programs have been accommodated.

Looking for a Position or a Candidate for a Position?

The Society of Toxicology Placement Service provides employers and candidates seeking jobs with an opportunity to establish contacts relating to their specific needs and areas of interest. Placement forms are included in this newsletter. The preregistration deadline is **January 5, 1996.**

Pre-Meeting Placement Service

Both employers and job candidates must register with the SOT Placement Service and pay a nominal fee. Employers complete job description and computer matching forms, and candidates complete resume description and computer matching forms. Information provided on the computer forms is used to help "match" candidates with positions described by the employers. Preregistered employers will receive packets of candidate resume description forms and "matches" for specific positions one month prior to the Annual Meeting. Likewise, preregistered candidates will receive packets of employer job description forms.

On-Site Placement Service

The SOT Placement Service will be open on Sunday, March 10, from 10:00 a.m. to 4:00 p.m. for registration of employers and candidates, and 9:00 a.m. to 4:00 p.m. Monday - Wednesday for full Placement Services. Although preregistration is encouraged, registrations for the Placement Service will be accepted at the Annual Meeting at somewhat higher fees. During the Annual Meeting, employers can view complete candidate resumes in the Placement Service Office. Candidates review up-to-date job listings in a room adjacent to the Placement Service Office. Contacts are made via message boards. The Placement Service will assist with the scheduling of interviews, and interview booths will be provided at the meeting. Neither employers nor candidates need be present, however, both are urged to use this opportunity for personal contact.

All job placement will be carried out via the Placement Service. No employer will be allowed to advertise positions elsewhere at the Annual Meeting.

1996 Continuing Education Courses

Advanced Topics in Toxicokinetics — AM #1 or PM #8

Chairpersons: Glenn F. Rush, Lilly Research Laboratories, Mont-Saint-Guibert, Belgium and John F. Newton, Jr., Sanofi Winthrop, Inc., Great Valley, PA

Toxicokinetics is the pharmacokinetic characteristics of a chemical or drug at high doses. Many changes have occurred in the approach to toxicokinetic analysis recently as new guidelines have been drafted and/or implemented attempting to define the regulatory expectations. The objective of this course is to provide information and guidance toward the conduct and interpretation of toxicokinetic studies. The first lecture will focus on basic concepts in pharmacokinetics and toxicokinetics as well as a review of existing regulatory guidelines. The second speaker will address the nonlinear kinetic behavior of many chemicals at the high doses typically used in toxicology studies. The third lecture will focus on how toxicokinetic data are used to explain species differences in toxicity, enhance the efficiency of dose escalation in early clinical trials, and determine safety ratios for pre-clinical and clinical data. Finally, the fourth lecturer will present strategies for the use of toxicokinetic data in selecting doses for the two-year rodent carcinogenicity studies as well as interpretation of toxicokinetic data from animals on modified diets.

Introduction to Toxicokinetics/Basic Scientific Concepts and Regulatory Issues, G. F.Rush, Lilly Research Laboratories, Mont-Saint-Guibert, Belgium

Non-Linear Toxicokinetic Data and Interpretation of Toxicology Data, G. Lockwood, Sanofi Winthrop, Inc., Great Valley, PA

Applications of Toxicokinetics Data in Pharmaceutical Development, J. F. Newton, Sanofi Winthrop, Inc., Great Valley, PA

Application of Toxicokinetics in Dose Selection and Design of Carcinogenesis Studies, R. Dixit, Merck Research Laboratories, West Point, PA

Apoptosis: Recent Advances in Detection and Regulation — AM #2 or PM #9

Chairpersons: Mary Treinen Moslen, University of Texas Medical Branch, Galveston, TX and Sidhartha Ray, Long Island University, Brooklyn, NY

The objective of this course is to provide an update on cell suicide by the process of apoptosis. Special emphasis will be placed on the series of molecular events that influence drug-and-chemically induced apoptosis in vivo and in vitro. Speakers will describe new methods of detection and diverse responses of the immune system; the kidney and human leukemia cells. Common themes will be the roles of MAP kinases and oncogenes.

Morphological and Biochemical Changes in Apoptotic Cells, M. Treinen Moslen, University of Texas Medical Branch, Galveston, TX

New Insights into Nephrotoxicity and Apoptosis, M. A. Davis, University of Maryland, Baltimore, MD

Apoptosis in the Immune System by Direct and Indirect Mechanisms, S. Pruett, Mississippi State University, Missisippi State, MS

Molecular Regulation of Drug-Induced Apoptosis in Leukemic Cells, S. Grant, Medical College of Virginia, Richmond, VA

Toxicant Effects Mediated by Steroid and Other Receptors: Modulation of Gene Expression and Other Cellular Responses — AM #3

Chairpersons: Chris Bradfield, Northwestern University, Chicago, IL and Hollie Swanson, University of Kentucky, Lexington, KY

The objective of this course will be to familiarize toxicologists with basic information on the mechanisms by which nuclear receptors transduce the signals of their ligands to the nucleus. Emphasis will be placed on recent models developed from studies on estrogen receptor-mediated events associated with xenoestrogens (endocrine disrupters), Ah receptor-mediated toxicity of dioxins and peroxisome proliferator activated receptor-mediated toxicity of plasticizers.

Introduction, C. Bradfield, Northwestern University, Chicago, IL

Xenoestrogens, T. Zacherewski, University of Western Ontario, London, Ontario, Canada

Peroxisome Proliferators, K. Alvarez, Northwestern University Medical School, Chicago, IL

The Ah Receptor, H. Swanson, University of Kentucky Medical School, Lexington, KY

Orphan Receptors, C. Bradfield, Northwestern University, Chicago, IL

Epidemiology for Toxicologists — AM #4

Chairpersons: Richard A. Parent, Consultox Limited, Damariscotta, ME and David E. Lilienfeld, EMMES Corporation, Potomac, MD

This introductory course is designed to familiarize toxicologists with fundamental concepts in epidemiology and its application to risk assessment. The course will cover basic measures of disease occurrence such as rates, sensitivity and specificity, stratification methods, and

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confounding factors. The major forms of observational studies, cohort and case-control studies, and the use of relative risks as measures of association to disease occurrence will be discussed. Next, the organization and conduct of randomized clinical trials will be reviewed. Finally, the strengths and limitations of epidemiology data in establishing association versus causation of disease in relation to chemical and environmental exposures will be addressed. Several relevant examples of the potential use and misuse of epidemiology data for biomonitoring and risk assessment will be provided throughout the course.

Rates and Measures, J. M. Sprafka, Procter & Gamble Company, Cincinnati, OH

Observational Studies, D.E. Lilienfeld, EMMES Corporation, Potomac, MD

Randomized Clinical Trials, P. Stolley, University of Maryland, Baltimore, MD

Inferences: Association versus Causation of Disease, L. Kuller, University of Pittsburgh, Pittsburgh, PA

The Cell Cycle: Influence on Toxic Responses AM #5

Chairpersons: Thomas L. Goldsworthy, Chemical Industry Institute of Toxicology, Research Triangle Park, NC and Val Culotta, Johns Hopkins University, Baltimore, MD

It is increasingly apparent that many, if not all, toxicants exert many of their carcinogenic actions by directly or indirectly perturbing the cell cycle. This course is designed to introduce the knowledge and progress that has recently been made in understanding the cellular and molecular basis of cell cycle control and cell growth. The first lecture will describe and compare yeast and mammalian models for studying cell cycle regulation and the consequences of loss of function. The second speaker will describe the effects of tumor suppressor genes and oncogenes on cell cycle check points. The third presentation will discuss alterations in gene expression and protein function that can occur as a result of perturbations in the cell cycle. The final lecture will focus on chemically-induced alterations with critical cell cycle components, including the cyclins and cyclin dependent kinases. The overall goal of the course is to familiarize participants with an understanding of the cell cycle and its regulation, particularly with respect to toxicology issues and toxicant induced responses.

Cell Cycle Regulation: Yeast to Mammals, C. Wittenberg, Scripps Institute, La Jolla, CA

Oncogenes and Tumor Suppressor Genes in the Cell Cycle, J. Pietenpol, Vanderbilt University, Nashville, TN

Downstream Targets of Cell Cycle Control, J. Reiners, Jr., Wayne State University, Detroit, MI

Chemically-Induced Perturbations of Cyclins and Cyctin Dependent Kinases: Implications for Carcinogenesis, J.G. Babish, Paracelsian, Ithaca, NY

New Approaches for Studying Cytochrome P450-Dependent Toxicant Metabolism AM #6

Chairperson: Ronald N. Hines, Wayne State University, Detroit, MI

With the discovery that the cytochromes P450 represent a gene superfamily with each gene product exhibiting broad, overlapping substrate specifity, the task of elucidating which enzyme is responsible for the metabolic disposition of a given toxicant became exceedingly difficult. This problem was confounded by the species-specificity of several of the cytochrome P450 enzymes, as well as the discovery of several polymorphisms in the human population that affect toxicant susceptibility. Thus, it is not always possible to identify the human enzyme responsible for a given metabolic transformation based on animal studies. Further, if the responsible enzyme has been identified, one must be wary of idiosyncratic responses to exposure. The last several years have seen the development of several new approaches to studying cytochrome P450-dependent toxicant metabolism. The goal of this course will be to familiarize the participants with several of these new methods, as well as present an overview of this fascinating enzyme system.

An Introduction/Overview of the Recommended Cytochrome P450 Nomenclature and What We Have Learned Regarding the Structure and Function of These Enzymes, D.J. Waxman, Boston University, Boston, MA

The Use of Inducing and/or Inhibitory Agents as Probes for Cytochrome P450-dependent Toxicant Metabolism, M. A. Correia, University of California, San Francisco Medical Center, San Francisco, CA

Cytochrome P450 Pharmacogenetics and Toxicant Suscepitability, P.J. Wedlund, University of Kentucky, Lexington, KY

Use of Characterized Microsomal Systems and Recombinant Expression Systems to Identify Specific Cytochrome P450 Enzymes Involved in Toxicant Metabolism, S. A. Wrighton, Eli Lilly and Company, Indianapolis, IN

Aquatic Toxicology and Human Health Risk Assessments: Shared Metabolic Pathways, Shared Mechanisms of Action, Plus Data at the Bottom of the Dose Response Curve AM #7

Chairperson: Val Beasley, Department of Veterinary Biosciences, College of Veterinary Medicine, University of Illinois, Urbana, IL

Sponsored by: the SOT Veterinary Specialty Section and cosponsored by the American Academy of Veterinary and Comparative Toxicology and the American Board of Veterinary Toxicology

The focus of this session will be on the rapidly emerging field of aquatic toxicology and its application to human risk assessment. The economy of studying large numbers of aquatic animals makes it possible to examine a

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range of doses with large group sizes, enabling exploration of effects at threshold levels of toxicity. The physiologic features of fish species that are integral to xenobiotic uptake, disposition, biotransformation, elimination, and toxicokinetic modeling will be described. The sensitivity of fish to carcinogens, which has become evident in the form of epizootics of neoplasms of the liver, kidney, hematopoietic tissue, and integument, will be reviewed. Tumor biology in fish will be addressed, including oncogene/tumor suppressor gene expression, and identification of cellular markers of tumor progression and this will be followed by a discussion of the use of fish bioassays as alternatives to rodent carcinogen test systems. Finally, principles of genotoxicity and developmental toxicity studies with fish will be presented and will rely upon data from current studies utilizing fish and fish embryos to investigate basic mechanisms of mutagenesis and interrupted development. Application to risk assessment for human and environmental health will be emphasized.

Aquatic Toxicology: Evolution of the Science/Strengths and Limitations of Aquatic Organisms as Models for Human Health Risk Assessment, G. Rand, Ecological Services, Inc., North Palm Beach, FL

Extrapolating from Fishes to Human Beings: Similarities Among, and Differences Between, Fish and Mammals in the Disposition of Xenobiotics, K. Kleinow, Louisiana State University, Baton Rouge, LA

Pharmacokinetics of Xenobiotics in Fish, W. Hayton, The Ohio State University, Columbus, OH

Toxicant-Induced Carcinogenesis - Fishes as Model Species, T. Bunton, Johns Hopkins University, Baltimore, MD

Genotoxicity and Developmental Toxicity in Fish: Models for Human Risk Assessment; Sentinels for the Environment, K. Cooper, Rutgers University, Piscataway, NJ

Mitochondrial Injury in Toxicology PM #10

Chairpersons: Dean P. Jones, Emory University, Atlanta, GA and Kendall B. Wallace, University of Minnesota, Duluth, MN

Mitochondrial dysfunction often occurs early in toxicologic processes and plays a pivotal role in determining whether cells are capable of maintaining homeostasis and repair or are irreversibly damaged. This course will present basic concepts of mitochondrial function and its role in toxicity of diverse agents, including the unique nature of the mitochondrial genome and its susceptibility to mutation, the bioactivation of compounds within the mitochondria, the detoxification systems available to prevent mitochondrial dysfunction, the role of high-amplitude swelling of mitochondria in cell damage, and the methodologies for measuring mitochondrial failure in association with cell injury. The course will include a lecture on types of mitochondrial toxicants and the mechanisms involved in disruption of energy production. This will be followed by a lecture on direct assessment of mitochondrial dysfunction in living cells. The next lecture will be on the role of mitochondrial calcium cycling and activation of the permability transition pore in cell injury. The generation of reactive metabolites in mitochondria and their detoxication and effects on mitochondrial function and cell injury will also be presented. Finally, a lecture on the mitochondrial genome as a molecular target of toxicity will be presented.

Toxicant Effects on the Regulation of Energy Metabolism, D.P. Jones, Emory University, Atlanta, GA

Direct Assessment of Mitochondrial Dysfunction in Living Cells by Fluorescence Microscopy, J.J. Lemasters, University of North Carolina, Chapel Hill, NC

Mitochondrial Calcium Cycling and Activation of the Permeability Transition Pore, K.B. Wallace, University of Minnesota, Duluth, MN

Reactive Metabolites in Mitochondrial Toxicity, M.W. Anders, University of Rochester, Rochester, NY

Mitochondrial Genome as a Molecular Target of Toxicity, E. Schon, Columbia University, New York, NY

The Female Reproductive System — How to Assess Potential Toxicity PM #11

Chairpersons: Richard E. Morrissey, Schering-Plough, Lafayette, NJ and Kimberley A. Treinen, SmithKline Beecham Pharmaceuticals, King of Prussia, PA

This basic course is designed to appeal to scientists who would like to review the biology and physiology of the female reproductive system, and to learn research approaches to identify mechanisms for chemically-induced lesions in the female reproductive system. This course will emphasize the ovary, early pregnancy and uterine function, and the neuroendocrine system as targets of chemicals, as well as provide examples of proper experimental design to identify mechanisms. The speakers will also address differences between rodent and human female reproduction in order to provide perspective in extrapolating rodent data to potential human health effects. The first speaker will review the physiology and biology of the female reproductive system and describe a scheme to assess the site of action of a toxicant once initial studies have been conducted. The second talk will address ovarian physiology and in vivo and in vitro approaches to assess ovarian toxicology. The third speaker will discuss fertilization, embryo transport, implantation, decidualization, and pregnancy maintenance and the protocols that can be used to assess possible pertubations. The final talk will emphasize the important role hormones play in female reproductive processes, and appropriate protocols for assessing neuroendocrine function.

The Female Reproductive System: Physiology and Toxicological Approaches, J.J. Heindel, National Institutes of Environmental Health Sciences, Research Triangle Park, NC

Methods for Functional and Morphological Assessment of Ovarian Toxicity, B.J. Davis, National Institutes of Environmental Health Sciences, Research Triangle Park, NC

Continued on page 10

Continued from page 9

Toxicology of Early Pregnancy and Uterine Function, A.M. Cummings, U.S. Environmental Protection Agency, HERL, Research Triangle Park, NC

Assessment of the Neuroendocrine Pathways Controlling Reproduction, M.D. Culler, Immunobiology Research Institute, Johnson & Johnson, Annandale, NJ

Quantitative Uncertainty Analysis in Risk Assessment: Monte Carlo Techniques PM 12

Chairpersons: Dennis Paustenbach and Paul S. Price, ChemRisk, Alameda, CA and Portland, ME

The purpose of this course is to introduce members to the use of Monte Carlo analysis as a tool to characterize variability and uncertainty in human health and exposure components of risk analysis. The course will begin with a brief overview of the concept of probabilistic analysis and the tools for characterizing uncertainty and variation, in particular, Monte Carlo analysis. A detailed discussion of the information required for performing Monte Carlo analysis will be presented followed by several case studies which demonstrate the relative advantages and disadvantages of Monte Carlo techniques versus traditional deterministic analyses. The course will then present guidelines for the use of Monte Carlo analysis in the exposure and dose-response components of risk assessment. Finally, the course will conclude with an overview of issues concerning regulatory acceptance of Monte Carlo analysis.

An Overview of Probabilistic Analysis in Exposure and Risk Assessment, T. McKone, University of California, Davis, CA

Application of Monte Carlo Analysis to Exposure Assessment: Case Studies Involving Contaminated Air, Water, and Soil, D. J. Paustenbach, ChemRisk, Alameda, CA

Guidelines for Using Monte Carlo Analysis in Toxicity and Exposure Components of Risk Assessment, P. S. Price, ChemRisk, Portland, ME

Regulatory Issues Concerning the Use of Monte Carlo Analysis, T. Barry, US EPA, Washington, DC

De-Regulation of ras Signaling by Toxic Chemicals PM #13

Chairperson: Kenneth S. Ramos, Texas A&M University, College Station, TX

The proteins encloded by ras genes serve essential functions in the transduction of extracellular and intracellular signals that influence the proliferation and differentiation of somatic cells. The objective of this course is to summarize recent advances in the elucidation of genetic and epigenetic mechanisms responsible for injury-induced alterations in ras signal transduction and the biological consequences of such events. Participants in the course will be offered a state of the art discussion of molecular mechanisms of toxicant action which involve a prominent ras component. The first lecture will present an overview of ras structure and function followed by an in-depth discussion of chemically-induced deregulation of ras signaling in disorders of growth and differentiation. In the second lecture, the cross-talk between ras and protein kinase C in mouse skin carcinogenesis will be featured to emphasize the importance of signaling interactions. The third lecture will further describe the multiplicity and complexicity of ras functions particularly in the context of osteopontin, a protein implicated in injury-related events. The fourth and final presentation, will discuss the role of ras and of genomic instability in carcinogenesis. The course has been designed to assist investigators who wish to advance their basic understanding of signal transduction mechanisms as critical molecular targets of toxicity.

Altered ras Function and Regulation by Environmental Chemicals: Implications in Atherogenesis and Carcinogenesis, K.S. Ramos, Texas A&M University, College Station, TX

Cooperation Between Genetic Events and Protein Kinase C in Non-Transgenic and v-Ha-ras Transgenic Mouse Skin Carcinogenesis, R.C. Smart, North Carolina State University, Raleigh, NC

Mechanisms and Consequences of ras Regulation of Osteopontin Expression, D.T. Denhardt, Rutgers University, Piscataway, NJ

Ras Oncogene and Genomic Instability, P. Stambrook, University of Cincinnati, Cincinnati, OH

Applications of PCR Technologies to Molecular Toxicology PM #14

Chairperson: Jack Vanden Heuvel, Purdue University, West Lafayette, IN

Since the first description of the polymerase chain reaction (PCR) in the mid-1980s, this ingenious new tool has had a dramatic effect on molecular biology and more recently on toxicology. PCR is the amplification of selected DNA sequences via repeated cycles of DNA denaturation, annealing of oligonucleotide primers and extension by a thermostable DNA polymerase. This procedure is so sensitive that a single DNA molecule can be amplified and single-copy genes are routinely extracted out of complex mixtures of DNA. In addition, the amplification of DNA by PCR can be easily controlled and manipulated making it adaptable to innumerable, individualized situations in the field of toxicology. This course will provide an update of the rapid advancements in this area, and a detailed understanding of PCR applications to all aspects of molecular toxicology.

Introduction and Optimization of PCR, W.B. Mattes, CIBA-GEIGY Corp., Farmington, CT

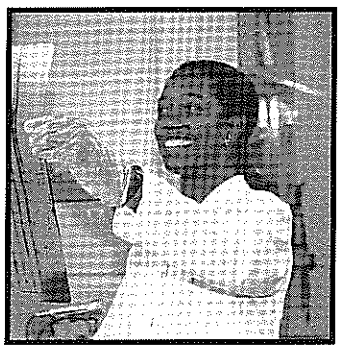
Quantitation of mRNA by PCR, J. Vanden Heuvel, Purdue University, West Lafayette, IN

Differential Display PCR, C. Cortin, Chemical Industry Institute of Toxicology, Research Triangle Park, NC

Use of PCR to Study Mutations and Polymorphisms, D.A. Bell, National Institutes of Environmental Health Sciences, Research Triangle Park, NC

Student Internships Benefit Students and Institutions

SOT Student Internships provide an outstanding learning experience for young scientists seeking hands-on experience in toxicology. In 1995, 20 interns were selected from the almost 300 student respondents to the flyers and applications distributed through science departments and undergraduate advisors at colleges and universities

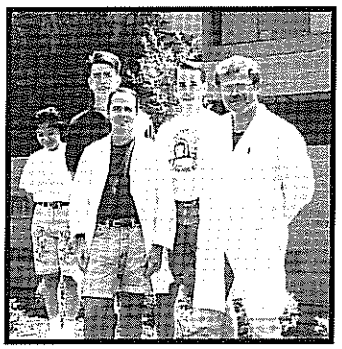


Michele Brown, University of Massachusetts

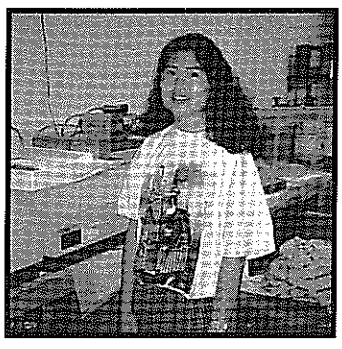
Danielle Ippolito, SmithKline Beecham

across the United States and Canada.

SOT thanks the following 15 organizations for sponsoring the 20 1995 summer interns: California Environmental Protection Agency; CIIT; Johns Hopkins University School of Public Health; Lilly Research Laboratories, Eli Lilly and Co.; Michigan State University; Procter & Gamble Company, Miami Valley Laboratories; State University of New York at Buffalo; University of Oklahoma College of Pharmacy; Genentech, Inc.; Inhalation Toxicology Research Institute; Marshall University School of Medicine; Purdue University; SmithKline Beecham; University of Massachusetts Medical Center; and SmithKline Beecham Pharaceuticals.



Interns Phuong Thao Pham, Jason Redwine, Barrett Simms, Tony Lopez and Dennis Rambo, University of Oklahoma



Janet Lam, Johns Hopkins University

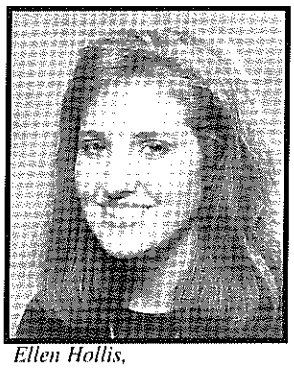
The Society's Toxicology Initiatives Task Force (TITF) together with the SOT Headquarters staff, has nurtured and coordinated the program since its beginning in 1989. The program is now handled entirely by Headquarters staff and overseen by a standing committee. Sponsoring organizations are asked to forward copies of all applications to SOT Headquarters in order to facilitate the development of a database. SOT compiles the total number of actual applicants, their geographic distribution, the number applying to more than one program, and percent accepted. This database is compared to the list of visiting minority students and future member databases.

David Johnson and Michael Beckstead, Procter & Gamble

Bryan Moloney, Johns Hopkins University

The number of sponsoring organizations has declined from 21 in 1989 to 15 in 1995. The SOT encourages members to invest in the future of toxicology by participating in this very important, rewarding program. SOT members interested in supporting one or more interns in 1996 should complete the internship form enclosed in this newsletter. Responses must be received at SOT Headquarters by January 1, 1996. Applicants will respond directly to participating programs by April 1, 1996.

Tyler Potter, Eli Lilly



Ellen Hollis, Eli Lilly

Amanda Sharpe, Eli Lilly

South Central Chapter Annual Fall Meeting

The annual fall meeting of the South Central Chapter of the Society of Toxicology is slated for October 12-13, 1995 at the University of Mississippi Medical Center in Jackson, Mississippi. Platform sessions will be conducted in the Lower Amphitheater and posters will be displayed in the Nursing Auditorium. **Dr. James S. Bus**, President-Elect of SOT, will deliver the keynote address at the meeting.

Awards will be presented in three different categories: Best Student Platform Presentation; Best Student Poster Presentation; and Best Non-student/Non-faculty Paper Presentation. The winner in each category will be awarded with a plaque and a $100 check.

Please contact **Dr. Durisala Desaiah**, President of SCCSOT, Telephone: (601) 984-5511, or **Dr. Laurence Fechter**, Secretary, Telephone: (405) 271-6593 for additional information regarding the annual meeting.

"SOT 1995 - The Challenge"

Continued from page 5

The Society has adopted an SOT Council Procedure for Developing Position Papers on Major Issues. This procedure recognizes that it is important for the Council to receive broad input from members concerning the positions the Society may take on important issues. Institution of a formal procedure for developing comments has given this process greater consistency while retaining some flexibility that might be needed to maximize effectiveness. This procedure should prove to be an effective vehicle for use in furthering federal support for fundamental research.

The Education Committee and the Toxicology Initiatives Task Force of SOT are to be congratulated on the continuing success of the SOT Minority Student Programs which they organize. These annual programs, funded by an NIH grant (through the MARC program), private industry (the R.W. Johnson Pharmaceutical Research Institute) and the Society of Toxicology, are, to the best of my knowledge, unique efforts. They are unique in that they afford an opportunity for minority students and their advisors to be exposed to the actual meetings of the Society and to Society members who serve them as mentors at those meetings. I believe that the program is also unique in the Society spends some of its own money on it. This program is especially valuable to the good number of minority students who, though possibly interested in toxicology, have no exposure to the discipline of toxicology available on their campuses. This program can do much to "seal the cracks" through which toxicology and SOT may have lost considerable potentially talented scientific personnel. As a "foster son" of Georgia, and many times when I see a peanut field, I shudder to think of what the agricultural economy of the south would be like if George Washington Carver had "fallen through the cracks" associated with the agricultural chemistry of his time. There is no place for circumstantially contrived lack of opportunity in a nation which hopes to maximize development of its scientific talent.

The present SOT administration has been exploring the possibility of creating a World Wide Web-Mosaic server on the Internet. Preliminary discussions have been held with the Specialized Information Services Division (SIS) of the National Library of Medicine (NLM) on making this a collaborative project. An SOT server could operate, for example, as part of the broader Toxicological and Environmental Health Internet Server now under construction at NLM. If this arrangement can be implemented it would markedly enhance rapid communication among SOT members. This writer is a consultant to SIS. In course of rendering consultation to that NLM division he has ascertained that the newly appointed NLM Associate Director in charge of SIS is definitely interested in exploring the feasibility of utilizing an SOT server as a component of the NLM Toxicological and Environmental Health Internet server.

The SOT initiatives and programs which I have listed by example are not exhaustive in depicting SOT. operational sophistication. The fact that they and other SOT endeavors of like excellence exist affords good hope that SOT will take up the challenge to work for enhancement of Federal support for broadly based fundamental research. Insofar as SOT takes on this challenge it will contribute to the national and global well being—assuring the continued value of SOT Assuming the challenge properly recognizes that different areas of science and their associated technologies are lightly interconnected. Advances in one area often have unanticipated major benefits in totally different areas. Furthermore, nature often yields her most precious secrets in surprising ways, to those who are well prepared and persistent, and with a schedule not often amenable to detailed planning. Thus, while we can and must do more to identify and coordinate research thrusts aimed at strategic goals, we must not limit our future by restricting the range of our inquiry. Vibrant scientific disciplines are best guaranteed by the initiatives of talented investigators and in turn provide the strongest and most enduring foundation for science in the national and global interests. That quantum theory would lead to today's electronics, or investigations of DNA structure to genetic engineering, could not be anticipated. Countless other examples could be provided; the two stated here are tangible evidence of inspiration, promise and improved quality of life provided to humanity. We can be confident that our children and grandchildren will look back at today's fundamental science and its ultimate benefits with the same surprise and appreciation that we experience today. I recommend that SOT should contribute to assuring the continuity of such a posterity.

Editor's Note: The Society appreciates Dr. Procter's thoughtful article and continuing contribution to the Society.

Faculty Position: Industrial Hygiene, Occupational/ Environmental Health Sciences

Applications are sought for a tenure-track academic year faculty position in the Industrial Hygiene program of the Purdue University School of Health Sciences. The successful applicant will be expected to have a strong commitment to teaching in the professional and graduate programs, and to establish a vigorous, extramurally funded, laboratory or field based research program. The initial goal is to identify candidates at the Assistant Professor level; however applicants with outstanding credentials could be considered for appointment at higher faculty rank. The applicant should be able to integrate with and complement current interests and expertise in the School which include indoor air quality, bioaerosols, pulmonary aerosol deposition, toxicology, exposure assessment, and health effects of nonionizing radiation. Collaborative opportunities exist in the areas of health physics, epidemiology and biostatistics, environmental engineering, agricultural safety and health ergonomics, and biomarkers of exposure and effect. The candidate must possess a doctorate in Industrial Hygiene, Environmental Health Sciences, or a related field. Review of applications will begin immediately and continue until the position is filled. Please send *curriculum vitae,* including a list of publications and any previous funding, a statement of research activities and interests, and the names, addresses and phone numbers of three references to: Dr. Frank S. Rosenthal, Chair, Search Committee, School of Health Sciences, Purdue University, West Lafayette, IN 47907. Telephone: 317-494-0812. FAX: 317-496-1377.

Purdue University is an Equal Opportunity/Affirmative Action Employer. Minority and female candidates are encouraged to apply.

Toxicologist

Merck Research Laboratories, a leader within the Pharmaceutical Industry in discovering and developing new drugs, is seeking a toxicologist with a Ph.D. in toxicology or a related field with either post-doctoral experience in toxicology or a D.V.M. The position, which is open immediately, involves designing, conducting, and interpreting pre-clinical toxicity studies on novel drug candidates to assess potential human risk. This position requires working in a multidisciplinary department whose objective is to fully characterize the toxicity of new drugs and to determine the relevance of these findings for human clinical studies. The successful candidate must possess outstanding written and verbal communication skills and a desire to work with others on project teams. If interested in learning more about this research opportunity, please contact George R. Lankas, Ph.D., Senior Director of Toxicology, Department of Safety Assessment, Merck Research Laboratories, West Point, PA 19486, Phone: (215) 652-7555, Fax: (215) 652-7758.

Assistant/Associate Professor of Toxicology

The University of Oklahoma Health Sciences Center Toxicology Program announces the opening of a tenure-eligible position at the assistant or associate professor level. The successful applicant should possess a Ph.D. in toxicology, neurosciences, pharmacology, or closely related field. A productive, independent, extramurally funded research program and evidence of effective teaching are essential. Preference will be given to applicants working in neurotoxicology and with post-doctoral experience. The position provides excellent laboratory space and support for an active research program. In addition to a significant research commitment, the successful candidate will be expected to contribute to the teaching and service missions of the College and University as well. The Toxicology Program and the Oklahoma Center for Neurosciences represent two prominent interdisciplinary growth areas on The University of Oklahoma Health Sciences Center Campus.

Applicants should submit a current *curriculum vitae* and a cover letter describing research interests and directions. Three letters of recommendation should be sent independently. The position is available July 1, 1996 and both appointment and salary are commensurate with qualifications and experience.

All correspondence should be sent to:

Laurence D. Fechter, Ph.D., Mosier Centennial Professor
and Director of Toxicology
University of Oklahoma Health Sciences Center
College of Pharmacy
P.O. Box 26901
Oklahoma City, OK 73190

The University of Oklahoma is an Equal Employment Opportunity/Affirmative Action Employer.

Assistant Professor Pharmacology/Toxicology

The Purdue University Departments of Pharmacology and Toxicology and Medicinal Chemistry and Pharmacology invite applications for a tenure-track Assistant Professor position. Candidates should hold a Ph.D. in pharmacology, toxicology, neuroscience or a related area and should have at least two years of post-doctoral training or equivalent. Individuals with research experience in neuropharmacology, neuroscience, or neurotoxicology are especially encouraged to apply, although all qualified applicants will be considered. The successful candidate will be expected to establish a strong research program with extramural funding, and have a commitment to excellence in teaching both at the undergraduate and graduate levels. Review of applications will begin September 15, 1995 and will continue until the position is filled. The position is available beginning January 1, 1996. Applicants should submit a curriculum vitae, a detailed description of research plans, and names and addresses of three references to: Gary E. Isom, Ph.D., Department of Pharmacology and Toxicology, Purdue University, West Lafayette, IN 47907.

Purdue University is an Equal Opportunity/Equal Access University.

Continued on page 14

Toxicology Salary Survey: What Do Toxicologists Earn?

Survey Conducted by Shayne Gad

Continued from page 4

Table 1

Employer	Sex	Respondents	Years Experience					
			0-1	1-3	3-5	5-10	10-20	20+
Pharmaceutical	M	261	-	60	64.4	80.7	122.9	123.6
	F	114	-	51.7	75	62	77.7	113.8
Chemical	M	185	-	66	61	70.2	83.4	116.7
	F	35	55*	64	70	66	87	105
Consumer Product	M	93	-	61	64	77	97.3	133.4
	F	36	55	59	70	76.9	88.3	-
Federal Gov	M	205	-	42.5	52.5	58.5	68.2	78.3
	F	96	55	49	50	59.3	66.3	81
State/Local Gov	M	71	45	47	38	57.5	69.1	89.4
	F	35	45	50	51.7	56.3	70	90
Contract Lab	M	135	27	50	50	58.9	85.4	107
	F	53	35	38	-	68.6	80.3	79.9
Academic	M	442	35	45	43	44.8	69	103.2
	F	126	28	43	30.8	42.5	65.7	84.1
Consultants	M	147	-	58	75	78.2	106.8	123.5
	F	60	50	55	63	86.1	93.3	95

* *Thousands of U.S. Dollars per Year*

toral degrees in the US and Canada. Table 1 presents the mean salaries for these individuals, sorted by years of experience (after receipt of doctoral degree), sex, and type of employer. Salary figures are in thousands of US dollars per year.

The remaining doctoral respondents were employees of other industries or post-docs. Results for these groups (as well as MS, BS, and associates respondents) will be addressed in the final report, which will be published in *The Journal of The American College of Toxicology.*

(1) Gad, S.C., First International Salary Survey for Toxicologist. *Amer. Coll. of Toxicol.* 8:1052-1070 (1 989).

(2) Gad, S.C. (1992) 1991 Toxicology Salary Survey Results, J Amer Coll Toxicol 11:369-378.

Debate on the Relevance of Life-long Rodent Exposures to Screen for Possible Carcinogens

Continued from page 3

session, it was clear that there was not uniform agreement on whether the rodent bioassay serves a useful purpose in our study of chemical toxicity.

The question of the usefulness of long-term rodent screening for carcinogens, although of intellectual interest, must also take into consideration the demands imposed by federal regulatory agencies. These federal agencies routinely place greater weight in life-long rodent exposures than to *in vitro* bioassays. Therefore, rodent bioassays still play an important role in the scientific investigation of carcinogenesis and in risk assessment. This does not imply that mechanistic studies should not be pursued. Rather, both approaches seem necessary for proper risk assessment.

UPCOMING CONFERENCES

■**8th International Symposium on Marine Natural Products,** September 10-15, 1995, Santa Cruz de Tenerife, Canary Islands, Spain, Prof. J.D. Martin, Inst. Universitario de Bio-Organica, Carretera Vieja de La Esperanza, 2; 38206 La Laguna, Tenerife, Spain.

■**North American Congress of Clinical Toxicology,** September 16-19, 1995, Rochester, NY, (716) 275-4392.

■**Council for the Advancement of Science in Law,** September 29-October 1, 1995, Boston, MA, Dr. David M. Benjamin, (617) 969-1393.

■**EuroConference: Mechanisms of Toxicity: Understanding Physiology and Diseases,** September 29-October 4, 1995, Dr. J. Hendekovic, European Science Foundation, 1 Quai Leazay-Marnesia, F-67080 Strasbough, France.

■**The 9th Annual Legal Symposium,** October 6, 1995, Loew's L'Enfant Plaza Hotel, Washington, DC, Contact ASAE at (800) 622-2723, request program fax document 69043.

■**Society of Forensic Toxicologists,** October 9-13, 1995, Baltimore, MD, Dr. Yale Caplan, (410) 536-1700.

■**Fall Meeting of the South Central SOT Chapter,** October 12-13, 1995, University of Mississippi Medical Center, Jackson, MS, Dr. Durisala Desaiah, (601) 984-5511 or Dr. Lawrence Fechter, (405) 271-6593.

■**Society of Quality Assurance,** October 16-19, 1995, Phoenix, AZ, Robin Smith, (703) 684-4050.

■**Risk Assessment 1995: Where Does The Great Risk Debate Stand Now?** October 17-18, 1995, Sheraton Crystal City Hotel, Arlington, VA, (800) 424-9068, Fax: (703) 416-8543.

■**A Comprehensive Review of Indoor Air Quality: Its Impact on Product Manufacturing and Building Operation,** October 18-19, 1995, Cobb Galleria Centre, Atlanta, GA, AQS Seminar, Air Quality Sciences, Inc. 1337 Capital Circle, Atlanta, GA 30067, (404) 933-0638

■**11th Annual Dermatological Conference,** October 25, 1995, Rutgers University-Livingston Student Center, Piscataway, NJ, John Herbert or Cathy Sedano at (908) 247-2900 or Fax: (908) 247-2936. *The conference has been approved for six continuing education hours by the American Academy of Dermatology and accredited by the American College of Pharmacy Education and the New Jersey Board of Pharmacy.*

■**Photocarcinogenesis: Mechanisms, Models and Human Health Implications,** October 27-28, 1995, Stouffer Mayflower Hotel, Washington, DC, Hasan Mukhtar, Ph.D., Skin Diseases Research Center, Case Western Reserve University, Hospitals of Cleveland, 1100 Euclid Avenue, Cleveland, OH 44106, (216) 368-1127, Fax: (216) 844-8993.

■**Thirteenth International Neurotoxicology Conference: Developmental Neurotoxicity of Endocrine Disrupters: Dioxins, PCB's, Metals, Pesticides, Psychoactive & Therapeutic Drugs,** October 29- November 1, 1995, Arlington Hotel & Spa, Hot Springs, AR, Prof. Joan Cranmer, Dept. of Pestiatrics, University of Arkansas for Medical Sciences, 1120 Marshall - Rm 207, Little Rock, AR 72202, (501) 320-2986, Fax: (501) 320-3947.

■**Pathway Analysis and Risk Assessment for Environmental Compliance and Dose Reconstruction,** November 6-10, 1995, Kiawah Island, SC, Radiological Assessments Corporation, Course Coordination Office, (312) 988-7667.

■**Susceptibility and Risk Assessment. The Third Annual HERL Symposium,** November 6-9, 1995 at the North Raleigh Hilton, Raleigh, NC, RSD Conference Coordinator, MD-70, Health Effects Research Laboratory, U.S. EPA, Research Triangle Park, NC 27711, (919) 541-5193, Fax: (919) 541-4002, Internet: MEETING$MAIL@HERL45.HERL.EPA.GOV.

■**American College of Veterinary Pathologists,** November 10-18, 1995, Atlanta, GA, Ms. Coley Lyons, (609) 848-7748.

■**3rd Congress of Toxicology in Developing Countries,** November 19-23, 1995, Cairo International Conference Center, Egypt, Dr. Amira Eldefrawi, International Advisory Committee, University of Maryland School of Medicine, (410) 706-3564, Fax: (410) 706-3564 or Secretary General Dr. Sameeh Mansour, Cairo, Fax: 011-202-337-0931.

■**The Commission Veterinarian/Equine Medical Director, A Short Course,** November 28 - December 1, 1995, Maxwell H. Gluck Equine Research Center, University of Kentucky, Lexington, KY, Dr. Thomas Tobin, (606) 257-3739, Fax: (606) 257-5169. *This course is directed towards Commission Veterinarians and other interested industry professionals and is approved for 16.25 hours of continuing education credit by the American Veterinary Medical Association.*

■**Toxicology of Inflammation and Reproductive Agents,** November 30- December 1, 1995, Montreal, Quebec, Dr. B. Virgo, (709) 737-7903.

■**Society for Risk Analysis,** December 3-6, 1995, Honolulu, HI, Richard J. Burk, Jr., (703) 790-1745.

■**Western Pharmacology Society's 39th Annual Meeting,** January 27- February 1, 1996, Granlibakken Conference Center, Lake Tahoe, CA, Dr. Ralph Purdy, WSP President, Department of Pharmacology, College of Medicine, University of California, Irvine, CA 92717, (714) 824-7653, Fax: (714)824-4855, E-mail: repurdy@uci.edu.

■**American Society of Pharmacology & Experimental Therapeutics - The Experimental Biology,** Washington, DC, April 14-18, 1996, Ms. Kay Croker, American Society of Pharm. & Experimental Therapeutics, 9650 Rockville Park, Bethesda, MD, 20814-3995.

■**Symposium on the Pharmacokinetics/Pharmacodynamics in the Developing System & Impact on Risk Assessment,** April 21-23, 1996, Arkansas' Excelsior Hotel, Little Rock, Arkansas, John F. Young, NCTR, Jefferson, AR, 72079.

■**RASS VI, IUTOX-International Union of Toxicology,** August 30- September 8, 1996, Royal Garden Village, Hua Hin, Thailand, RASS Secretariat, Malmfors Consulting AB, Vastmannagatan 48, S-113 25 Stockholm/Sweden, +46 8 31 19 90; Fax: +46 8 30 11 33.

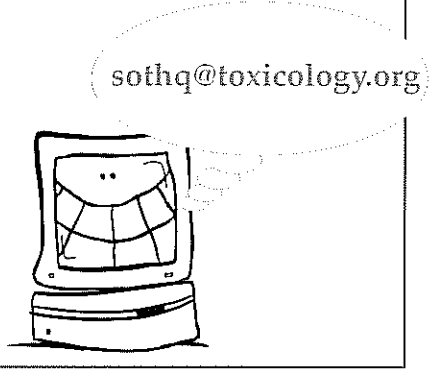
Abstract Deadline is OCTOBER 2, 1995

MEMBER NEWS

New SOT E-mail Address

Effective October 1, 1995, the SOT Headquarters office will have an E-mail address on the internet. If you wish to send us a message, address it to "**sothq@toxicology.org**". We will also continue to use our current CompuServe address.

The Headquarters staff, in conjunction with Council, is currently developing an SOT home page for the World Wide Web. An announcement will appear in the *Communiqué* as soon as the page is available for use. Additionally, Headquarters would like to incorporate within this home page links to other toxicology resources. If you are a member whose organization has a home page, and you would like to establish a link with SOT, please contact the Headquarters office so that the necessary information may be exchanged.



COUNCIL HIGHLIGHTS

Following, are the highlights of the May 18 and July 27, 1995 Council Meetings:

1. Council reviewed the results of the May Long-range Planning meeting. A September meeting has been scheduled so that Council and the Chairpersons of select Committees can jointly review and plan for the long range focus of the Society. Some of the topics that are of concern are: research funding sources, changing employment demographics and training needs, and basic and applied research to improve risk assessment.
2. Council voted unanimously to select the Association Development Group as the recipient of a three year management contract.
3. Council approved maintaining SOT's financial reserves at 100% of the operating expenses for the 1995-96 fiscal year.
4. Council approved initiating the planning and research phase of a legislative advocacy contract with Capitol Associates, a Washington, DC firm.
5. Council agreed that SOT be a sponsor of The Science Coalition, a group who's goal is to sustain the federal government's commitment to basic research.
6. Council approved a Dues Waiver Policy for unemployed members; details will be printed in a future Communiqué and on the dues renewal form.
7. Council approved SOT jointly sponsoring the EPA Science Achievement Award for Health Sciences.
8. Headquarters will provide applicants, who have problems locating a sponsor to support their memberships application, with names of SOT members from the applicant's general vicinity or specialty area who might serve as potential sponsors.
9. Council approved a contribution to Connecticut United for Research Excellence (CURE), to be used in support of a nationwide distribution of middle school science education materials. (For more information on this program, please call the SOT Headquarters.)
10. Council amended the award policy and procedures to state that "sponsoring an award at the SOT Annual Meeting is a benefit of Corporate Associate membership; non-Corporate Associate companies will incur an administrative processing fee."

ICT-VII Meeting

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Each morning, a plenary lecture was presented. On Tuesday morning, the Deichmann Lecture on "Molecular Epidemiology and Human Cancer Risk Assessment" was presented by C.C. Harris. The three plenary lectures were: "Nitric Oxide in Biology and the Implications for Toxicology" by M.A. Marletta, "Receptor Mediated Toxicity" by J. A. Gustafsson, and "Can Chemicals be Loved? - A Problem for 2000" by C.L. Berry.

The scientific program also contained 13 workshops, 21 symposia, 2 debates and numerous platform, poster, and poster-discussion presentations to accommodate the 1300 abstracts. There were 1878 scientific registrants, 428 exhibitor registrants, 177 guests and 8 press for a total of approximately 2500 attendees at ICT-VII.

The Society of Toxicology is indebted to the organizers of the congress for their extraordinary dedication of time and expertise:

Curtis Klaassen	President
Roger McClellan	Treasurer
James Woods	Secretary
Donald Reed	Scientific Program Chair
David Eaton	Local Arrangements Chair
Kendal Wallace	Continuing Education Chair