



Society of Toxicology

Immunotoxicology Specialty Section

President's Message

by Scott Burchiel

Greetings to everyone from your new officers. We look forward to serving you during the coming year, and certainly thank last year's officers for the continued wonderful development of this Specialty Section. The Immunotoxicology Specialty Section has enjoyed a rich tradition of strong leadership and involvement in SOT. We hope that we can continue this tradition by providing programs that are of interest to our membership, and by involving as many of you as possible in professional activities.

Elsewhere in this newsletter you will find a list of committees, a brief description of their functions, and the names of the current chairs. Please do not hesitate to contact these people and do not be bashful in volunteering your services. One of the primary ways we will try to better inform our membership of needs and activities is through this newsletter and our new Home Page. Bob Luebke, Robert House and Mitchel Cohen are diligently working on this. We would appreciate your feedback after it is up and running.

Since we discussed many items at our last business meeting in Cincinnati, and perhaps some of you were not able to attend, let me mention a few things. First, during the past several years, we have had excellent success in sponsoring programs at the annual meeting. Program development is one of the major activities of our Specialty Section. This past year's attendance was outstanding, with standing room only in a few sessions. We solicit ideas for programs each year at the annual meeting. These proposals are then submitted to the SOT Program

Committee for consideration. Kathy Rodgers, our Vice President, has put together the proposed ideas for next year's program. These proposals are due around April 15th each year, and they must be well-developed within a few weeks of the annual meeting. If there are future topics that you would like to see included in the program proposal, please contact Judith Zelikoff our new Vice President-Elect and head of the program committee for the 1999 meeting.

Second, we also learned this past year that SOT is beginning to sponsor satellite meetings on selected topics as either stand alone meetings or in concert with regional meetings. The first sponsored meeting will be this fall in North Carolina on the topic of Liver Carcinogenesis. I understand that the SOT Program Committee would like to sponsor two or three of these per year. Therefore, there is an opportunity to submit a special meeting to them for consideration.

Finally, we continue to want to reach out to students, postdocs, and other professionals who have interests in immunotoxicology. If you have suggestions as to how to reach new people and to broaden the base of our Specialty Section, we would love to hear from you. We wish you a successful summer, and look forward to working with you in the future.

Past-President's Message

by Peter Thomas

As I move on to a new job and new challenges at Covance, I want to thank everyone involved who helped put together another great program at this year's SOT meeting in Cincinnati. Special thanks go to Judith Zelikoff for helping keep things on track. Thanks also to Scott Burchiel and the Program Committee for a superb effort. Judging by the turnout at our reception in Cincinnati, we have one of the strongest Specialty Sections in the Society. It was also very gratifying to see so many new faces. I encourage everyone, especially our new members, to get involved in your Specialty Section. Many new proposals for next year's program were discussed at the Executive Council meeting. While the proposal process is well underway for next year, I encourage anyone with an idea for a workshop, continuing education course, round table or symposium to contact Dr. Judith Zelikoff, Vice President-Elect and 1998 program chair. We are already soliciting ideas for the following year. Last but not least, I must recognize and thank Judith Zelikoff and Tom Kawabata for their efforts putting together another year's worth of great newsletters. They did a super job and deserve a lot of credit. Finally, I would like to congratulate the new officers and councilors. I look forward to seeing you next year in Seattle.

Past Secretary-Treasurer's Report

by Judith Zelikoff

Well, another SOT meeting and Specialty Section reception has come and gone. Hope y'all liked the chicken wings- I guess I ordered enough for all the groups. But the way our Specialty Section is growing it's hard to keep up.

I'd like to thank everyone on the Executive Board who made my job as Secretary/treasurer a pleasure. Our elected officials for this year, who took office as of May 1, include Scott Burchiel (President), Kathy Rodgers (Vice President), Judith Zelikoff (Vice

President-Elect), Robert House (Secretary/Treasurer), Steven Pruett (Councilor) and, of course, Dori Germolec (Senior Councilor.) We have a number of committees in our Specialty Section and a whole bunch of new committee members for this upcoming year. These include:

Awards: This committee evaluates and awards meritorious doctoral and post-doctoral presentations. It is chaired by Dori Germolec, and the members include Mitchell Cohen, Don Frazier, Ian Kimber, David Lawrence, Jean Regal and Judith Zelikoff.

Program: This committee suggests and decides upon symposia, workshops and roundtables for presentation to the Program Committee of SOT. This committee is chaired by Judith Zelikoff. Members include Mitchell Cohen, Don Frazier, Frank Gerberick, Nyla Harper, Ian Kimber, Kathy Rodgers, Gary Rosenthal and MaryJane Selgrade.

[Please note: For technical ease, only 7-8 members for each committee were selected. If you don't see your name on the list don't be disheartened, just run faster next year. We invite everyone who has ideas for programs for the 1999 SOT meeting to bring them forward and suggest them to one of the people on this list.]

Historian: The Historian (Nancy Kerkvliet) and her band of merry followers (Tom Kawabata, Peter Thorne and Judith Zelikoff) bring together the history of our Specialty Section and creates memories for the future.

Methods: The primary role of the Methods Committee is to promote the development, standardization and validation of assays useful in the detection of immunologic impairment following exposure to xenobiotics. The committee also promotes the sharing of technical expertise among members and nonmembers of the Society and Specialty Section. The committee is chaired by Robert Leubke, and the members include Nyla

Harper, Kenneth Hastings, Robert House and Henk van Loveren.

Regulatory: This committee seeks to monitor regulatory activities in the area of immunotoxicology and pass this information onto our Specialty Section. It is chaired by Liz Sikorski, and the members include Mark Blazka, Leigh Ann Burns, Dori Germolec, Gary Rosenthal, Larry Updyke, Dan Wierda and Henk van Loveren.

Student Representative: This individual serves as a liaison to communicate the needs/goals of the Specialty Section students to the Executive Committee, as well as to dispense information from the Board. Cynthia Graham is our representative, and the student members include Sue Ping Chen, Barbara Faubera, Kamaran Ghoreishi, Ben Hayes, Denton Kump, Craig Llewellyn, Rebecca Marcus, Courtney Sulentic, Beth Vorderstrasse and Michael Woolhiser.

[First of all I apologize for any misspelling of names, I write em' as I read em' and sometimes I don't see very well! Also, if there are other student members whose names are not on this list it means you did not sign up at the reception. Please contact Cynthia or myself by email (look in your handy/dandy directory) and we will add your name.]

Membership: This group recruits new members and keeps the old members happy! It is chaired by Michael McCabe, who is assisted by Michael Lynes.

Education: The Education Committee aids educators in teaching and communicating immunotoxicology. The committee is chaired by Mitchell Cohen, and the members include Kamran Ghoreishi and Michael McCabe.

More information concerning many of these committees can be found in the chairpersons' individual bylines.

Again, thanks for the opportunity to have served you as Secretary/Treasurer. I look forward to serving you as Vice President-Elect this year!

COMMITTEE REPORTS

Education Subcommittee

Mitch Cohen, Chair

I am happy to report that the experiment in inviting fellow IMTOX members to give lectures (as well as to see the Big Apple) was a great success. The lectures provided by Drs. Steve Pruett and Mary Jane Selgrade were both informative to the students in the NYU Environmental Immunotoxicology course and a great (but brief) respite for the home team instructors. Their separate seminars presented at the NYU Medical Center were equally well-received. Lastly, but most importantly, both visitors enjoyed their visits to NYC. With that, I hope and encourage all of those IMTOX members who teach courses in Immunotoxicology to try out this plan (depending, of course, upon the financial capabilities of your respective institutions). Any comments would be appreciated.

The new Education Committee (myself, Judy Z, Mike McCabe, and Michael Lynes) are also still interested in compiling course curricula. It is an open idea as to whether there would be any interest by other IMTOX members in helping to create a "framework curricula" to allow those who teach Immunotox courses to possibly reshape their course structure, as well as to permit those interested in starting up a course to have a "starting point". All input on this notion are welcome....you know where to reach any of the EC members (use your handy-dandy IMTOX directory, of course).

Awards Committee

Dori Germolec, Chair

Each year the Immunotoxicology Specialty Section recognizes the scientific excellence of research conducted by graduate students and postdoctoral

fellows in our Specialty Section by giving awards for outstanding presentations at the annual National SOT meeting. The awards committee for the 1998 SOT meeting will consist of Dori Germolec (Chairperson), Mitchell Cohen, Donald Frazier, Ian Kimber, David Lawrence, Jean Regal and Judith Zelikoff.

I received many complaints at the last Specialty Section meeting about the awards process, particularly that the presentations must be submitted so far in advance of the meeting. Evaluation of presentations is done in advance so that the awards (plaques and checks) can be presented to the recipients at the National meeting. The current procedure is for graduate students or postdocs who are first author on a presentation to submit their entire presentation to the committee chair on January 31st. The proposals are then distributed to the committee members, who evaluate and numerically rank them. The rankings are returned to the committee chair within two weeks, so that results can be compiled in time to meet the National SOT office deadline in mid-February for having checks made for the recipients.

We have discussed the alternative of delaying the deadline for submission and not presenting the awards at the meeting, however, the general feeling is that the current procedure is preferable. The awards committee would welcome any suggestions regarding the selection procedure. I would especially like to hear from the graduate students and postdoctoral fellows. These are your awards, so let us know what your opinions are. Please send your comments to:

Dori Germolec
Environmental Immunology, NIEHS
PO Box 12233, RTP, NC 27709
germolec@niehs.nih.gov

Methods Committee
Bob Luebke, Chair

The Methods Committee is establishing an Immunotoxicology Specialty Section Home Page on the SOT Web Site. Our goal is to have a portion of the Specialty Section page dedicated to a platform for sharing information on techniques, reagents, troubleshooting and similar issues. We wish to include the membership information compiled by Mitchell Cohen in a searchable database, indexed by key words, that will aid in the identification of Specialty Section members willing to act as consultants to individuals with questions on methods (please see Mitch's letter elsewhere in this newsletter.)

At present, there does not seem to be an official SOT policy on the inclusion of this information on a Specialty Section Home Page, other than obtaining permission from individuals before publishing email addresses and telephone numbers. Of course, permission will be obtained before any information on an individual is included on the Home Page. Please contact a member of the Methods Committee with your suggestions and comments on Home Page development, content and features.

Regulatory Committee
Liz Sikorski, Chair

FDA Center for Devices and Radiological Health (CDRH)

In the June 1996 newsletter, a summary of the current regulatory status of the CDRH was provided. The CDRH has been working on a guidance document for immunotoxicity testing. A team from the Office of Science and Technology and the Office of Device Evaluation has prepared a draft *Immunotoxicity Testing Framework*. The purpose of this guidance document is to provide: (1) a strategy for establishing the need for immunotoxicity testing of devices or constituent materials; and (2) a systematic approach for evaluating potential immunotoxicological effects. The format of this document consists of a flow chart and three tables. The flow chart is to be used to determine whether immunotoxicity testing is needed.

When the flow chart indicates that immunotoxicity testing is needed, the tables are used to determine the types of testing that would be useful in evaluating product safety consistent with the intended patient population and expected risk vs benefit. This document is a guide that provides direction regarding the types of immunotoxicity testing that should be considered. It does not prescribe what tests should be performed or the protocols that should be followed.

The availability of the draft guidance entitled "Immunotoxicity Testing Framework" was announced in the Federal Register on March 18, 1997. Please see the Federal Register for additional information on this document. A copy of the draft guidance can be obtained by calling 1-800-638-2041.

Written comments regarding the draft guidance may be submitted to the Dockets Management Branch (HFA-305), Food and Drug Administration, 12420 Parklawn Dr., Rm. 1-23, Rockville, MD 20857 on or before June 16, 1997. The comments must be identified with the docket number 97D-0024.

FDA Center for Food Safety and Applied Nutrition (CSFAN)

Dr. Dennis Hinton reports that the final draft of Redbook II is almost ready, although no date for completion has been given. When the draft document is complete a notice of availability will be published in the Federal Register.

FDA Center for Drug Evaluation and Experimental Research (CDER)

As mentioned in an earlier newsletter, Dr. Ken Hastings of the Division of Antiviral Drug Products asked for input from immunotoxicologists regarding preclinical determination of the immunotoxic potential of drugs. A draft of a guidance document (formerly called a Points to Consider document) that collated this input was completed and has been presented to the Pharmacology and Toxicology Coordinating Committee. Next month it will be

posted on the FDA bulletin board for internal review which will take approximately two months to complete.

If the guidance document passes successfully through internal review it is estimated that this document will be available for public comment in Summer 1997 via the Internet. Once the comments are received, the document will undergo an abbreviated review process and be published. This document outlines a tier approach to immunotoxicity testing for most chemicals with Tier I following OECD guidelines and incorporating parameters from standard toxicity tests such as organ weights, hematology and histopathology. Immune function assays would be requested in Tier II when positive results are noted in Tier I. The three fundamental recommendations that are proposed in the draft guidance document are: (1) reliance on flow cytometry as the immune function assay in Tier II; (2) use of the murine local lymph node assay as an acceptable alternative to guinea pig assays for testing the contact sensitization potential of topical drugs; and (3) the introduction of the popliteal lymph node assay to test for immunostimulation.

CDER feels that there are certain categories of drugs (special concern categories) where they may recommend immunotoxicity tests in Tier I or earlier in the safety evaluation. These include immunomodulatory drugs, steroids, drugs used in treatment of HIV infected patients or drugs to prevent perinatal transmission of HIV.

FDA Center for Biologics Evaluation and Research (CBER)

CBER reviews the safety of a variety of products such as monoclonal antibodies, recombinant proteins, vaccines, gene therapy and xenotransplants. CBER's goals are to continue evaluating new therapeutic agents on a case-by-case basis using sound scientific judgement rather than moving toward routine immunotoxicity screening.

Through CBER at the FDA, a draft guideline entitled "Guideline for the Preclinical Testing of Biotechnology-Derived Pharmaceuticals" has been published and an announcement of availability for comment was made in the Federal Register on April 4 (Vol. 62, No. 65). Information on this document can be found in the Federal Register. A copy of this document may be obtained by calling 1-800-835-4709 (CBER Voice Information System) or via the Web (<http://www.fda.gov/cder> in the "Regulatory Guidance" section). Further information on this document may be obtained by contacting Dr. Joy Cavagnaro at (301) 827-0379.

The draft guideline was prepared under the auspices of the International Conference on Harmonisation of Technical Requirement for Registration of Pharmaceuticals for Human Use (ICH). The draft guideline is intended to provide general principles for the design of internationally acceptable preclinical safety evaluation programs for biopharmaceuticals.

Regarding immunotoxicology testing of biopharmaceuticals, immunotoxicological evaluation generally includes assessment of potential immunogenicity and hypersensitivity. In addition, many biopharmaceuticals are intended to stimulate or suppress the immune system. Inflammatory reactions at the injection site may be indicative of a stimulatory response. In addition, the expression of surface antigens on target cells may be altered with implications for their autoimmune potential. This document recommends applying immunotoxicological testing strategies to clarify any issues, however, testing is done on a case-by-case basis and does not follow a routine tiered testing approach or standard testing battery.

The public can comment on this document on or before June 3, 1997. Comments should be submitted to the Dockets Management Branch. See the Federal Register for details.

Current Efforts on the Murine Local Lymph Node Assay

According to Dr. Ken Hastings, there has been an effort underway to gain FDA acceptance of the murine local lymph node assay (LLNA) as a stand alone assay for the prediction of the contact sensitization potential of chemicals (see June 1996 newsletter). This assay would provide an alternative to guinea pig assays. Within the FDA it was felt that information was lacking specifically with respect to pharmaceuticals. An international validation study evaluating a number of topical pharmaceuticals in the LLNA has been completed and a manuscript is currently in progress. In the draft guidance document formulated by CDER at the FDA, this assay will be recommended as an acceptable alternative to guinea pig assays.

In the effort to have the murine LLNA accepted as a validated assay according to the criteria outlined by ICCVAM, the Executive Committee of ICCVAM will review existing data on this assay. Scientists from Industry (P&G, Zeneca) and the FDA (Ken Hastings) will work with Bill Stokes (NIEHS) to present the data to the Executive Committee. This will be one of the first efforts of the ICCVAM committee to work with Industry to determine how a weight of evidence approach might be used for the validation of an alternative method.

FIFRA Immunotoxicity Testing Guidelines

The EPA is in the process of revising its test guidelines for Series 870-Health Effects Test Guidelines which are for use by the Office of Pesticide Programs (OPP) and the Office of Pollution Prevention and Toxics (OPPT). These revisions were influenced by submissions received during the comment period as well as by recommendations from the FIFRA Scientific Advisory Panel (SAP) meeting held in October 1996. The revised guidelines are scheduled to become available for public comment by the end of May 1997 and their availability will be announced in the Federal Register. After the public comments

have been addressed, the Immunotoxicity Guidelines will most likely be finalized.

The main change in the proposed guidelines is the requirement of an immune function assay in Tier I. The EPA will require the sheep red blood cell (SRBC) assay in both the rat and mouse. If the pharmacokinetics of a material has been shown to be similar in both species, the SRBC assay would only need to be done in one species. The endpoint of the SRBC can either be plaque forming cell enumeration or ELISA. The NK cell assay and flow cytometric analysis will be recommended as optional immune function assays to perform if suppression of the SRBC response is seen. In the event that there is no suppression of the SRBC response, the NK cell assay will be recommended as an optional assay to assess non-specific immunity.

The final report on the FIFRA SAP meeting is available under docket number OPP 00434 and can be obtained by calling (703) 305-5805.

Proposed Test Rule for Hazardous Air Pollutants

The EPA is proposing a test rule (40 CFR Part 799) under section 4(e) of the Toxic Substances Control Act (TSCA) entitled "Proposed Test Rule for Hazardous Air Pollutants" to require manufacturers and processors of 21 hazardous air pollutants to test these substances for various health effects including immunotoxicity. The immunotoxicity tests required in this test rule will follow recommendations in the proposed EPA 870.7800 Immunotoxicity Testing Guidelines. A notification was posted in the Federal Register (Vol. 61, No. 124) indicating this document is now available for public review. The deadline for written comments on the proposed HAPs test rule has been extended to June 30, 1997.

In this proposed test rule, the EPA also asked for submission of proposals to look at the pharmacokinetics of the HAPS chemicals instead of requesting the OPPTS harmonized test guideline for pharmacokinetic studies be followed. The EPA has

received approximately nine proposals. These proposals describe proposed pharmacokinetic studies for a HAPs chemical and may discuss the application of the pharmacokinetics data in performing route to route extrapolations. An announcement will be made at the end of May stating which pharmacokinetic proposals the EPA will consider further and those which they will no longer consider.

OECD Harmonization Efforts Skin Sensitization Guidelines

In March, a third revision of the harmonization guidelines were made available for public comment. The main changes in this version (included at the request of Industry) related to skin contact sensitization was to recognize human test data and to delete comments on potency.

Immunotoxicology (update provided by Dr. MaryJane Selgrade)

On December 11-12, 1996, OECD convened an ad hoc working group meeting on Immunotoxicity. The meeting was held in Research Triangle Park, NC and included immunotoxicologists from around the world. The charge was to review the currently available test methods for immunotoxicity safety evaluation of substances, consider minimum test requirements and make recommendation for test method development.

The group concluded that the scientific evidence supports inclusion of a functional test, the antibody response to sheep red blood cells or another well-characterized and validated response to a T-dependent antigen, as part of the initial screening process. However, in order to limit costs of the standard repeat-dose toxicity test (OECD Guideline 407) and the number of test animals, a reasonable compromise would be to revise the histopathology section of Guideline 407 to include more quantitative observations and to conduct the antibody assay (plaque or ELISA) only if the standard analysis (including histopathology of the spleen, thymus, lymph nodes or Peyer's patches or

hematology) gave any indication of treatment-related effects on the immune system at any dose tested. An OECD report on the meeting is forthcoming.

Validation of Toxicological Testing Methods

Recently, there has been much discussion concerning the validation of toxicological testing methods. At the 1997 SOT, a workshop session entitled "Scientific and Regulatory Challenges for the Reduction, Refinement and Replacement of Animals in Toxicity Testing" contained several talks on validation and are summarized in abstracts #1464, 1466 and 1467 in *The Toxicologist* (Volume 36, No. 1, 1997).

The NIH was directed to establish criteria and procedures for the validation and regulatory acceptance of toxicological testing methods. NIEHS/NTP established the ad hoc Interagency Coordinating Committee on the Validation of Alternative Methods (ICCVAM), consisting of representatives from fifteen Federal regulatory and research agencies. The ICCVAM report entitled "Validation and Regulatory Acceptance of Toxicological Test Methods" has recently been published (NIH Publication No. 97-3981). It is available on the Internet at the web address <http://ntp-server.niehs.nih.gov/htdocs/ICCVAM/ICCVAM.html>. This document outlines: (1) validation criteria for new or revised test methods for regulatory risk assessment purposes; (2) criteria for regulatory acceptance of new or revised methods; and (3) regulatory acceptance process recommendations. ICCVAM activities will continue and their initiatives will encourage new method development, improvement of existing methods, provide effective guidance for assay evaluation and validation, increase the likelihood of regulatory acceptance and encourage refinement, reduction and replacement of animal use in testing when scientifically feasible.

Membership Committee

Michael McCabe, Chair

I am delighted to have the opportunity to serve the Immunotoxicology Specialty Section as chair of the Membership Committee. In view of the number of Immunotoxicology Specialty Section (ITSS)-sponsored or co-sponsored sessions at the Annual Meeting in Cincinnati, it is readily apparent that the ITSS has become one of the most influential and largest Specialty Sections within the SOT. Our burgeoning ranks are largely due to the recruiting efforts led by Dr. Mitch Cohen (NYU), who has served as the Membership Committee chair over the past 4 years. During this time period the ITSS has grown from approximately 150 to approximately 220 members, constituting a 20% increase in size. As only half of ITSS members in 1993 are still members in 1997 the increase in our membership is actually quite a bit larger. Many of these former members lost to attrition ought to be recruited back to the ITSS. If you know any former ITSS members, you can help by inquiring why they are no longer members. Dr. Michael Lynes (U. Conn.) has agreed to serve on the membership committee. Together, I hope that we can serve the ITSS with the same level of enthusiasm and attention to detail as Mitch did. I believe that we can continue to grow as a diverse, yet coherent, scientific entity within the SOT. "Keep Recruiting" - Mitch is gone but his slogan remains.

Program Committee

Kathy Rodgers, Chair

Thank you all for participating in bringing forth ideas for submission to be considered for the 1998 Society of Toxicology National meeting in Seattle, WA. In total, our Immunotoxicology Specialty Section submitted proposals for one continuing education course, five workshops and one symposium. Those of you who have completed these proposal applications before know the work that has to be accomplished to line up speakers, have them summarize their talk, etc. and I would like to extend the appreciation of the rest of us to those who put forth that effort.

The following proposals were sent to the Program Committee of the SOT for consideration: Continuing Education - *Cytokines as Indicators of Toxicity: The Immune System and Beyond* (R. House); Workshops - (1) *Chemical Contact Allergy Structure Activity Relationships (SAR)* (F. Gerberick and M. Karol), (2) *Toxicology of Protein Allergenicity: Prediction and Characterization* (I. Kimber and N. Kerkvliet), (3) *Immunotoxicology: Strategies to Identify Risk of Autoimmune Disease Associated with Chemical Exposure* (M. Selgrade and K. White), (4) *Immunotoxicology: Applications of Lessons Learned from Rodent Studies to Human and Wildlife Populations* (M. Holsapple); Symposia - (1) *Woodburning: Toxicological and Human Health Risks* (J. Zelikoff and J. Morris), (2) *Interaction of Xenobiotics with Cytokine and Cytokine Receptor Expression* (M. Cohen and K. Rodgers).

As can be seen, the proposals set forth are exciting and I look forward to notifying everyone of the decision of the SOT Program Committee. Thanks again for everyone's contribution.

An Open Letter From Mitch Cohen

Dear IMTOX Specialty Section Member:

Several of your colleagues are hard at work establishing a Home Page for our Specialty Section which will become a part of the SOT National Web Site. One anticipated feature of our Home Page will be the ability to search our membership by research/expertise key words (using the Key Word Index that is part of the Specialty Section directory) for the names of members associated with that keyword. Using this feature, a visitor to the page can identify individuals who are willing to share their scientific/technical expertise. A hypertext link to the member's email address will be provided, so that the visitor can send email directly to the identified individuals. It is also possible to create links to a member's personal Home Page, if desired. After initial contact, subsequent interactions will be directly between the user and the IMTOX member.

At this stage, we need to first find out which members of the IMTOX Specialty Section are willing to allow their email address to be linked in the manner described above (Note that you can have your address link removed at any time, if you no longer choose to participate). For those who agree to be linked, and who might want to add more information (re: phone/fax, etc.), we will send out follow-up communiques. Once we have a listing of those IMTOX members who agree to be linked to their email addresses, a formal letter will be forwarded for signature such that SOT and our Specialty Section are legally compliant.

Please indicate to me by June 17th if you are willing to have your e-mail address linked to your keywords from the directory and that you are willing to allow this link to be made available through our upcoming Home Page. We anticipate great things for our Home Page and hope that all Specialty Section members will take part.

I await your responses as soon as is convenient (but please, not too close to 6/17!!). Thanks again.

Announcements

Postdoctoral and Predoctoral Research Positions in Signal Transduction

The University of New Mexico Toxicology Program has immediate openings for two postdocs and a predoc in the areas of immunotoxicology and breast epithelial cell signaling by environmental agents. Applicants for the postdoc positions must have a Ph.D. in a toxicology-related discipline, and should send resumes with a cover letter including an original signature referencing Job Req. Nos. P3369-A, B to Dr. Scott W. Burchiel, Professor, College of Pharmacy Toxicology Program, The University of New Mexico, Albuquerque, NM 87131-1066. These are not regular staff positions and the predoctoral position requires admission and enrollment in the Toxicology Graduate Program at UNM. For additional information and complete job

information contact Dr. Burchiel at the above address, call (505) 272-0920, FAX (505) 272-6749, or email: burchiel@unm.edu. Positions will remain open until filled. The University of New Mexico is Equal Opportunity and Affirmative Action Employer.

Upcoming Meeting

The Twelfth Annual Toxicology Symposium, *Comprehensive Solutions to Contemporary Toxicology Issues*, will be held July 27-31, 1997 at the Meany Tower Hotel, Seattle WA.

For information or registration, contact the AIHA Toxicology Committee at 703-849-8888.

ILSI Health and Environmental Sciences Institute (HESI) Workshop

The HESI Immunotoxicology Technical Committee is sponsoring a workshop on the use of flow cytometry in immunotoxicity testing that will take place on October 9 and 10, 1997 at the Sheraton City Center Hotel in Washington, DC. The workshop will examine current and potential uses of flow cytometry in immunotoxicity testing and the application of such data to human health risk assessment. The first day will consist of plenary presentations on the use of flow cytometry in assessing human immune status, human and animal studies on drugs and other chemicals, and the use of flow cytometry for hazard identification and risk assessment. On the second day, the rapporteurs from academia, government and industry will explore the implications of these findings for human health risk assessment. This will set the stage for a roundtable discussion moderated by Dr. Jack Dean, that will address specific scientific issues of concern to the immunotoxicological community.

For more information, or to register to attend, please contact Ms. Amy Burk at the ILSI Health and

Environmental Sciences Institute, T: 202-659-3306; F: 202-659-3617; e-mail: amy@dc.ils.org.

The Immunotoxicology Specialty Section Newsletter is published quarterly. Please address all questions, comments, news items or other submissions to:

Judith T. Zelikoff, Editor
Institute of Environmental Medicine
New York University Medical Center
Long Meadow Road
Tuxedo, NY 10987
914-351-5624 (T)
914-351-5472 (F)
judyz@charlotte.med.nyu.edu (E)

Robert V. House, Editor
IIT Research Institute
10 West 35th Street
Chicago, IL 60616
312-567-4294 (T)
312-567-4296 (F)
rhouse@iitri.com (E)