Mitchell Cohen told me last year about this time, “Hang on, it goes by in a hurry” (maybe not his exact words, but I think you get the idea). He was right! It has been a very eventful year for the ImTox Specialty Section. On the smaller and less significant side, we adopted the ImTox acronym to distinguish ourselves from that other ISS (Inhalation Specialty Section). Financially, we have continued to prosper and our membership numbers have been stable or increasing. I believe a big part of the credit for this is the scientific quality of ImTox programs at the annual meeting and the excellent opportunity provided by the ImTox SS for scientists in industry, academia, and government to discuss issues in a collegial atmosphere. The quality of the scientific sessions this year can be attributed in a major way to Dr. Jeanine Bussiere (Chair of the Program Committee last year), the members of the Program Committee, and of course, our colleagues who planned and presented these excellent sessions. Dr. Jean Regal and the Program Committee have another stellar set of ImTox related scientific sessions in store for us next year. Another major factor in the financial and numerical success of the ImTox SS over the last several years has been the dedicated work by Dr. George DeGeorge, who has served as Chair of the Membership Committee. George’s data and his analysis of the data has allowed us to learn that we always drop drastically in membership at the beginning of January (because we forget to pay our SOT dues). Thus, we have been able to send timely reminders to our members and keep our year round membership (and associated funds from dues) consistently high.

My primary goals this year were to continue the efforts begun previously in using the ImTox SS to improve interactions and information exchange between immunotoxicologists world wide and to continue efforts to gain an NIH study section with sufficient expertise to give immunotoxicology grant applications a fair review. Major developments occurred with regard to both goals. The Executive Committee approved a recommendation (to the next President) to form a standing committee to further promote international interactions in immunotoxicology and to manage the annual exchange visits that have now been established between the Japanese Society for Immunotoxicology (JSIT) and the ImTox SS. It was useful to learn about immunotoxicology in Japan from Dr. Fujio Kayama at our ImTox Reception in Seattle and plans are...
already in development for participation of one of our colleagues from Japan in planning and participating in a scientific session next year.

The second goal partially fulfilled was the formation of the new Systemic Injury by Environmental Exposure (SIEE) Special Emphasis Panel by the Center for Scientific Review at NIH. As you know many people have been working for this for several years now. Norb Kaminski served on an SOT task force to address this issue and several of us attended workshops sponsored by CSR last Fall to identify issues that should be addressed in the peer review process. As a result, CSR decided to try this Special Emphasis Panel. It is important to know that this is considered a trial Panel. Continuation of the Panel will depend on the availability of reviewers and the number of grant applications received. Therefore, I suggest that you request that your grant applications be assigned to this review group. Dr. Patricia Greenwel has been named Scientific Review Administrator for this SEP.

Her contact information is:

Patricia Greenwel, Ph.D.
Scientific Review Officer
Xenobiotic and Nutrient Disposition and Action (XNDA) Study Section
ZRG1 DIG C Special Emphasis Panel
Center for Scientific Review, MSC 7818, Room 2172
National Institutes of Health
6701 Rockledge Drive
Bethesda, MD 20892 (20817 for courier mail)
Phone: (301) 435-1169; Fax (301) 451-2043
E-mail: greenwep@csr.nih.gov

More information about the SEP can be found here:
http://cms.csr.nih.gov/
PeerReviewMeetings/
CSRIRGDescription/DIGIRG/
SIEE.htm.

About 15 members of the ImTox SS have volunteered to serve on this SEP in response to an e-mail request for volunteers, and the ImTox Executive Committee has endorsed them and forwarded them to Dr. Ken Ramos (the new SOT President). I appreciate the willingness of all who volunteered to take on this difficult but critically important task.

It was a privilege to have the opportunity to serve as President of the ImTox Specialty Section this past year. It was a pleasure to work with all of you. I especially want to thank Jean Regal, who filled in for me when I was unable to attend the summer SS President’s meeting. Also, Jeanine Bussiere and Mitch Cohen helped with sage advice, and Mitch worked all year to remind me of deadlines and make sure key tasks were completed on time. We all owe gratitude to Helen Rataficzak for agreeing to extend her term as Secretary/Treasurer. She has been efficient and thorough and has consistently produced (with help from Peyton Myers) what I believe is the best Specialty Section Newsletter in SOT. I also need to thank Susan McKarns for her excellent work as Chair of the Communications Committee, Peter Thomas for serving as Chair of the Regulatory Committee, and Rod Dietert who did an outstanding job as Chair of the Awards Committee.

Dr. Pruett chairing the ImTox SS Executive Committee Meeting
Incoming President's Message

Submitted by Jeanine Bussiere

I hope everyone enjoyed the 2008 meeting in Seattle (even though the weather didn’t really cooperate)! The Immunotoxicology Specialty Section was well represented by a number of programs that were sponsored by this committee (thanks to Susan McKarns for sending out the list prior to the meeting for easy access to all the immunotoxicology related symposiums, workshops, posters, etc). Jean Regal and the Program Committee for 2008 did an excellent job of encouraging another great batch of proposals for the 2009 meeting, so look for a strong showing from the ImTox SS in Baltimore next year! There are a few initiatives which were started last year that I would like to see continue through the next year. One is the interaction between the ImTox SS and its counterpart in Japan. There has been support for a Japanese scientist to travel to the SOT meeting and support for a US scientist to travel to the JSIT to present at their annual meeting. In addition, we hope next year to have a Symposium co-chaired with a Japanese colleague to further enhance the relationship. Because of the success of this program, other countries have also approached us on ways to have our societies interact (e.g., Korea). We have asked Mitch (and he graciously agreed, although we didn’t really give him much choice) to continue and expand his efforts to reach out to Immunotoxicologists in other countries and encourage interactions with our Specialty Section. In addition, you’ve all heard about the SOT endowment fund and may have realized that many Specialty Sections have already taken advantage of the SOT matching funds to establish a fund for their specialty section. The matching will continue for a short period of time, so we will focus on trying to get that established this year for our Specialty Section. That’s one of my big goals for the year!

The executive committee decided to support the Immunotoxicology Pool of Lecturers (see Education Committee Update) for travel expenses with up to $2000 per year from the specialty section funds. These will be reimbursed on a first come-first served basis and must be approved by the President and Secretary/Treasurer. My thanks to Steve and Mitch for their help and guidance along the way and continuing support even after their term is through! An additional thanks to all of you who signed up for helping on the various committees for the specialty section as well as those who have agreed to chair these committees. As I sit in on the SS Officers meeting, I see that many of the new policies implemented were based on things that this SS was already doing (like review of programs being submitted). This is a strong SS and will continue to be with the dedication of all the folks who work so hard on these committees and serve as officers. Thanks for your support! Feel free to contact me with ideas or comments regarding the upcoming year at bussierj@amgen.com or call at (805) 447-6182.

Dr. Jeanine Bussiere
President, ImTox SS
2008-2009

Drs. Jeanine Bussiere, George DeGeorge, and Judy Zelikoff at the 2008 ImTox SS Executive Committee Meeting at SOT
I want to express appreciation to our ImTox SS members for all the nominations they submitted this year and to Awards Committee members for their hard work in providing a timely review of the nominees and their materials. This year, we received 9 student presentation nominations, 2 post-doctoral presentation nominations and 3 nominations for best paper of the year. As a result, we presented 1st, 2nd and 3rd place awards in the student category and single awards in the other categories. I would strongly encourage our members to think about potential nominations for next year. Recognition of significant immunotoxicology research and achievement begins at home, and we can ensure that our members receive proper recognition of their work through these nominations and awards. It takes only a little time to help support young careers in immunotoxicology with these well-deserved accolades.

The winners of the 2008 ImTox SS awards in each category are as follows:

**IMMUNOTOXICOLOGY SPECIALTY SECTION**

**Awards Committee Report**

Submitted by Rod Dietert

I want to express appreciation to our ImTox SS members for all the nominations they submitted this year and to Awards Committee members for their hard work in providing a timely review of the nominees and their materials. This year, we received 9 student presentation nominations, 2 post-doctoral presentation nominations and 3 nominations for best paper of the year. As a result, we presented 1st, 2nd and 3rd place awards in the student category and single awards in the other categories. I would strongly encourage our members to think about potential nominations for next year. Recognition of significant immunotoxicology research and achievement begins at home, and we can ensure that our members receive proper recognition of their work through these nominations and awards. It takes only a little time to help support young careers in immunotoxicology with these well-deserved accolades.

The winners of the 2008 ImTox SS awards in each category are as follows:

**Vos Award for Career Achievement in Immunotoxicology**

Dr. Henk van Loveren
National Institute of Public Health and the Environment (RIVM), Bilthoven, the Netherlands

Henk van Loveren did a post-doc at Yale in the early eighties, where he worked on contact sensitivity in clinical immunology with Phil Askenase. After this post-doctoral period, Henk entered the field of immunotoxicology when he joined Jeff Vos at RIVM in 1983. At RIVM, Henk pursued his interest in sensitization to low molecular weight chemicals, with studies on respiratory sensitization in the mouse, studies on evaluation of the potency of sensitizers based on adaptations of the LLNA, and, currently, with in vitro work on effects of sensitizers on keratinocytes.

The main objective for his employment at RIVM in 1983, however, was investigation of effects of air pollutants on pulmonary resistance to infections. This work led to his interests in systemic immunotoxicity and developing host resistance models. The experience with host resistance models was used for work with his group on effects of UV on resistance to infection.

Henk van Loveren has been an important player in discussions of guidelines for immunotoxicity, for instance, in updating guideline OECD407 to include immunotoxicity testing, and in the designation of the EMEA guidelines for preclinical safety evaluation that demanded functional immunotoxicity testing. Under the auspices of ICH, the guidelines for immunotoxicity testing of drugs were harmonized among Japan, the US, and the EU. This harmonization led to the decision that drugs need to be tested for immunotoxicity with functional assays, using a cause for concern approach. He took active part in these discussions as a delegate from EU/EMEA.

Over the years, he extended his work to not only include in vivo and in vitro studies in laboratory animals and humans, but also extrapolation of animal data to that of the human. In addition, he conducted studies of epidemiology in human volunteers, including investigation in several European countries of immune effects of occupational pesticide exposure on vaccination.
He has led several European consortia conducting immunotoxicological studies funded by the EU. Two studies pertained to development of immunotoxicological methodologies, three to effects of ultraviolet radiation, and an additional one to immunotoxicological effects of pesticides on the population. Currently he is involved in EU consortia on assessment of immunotoxic effects in children, and validation of in vitro immunotoxicity testing.

Current novel focus of his research is on implementing toxicogenomics in immunotoxicology, and on developing in vitro alternatives for immunotoxicity testing. This work is done in collaboration with Maastricht University at which he holds a Chair in Immunotoxicology.

Young Investigator Award

Dr. Emanuela Corsini, University of Milan, Milan, Italy

Emanuela Corsini is an Associate Professor in Toxicology at The University of Milan, Italy, where she directs the Immunotoxicology and Immunopharmacology Toxlab units within the Laboratory of Toxicology (http://users.unimi.it/DPS/). Emanuela obtained her PhD in Food and Environmental Toxicology from The University of Milan in 1993. With more than 15 years of experience, her primary areas of interest include in vitro and in vivo study of the mechanisms of action of skin irritants and allergens, the evaluation and effect of potentially immunotoxic substances exposure to the immune system, and the study of molecular mechanisms underlying dehydroandrosterone-induced immunorestoration. Author of more than 80 publications, she is member of several National and International professional societies and committees.

Paper of the Year

Lawrence BP, Roberts AD, Neumiller JJ, Cundiff JA, Woodland DL. Aryl hydrocarbon receptor activation impairs the priming but not the recall of influenza virus-specific CD8+ T-cells in the lung. J. Immunol. 2006; 177(9):5819-28. (Dr. B. Paige Lawrence, University of Rochester Medical School)

Dr. Rod Dietert presenting a plaque to Dr. Paige Lawrence, Winner, Paper of the Year

Dr. Jeanine Bussiere presenting a plaque to Dr. Emanuela Corsini, Winner, Young Investigator Award
Post-Doc Presentation Award
Dr. Cheryl Rockwell, University of Kansas School of Medical School, *Nuclear factor erythroid 2-related factors 2 (NRF2) inhibits cytokine production by activated murine T-cells.*

Student Awards
1st Place - Nivedita Banerjee - Texas A & M University, *Possible role of osteopontin in Th1 immune response and lymphocytic infiltration during non-alcohol steatohepatitis in a dietary murine model.*

2nd Place - Haitian Lu - Michigan State University, *Suppression of T-cell co-stimulator ICOS by delta-9-tetrahydrocannabinol.*

3rd Place - Sheung Ng - New York University School of Medicine, *Prenatal exposure to cigarette smoke suppresses cytotoxic T-lymphocyte (CTL) activity in the offspring possibly via increased numbers of T-regulatory cells.*

Dr. Rod Dietert presenting a plaque to Haitian Lu, 2nd Place Winner - Student Award

Dr. Rod Dietert presenting a plaque to Nivedita Banerjee, 1st Place Winner - Student Award

Dr. Steve Pruett, accepting a plaque and passing the torch to Dr. Jeanine Bussiere

Dr. Fujio Kayama, Guest Speaker, Japanese Society of Immunotoxicology
I would like to begin by thanking Sheung Ng for her service as the student representative for the last two years. I think I can speak for everyone in commending Sheung on a job well done. We wish her the best of luck with all of her future research and science endeavors.

I would like to introduce everyone to our new student representative. Haitian Lu is a PhD student from Department of Pharmacology and Toxicology and Center for Integrative Toxicology at Michigan State University. Working with Dr. Norb Kaminski, Haitian is developing an ex vivo activation system which could be utilized to compare the sensitivity of mouse and human primary B lymphocytes to the suppression of antibody response by TCDD and dioxin-like compounds. His career goal is to become a toxicologist who could contribute to a better prediction and understanding of immune-related toxicity associated with drug candidates and other chemicals. Haitian is delighted by the opportunity to serve ImTox SS and make new friends as the new student representative.

If you missed the ImTox student/post-doc mixer at The Tap House Grill, we will have a similar opportunity to socialize with one another at the meeting in Baltimore. Please watch for information about our meeting place in upcoming communications from the ImTox SS as the national meeting approaches. We hope more of you attend future mixers. They are a great way to get to know the other students/post-docs in ImTox SS.

I would also like to remind all student members that ImTox SS committees are open to students. Committees include the Awards, Communications, Membership, Program, and Regulatory Committees. Descriptions of these committees are available on the ImTox SS website. Serving on committees is a great way to make new contacts and to learn about hot topics in immunotoxicology. Student participation for these committees has been low in the past so let’s make an active effort to give ourselves a good name.

Want to broaden your network? Have your advisor nominate you to become the next post-doctoral representative of the ImTox SS. All your advisor has to do is send a letter of recommendation to the ImTox SS president that includes verification that he or she can fund your travel to SOT for the next two years. Your term would run from March 2009-March 2011 and you would serve as THE post-doctoral voice on the ImTox SS. Think about it. You can’t expand your professional network by hiding in the lab. If you have any questions about post-doctoral representation or anything else ImTox SS related, please do not hesitate to contact me at sanderson4@cdc.gov or Haitian at luhaitia@msu.edu

Greetings fellow students and post-docs! We hope all of you had a productive and enjoyable time in Seattle.
Program Committee Report
Submitted by Jean Regal

The Immunotoxicology Program Committee met in Seattle and reviewed program proposals for SOT 2009 in Baltimore. The following proposals will be recommended to the SOT National Program Committee and we are hopeful that they will all be included in the final Baltimore program! Thanks to all Co-chairs for putting these proposals together.

Regulatory Committee Report
Submitted by Peter Thomas

There were several developments during the year that impacted, or will impact the regulatory requirements for immunotoxicology testing of drugs and chemicals.

1) Developmental Immunotoxicology
The impact of exposure to the developing immune system continues to be a focus of scientific research and discussion. In the regulatory community, particularly at the FDA, the question of whether or not we are designing the appropriate developmental toxicology studies to evaluate the immune system of the offspring is receiving attention.

- Are there data that we are not currently collecting from current Segment III reproduction toxicology studies that would provide additional insight into immune system (or the CNS) structure and function?

- Are there “triggers” from such studies that would suggest risk to children and might lead to additional studies in juvenile animals?

There was discussion early in the year with Leigh Ann Burns-Naas and Ken Hastings about putting together a SOT-CCT proposal on this topic that the ISS would support. This topic is also a focus of the HESI-DART committee. At a recent FDA-sponsored conference on immunotoxicology on December 3, 2007, gaps in the current assessment of the effects of pharmaceuticals on the developing immune system were discussed. Several changes to the

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<tr>
<td>CE Course</td>
<td>Immunology for Toxicologists</td>
<td>Ian Kimber and Raymond Pieters</td>
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<td>CE Course</td>
<td>Free Radicals for Toxicologists – From the Basics to Inflammation and Diseases</td>
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<td>Food Allergy – Basic Mechanisms and Applications to Identifying Risks and Preventing Allergic Responses</td>
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<td>Modulation of the Immune System by Perfluoroalkyl Acids</td>
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<td>Symposia</td>
<td>Immunomodulation by Plant-derived Products: Putative Therapies or Potential Toxins</td>
<td>Barbara Kaplan and James Pestka</td>
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<td>Superantigens and Toxic Reactions – Putting the Immune System into Overdrive</td>
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<td>Symposia</td>
<td>The Good, the Bad and the Ugly of Toxicant-Induced Pulmonary Inflammation.</td>
<td>Lin Mantell and Judy Zelikoff</td>
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<tr>
<td>Symposia</td>
<td>Transcriptional Changes in Immunotoxicology: Transcription Factors, Signal Transduction and Epigenetics</td>
<td>Keiko Nohara and Nancy Kerkvliet</td>
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</tbody>
</table>
current testing schemes were proposed to help address these data gaps. According to Peyton Myers at the FDA, a follow up survey was sent to the 75 participants to plan for a follow-up meeting currently scheduled for the fall, 2008 on the FDA campus.

(See p24-25 of this Newsletter for more information on the 2008 FDA Immunotoxicology meeting.)

2) Clinical trials with “high-risk” medicines

In March of 2006 six normal healthy volunteers participating in a clinical study in the UK were given an IV dose of an experimental immunotherapeutic as part of an ascending single dose safety and tolerability study. Within a few hours of administration, all subjects exhibited severe reactions resembling a “cytokine storm” that progressed to multiple organ failure. Fortunately all individuals survived. As a result, regulatory agencies conducted an extensive review of “first in human” studies and the UK’s Secretary of State for Health established an Expert Scientific Group to review and report on these severe reactions that occurred with this CD 28 agonist known as TGN 1412.

This monoclonal antibody acts by bypassing the normal antigen specific/MHC pathway and directly and nonspecifically activates T-cells.

This incident and the resulting analyses (the Duff report) lead to the publication and adoption in 2007 by the European Medicines Agency (EMEA) of new guidelines* for first in man clinical trials for potential high risk medicinal products. This document provides a definition of a “high-risk” medicine and discusses the non-clinical testing requirements to bring these compounds forward into the clinical. The guidance introduces the concept of a “Maximum Anticipated Biological Effect Level” (MABEL) and how this value can be used in the place of the NOAEL for setting dose levels. This is particularly important when potent immunomodulatory compounds are being tested.


3) USEPA Revised Pesticide Testing Guidelines

As a result of recommendations from the National Research Council and the FIFRA Scientific Advisory Panel, the Agency proposed requiring functional immunotoxicology testing along with data from endpoints in other studies to assess the potential risk of pesticide exposure on the immune system more fully. Fifteen comments were received that provided feedback and/or requested clarification on this rule. Three supported the proposed changes to the testing paradigm; six opposed this approach and offered alternatives. The EPA disagreed with these latter comments “because data and analysis have shown that functional immunotoxicity testing, particularly when considered in conjunction with data already required by EPA on immunotoxic endpoints, is likely to increase EPA’s ability to identify pesticides with immunotoxic effects”*.

Therefore, in the final rule, EPA retains a requirement for immunotoxicity testing on all food and nonfood pesticides.

*CFR 72 (207), October 26, 2007, page 60939

Regulatory Committee Info:

The purpose of the Regulatory Subcommittee for the SOT Immunotoxicology Specialty Section is to provide the membership with the latest information about the regulatory environment concerning immunotoxicology testing in the US, European Union and Japan. This also includes information concerning specific meetings of interest to the ISS where this topic is discussed. Regulations pertaining not only to drug development but also to chemical and pesticide testing would be relevant. The Committee welcomes members with an interest and working knowledge of this topic as well as ideas on how to broaden our scope.
After many years of trying to find a mission, the Education Committee landed upon the idea of a “Lecturer’s Pool”. The concept was put forth last year at the Business Meeting and further described on our SS website. While still a work-in-progress, the Lecturer’s Pool consists of members of our SS willing to give a single graduate/undergraduate lecture in their specific area of expertise in another member’s Immunotoxicology course. At present, more than 20 “lecturers” from academia, industry, government, and pharma have volunteered. Each has also registered their area of expertise and indicated whether or not they would need funding to participate. In an earlier ImTox SS Newsletter, we invited anyone having a class in Immunotoxicology to take advantage of this opportunity to bring those with significant experience in a given particular area of Immunotoxicology to their school. Unfortunately, there were no takers in this first season!

Therefore, Dr. Mitch Cohen and I decided to be a “prototype” to see how the program could work with respect to our Spring semester course in Environmental Immunotoxicology at the NYU School of Medicine. By the time this Newsletter comes out, the course will be over; I am happy to report that the class and its use of the various members from the “Lecturer’s Pool” were a big success. Because of this program, we were able to invite Dr. Virginia Sanders to lecture on “Indirect Mechanisms of Immunotoxicity”, along with Drs. Steve Pruett, Nancy Kerkvliet, Mike McCabe, Rod Dietert, Ken Hastings, and Peter Thomas who lectured on alcohol and pesticide immunotoxicology, halogenated hydrocarbons, immune cell signal transduction, developmental immunotoxicology, the role of immunotoxicology in drug regulation, and immunotoxicology in drug development, respectively. Not only did the students in the class benefit from each lecture, but so did the Lecturers in that they got to meet and spend time with the students and some of the faculty here at NYU. I anticipate that this program will not only benefit those students who will become our future immunotoxicologists, but also help foster collaborations between many of our colleagues.

Although we are still working out some of the “bugs” in this newly-implemented program, I invite any of you who have Fall 2008 or Spring 2009 courses in Immunotoxicology/have a significant immunotoxicology component to contact me (judith.zelikoff@nyumc.org) to discuss how this program might be able to help you.

Immunotoxicology Pool of Lecturers

Judy Zelikoff (Organizer)
Leigh Ann Burns-Naas
Mitch Cohen
George DeGeorge
Rod Dietert
Ken Draper
Deborah Finco-Kent
Kathleen Gilbert
Ken Hastings
Robert House
Norb Kaminski
Barb Kaplan
Nancy Kerkvliet
Ian Kimber
Raj Krishnaraj
David Lawrence
Mike McCabe
Mitzi Nagarkatti
Prakash Nagarkatti
Margie Peden-Adams
Joseph Piccotti
Helen Ratajczak
Jean Regal
MaryJane Selgrade
Membership Committee Report
Submitted by George DeGeorge

By Membership Category

Mar 2008

- Full: 71%
- Assoc: 14%
- Student: 15%

Total = 323

By Organization Category

Mar 2008

- Industry: 31%
- Academia: 10%
- Government: 4%
- Consulting: 4%
- Research (NP): 3%
- Research (CRO): 7%
- Other: 1%

44%

Former Members:

- Full: 28%
- Assoc: 22%
- Student: 50%

Total = 107

Former Members:

- Industry: 44%
- Academia: 31%
- Government: 10%
- Consulting: 4%
- Research (NP): 3%
- Research (CRO): 7%
- Other: 1%
Membership Committee Report

Total Members

red dot = SOT takes this point as the yearly

SOT re-sets the membership rolls at the beginning of January. Levels recover as renewals are received.

Immunotoxicology Specialty Section Membership

- Estimated for 2008
- Actual

<table>
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<td>Mar 2008</td>
<td>373</td>
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“Missing” ImTox SS Members
(as of April 2008)
ImTox SS members listed at least once since 2006-2007, but not currently registered

Arias Salvatierra, Alicia D.
Armstrong, John M.
Arrieta, Daniel E.
Azcona-Olivera, Juan I.
Beamer, Celine A.
Bell, Rosonald R.
Berman, Cindy L.
Bezdeceny, Steven A.
Blaylock, Benny L.
Blomeke, Brunhilde M. M.
Broadwell, Kimberly M.
Buchweitz, John P.
Cao, Ling
Chen, Victor H.
Choy, Wai N.
Clark, Edwin D.
Dai, Qun
Davin, Cynthia
Debruyne, Eric L. M.
Dickerson, Richard L.
Dietz, Dennis D.
Dixit, Rakesh
Doherty, Shannon
Duffy-Whritenour, Jessica E.
Emberley, Jessica K.
Exon, Jerry H.
Finco-Kent, Deborah L.
Flaherty, Dennis K.
Frantz, Jerry D.
Freier, David O.

Goad, Dale L.
Goth, Samuel
He, Bin
Hébert, Pamela
Hegde, Venkatesh L.
Hernandez, Denise M.
Hooiveld, Michel J. J.
Hueber, Sara
Iciek, Laurie A.
Idee, Jean Marc
Itagaki, Hiroshi
Ivens, Inge
Jankowski, Mark
Jin, Guangbi
Joosten, Harrie F. P.
Jungsuwadee, Paiboon
Koh, Woo Suk
Kretz Rommel, Anke
Kubaszky, Raluca E.
Lai, Zhiwei
Landgren, Cindy A.
Lawrence, David A.
Li, Li
Mann, Koren K.
Mayer, Alejandro M.
McCay, J. Ann
McMillan, JoEllyn M.
Méndez, Loyda B.
Migliaccio, Christopher T.
Mitchell, Valerie L.
Munson, Albert E.
Nagarkatti, Mitzi
Novicki, Deborah L.
O’Neill, Heidi
Palkar, Prajanka S.
Panteleyev, Andrey A.
Parrish, David D.
Peden-Adams, Margie M.
Popovic, Marija R.
Prevo, Mary Ellen
Pyles, John
Reid, Lynnda L.
Rhule, Ava-Gaye T.
Roberts, Dean W.
Rooney, Andrew A.
Sailstad, Denise M.
Schmidt, Lisa D.
Sherr, David H.
Sherwood, Robert L.
Shnaider, Dina
Sleet, Randolph B.
Smith, Donna C.
Stringer, Kathleen A.
Struthers, Barbara J.
Sullivan, Lorraine M.
Thiem, Patricia
Thornton-Jones, Suzanne R.
Todd, Marque D.
Tort, Maria J.
Trush, Michael
Tsunoda, Masashi
Tukov, Francis F.
Vega, Libia
Vojdani, Aristo
Waksman, Javier C.
Whitekus, Michael J.
Wilson, Susan D.
Yin, Hao
Zhang, Xing-Dong
Zhao, Shuou
# Immunotoxicology Specialty Section Committees 2008-2009

<table>
<thead>
<tr>
<th>2008-2009 Regulatory Committee</th>
<th>2008-2009 Awards Committee</th>
<th>2008-2009 Communications Committee</th>
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<tbody>
<tr>
<td>Peter Thomas (Chair)</td>
<td>Danuta Herzyk (Chair)</td>
<td>Susan McKarns (Chair)</td>
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<tr>
<td>Tony Arulanandum</td>
<td>Michelle Horner</td>
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*Please contact the Committee Chair if you still want to join a specific committee.*
ImTox SS and the Japanese Society of Immunotoxicology (JSIT) Launch a Global Focus on Developmental Immunotoxicology (DIT) Testing

Submitted by Rod Dietert

The Benefits of Inter-Society Collaborations

Our Specialty Section along with the JSIT combined forces to make Spring 2007-Spring 2008 a landmark year for the international consideration of developmental immunotoxicology and safety assessment. Joint sponsorship of my participation in the 14th Annual Meeting of the JSIT in Kobe, Japan by our Specialty Section and the JSIT as well as the support for Dr. Ken Hastings provided via JSIT and the Journal of Immunotoxicology were instrumental in facilitating these important intercontinental scientific exchanges.

The 2007-08 focus on DIT began with our own ImTox SS-sponsored DIT symposium at the March 2007 SOT meeting in Charlotte. This was followed by DIT forums at the Northern CA Regional Chapter (SOT) Meeting in June and the Pharma-sponsored ITOX V meeting in Virginia in September. The JSIT meeting in Kobe brought the topic to Asia aided by important new studies presented by Japanese immunotoxicology researchers. DIT was a major focus of a December 2007 one-day meeting, Recent Advances in Immunotoxicology, hosted by the US FDA. Finally, in February 2008, DIT will emerge in Europe as the World Health Organization will include this topic under the IPCS harmonization effort surrounding Guidelines for Immunotoxicology Risk Assessment.

Certainly, the scientific collaboration of ImTox SS and the JSIT was a pivotal component of this year’s increased focus on DIT, and it was a distinct honor for me to have been a part of the 2007 joint society effort. We should recognize the novel opportunities that exist for ImTox SS and JSIT to provide definitive forums on cutting-edge topics within immunotoxicology. I would stress the importance of our long-term commitment to a global linkage of immunotoxicologists and specifically to the current program facilitating ImTox SS and JSIT collaboration. I look forward to facilitating continuing exchanges between JSIT and ImTox-SOT, and believe we will all experience the major benefits that arise from this commitment.

JSIT Hosting

Dr. Kazuichi Nakamura served as the host and provided an exceptional itinerary that featured both scientific enlightenment and historical inspiration. I am particularly grateful to Dr. Nakamura for a wonderfully
planned visit and for the honor to meet JSIT Executive President Dr. Motoyasu Ohsawa, Meeting President Dr. Shin Yoshino, Dr. Keiko Nohara, and other members of the society. Our social program began with the Kobe Bay cruise dinner associated with the conference. The Kobe skyline was so impressive. The knowledge that only a few years ago the city had been devastated by an earthquake made the scenery from the ship all the more spectacular. Dr. Nakamura had arranged a magnificent schedule of touring that provided an opportunity to see many places I had read about but had only dreamed of seeing first hand. Himeji Castle and the Philosopher’s Path with its many temples in Kyoto were among those. Of course Nara was a highlight of the social visit. Dr. Nakamura, aided by several graduate students, provided wonderful insights about the monuments that made the visit so much more inspiring. Being from the Cornell Veterinary College, I was sure to extend my university’s best regards and wishes for good health to Nara’s population of sacred deer.

The 14th Annual Meeting of JSIT

The meeting itself was filled with exceptional research and new insights on the immunotoxicity of drugs and environmental contaminants. I was particularly impressed by the new research pertaining to both mechanism and outcomes of xenobiotic-induced immune dysfunction that reached far beyond traditional concepts of immunosuppression. There were many presentations addressing dysfunction that included concern for hypersensitivity and autoimmunity. Additionally, the idea was evident that risk of immunotoxicity can include concomitant increases in hypersensitivity and/or autoimmunity along with targeted immunosuppression.

The Lecture(s)

My lecture at the 14th JSIT meeting covered the biological basis for the increased sensitivity of the non-adult’s immune system to toxic alteration by drugs and environmental chemicals. It also addressed the patterns of dysfunctional outcomes seen with DIT and the combinations of testing protocols that have proven most effective for detection of developmental immunotoxicants. Critical windows of vulnerability exist for the developing immune system and have been defined in previous review articles. These prenatal-perinatal windows constitute one-time immune maturational events that must occur without environmental disruption or result in risk of postnatal dysfunction and increased disease susceptibility.

Events such as myelomonocytic cell seeding of tissues and organs for homeoregulatory oversight, lymphoid seeding of the thymus, thymocyte positive and negative selection, generation, seeding and activation of T-regulatory cells, dendritic cell maturation to promote Th1 responses, T-helper cell balance, and macrophage systemic modification in response to surfactants near birth are critical developmental benchmarks that help define the postnatal immune system and its capacity. Additionally, requirements of the pregnancy itself needed for maintenance of a semi-allogeneic fetus place unique restriction on fetal immune development. This helps to define the particular susceptibilities that exist in DIT in contrast with adult-induced immunotoxicity.

In this lecture, I made an additional point concerning the spectrum of postnatal diseases influenced by DIT. Beyond the obvious...
immune-associated diseases such as childhood asthma, infectious disease susceptibility, risk of later life cancer and autoimmunity, a host of inflammatory-associated conditions appear linked with DIT. These include various neurobehavioral conditions such as Parkinson’s disease, autism and schizophrenia as well as vascular system and reproductive dysfunction. Such expanded disease associations increase the need to detect potential developmental immunotoxicants and highlight the benefits that would arise from effective DIT screening of drugs and chemicals.

The lecture continued in identifying specific drugs and chemicals that serve as model developmental immunotoxicants. These xenobiotics disrupt specific events during one or more windows of immune vulnerability. With the DIT literature having expanded dramatically in the past five years, the breadth and range of known developmental immunotoxicants can now provide clues as to categories of likely toxicants and the specific immunotoxic risks. The significantly expanded literature also permits an evaluation regarding the nature of DIT alterations and the most predictive assays for detecting developmental immunotoxicants.

In considering specific testing assays and detection of developmental immunotoxicants, the take-home message was that function trumps structure. Dysfunction rather than major structural alterations is the most common DIT outcome. Not surprisingly, those combinations of assays that are capable of measuring across the spectrum of immune response capacities appear to be best for detecting developmental immunotoxicants. As a result, a multiple isotype (e.g., IgM and IgG subtypes) T-dependent antibody response (TDAR) can be combined with a Th1-dependent assay such as the cytotoxic T-lymphocyte (CTL) assay or the delayed type hypersensitivity (DTH) assay for analysis of acquired immunity. Inclusion of a natural killer (NK) cell cytotoxicity assay further adds a useful measure of innate immunity. Cytokine measurements, immunohistology, and immunophenotype are helpful as associated measures but do not substitute for functional assays when it comes to DIT.

The question and answer discussion following the JSIT lecture was excellent and very thought provoking. It was such an honor to be a part of the session dealing with developmental immunotoxicology at this meeting.

My second presentation at Shionogi & Co., Ltd. followed a similar outline. However, the lecture time was slightly longer, and it was possible to include additional materials concerning DIT testing. Much of the subsequent discussion focused on testing options including the range of potential developmental immunotoxicants and the benefits and limitations of various testing protocols.

I returned with many wonderful photographs and memories from the conference, the visit to Shionogi & Co. Ltd. and the tours of the Osaka-Kobe area monuments. Dr. Nakamura provided the tour of a lifetime and I am so appreciative of his special hosting. It was an honor to have represented our Immunotoxicology Specialty Section at this conference.
The workshop was convened at the Natcher Building on the NIH campus on November 9, 2007. There was an Introduction provided by CSR officials, including the Director, Dr. Tony Scarpa.

There was then a morning breakout session in which cellular-molecular or clinical or translational work was discussed. I was a facilitator for the clinical group and the other SOT representative attended the cellular-molecular breakout. The question for the morning session was, what research areas or technologies will be important to your discipline in the next 5 years?

The responses were relevant to SOT, but not uniquely relevant. The following areas were mentioned: clinical databases to maximize use of data from these expensive studies; investment in computational methods/personnel to handle high throughput data and systems biology approaches; assistance in design and statistical analysis of clinical studies.

Following the morning breakout session the whole group met and the facilitators of the breakout sessions presented the major conclusions from each group. There was discussion on a number of the issues presented and general agreement that the issues raised were appropriate for CSR to consider as it decides if new or modified study sections are needed.

The afternoon breakout session addressed the question: Is the science of your discipline evaluated appropriately within the existing study section structure?

Again, I facilitated the clinical group, and we concluded that sleep research crosses disciplines and does not have a “home” study section.

I mentioned the statistics on funding of NIEHS grants by Immunology study sections (16% of NIEHS grants in all study sections receive a score of 20th percentile or lower, whereas 7% receive a score that is good when reviewed by immunological sciences study sections). Liz Kovacs, representing the American Association of Immunology, indicated that alcohol-immunology grants have no home, and I mentioned that the case was similar for toxicology. The group concluded that alcohol and toxicology research also do not have an obvious “home” study section. The recommendations was that special emphasis panels should be tried. Emergency medicine was also identified as an area without study section representation at present. Finally, review of small to moderate sized clinical trials seems to not be appropriate in some cases.

The discussion of these conclusions and the conclusions of the other groups included written statements from two groups indicating that alcohol and toxicology grants often do not have an obvious “home” study section, and a special emphasis panel should be started.

I spoke in favor of this in the large group meeting, and the chair of the Innate Immunity and Inflammation study section spoke in support of the idea. He noted that the immunotoxicology reviewers were often harder on immunotoxicology grants and because there were so few of them the score given by the assigned reviewers typically prevailed, whereas among all the other reviewers there were almost always a number of grants that received better scores (e.g., 1.1-1.2). Thus, the immunotoxicology grants were not getting fundable percentiles.

In summary, I believe the message was very clearly delivered that there is a problem with appropriate review of many toxicology applications and that special emphasis should be implemented to address this problem.

Reports from the CSR Workshop are located at: http://cms.csr.nih.gov/AboutCSR/ReportStorage/openhousereports.htm under “Biological II Open House” subheading.
SOT 2008

Washington Convention Center, Seattle, WA

Drs. Stacey Anderson, Courtney Sulentic, and Barbara Kaplan enjoy the opening festivities

Pike Place Market, Seattle, WA

Poster Sessions

Dr. Carmen Booker

Ms. Mitzi Glover

Dr. Jean Regal
Poster Sessions

Drs. Steve Pruett and Yanli Ouyang

Dr. Margie Peden-Adams

Drs. Mike Holsapple, Dori Germolec, Mitzi Nagarkatti, and Steve Pruett

Drs. Courtney Sulentic, Prakash Nagarkatti, and Mitzi Nagarkatti

Dr. Jamie DeWitt and colleagues
Platform Sessions

Drs. Peyton Myers, Barbara Kaplan, Courtney Sulentic, and Deborah Keil

Drs. Deborah Keil and Kimber White

Dr. Ken Hasting

Immunotoxicology Specialty Section Business Meeting

Dr. Susan McKarns, Dr. Barbara Kaplan, Rick Salisbury, and Tharu Fernando
Immunotoxicology Specialty Section Business Meeting

Drs. Pramila Singh, Vic Johnson, and Stacey Anderson

Drs. Nancy Kerkvliet and Paige Lawrence

Dr. Fujio Kayama, Guest Speaker, Japanese Society of Immunotoxicology

Dr. Henk van Loveren Winner, Vos Award

Drs. Tom Kawabata and Kimber White

Space Needle, Seattle, WA
In order to enhance its long-standing commitment to the promotion of immunotoxicology, the nonprofit association “Summerschool in Immunotoxicology” is pleased to announce that it will present an Annual PhD Award starting from 2007, in recognition of outstanding student candidates for their contribution to the field of immunotoxicology.

In addition to the 1,000 € prize, the 2008 recipient will be the guest (including registration, accommodation and travel expenses) of the 17th Summerschool in Immunotoxicology to be held on September 22-24 in Avignon (France), and will be invited to give a 15-min oral presentation summarizing his (her) most significant results.

Any student having obtained a PhD degree (or recognized equivalent) during the 12 months prior to the application deadline for original work strictly in the area of immunotoxicology is eligible. However, the submitted PhD thesis should be either in English, French, or Spanish.

Applications, including the candidate’s CV and PhD dissertation in final form should be submitted to the Summerschool President Prof. Jacques Descotes:

E-mail: jacques-georges.descotes@chu-lyon.fr

Post mail: Centre Antipoison, 162 av. Lacassagne, 69424 Lyon cedex 03, France.

The next deadline for application is 1st June 2008.
The Society for Risk Analysis (SRA) Dose-Response Specialty Group is sponsoring a student award for graduate-student research. The research may be on any topic broadly related to dose-response assessment applied to risk assessment.

In addition to the peer recognition of the student’s scientific accomplishment, the award includes a registration fee waiver to the SRA Annual Meeting in December, an engraved plaque, and a $500 honorarium. All student abstracts and application forms must be submitted by May 24.

More information about the award and how to apply is posted at http://www.sra.org/drgs/DRSG_Student_Award_2008.pdf.

Patty Toccalino, Ph.D.
Vice Chair, Dose Response Specialty Group
Society for Risk Analysis
U.S. Geological Survey
916-278-3090
ptocca@usgs.gov

DEPARTMENT OF HEALTH AND HUMAN SERVICES
FOOD AND DRUG ADMINISTRATION
CENTER FOR DRUG EVALUATION AND RESEARCH

Cytokine Release: What Does It Mean?

October 20, 2008

Featuring Keynote Speaker: Sir Gordon Duff

Final Agenda will be distributed during Summer 2008.
See registration form and contact information on the next page.
Cytokine Release: What Does It Mean?
US Food and Drug Administration
Silver Spring, MD
Monday, October 20, 2008

Registration Form

Personal Information

Name:  
Company:  
Address:  
City:  
State/Province:  
Zip/Postal Code:  
Country:  
Email:  
Phone:  

Registration Fees

There is no registration fee.

Location Information

This conference will be held at the US FDA White Oak Campus in Silver Spring, MD.

10903 New Hampshire Ave
Silver Spring, MD  20903

Registration Information


Registration for non-FDA employees is being limited to the first 100 registrants.

To complete your registration, EMAIL this information to:

Carmen.Booker@fda.hhs.gov

Alternatively, you can also PRINT and MAIL/FAX your registration to:

Carmen Booker, Ph.D.
Chair, Immunotoxicology Subcommittee
US Food and Drug Administration
CDER/OND/ODE III
Division of Dermatology and Dental Products
10903 New Hampshire Ave
Silver Spring, MD  20903
(301) 796-0853 (Voice)
(301) 796-9895 (Fax)
Welcome to the 2008 ITCASS Meeting in Oslo!

The Immunotoxicology and Chemical Allergy Speciality Section (ITCASS) is a branch of EUROTOX. Members include scientists with training in immunology, toxicology, allergy and risk assessment. Every two years an informal meeting (ITCASS Research in Progress Meeting) is organized by ITCASS to promote immunotoxicology and scientific collaboration within the Europe. During such meeting all participants have the opportunity to present and discuss their data. ITCASS Officers are glad to announce the 5th ITCASS Research in Progress Meeting to be held in Oslo September 22-23, 2008.

**Oral presentations:**

All participants will have the opportunity to give an oral presentation (10 minutes + 5 min discussion). A preliminary program based on submitted abstracts will be presented by July 1st. Please e-mail your abstract to ITCASS2008@fhi.no. The abstract should be no longer than 1 page (Times New Roman, font 12).

**GENERAL INFORMATION**

**Important Dates**

June 16, 2008: Deadline for abstract submission and registration with payment for accommodation and board (lodging not guaranteed after this date). Please note - block reservation, payment to ITCASS

July 1, 2008: Preliminary program available

July 14, 2008: Deadline for late registration

September 22-23: Enjoy the ITCASS meeting in Oslo
Official Language
English is the official language of the meeting.

Meeting hotel and venue:
Holmenkollen Park Hotel Rica
Kongev. 26
N-0787 Oslo
Tel: +47 22 92 20 00
Fax: +47 22 14 61 92
For more information visit the hotel's website: www.holmenkollenparkhotel.no
NO PAYMENT TO HOTEL (except for minibar etc at departure)
The meeting will start with lunch at 13.00 hours Monday 22nd, and end Tuesday 23rd in the afternoon, depending on the number of abstracts received.

Payment
Price per person is NOK 2650,- in a single room or NOK 2150,- in a double room. The price includes one night accommodation, breakfast, lunch Monday and Tuesday and the meeting dinner. You will also have free access to the internet, swimming pool, sauna and fitness studio.

If you don’t want accommodation at the Holmenkollen Park Hotel, the price is NOK 1500,- (includes meeting facilities, afternoon/morning coffee/tea and snack, lunch Monday and Tuesday and the meeting dinner).

ACCOMMODATION AND BOARD MUST BE PAID UPON REGISTRATION (USE SEPARATE REGISTRATION FORM). NO REFUND CAN BE MADE AFTER JULY 14TH.

Extended stays must be arranged with the hotel on an individual basis.

Organizing committee:
If you have any questions, please contact us by e-mail: ITCASS2008@fhi.no, or call us at +47 2107 7000.
Ellen Namork, Berit Granum, Unni C. Nygaard, Nina E. Vinje or Martinus Løvik, Norwegian Institute of Public Health, Oslo.

ABOUT OSLO
Oslo is the capital city of Norway, and 560 000 of Norway’s 4.7 millions inhabitants live here. The city is situated in beautiful surroundings between large forests and the Oslo Fjord with its many islands. Oslo has many cultural attractions and sights in addition to magnificent nature experiences. There are several museums and collections of international fame such as the Viking Ship Museum, the Vigeland Sculpture Park, the Nobel Peace Centre and the new Opera house (where you can walk on the roof and down to the fjord). For more tourist information please visit the website of the Oslo Visitors and Convention Bureau at http://www.visitoslo.com/.
Climate
Oslo’s climate is better than its northern latitude might suggest. This is due to the Gulf Stream bringing warmth from the Gulf of Mexico up the coast of Norway. Average daytime temperatures in September are about 15°C and lowest average temperatures at night time are around 7°C.

Electricity
Electricity in Norway is 230 V AC with 50-Hz cycles. Plugs used are round-ended, two-pronged, continental plugs.

Currency
Norwegian currency consists of "kroner" (NOK) and "øre"; 100 øre make up one krone. The exchange rate as of April 2008 was 100 NOK = 20.5 USD or 12.8 EUR. Use of credit cards is widespread in Norway, and most stores, restaurants and taxis accept all major credit cards.

TRAVELLING TO OSLO AND THE VENUE
Oslo Airport Gardermoen, which is the airport closest to the city, connects Oslo to all the main cities in Europe and is 45 km from the city centre. Alternative airports are Sandefjord Airport Torp and Moss Airport Rygge.

Upon arrival at Oslo Airport Gardermoen, you can take the Airport Train directly to Oslo Central Station (Oslo S); trains depart every 10 minutes. Travel time is approximately 20 minutes, and the fare is NOK 160. The SAS shuttle bus connects the airport directly with the city centre (Oslo Central Station), departing every 20 minutes and the fare is about NOK 120. The bus takes about 45 min to the city centre (Bussterminalen).

Upon arrival at Sandefjord Airport Torp or Moss Airport Rygge, you can take the airport bus to Oslo Central Bus Station (Bussterminalen). Travel time is approximately 2 hours (NOK 160) and 1 hour (NOK 120), respectively. From the Central Station (Oslo S), you may take the underground number 1 “Frognerstjernen” and get off at the Holmenkollen Station. The ride will last for approximately 20 minutes. When you get off, follow the road slightly uphill towards the Holmenkollen National Ski Stadium. It is a 10 minutes walk.

The taxi from the city centre takes approximately 20 minutes, and the cost is between NOK 200-300, depending on what time you will be travelling. The hotel may offer special prices for taxi from the Gardermoen Airport directly to the Holmenkollen Park Hotel Rica. Contact the Airport Taxi stand in the arrival area or pre-order at: +47 02323. Fares: 1 - 4 people NOK 690, 5 people NOK 1010. (Additional charges when travelling the following times: Weekdays: 5pm - 6 am; Saturday and Sunday: All day additional charge NOK 100).

Entry formalities
Visitors from countries within the Schengen area do not have to show their passport when entering Norway. An ID-card is, however, necessary and you are therefore recommended to bring your passport. For nations outside the Schengen area a passport is necessary, and for some countries a visa.
# REGISTRATION FORM – ITCASS meeting
Oslo, Norway, September 22-23, 2008

Deadline for registration: June 16, 2008.
Please send by fax (+47 21076686) or e-mail (ITCASS2008@fhi.no)

## PARTICIPANT INFO
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Norwegian Institute of Public Health

May 2008
STAFF TOXICOLOGIST

WIL Research Laboratories, LLC

Ashland, Ohio

If you are an accomplished scientist with excellent interpersonal skills, an entrepreneurial bent, and enjoy a brisk turnover of new and interesting scientific projects, you should investigate the opportunities at WIL Research Laboratories, LLC. The diversity of this position provides the successful candidate with a personal growth opportunity covering science, project management and business acumen, unique in the contract research organization (CRO) industry.

WIL Research Laboratories, LLC is a successful, mid-size, interdisciplinary, non-clinical CRO, providing toxicology and related services to pharmaceutical, biotechnology, chemical, veterinary and food product industries. WIL is seeking a qualified Staff Toxicologist. As such, the successful candidate will be the responsible staff scientist and project manager for toxicology studies. This involves communication with scientific and regulatory sponsor representatives and consultants, study costing, proposal and protocol preparation, study implementation and interpretation of the results obtained. The candidate would be expected to remain current with technical advances and regulatory requirements in the applicable area of expertise.

The successful candidate will be expected to have a PhD (or BS or MS with significant applicable experience) in Toxicology, Pharmacology, Cellular Biology, Physiology, Microbiology, Immunology or other closely related discipline. ABT certification and experience in GLP environment would be desirable, but not required. General toxicology studies range from single-dose studies through 2-year bioassays, using a unique variety of in vivo test models, routes of administration, and study designs. The studies integrate pharmacodynamic observations with a variety of different disciplines such as laboratory animal medicine, clinical pathology, anatomic pathology, toxicokinetics and analytical chemistry.

Salary will be commensurate with experience and level of accomplishment. WIL is located in North Central Ohio, with easy access to Cleveland, Columbus and a variety of cultural and recreational activities.

For consideration, download an employment application from our website (www.wilresearch.com) and mail or fax the completed application, along with a resumé, to: WIL Research Laboratories, LLC, Attn: Human Resources, 1407 George Road, Ashland OH 44805. Fax: (419) 289-3650.
Compiled by Haley Neff-LaFord.

ANYTIME you have a new publication to report, please sent it to the coordinator, Haley Neff-LaFord: hnlaford@seagen.com

Asthma, Allergy & Hypersensitivity


Effects: Compounds


Li H, van Berlo D, Shi T, Speit G, Knaapen AM, Borm PJA, Albrecht C and Schins RPF. Curcumin protects against cytotoxic and inflammatory effects of quartz particles but causes oxidative DNA damage in a rat lung epithelial cell line. TAAP 227:115-124, 2008.


Smialowicz RJ, DeVito MJ, Williams WC and Birnbaum LS. Relative potency based on hepatic enzyme induction predicts immunosuppressive effects of a mixture of PCDDs/PCDFs and PCBs. TAAP 227:477-484, 2008.


**General Immunotoxicology**


Dietert RR and Dietert JM. Possible role for early-life immune insult including developmental immunotoxicity in chronic fatigue syndrome (CFS) or myalgic encephalomyelitis (ME). Toxicology 247:61-72, 2008.


Repnik U, Bergant M, Wraber B and Jeras M. Late dendritic cells are still able to evoke a potent alloreactive CTL response. Immunobiol 213:51-64, 2008.


**Reviews and Book Chapters:**
