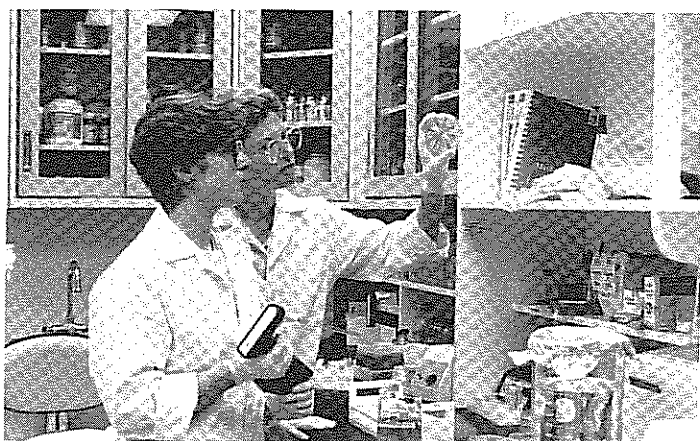


Society of Toxicology NEWSLETTER

SEPTEMBER/OCTOBER 1990

1990 SOT Summer Internship Program Shows Healthy Growth



Dr. Cheryl Walker, coordinator of the CIIT Summer Intern Program, and Rebecca Noranbrock, a summer intern from the College of Notre Dame of Maryland, examine yeast cells used to express recombinant DNA.

The Society of Toxicology Summer Internship Program in its second year continued to generate strong support from students and sponsors. The internships demonstrated diverse career opportunities in toxicology and gave 32 undergraduates a real-life glimpse at toxicology beyond the classroom. 168 students applied for summer internships sponsored by 30 organizations representing industry, academia and government.

Continued on page 3

Search for New FAAT Editor

Dr. Bernard A. Schwetz, Editor of *Fundamental and Applied Toxicology*, has announced his intent to resign as editor effective December 31, 1991. The SOT Board of Publications has accepted his resignation with regret, noting Dr. Schwetz's key role in guiding the journal. The SOT Council has directed the Board of Publications to conduct a search for a well-qualified individual to serve as the editor of FAAT beginning January 1, 1992.

The Board of Publications has prepared a written description of the responsibilities of the FAAT editor, which will be made available to individuals interested in serving as editor.

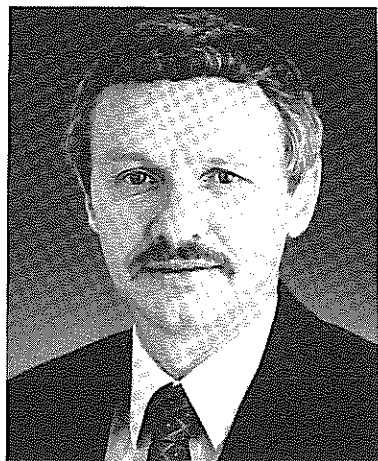
In brief, the editor is expected to provide the scientific editorial leadership for the journal and serve as the primary coordinator of interactions between the authors of submitted manuscripts, associate editors, members of the Editorial Board, and other manuscript reviewers. The publisher of FAAT, Academic Press, initially receives all manuscripts submitted and handles the majority of clerical and non-scientific editorial functions. This minimizes clerical functions that must be performed in the office of the FAAT editor. The editor is reimbursed by the SOT for budgeted expenses incurred in the performance of official duty.

Individuals interested in being considered for this important position should submit both a letter stating their interest in the FAAT editor position and a curriculum vitae to Dr. Richard E. Peterson, Chairperson, SOT Board of Publications, c/o School of Pharmacy, University of Wisconsin, 425 N. Charter Street, Madison, WI 53706. Telephone: (608) 263-5453, fax (608) 262-3397. The closing date for receipt of FAAT editor applications is December 1, 1990. ●

Q: Who designed the Society of Toxicology Seal and what does it represent?

INSIDE THIS ISSUE

- President's Message 2
- Society of Toxicology Bulletin 5
- Annual Meeting Information 6
- Continuing Education Courses 7
- Placement Services 14



Society of Toxicology
 1101 14th Street, NW
 Suite 1100
 Washington, DC 20005
 (202) 371-1393
 Fax (202) 371-1090

Deadline for next issues:

October 10, 1990
December 10, 1990
February 10, 1991
April 10, 1991

1991 SOT Annual Meeting
 February 25–March 1
 Loews Anatole Hotel
 Dallas, Texas

President's Message

Education is a major emphasis of the Society of Toxicology. The Society expends a considerable amount of its resources on education and there are a number of committees within the Society whose main task is education.

The Tox 90's *ad hoc* Educational Issues Task Force was established two years ago. Its main task is to attract potential graduate students into the discipline of toxicology. This committee, consisting of **A. Jay Gandolfi** (Chairperson), **Robert Dudley**, **David Eaton**, **Michele Medinsky** and **Harihara Mehendale**, has been extremely busy. The committee has established a Summer Internship Program to enable college students to have an experience in the discipline of toxicology. This program has been very successful and included in this Newsletter are a few pictures of students enjoying their summer educational experience. While 168 students applied for the Summer Internship Program, only 32 students were placed. Also included in this Newsletter is a request for additional sponsoring organizations for next year's program, and I encourage you and your organization to become a part of this program so we can increase the number of students to whom we can provide this opportunity. The Committee is presently preparing posters on toxicology career/educational opportunities to be sent to all college biology and chemistry departments. Interested students will return a postcard to our Washington office and they will receive a copy of the *Resource Guide to Careers in Toxicology* that all members of the Society received this spring, and their names will be forwarded to the various graduate programs. The Committee has also prepared both a large mobile poster display as well as a set of 35mm slides on the educational/career opportunities in toxicology. These are available for loan from the Washington office and I encourage the membership to use these resources to encourage young people to choose toxicology as a career.

The Education Committee consists of **Marion Ehrich** (Chairperson), **Linda Birnbaum**, **A. Jay Gandolfi**, **Serrine Lau**, **Robert Roth** and **Stephen Safe**. This committee is presently busy preparing relevant information on the Society of Toxicology for student members. This committee selects the graduate student travel awards and hopes to be able to have enough funds to send about 60 students to our annual meeting in Dallas. This committee is also responsible for selecting the SOT Graduate Student Fellowships. This year we plan to have four awards: Ciba-Geigy, Hazleton, Hoffmann-La Roche and Procter & Gamble. In addition, this committee selects the Colgate-Palmolive post-doctoral fellowship in *in vitro* toxicology, the Air Force post-doctoral fellowship and the Air Force new investigator award. Another major effort of this committee is introducing toxicology to minority students. They are planning a program for minority students at our annual meeting in Dallas. In fact, the SOT was recently awarded a three-year grant from the National Institutes of Health to support this minority program at the annual meeting of SOT. This grant will provide transportation and per diem expenses for approximately 30 undergraduate science majors who belong to under-represented minorities. The objective of this program is to introduce toxicology as a career choice, and allow interaction between these students and scientists working in the field of toxicology.

The Continuing Education Committee has been working diligently and has already selected the courses for the meeting in Dallas. They have developed an exciting program, which is described in another section of this Newsletter. Members of the Continuing Education Committee are **Donald deBethizy** (Chairperson), **James Bond**, **Janice Chambers**, **Donald Fox**, **Robin Goldstein**, **Andrew Parkinson** and **Kendall Wallace**.

While these three committees all have education in their titles, many other committees of our Society are also involved in education. For example, the Animals in Research Committee is preparing educational materials on the benefits of animal

usage, and the Committee on Public Communications is preparing slides and other educational material on how to communicate toxicological principles with the general public. I guess the essence of the annual meeting is education and the purpose of our journals is education; thus, the Program Committee and Board of Publications could also be considered education committees.

Thus, the Society of Toxicology is extensively involved in education. We are not only involved in educating our members (annual meeting, continuing education, journals, etc.), but also involved in educating young people about a career in toxicology, as well as providing resources to us toxicologists to educate the general public on the principles of toxicology. Our educational activities reach a peak at our annual meeting, which this year will be in Dallas from February 25 to March 1. Please plan to attend. ●

Sincerely,



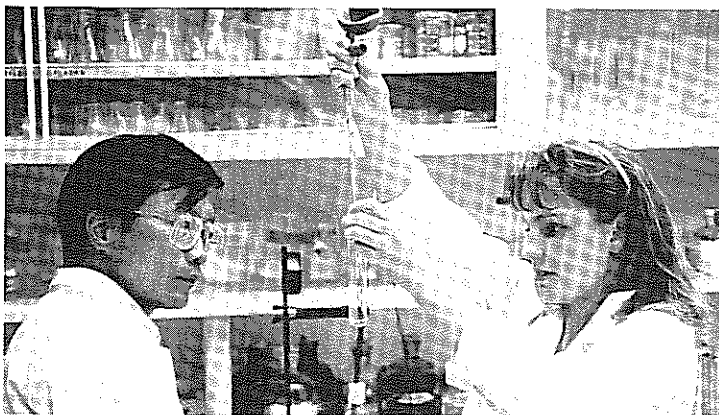
Curtis D. Klaassen, Ph.D.

Summer Internship Program

Continued from page 1

Students were recruited on a national basis using flyers and applications distributed through science departments at colleges and universities across the United States and Canada. This year's program built on the foundation of last year's success and established the SOT Summer Intern Program as one that will pay long-term dividends to the entire discipline of toxicology.

SOT members interested in supporting one or more interns during the summer of 1991 should provide the information requested on the form which is enclosed in this newsletter. SOT also welcomes single page flyers or information sheets



Dr. James D. Sun watches Ms. Joy Mockbee, an intern from Northern Arizona University, prepare a sample of red blood cells for density gradient separation.

A: The SOT Seal was designed by Louise Shaffer, wife of Founder C. Boyd Shaffer. The Seal appears on the stationery of the Society and on the cover of the journals of the Society and newsletter. Mrs. Shaffer sought to portray an overall idea of "Safety and Protection from Poison Through Increasing Knowledge" with the Seal. The significance of the symbols is as follows:

SALUS-Latin for safety

The riband-A token of pre-eminence or superiority

The arrow-Toxicum (Latin for poison arrow)

The shield-Protection

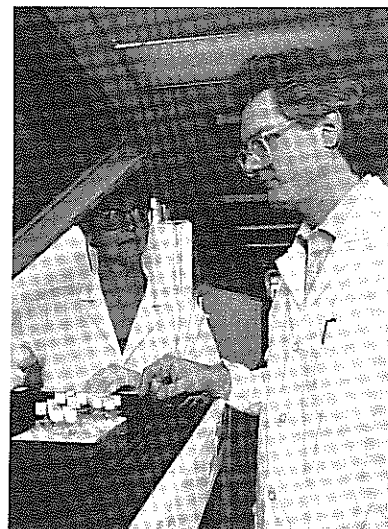
The wreath-symbol of success

Radiating lines-Force manifesting itself: victory over ignorance.

If the shield were colored, it would appear in white, a red background would suggest warning or danger, a black arrow would mean ignorance, a white riband would mean wisdom, and the olive green wreath would indicate vigor. ●

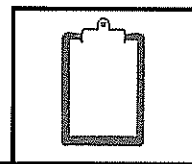
providing additional information on positions. In order to maintain a successful program, responses must be received at SOT Headquarters by **January 14, 1991**. Potential sponsors will receive applications of qualified students by mid-February, allowing ample time for evaluation and selection.

The Society of Toxicology and the Tox 90s *ad hoc* Educational Issues Task Force extend a sincere thanks to sponsors of the 1990 Summer Internship Program and others offering encouragement, suggestions, and other forms of support. Additional sponsors are encouraged to invest in the future of toxicology by participating in the 1991 Summer Internship Program. ●



SOT summer intern Michele Ann Loos and Dr. Gregory Kedderis of CIHT analyze tissue samples for radioactivity associated with cyanoethylene oxide, the epoxide metabolite of acrylonitrile.

Announcements



1991 Burroughs Wellcome Award

The Burroughs Wellcome Fund offers a five-year Toxicology Scholar Award of \$300,000, administered by the Society of Toxicology and awarded to an individual in a U.S. school. A commitment to toxicology as a basic science by the individual and the institution is a major criterion. Selection is made by the guidance of a five-member committee and based on demonstrated ability and potential of the candidate, strength of commitment of the institution to program quality and the relative importance of the Award to the success of the program.

Applications are to be received by **December 3, 1990** by the Chairman, Advisory Committee for the Burroughs Wellcome Toxicology Scholar Award, **Dr. Tom S. Miya**, School of Pharmacy, Beard Hall, Campus Box 7360, University of North Carolina, Chapel Hill, North Carolina 27599 (Telephone: (919) 966-1121.) ●

Air Force Grants

The Society of Toxicology is pleased to announce the availability of the Air Force Office of Scientific Research Toxicology Grants. They include: One Post-Doctoral Research Award consisting of a two-year grant of \$40,375 per year (a new grant annually) and a New Investigator Research Award, a one-year grant (non-renewable) for \$61,750.

Interested parties should submit written requests for details and application to: Air Force Grants Review Committee, c/o Society of Toxicology, 1101 Fourteenth Street, NW, Suite 1100, Washington, DC 20005.

Closing date for grant submission is **January 15, 1991**. Grant work begins in the summer of 1991. ●

Colgate-Palmolive Postdoctoral Award Seeks Applications

The Colgate-Palmolive postdoctoral award for *in vitro* toxicology has expanded its scope, with applications invited from individuals conducting research in any aspect of *in vitro* toxicology. The award is available to post-doctoral trainees in their early years of study beyond the Ph.D., M.D., or D.V.M. degrees who are employed by academic institutions or research institutes worldwide. The

post-doctoral advisor must, however, be a member of SOT. This 2-year \$67,000 award includes an annual stipend of \$22,000 and additional funds that can be used for supplies, equipment, or research-related travel. The application deadline is **November 1, 1990**. The award will be presented at the SOT Annual Meeting in Dallas, with funding to begin at that time or anytime before September 1, 1991. Application materials can be obtained from the Education Committee, Society of Toxicology, 1101 Fourteenth Street, NW, Suite 1100, Washington, DC 20005. ●

Metals Specialty Section

In recognition and support of excellence in graduate student research, the Metals Specialty Section invites graduate students to apply for two awards and postdoctoral students for one award to be presented at the upcoming Society of Toxicology Annual Meeting in February of 1991. Each award will be based on work submitted in the form of an abstract to be presented at the annual meeting and will include a cash stipend of \$400. Abstracts will be evaluated with the authors'/sponsors' names removed and will be judged on the basis of quality of study design and interest/importance of results, with additional consideration of quality/clarity of written presentation and relevance of the study to human exposures.

Each student applicant must be first author of the abstract, which must describe research performed while a student. Qualified applicants should send their name, address, abstract, and a letter of support from a full member of the Society of Toxicology to the address listed below. The letter of support should state that the work was done while a student, should clearly designate either graduate or postdoctoral student category, and should indicate that this is the only specialty section award sought with this work. Abstracts may be submitted any time after October 5, 1990, with a deadline for submission of **January 1, 1991**. An awards committee will then select the winners, and awards will be presented at the 1991 Specialty Section Meeting in Dallas, Texas.

Send abstracts to: Dr. Carol Walsh, Secretary/Treasurer, Metals Specialty Section, c/o Boston University School of Medicine, 80 E. Concord St., L-603, Boston, MA 02118. ●

Society of Toxicology Bulletin



Postdoctoral Opportunities List Under Development

The SOT office is developing a separate list of postdoctoral programs to respond to inquiries resulting from the Tox '90s educational/career materials. Most academic programs are already included in the Resource Guide. We are interested in getting information concerning those academic programs not listed in the Resource Guide and programs such as those available in research institutes and the pharmaceutical or chemical industry. If you would like to assure that your program is included among the SOT educational/career materials, please contact the SOT office, (202) 371-1393. ●

Education Committee Seeks "Mentors" for Minority Student Programs at Annual Meeting

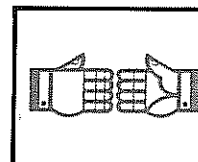
The SOT Education Committee has been informed that, due to a grant from the NIH, they will likely be able to expand their efforts to introduce toxicology to minority undergraduate science majors at the 1991 meeting in Dallas. For this effort, the Education Committee will require assistance from SOT members, postdoctoral students and others willing to serve as "mentors" for these students at the meeting. Mentors would help students find the rooms in which special sessions for them will be held during the time period between Monday afternoon and Tuesday afternoon. Mentors should also generally make these minority undergraduate science majors feel welcome at SOT. About 15-30 volunteers with responsibility for 1-2 students each are required. Please contact Donna Thomas by **January 15, 1991** at the SOT office, (202) 371-1393, if you are willing to help. ●

1991 Meeting Travel Grants Available for Minority Students

The Society of Toxicology is interested in receiving applications from minority undergraduate science students interested in travelling to the Annual Meeting in Dallas to learn about opportunities in toxicology. To promote the minorities program of the Society, funding has been received that will allow about 30 undergraduates and about 4-10 advisors of minority science students to attend the Annual Meeting. Travel and lodging expenses will be provided. Award recipients, selected by the Education

Committee of SOT, will attend the Educational Program for Minority Students on Monday, February 25, and the Minority Poster Session on Tuesday, February 26. Individuals interested in this award program should request an application from the following address: Minority Travel Awards, Society of Toxicology, 1101 Fourteenth St., NW, Suite 1100, Washington, DC 20005. Deadline for receipt of applications is **November 1, 1990**. ●

Regional Chapter News



Midwest Chapter

More than 120 people took part in the Spring Scientific Meeting of the Midwest Regional Chapter held May 11 at Marriott's Lincolnshire Resort in Lincolnshire, IL. The symposium was organized by the Program Committee chaired by **Dr. Robert Dudley**, President of the Chapter.

Titled "Perspectives in Environmental Contamination," the meeting featured stimulating and timely presentations including 16 poster presentations. At the meeting, the Midwest Chapter presented **Janardan K. Reddy** with the 1990 DuBois Award. The Award is given annually to an outstanding toxicologist in the Midwest. **J.A. Bacon**, author of "In Vitro Evaluation of Galactosamine and Ethionine-Induced Cytotoxicity in the Chang Human Liver and H-4-II-E Rat Hepatoma Cell Lines," received the Victor A. Drill Award for the best poster. The paper was co-authored by D.A. Linseman. The prize, consisting of a trip (registration, airfare, and lodging) to the SOT national meeting, was funded by G.D. Searle, Skokie, IL. ●

Mid-Atlantic Chapter

The Mid-Atlantic Regional Chapter of SOT will sponsor the "Immunotoxicology Symposium on Principles and Mechanisms" in Princeton, NJ, on Thursday, November 15, 1990. This one day symposium will be held at the Princeton Ramada Hotel. The presentations will include basic principles of immunology and models used to assess immunotoxicity, both *in vivo* and *in vitro*. Also to be discussed are considerations in dealing with immunocompromised patients, host resistance, and regulatory aspects of drug approval. For further details contact: **Patricia Weideman**, NYU Medical Center, Institute of Environmental Medicine, A.J. Lanza Laboratories, Tuxedo, NY 10989. ●

Annual Meeting Information

DALLAS

Guest Hospitality Center and Program

Guests must be registered for the Annual Meeting to have access to the Hospitality Center and to be eligible for the discounted tour rates. Guests can register by using the Annual Meeting registration form.

The Hospitality Center will be open daily beginning Sunday afternoon, February 24.

The Center will be staffed Sunday through Wednesday with a representative from a tour agency. He will provide information on the city, registration for the tours offered through the Society, or tour tickets purchased in advance of the meeting.

A special Guest Program has been planned for this meeting and will be printed in the Preliminary Program, to be mailed in December.

Social Evening

The social evening on Tuesday, February 26, will be a unique Southwestern experience offering the best of the Old West at the Circle R Ranch. The evening will include an all-you-can-eat Western barbecue, a rodeo show, square dancing, horseback riding, and many other events all that allow Annual Meeting attendees to enjoy the abundant Southwestern flavor and culture.

Reserving Space for Auxiliary Meetings

Specialty sections, committees, alumni organizations and others who wish to hold a meeting or social function at the Loews Anatole Hotel during the week of the Society meeting, February 25–March 1, 1991, should contact Jean Francese at Society headquarters as soon as possible, but no later than **December 14, 1990**. Space will be assigned on a first-come, first-served basis, after the SOT scientific and social programs have been accommodated.

Forms will be sent to Committees, Specialty Sections, Chapters and other groups who have held an ancillary function within the last two years.

Placement Services

The Society of Toxicology Placement Service provides employers and job seekers with an opportunity to establish contacts relating to their specific needs and areas of interest.

Pre-Meeting

Both employers and candidates for positions must register with the SOT Placement Service and pay a nominal fee. Employers fill out job description forms and candidates complete narrative resumes and computer forms. Information provided on the computer forms is used to help "match" candidates with positions described by employers. Employers registering before **December 14, 1990**, receive packets containing resumes of registered candidates and "matches" for specific positions. Please contact the SOT office for Placement Service forms.

On-Site

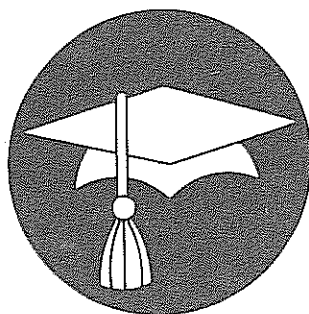
The SOT Placement Service will be open on Monday from 10:00 am-3:30 pm for registration of employers and candidates only, and Tuesday-Thursday for full placement services. Registrations for the placement service are accepted at the Annual Meeting. During the Annual Meeting, employers scan the complete packets of resumes at the Placement Service Suite. Candidates look over up-to-date job listings in a room adjacent to the Placement Service Suite. Contacts are made via a message board. The Placement Service does not arrange interviews. 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.

Post Meeting

All candidates will receive a mailing about one month after the meeting that contains a list of all jobs posted at the Annual Meeting. Employers will receive a complete packet of candidates' resumes. The Placement Service should be notified promptly after positions are filled. ●

Continuing Education Courses for 1991 SOT Meeting

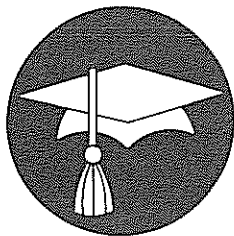


The Continuing Education Committee—J. Donald de Bethizy, (Chairperson) James A. Bond, Donald A. Fox, Robin S. Goldstein, Janice E. Chambers, Andrew Parkinson, Kendall B. Wallace—is pleased to offer eleven courses this year for the upcoming SOT meeting in Dallas, TX. The course descriptions are given below.

In selecting courses for this year, the Committee relied heavily upon suggestions from the membership who responded to last year's course questionnaires. For example, over 90 percent of the respondents favored Advanced courses and offering selected courses in both the morning and afternoon sessions. This year there will be three Advanced courses (Neurotoxicology, Immunotoxicology and Molecular Biology) and three offered both in morning and afternoon sessions (Physiologically-Based Pharmacokinetic Modeling, Risk Communication and Molecular Biology.) Advanced courses will focus on selected issues or current concepts and individuals signing up for these courses will be expected to have a basic understanding of the area being covered.

We also received suggestions related to courses that might be oriented toward target organs and selected toxic agents. The Continuing Education Committee will continue a series of courses related to Target Organ Toxicity and Toxicity of Agents. This year, one course related to Target Organ Toxicity (Reproductive System) and two courses related to Toxicity of Agents (Metals and Naturally-occurring Toxins) will be offered. In addition, we were asked to offer courses in Risk Assessment and Public Communication. The Risk Communication course which is described below addresses this need. We are also considering a new course on **Communicating Toxicology to the Public**. If offered, this course will be on Sunday night, February 24, and conducted as a Socratic discussion among a panel of distinguished scientists, regulators, and media representatives. More detail on this special course will be available in the next newsletter.

The Committee would like to share some of the results of last year's questionnaires for the courses. Approximately 70 percent of the respondents rated the courses "good" to "excellent." Over 90 percent of the respondents were "somewhat" to "very much" pleased with slide quality, audio quality, and seating arrangements. The Committee found the responses valuable in terms of providing guidance for restructuring the course format; specifically, respondents wanted more time for a question and answer period. The course format will include a 30-minute question and answer period after the completion of all lectures in a course. The Committee welcomes suggestions for potential courses that might be offered and would like to encourage everyone to contribute their ideas to members of the Committee. ●



Continuing Education

Novel Techniques in Inhalation Toxicology

Chairperson: Christopher R. E. Coggins, R. J. Reynolds Tobacco Co., Winston-Salem, NC

Inhalation toxicology has a very large number of different approaches, not all of which are particularly apparent to the novice. This course is designed to introduce novel technologies that are being used to cover four of the more deficient areas. The first of these covers the basic concepts of dosimetry, where Dr. Paul Ayres will review methods of obtaining data on actual inhaled amounts of test materials. A second area where knowledge is relatively scarce is work with human volunteers: Dr. Sidney Soderholm will explain the current methodologies. Animal models of respiratory disease have tended in the past to concentrate on neoplastic end-points: this deficiency will be corrected by Dr. Jack Harkema. The complicated and poorly-understood series of events that occur when inhaled materials actually arrive at the alveolus is the subject of the final speaker, Dr. Werner Stober.

- Dosimetric Considerations**, Paul H. Ayres, R.J. Reynolds Tobacco Company, Winston-Salem, NC
- Studies with Human Volunteers**, Sidney C. Soderholm, University of Rochester Medical Center, Rochester, NY
- Animal Models of Non-Neoplastic Human Respiratory Tract Disease**, Jack R. Harkema, Inhalation Toxicology Research Institute, Albuquerque, NM
- Modelling of Alveolar Events**, Werner Stober, Chemical Industry Institute for Toxicology, Research Triangle Park, NC

Advanced Neurotoxicology

Chairperson: Donald A. Fox, University of Houston, Houston, TX

This Advanced Neurotoxicology Course will cover cellular and molecular aspects of neuronal and axonal injury and repair processes following chemical exposures. Each speaker will present an overview of their topical area as well as discuss state-of-the-art techniques and neurobiological/neurotoxicological principles. Specifically, the talks will focus on second messengers (i.e., cAMP, cGMP, calcium), signal transduction mechanisms, elemental and ionic changes in the extracellular and intracellular environment, and alterations of axonal proteins in the CNS and PNS. The advantages and disadvantages of using *in vivo* and *in vitro*

model systems will be discussed. Finally, the importance and relevance of this type of cellular and molecular neurotoxicology data in assessing neurobehavioral dysfunction will be addressed.

The Role of Calcium in Physiological and Pathological Response to Chemicals, James W. Putney, Jr., NIEHS, Research Triangle Park, NC

Signal Transduction in a Regenerating Neuronal System, Randall R. Reed, The Johns Hopkins University, Baltimore, MD

Element Distribution and Water in Normal and Injured Axons, Richard M. LoPachin, SUNY, Stony Brook, NY

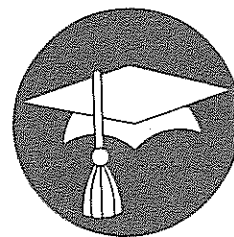
Cellular and Molecular Guideposts to Axonal Reactions and Repair, Kenneth R. Reuhl, Rutgers University, Piscataway, NJ

Introduction to Physiologically-Based Pharmacokinetic Modeling (morning session)

Chairperson: Michele A. Medinsky, CIIT, Research Triangle Park, NC

The objective of this course is to provide an overview of the basic principles of physiologically based pharmacokinetic (PBPK) modeling. The first lecture will review the history of PBPK model development from its foundations in anesthesiology and chemotherapy, basic concepts critical in the formulation of all PBPK models, and philosophy intrinsic to PBPK models that differentiates them from data based models. Included in this lecture will be the mathematical structures that form the foundation of PBPK models. The second lecture will emphasize the physiological, chemical and biochemical determinants required for predicting chemical behavior. These determinants will include flow-related parameters such as ventilation and perfusion, organ volumes, solubilities of chemicals in biological fluids, metabolism and macromolecular binding. The third lecture focuses on applications of PBPK to volatile organic chemicals and how these models have been used to test hypotheses regarding chemical behavior, to provide insights into behaviors such as enzyme inhibition, and to generate laboratory studies to test new hypotheses. The fourth lecture provides an introduction to biologically-based tissue-response, or pharmacodynamic, models and illustrates how, when properly constructed, these models are closely linked, and flow naturally from PBPK models. This course is suggested for those who wish to become familiar with PBPK

Continuing Education



models as well as those who anticipate that they will be using these models in their own research. This course will be offered in the morning session only and is a prerequisite for the course described below.

Principles of Physiologically-Based Pharmacokinetic Modeling: Model Structures, Compartments, and Philosophy, Melvin E. Andersen, CIIT, Research Triangle Park, NC

Determinants of Chemical Disposition: Predicting Behavior from Physiological Models, Richard H. Reitz, The Dow Chemical Company, Midland, MI

Applications of PBPK Models in Toxicology, Harvey Clewell III, AAMRL/TH, Wright Patterson AFB, OH

Future Directions in Physiologically-Based Modeling: Biologically-Based Tissue Response Models, Rory B. Conolly, CIIT, Research Triangle Park, NC

Implementing Physiologically-Based Pharmacokinetic Models (afternoon session)

Chairperson: Michele A. Medinsky, CIIT, Research Triangle Park, NC

The objective of this course is to provide "hands-on" computer experience for attendees and permit them to implement concepts developed in the morning session by conducting their own simulations. Personal computers will be available for use by attendees. Course lecturers will guide the attendees through the exercises as a group and provide individual consultations as needed. Because this course will involve significant computer simulation, registration will be limited and attendance at the morning session will be a prerequisite. This insures that all participants have maximal participation in interactive sessions and maximal interaction with lecturers. Attendance at the morning session assures that all participants are acquainted with necessary terminology and mathematical structures. *We suggest that only those individuals that foresee a relatively near-term need for implementation of PBPK models register for the afternoon session.* These sessions begin with the writing and running of PBPK models on the computer. The computer code and equations for setting up a model for a volatile organic chemical will be used as a starting point. Attendees will perform interspecies and interchemical comparisons and learn how model behavior is altered by the parameters they choose. Next the inhalation model will be expanded to incorporate both intravenous and oral exposure routes into the PBPK model. Attendees will be able to make their own route-to-route

extrapolations. Finally, we will go beyond the single exposure and learn how to alter the model code to accommodate multi-day exposures, and perform simulations of chemical behavior over a range of doses to generate "dose-response" curves. The equations and computer code for all simulations will be included in the syllabus for this course. Thus, individuals with some experience in PBPK model development may want to purchase the syllabus only.

Writing and Running PBPK Programs on the Computer: Setting up a Model for a Volatile Organic Chemical, Rory B. Conolly, CIIT, Research Triangle Park, NC

Interspecies Extrapolations and Interchemical Comparisons, Michael L. Gargas, CIIT, Research Triangle Park, NC

Route-to-Route Extrapolation: Incorporating Intravenous and Oral Routes into PBPK Models for Inhalation, Richard H. Reitz, The Dow Chemical Company, Midland, MI

Setting up Models for Multi-Day Exposures and for Evaluating Dose-Response Curves, Harvey Clewell III, AAMRL/TH, Wright Patterson AFB, OH

Toxicity of Agents: Metals

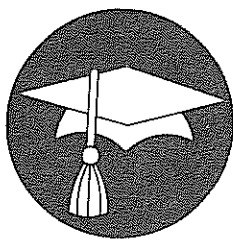
Chairperson: Michael P. Waalkes, National Cancer Institute, Frederick, MD

This course will be devoted to discussing the toxicology of metals, a diverse group of extremely important environmental and industrial toxicants. Basic fundamentals of the metabolism of toxic metals will be addressed, including the bioavailability, transport, uptake, speciation, tolerance mechanisms and factors influencing toxicity. An overview of specific mechanisms of metal toxicity will be given focusing on metals of major toxicological importance including lead, mercury, cadmium, chromium and others. Methods in the therapeutic intervention of metals intoxication will be covered with emphasis on current developments in chelation therapy of metals. Finally, the carcinogenic potential and mechanisms of selected metals will be covered.

Metal Metabolism, Robert A. Goyer, University of Western Ontario, London, Ontario, Canada

Mechanisms of Metal Toxicity, Thomas W. Clarkson, University of Rochester, Rochester, NY

Continued on page 10



Continuing Education

Therapeutic Intervention in Metal Intoxication,

H. Vasken Aposhian, University of Arizona,
Phoenix, AZ

Metal Carcinogenesis, Michael P. Waalkes; National

Cancer Institute, Frederick, MD

Advanced Immunotoxicology

Chairperson: Ralph J. Smialowicz, EPA, Research Triangle Park, NC

Recent advances in immunology and in cellular and molecular biology have provided new and sensitive techniques for the detection and evaluation of xenobiotic-induced immune dysfunction. The purpose of this course is to provide the attendee with in-depth information on these recent and novel approaches for the identification and characterization of immunotoxicants. *In vitro* techniques useful in the evaluation of immunotoxicants will be discussed by the first lecturer. Antigen-induced lymphocyte maturation techniques, using primary lymphoid cells cultured with drug-metabolizing systems (i.e. S-9 supernatant fractions and hepatocyte co-culture and the transfection of P-450 genes into lymphoblastoid antibody-secreting cell lines, will be presented. Methods utilizing mixed-cell culture systems (e.g., Langerhans cells, keratinocytes,) which can potentially be used for assessment of contact sensitizers by monitoring distinct phases of the response, will also be discussed. Cytokine evaluation in the context of immunotoxicity testing and characterization will be discussed by the second lecturer. A brief overview of cytokine biology will be followed by a discussion of the various considerations in choosing appropriate cytokines for examination. Comparison of cytokine assay methodologies (i.e. bioassays, immunoassays and molecular probes) as well as the advantages and disadvantages of each testing approach will be presented. The third lecturer will present a review of current thinking in the area of local proliferation responses and phenotype analysis in immunotoxicity testing. The application of cDNA probes and *in situ* hybridization techniques used in conjunction with the popliteal lymph node assay to assess the *in vivo* modulatory potential of xenobiotics will be discussed. The final speaker will discuss the role that host genotype plays in environmental-host immune interactions. This presentation will consider genes and gene families of particular importance within immunotoxicology. The strategies used to address genotypic variation in immunotoxicological evaluations will also be discussed.

Introduction, Ralph J. Smialowicz, EPA, Research Triangle Park, NC

Opportunities for *In Vitro* Testing in Immunotoxicology, Michael I. Luster, National Institute of Environmental Health Sciences, Research Triangle Park, NC

Cytokine Assays in Immunotoxicology: Applications and Practical Considerations, Robert V. House, IIT Research Institute, Chicago, IL

Rapid Screening Techniques for Xenobiotic-Induced Immunomodulatory Effects, Stephen Nicklin, British Industrial Biological Research Association, Charshalton, Surrey, England

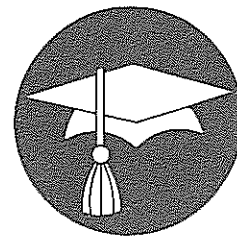
The Influence of Genotype within Immunotoxicology, Rodney R. Dietert, Cornell University, Ithaca, NY

Female Reproductive Toxicology

Chairperson: Patrick J. Wier, SmithKline Beecham Pharmaceuticals, King of Prussia, PA

The objective of this course is to convey the basic principles of female reproductive toxicology to the non-specialist, although reproductive toxicologists will also benefit from this as a refresher course. The female reproductive system is a dynamic and complex major organ system which is known to be sensitive to a large variety of physical and chemical agents, including drugs, pesticides and industrial chemicals. Female reproductive toxicology includes not only the study of ovarian function, but also the central nervous system and the integrated functions of the hypothalamic-pituitary-gonadal axis with considerable emphasis on endocrinology. Dr. Claude Hughes, Duke University Medical Center, will cover introductory principles including fundamental aspects of anatomy and physiology. Dr. Richard F. Walker, SmithKline Beecham Pharmaceuticals, will discuss effects on folliculogenesis and on the corpus luteum with an emphasis on drug toxicity. Dr. John A. McLachlan, National Institute of Environmental Health Sciences, will present hormonal mechanisms of female reproductive toxicity and will discuss environmental agents which have toxic effects on female reproductive functions. Finally, Dr. Donald R. Mattison, University of Pittsburgh, will address the contemporary topic of risk assessment with regard to female reproductive hazards.

Continuing Education



Overview, Anatomy and Physiology, Claude Hughes,
Duke University Medical Center, Durham, NC

Effects on Folliculogenesis and the Corpus Luteum,
Richard F. Walker, SmithKline Beecham
Pharmaceuticals, King of Prussia, PA

Hormonal Mechanisms of Female Reproductive Toxicity, John A. McLachlan, NIEHS, Research Triangle Park, NC

Female Reproductive Effects: Risk Assessment,
Donald R. Mattison, University of Pittsburgh,
Pittsburgh, PA

Advanced Molecular Toxicology: Application of Molecular Biology in Toxicology

Chairperson: Edward Bresnick, Dartmouth Medical School, Hanover, NH

The majority of carcinogens and many toxins are believed to act through the generation of DNA damage. The exact mechanisms by which these alterations in DNA structure subvert its function have eluded investigators for many years. However, because of recent advances in molecular biology techniques, it is now possible to study in great detail the effects of such DNA damage on the function of DNA as a template for gene expression, and the conversion of such DNA damage to mutations. The first speaker, Dr. Joshua Hamilton, will discuss the methodological approaches and interpretations associated with this important area of genetic toxicology. One of the single major advances in molecular biology has been the development of the technology for the Polymerase Chain Reaction (PCR). PCR has great implications for the field of diagnostic pathology, forensic toxicology, molecular toxicology generally, as well as for uncovering fundamental advances in molecular biology. Dr. George Mark will discuss the details of the technique, the many uses to which it can be applied, and some of the pitfalls that are faced by the users. It is clear that regulation of gene expression is effected by base sequences associated with the gene itself, i.e., *cis* elements, and by protein factors that interact with these sequences, i.e., *trans* elements. Dr. Edward Bresnick will discuss the relative roles of *cis* and *trans* elements in governing the expression of hormone- and toxin-sensitive genes. Specific examples will be included with the discussion of the technical approaches for studying trans-regulation of these genes. It is most appropriate that this session conclude with a view to the future

regarding gene therapy, the anticipated end-point for many medical researchers. Dr. Brian Huber, active in designing approaches to gene therapy, will discuss the rationale underlying the permanent modification of a cell's genetic machinery by the insertion of a "foreign" gene. He will specifically concentrate on targeting aberrant cells such as occur in cancer or AIDS to this novel mode of therapy, with an emphasis on weighing the pros and cons associated with gene therapy.

Molecular Approaches to the Study of Mutagenesis,
Joshua Hamilton, Dartmouth Medical School,
Hanover, NH

Polymerase Chain Reaction - Application in Recombinant DNA Technology, George Mark, Merck, Sharp and Dohme, Rahway, NJ

Trans Regulation of Gene Expression, Edward Bresnick,
Dartmouth Medical School, Hanover, NH

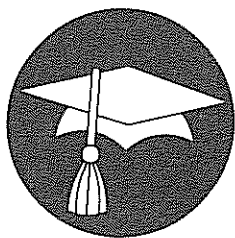
Approaches to Gene Therapy, Brian Huber, Burroughs Wellcome and Co, Inc., Research Triangle Park, NC

Naturally Occurring Toxins

Chairperson: Henry J. Segall, University of California, Davis, CA

The course will discuss the metabolism, distribution, organ specificity and toxicity of a number of natural toxicants. Some specific pulmonary toxins to be discussed include ipomeanol, 3-methylindole, β -nicotyrine, pulegone, and perilla ketone. Particular emphasis will be placed on the chemical and biochemical mechanisms of bioactivation of 3-methylindole. The pyrrolizidine alkaloids (PAs) represent a unique chemical subgroup of alkaloids present in many plant species with world wide distribution. The bioactivation, metabolic pathways, metabolites, and organ selectivity for PAs affecting the liver/lung will be discussed. The occurrence of the PAs in the food supply as well as their toxicological/pathological effects will be presented. Neurotoxins and hepatotoxins from cyanobacteria and neurotoxic, hepatotoxic, and immunosuppressive toxins produced by fungi of the genus *Fussarium* will also be discussed. The former compounds commonly contaminate surface waters and the latter are widespread food contaminants. Adaptation of methodology to interrelate toxin fate, subcellular or biochemical effects, and acute organ/system failures leading to lethality will be discussed. Aflatoxins are common contaminants in many agricultural commodities destined for human consumption and are

Continued on page 12



Continuing Education

potent animal carcinogens plus presumed human carcinogens. Their occurrence in the food supply, toxicology, biotransformation, mechanisms of carcinogenesis and their potential risk to human populations will be presented.

Pneumotoxins from Natural Products, Gary Yost, University of Utah, Salt Lake City, UT

Pyrrolizidine Alkaloids: Metabolism and Toxicity, Henry J. Segall, University of California, Davis, CA

Cyanobacterial (Blue-Green Algae) and *Fusarium* Toxins, Val Beasley, University of Illinois, Urbana, IL

Aflatoxins: Biotransformation, Toxicology and Carcinogenesis, Roger Coulombe, Utah State University, Logan, UT

Environmental Toxicology

Co-chairpersons: Foster L. Mayer, EPA Environmental Research Laboratory, Gulf Breeze, FL and Janice E. Chambers, Mississippi State University, Mississippi State, MS

The field of environmental toxicology includes investigation of toxicity induced by environmentally relevant xenobiotics at the molecular to the ecological level. The course is designed to highlight the unique chemical, physical, and physiological aspects of the manifestation of the toxic effects of chemicals in the aquatic and terrestrial environment. The fundamental principles of toxicology apply to the inhabitants of natural ecosystems, but the behavior of chemicals in aqueous media, air or soil matrices, the physiology of diverse species, and the complex interactions among components of communities and food chains require unique considerations in the study of environmental contaminants. Lectures on aquatic and terrestrial environmental toxicology will address routes of exposure, toxicodynamics and metabolism, comparative toxicity and a description of test types. Additionally, regulatory issues unique to environmental toxicology will be discussed, including toxicological (acute and chronic) testing requirements and decision trees, and an assessment of the current state of the environment and future trends.

Introduction: Foster L. Mayer, EPA Environmental Research Laboratory, Gulf Breeze, FL

Aquatic Toxicology: Toxicodynamics and Effects, Denny R. Buckler, U.S. Fish and Wildlife Service,

National Fisheries Contaminant Research Center, Columbia, MO

Terrestrial Toxicology: Exposure and Effects, Michael J. McKee, Southern Illinois University, Carbondale, IL

Regulation and the Environment: Past, Present and Future, Kenneth L. Dickson, University of North Texas, Denton, TX

Risk Communication: Problems, Perceptions and Practice

Co-chairpersons: Jenifer S. Heath, Gradient Corporation, Denver, CO, and Christopher F. Wilkinson, Versar, Inc., Springfield, VA

Public participation in risk management decisions involving chemicals is now recognized as a legitimate and important part of the decision-making process. As a consequence, there has been rapidly growing interest in the development of methods by which technical toxicological information can be communicated to the public in a form that will increase public understanding of the facts and in a manner that will facilitate effective public participation in non-technical dialogue about toxicologic risk. At the present time, most toxicologists are ill-prepared to communicate risk information to nonscientists and have difficulty in engaging in non-technical dialogue. This course is designed to help toxicologists better understand some of the problems that make risk communication difficult and will provide insight, based on experience, on how some of these difficulties can be overcome.

Toxicologic Risk Assessment: Never the Twain Shall

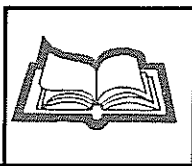
Meet, Art Craigmill, U.C. Davis, Davis, CA

Perception of Toxicologic Risk: Irrational and Capricious or Understandable?, Paul Slovic, Decision Research, Eugene, OR

The Risk of Public Debate, Judith Shaw, N.J. Department of Environmental Protection, Trenton, NJ

Lessons from the Trenches: An Industry Perspective, Donald Verrico, E.I. du Pont, Wilmington, DE ●

Publications of Interest



Biological Effects of Heavy Metals Vol. II, E.C. Foulkes (ed.) \$124.95, CRC Press, Inc., Corporate Blvd., NW, Boca Raton, FL 33431.

Calories and Weight, U.S. Dept. of Agriculture, \$1.75, U.S. Government Printing Office, Dept. SSMC, Washington, DC 20401.

Clinical Management of Poisoning and Drug Overdose, 2nd Edition, L.M. Haddad, J.F. Winchester, \$135.00, W.B. Saunders Co., Harcourt Brace Jovanovich, Inc., The Curtis Center, Independence Square West, Philadelphia, PA 19106; 1-800-545-2522.

Comparative Pharmacokinetics and Residues of Veterinary Antimicrobials, J.E. Riviere, A.L. Craigmill, S.F. Sundlof, \$295.00, CRC Press, Inc., 2000 Corporate Blvd., NW, Boca Raton, FL 33431.

Effective Expert Witnessing: A Handbook for Technical Professionals, J.V. Matson, \$45.00, Lewis Publishers, Inc., 2000 Corporate Blvd., NW, Boca Raton, FL 33431.

Environmental Causes of Human Birth Defects, \$34.75, Charles C. Thomas, 2600 South First Street, Springfield, IL 62794-9265.

Focus on Pulmonary Pharmacology and Toxicology, Vol. I, M.A. Hollinger, (ed.) \$75.00, CRC Press, Inc., 2000 Corporate Blvd., NW, Boca Raton, FL 33431.

Panic Disorder in the Medical Setting, W. Katon, U.S. Dept. of Health and Human Services, \$4.25, U.S. Government Printing Office, Dept. SSMC, Washington, DC 20401.

The Pharmacological Basis of Therapeutics, 8th Edition, \$79.50, Pergamon Press, Inc., Pergamon Press Order Dept., Front and Brown Streets, Riverside, NJ 08075.

Phthalate Esters: Toxicity and Metabolism, K.N. Woodward, \$119.00, CRC Press, Inc., 2000 Corporate Blvd., NW, Boca Raton, FL 33431.

The Public Health Consequences of Disasters 1989, U.S. Dept. of Health and Human Services, \$4.00, U.S. Government Printing Office, Dept. SSMC, Washington, DC 20401.

Report of the Advisory Panel on Alzheimer's Disease 1988-89, U.S. Dept. of Health and Human Services, \$2.25, U.S. Government Printing Office, Dept. SSMC, Washington, DC 20401.

Toxicity and Metabolism of Explosives, J. Yinon, (ed) \$89.95, CRC Press, Inc., 2000 Corporate Blvd., NW, Boca Raton, FL 33431. ●

Upcoming Conferences



International Society of Quality Assurance Mini-Symposium, October 1, 1990, Hilton at Walt Disney World Village, Orlando, FL. For information contact: Program Chairman, ISAQ Mini-Symposium, 5520 Cherokee Ave., Suite 200, Alexandria, VA 22312; (703) 658-8926, fax (703) 658-8887.

Society of Quality Assurance 1990 Annual Meeting, October 2-5, 1990, Hilton at Walt Disney World Village, Orlando, FL. For details, see item above.

Eleventh International Symposium on HPLC of Proteins, Peptides and Polynucleotides, October 20-23, 1991, Washington, DC. For further information, contact: Barr Enterprises, P.O. Box 279, Walkersville, MD 21793; (301) 898-3772, fax (301) 898-5596.

Neurotoxins-Impacts on Public Health, November 9, 1990, Mt. Sinai Hospital Auditorium, Toronto, Ontario. For information, contact: Canadian Neurological Coalition, 100 College Street, Suite 126, Toronto, Ontario M5G 1L5; (416) 596-7043, fax (416) 964-2165.

11th ASTM Symposium on Pesticide Formulations and Application Systems, November 14-15, 1990, Hyatt Regency San Antonio, San Antonio, TX. For more information, contact: Anne McKlinton, ASTM, 1916 Race Street, Philadelphia, PA 19103; (215) 299-5490.

International Biotechnology Expo & Scientific Conference, January 6-9, 1991, Ramada Renaissance Techworld, Washington, DC. For information, call BioEast '91 (212) 996-5679 or fax (212) 289-4697.

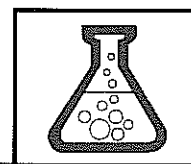
7th International Symposium on Separation Science & Biotechnology, January 22-24, 1991, Bahia Mar Fort Lauderdale, FL. For information, contact: Lois Ann Beaver, P.O. Box 279, Walkersville, MD 21793; (301) 898-3772.

30th Annual Meeting of the Society of Toxicology, February 25-March 1, 1991, Loews Anatole Hotel, Dallas, Texas. For information, contact: SOT, 1101 Fourteenth Street, N.W., Suite 1100, Washington, DC 20005; (202) 371-1393.

International Meeting of the Electrophoresis Societies, March 19-21, 1991, Sheraton Washington Hotel, Washington, DC. For information, write: P.O. Office Box 279, Walkersville, MD 21793; (301) 898-3772.

14th World Conference on Health Education, June 16-21, 1991, Helsinki, Finland. For information, contact: CON-GREX (Finland), P.O. Box 151, 00141 Helsinki, Finland; +358-0-175 355, fax +358-0-170 122. ●

Placement Services



Assistant Professor-Neurotoxicology/ Neuropharmacology

The Department of Pharmacology, Toxicology, and Therapeutics at the University of Kansas Medical Center invites applications for a tenure-track position for a neurotoxicologist and neuropharmacologist. The applicant must have a Ph.D. or M.D. degree with post-doctoral experience. The candidate will establish an independent research program and contribute to graduate and medical teaching. Primary appointment will be in this department with an affiliation with the Mental Retardation Research Center. A further affiliation in the Center for Environmental and Occupational Health is possible. Applications, including a curriculum vitae, a summary of research plans, and the names of three references should be sent to Dr. Richard H. Alper, Department of Pharmacology, Toxicology, and Therapeutics, University of Kansas Medical Center, Kansas City, KS 66103 and received by November 1, 1990; the search will remain open until the position is filled. The University of Kansas is an Affirmative Action/Equal Opportunity employer. ●

Manager of Toxicology

Dow Corning, a multinational firm and leader in the silicone industry, is seeking a highly qualified person to fill the position of MANAGER OF TOXICOLOGY. The individual would be located at our global headquarters site in Midland, Michigan, at our state of the art Health and Environmental Science facility. This position involves responsibility for directing the efforts of our Toxicology Department, a staff of about 25 people, and reports to the Director of Health and Environmental Science. Candidates should possess a doctorate degree in toxicology or related science with at least 15 years of relevant industrial experience. An understanding of the regulatory environment and its impact on industrial toxicology is essential. Quantitative risk skills are needed; leadership and management skills are required. Competitive salary and comprehensive benefit package will be provided. Interested individuals should submit to: Personnel Manager, Research and Development, Dow Corning Corporation, Mail Code C01110, 2200 Salzburg Road, Midland, MI 48686-0994. An equal opportunity employer. M/F. ●

Manager/Scientific And Regulatory Liaison

Brown & Williamson Tobacco Corporation, a leading manufacturer of quality tobacco products has an opening in our modern Research and Development operations located in Louisville, Kentucky. We are looking for an individual with a Ph.D. in one of the biosciences who preferably has ABT certification. This position is responsible for product conformity with company policy and government regulations for both our U.S. and International Business. The individual will represent B&W on industry and parent company committees for technical expertise and provide scientific counsel to our Law and Government Affairs Departments. In addition to managing the function, the position will manage consultants and external contracts. We offer an excellent salary and comprehensive benefit program which includes an outstanding profit sharing program and relocation. Please send resume, including salary history, in confidence to Corporate Recruiter, Brown & Williamson Tobacco Corporation, P.O. Box 35090, Louisville, KY 40232. Equal Opportunity Employer. M/F. ●

Ph.D. Toxicology Research

ICI Pharmaceuticals Group, a leader in pharmaceuticals research, has an immediate opening for a Research Toxicologist. This individual will act as study director on short term classical toxicology studies of potential drugs and also be responsible for investigative research. Acting as part of an interdisciplinary team, the incumbent will work with pharmacologists, bioanalytical chemists, and medicinal chemists involved in the process of drug discovery. Successful candidates should have a Ph.D. degree in Toxicology, Biochemistry, Pharmacology or a related field and 0-2 years of post-doctoral training. Experience in CNS or Pulmonary toxicology research is desirable. Experience with inhalation exposure systems is a plus. Effective communication skills and supervisory potential are essential. This position is located at our research facility in suburban Wilmington, DE. We offer an excellent salary and a flexible benefits program designed to meet the needs of a diverse work force. We also encourage professional development and provide advancement opportunities designed for long-term commitment. Please send your resume to Mary G. Grigas, ICI Pharmaceuticals Group, Wilmington, DE 19897. ●

Postgraduate Research Program

Research efforts at the National Center for Toxicologists Research, an FDA laboratory in central Arkansas, focus on testing the assumptions used in assessing risks posed by toxic chemicals emphasizing studies in biomarkers, modulators of toxicity, and extrapolation/exposure assessment. Current positions are available in the Divisions of Genetic Toxicology, and Reproductive and Developmental Toxicology; the Biometry Staff, and the Microbiology Division. Postdoctoral stipend begin at \$31,750 per year. Appointments are for up to three years. A graduate degree received within three years and U.S. citizenship or permanent resident alien status is preferred. Some faculty positions also available. Contact: Postgraduate Research Program at NCTR, Science/Engineering Education Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117, (615) 576-3190. ●

Postdoctoral Training Opportunities in Toxicology

Duke University and RJR Tobacco Company have established training fellowships honoring the eminent toxicologist, the late Dr. Leon Golberg. One position is available immediately in neurotoxicology/neuropharmacology with special emphasis on studying nicotinic receptors in the central nervous system. In addition, applications are being considered for NIH training fellowships for the 1990-91 and 1991-92 academic years. The program consists of over 50 faculty members representing a wide variety of disciplines including chemistry, ecotoxicology, biochemistry, cell biology, molecular biology, pathology and pharmacology. Emphasis is placed on molecular mechanisms of toxicology. A competitive stipend will be offered. Fellows will have the opportunity to spend at least 2 years at Duke or RJR. Applicants should hold an M.D., Ph.D. or D.V.M. degree and should submit a cv, a description of current research project, and the names and addresses of three references to: Doyle G. Graham, M.D., Ph.D., Integrated Toxicology Program, Box 3005, Duke University Medical Center, Durham, NC 27710. Duke University is an Equal Opportunity Employer. ●

Toxicologist

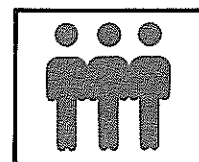
Growth oriented Gulf Coast specialty chemical manufacturer is searching for a highly motivated individual to manage a proactive program conducting research on the health and environmental affects of our products, by-products and waste materials. The position will be very visible and will report directly to the V.P., Environmental Affairs. The ideal candidate will have a Ph.D. in Toxicology or a closely related field and sufficient

industrial experience to function independently. Primary duties will include evaluation and recommendation of company policy; selecting contract laboratories and evaluating ongoing studies: preparation of regulatory submittals for EPA (TSCA), FDA and other agencies worldwide; and assisting in preparation of MSDS and product safety literature. Interested persons should submit a resume with salary requests in confidence to the Human Resources Manager, First Chemical Corporation, P.O. Box 1427, Pascagoula, MS 39567. An Equal Opportunity Employer. ●

Toxicologist

Lorillard, a leading manufacturer of tobacco, has an immediate opening for a toxicologist at our Greensboro, N.C. research center. The successful candidate's responsibilities will include participation in internal research and testing activities, primarily in the area of genetic toxicology, as well as protocol development, study monitoring, and report evaluation in an extramural toxicology testing program. Requirements include a Ph.D. degree, 0-10 years experience, and excellent communication skills. An ability to accurately read, and interpret scientific literature is required, as are the writing skills necessary to communicate key elements to others. A background in genetic and *in vitro* toxicity assessment is desirable. Lorillard offers a comprehensive flexible benefits package, relocation assistance, and competitive salary. Qualified candidates should forward their cv, and salary requirements to: Hallie S. Jessup, Lorillard Research Center, P.O. Box 21688 Greensboro, N.C. 27420. An Equal Opportunity Employer. M/F/H. ●

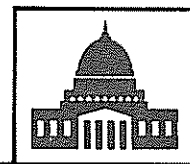
Member News



Donald R. Mattison, M.D., has been appointed dean of the University of Pittsburgh Graduate School of Public Health effective August 1, 1990. Dr. Mattison was previously professor of obstetrics and gynecology and professor of toxicology at the University of Arkansas for Medical Sciences.

Susan A. Rice, Ph.D. and Bruce J. Kelman, Ph.D., D.A.B.T., have joined Failure Analysis Associates, Inc. Both SOT members will work in the Toxicology Department of the Corporate Headquarters in Menlo Park, CA. Dr. Kelman will form a toxicology department and develop toxicology consulting services, while Dr. Rice will consult on a variety of chemical, industrial, and environmental toxicology and health-related issues. ●

Watching Washington



U.S. Senate Tables Amendment Limiting Use of Animals in Acute Toxicity Tests

An amendment to the 1990 Farm Bill, S. 891, calling for a halt to "any animal model acute toxicity test," was overwhelmingly rejected in a vote of 62-29 by members of the United States Senate. Following a sustained debate on the Senate floor S. 891 was tabled, meaning the amendment would receive no further consideration on the Senate floor. The debate included a statement from Health and Human Services Secretary, Louis Sullivan, stating the current administration's strong opposition to the amendment on the grounds that "The future health and well-being of our citizens may well depend on a firm rejection of this amendment." ●

Arizona Enacts Facility Protection Bill

Arizona Governor Mofford, by signing HB2384, made it a class 5 felony for individuals to intentionally release an animal lawfully confined for scientific purposes without the consent of the owner or custodian. Guilty parties become liable for the full costs of restoring the animal to its pre-release conditions and also for any damages caused to property. Furthermore, if an experiment fails due to the release, the party would be responsible for the full costs of repeating the experiment.

The bill was initially approved by the House with a provision banning the use of live animals in cosmetic safety testing; however, the Senate deleted this provision and the House concurred. ●

Secretary Sullivan Criticizes "Animal Rights Terrorists"

Together with medical research representatives, government officials and patients, Health and Human Services Secretary Louis Sullivan leveled heavy criticism at the animal rights movement. In a Washington, DC press conference sponsored by the Association of American Medical Colleges, the Foundation for Biomedical Research and the Incurably Ill for Animal Research, Secretary Sullivan blasted animal rights groups for their use of violence and intimidation, referring to them as "animal rights terrorists."

Sullivan's comments were supported by L. Thompson Bowles, M.D., Ph.D., the American Association of Medical Colleges representative, who noted the enormous sums that America's medical schools must spend to offset the criminal activities of animal rights movements. Bowles estimated that medical school faculty and staff log 100,000 hours an-

nually combatting activities ranging from bomb threats to the spread of misinformation. ●

New Film Portrays Life Saving Importance of Animal Research

A new film produced by the Foundation for Biomedical Research and narrated by Judson Randolph, M.D., surgeon-in-chief, Children's National Medical Center, depicts the critical importance of animal research and how it relates to the struggle for life of three children. The film was developed as an educational resource and will be made available for television and broadcast. It will also be available for sale in VHS or 3/4 U-Matic format through the Foundation for Biomedical Research, (202) 457-0654. ●

California Governor Vetoes Consumer Product Safety Bill

Citing a lack of consensus "in the scientific community that non-animal testing could adequately protect the health of consumers," California Governor Deukmejian vetoed AB 2461, a bill that would have prohibited cosmetic and household product manufacturers from conducting any dermal or ocular test, including the Draize test, on live animals. ●

States Increasingly Act to Protect Animal Research Facilities

Over the past three years eleven states have adopted laws to protect research facilities, employees and animals from actions by animal rights movements. Massachusetts and Minnesota enacted the first protection bills in 1988. In 1989 they were followed by Indiana, Louisiana and Utah. In 1990 Arizona, Georgia, Idaho, Kansas, Kentucky and Maryland have joined the list of states seeking to protect research facilities. ●

Activists March on Capitol Hill

On June 10, nearly 24,000 animal rights activists marched on Capitol Hill where they heard speeches from animal rights leaders. The marchers drew sharp battle lines, calling for rapid change, and rejected the idea of compromise regarding the use of animals in research.

In response to the protestors, HHS Secretary Sullivan released the statement "we draw a clear line between our concern for animals on the one hand and the outright attacks on the one hand and the outright attacks on medical research which have occurred in recent years." ●