

Immunotoxicology Specialty Section Newsletter



1998 - 1999 Council

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President's Message

by Kathleen Rodgers

Greetings to all as we exit this holiday season. There is a lot of activity in our specialty section. As you will see elsewhere in this newsletter, we have had another good turnout with our section being represented at the next national SOT meeting. The reason for this is excellent leadership by Judith Zelikoff and extensive participation from our membership with ideas for symposia and workshops. As early planning is necessary, I would encourage all those with ideas for the year 2000 meeting to contact Dori Germolec, your Vice President-Elect, as soon as possible so that she can get you turned in the right direction. Also in the works is planning for possibly unusual business meeting for the specialty section in New Orleans. If any of you would like to help Robert House and I in the planning of and preparation for this event, please contact us so that we can give you an assignment. If we can pull off what we are planning, it should be a lot of fun! So look for further information in future newsletters and keep Wednesday night of the meeting open (plan to attend). Thanks to all of our other committees and the work that is going on to run this specialty section. All of you that have postdoctoral fellows and graduate students that will give presentations at the upcoming national meeting be sure that they submit their data for review by our Awards committee. The recognition of these outstanding members of our specialty section is as major function of ours.

Thanks again for all the participation that makes this specialty section work so well. We are growing and have a strong presence within the national SOT. Have a wonderful year! ■

Vice President's Message

by Judith Zelikoff

With each new regime comes the potential for change. As the incoming president of the Immunotoxicology Specialty Section I would like to hear from all of you. Tell me what you like most about our Specialty Section

and things that you think could benefit from some overhauling.

It'll help most if you can be specific in your comments and also provide some workable alternatives. The easiest way to

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get your point across is to write to me at judyz@charlotte.med.nyu.edu. You can feel confident that your suggestions will be taken seriously and remain confidential.

One of the most frequent concerns I have heard in the past is "With so many members how come the same people are always involved with symposia, workshops, etc.?" The answer is simple- they are the only ones taking the time to organize a program. If this thought sounds familiar, now is the time to rectify the situation.

I would like to re-emphasize our VP-Elect's request for Continuing Education proposals for the 2000 meeting. As a past CE organizer and now as one of the committee members for the National Meeting, I can tell you that it's worth all of the effort. A successful CE course reaps lots of accolades and an overwhelming feeling of accomplishment. If you haven't yet organized a CE course, get some friends together and give it a shot. Forms will be available at our Specialty Section reception.

Thanks again for your participation in the IMTOX Specialty Section. I look forward to hearing from many of you in the very near future. ■

Meeting Report: Linking Environmental Agents and Autoimmune Diseases

September 1-3, 1998, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina.

There has been considerable concern in recent years that exposure to environmental agents may increase the risk of developing autoimmune disease or increase the risks associated with the expression of autoimmune disease. Recent advances in our understanding of genetics, endocrinology, and the development and function of the immune system make this an ideal time to determine the role and interaction of these factors and environmental exposures in the etiology and progression of autoimmune disease. The purpose of this workshop was to bring together immunologists, clinicians, epidemiologists, molecular biologists, and toxicologists in order to review what is known about environmental links to autoimmune disease and identify data gaps and future research needs in a multidisciplinary fashion.

A number of critical questions were raised at the beginning of the workshop: Is there increased risk for autoimmune disease as a result of environmental exposures? If so what is the magnitude of that risk? What are the underlying mechanisms? How do we determine what chemicals are involved; i.e., how do we evaluate the role of environmental agents using animal testing

strategies and epidemiologic studies?

The first sessions introduced the state-of-the-art in the epidemiology, immunology and evidence for the role of environmental agents in autoimmune diseases. In the second session, systemic autoimmune disease were examined in detail, focusing on clinical presentation, mechanisms, epidemiology and experimental induction of systemic autoimmune diseases by environmental agents. Day 2 of the meeting began with a number of talks emphasizing differential sensitivities due to gender, age, genetics and occupational status. The session which followed presented specific examples where environmental agents have been linked with organ specific and systemic autoimmune diseases and the search for common threads between environmental exposures and certain patterns of disease. The final day of the meeting began with a talk examining the issues in qualitative and quantitative analysis necessary to conduct risk assessments for chemical-induced autoimmunity. Participants then broke out into small groups to discuss research needs and develop recommendations for specific areas including: strategies for testing; common threads (among autoimmune diseases, chemicals and other indicators of immunotoxicity); integrating epidemiology and animal research, organ-specific diseases; and risk factors (sensitive populations).

From these breakout sessions five broad research needs were identified. The first is to develop research tools needed to explore links between environmental

agents and autoimmune disease. Because this field of study is fairly new many of the tools needed to effectively study the links between environmental agents and autoimmune disease need to be developed. Two much-needed tools are biomarkers of effect and validated questionnaires for use in epidemiology, field, and clinical studies. A second research priority would be to establish a nationwide surveillance network for autoimmune diseases. Established population-based registries for autoimmune disease would help to identify clusters, potentially associated with environmental exposures, and sensitive populations. Because autoimmune diseases are relatively rare, surveillance of this type is needed to define the scope and magnitude of the problem. A third recommendation was that strategies for screening chemicals for the potential to induce or exacerbate autoimmune diseases be developed and validated. The goal would be to develop a testing strategy (most likely in laboratory rodents) that could be used to assess chemicals for the potential to increase risks associated with autoimmune disease. Another suggested need is the development of an emergency response strategy for toxicant exposure. On occasion there have been large scale accidental exposures (toxic oil) or unexpected effects from intended exposures (L-tryptophan) which might have yielded more information had someone been prepared to assess the situation immediately. A protocol for responding to such incidents should be in place in advance along with the means to rapidly

obtain support, both financial and other (e.g., rapid Institutional Review Board approval). Both clinical and epidemiologic approaches as well as exposure assessment should be included in such a strategy. The final recommendation would involve the conduct of hypothesis driven research in occupationally exposed groups and/or in experimental animals. Identification of autoimmune effects following chemical exposure in animal studies should result in the development of hypothesis driven human epidemiologic or clinical studies.

There was general consensus that meetings like this one or projects which facilitate interactions between specialties should be encouraged and that funding should be targeted to studies which use multi disciplinary approaches to improve overall knowledge of the hazard, mechanism of action, and human health consequences associated with environmental agents and autoimmune disease. *Environmental Health Perspectives* will publish a special issue on autoimmunity in 1999, featuring a meeting report and monographs on selected topics.

We are looking forward to another excellent year of Immunotoxicology offerings at the National Meeting in New Orleans. In 1999 we are sponsoring a Continuing Education Course on Chemical Hypersensitivity; Workshops on the Immunotoxicology of Novel Therapeutics and the Validation of Toxicology Test Methods; Immunotoxicology Case Studies, and; Symposia on Drug Hyper-

sensitivity: Mechanisms of Immune-Mediated Reaction and Animal Models of Cardiopulmonary Disease: Impact of Air Pollution on at Risk Populations.

It's hard to believe, but it is already time to start thinking about the program for the year 2000. We have been asked to begin consideration of what sessions the Immunotoxicology Specialty Section would like to propose.

I would like to encourage you to submit your ideas for Continuing Education courses, workshops and platform sessions for the year 2000 to the Specialty Section Program committee. In particular, I would encourage submission of Continuing Education courses, as we generally receive fewer proposals for these important and noteworthy contributions to the meeting program. We will evaluate the proposals received and present them to the Immunotoxicology Specialty Section Executive Committee for approval. Please keep in mind that the Executive Committee bases their decision of which proposals to sponsor and submit to the National Program Committee on the total package, so it's best to flesh out and make the proposals as complete as possible. For additional information or to submit a proposal, please contact:

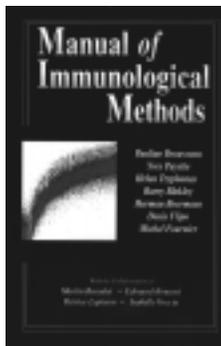
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Book Review

Manual of Immunological Methods

by P. Brousseau, Y. Payette, H. Tryphonas, B. Blakley, H. Boermans, D. Flipo and M. Fournier.

Copyright 1999 by CRC Press.
ISBN 0-8493-8558-X.



There is always a need for a clear and concise handbook of immunotoxicology methods. Of course the benchmark to date remains

Methods in Immunotoxicology edited by Burleson et al. Now along comes *Manual of Immunological Methods*, which is not billed as an immunotoxicology book *per se*, but which contains methodology used in essentially all immunotox labs. This manual contains a wealth of practical "how to" techniques on everything from identifying animals by ear punch to measuring intracellular calcium levels. Those just starting out in the field will benefit most from this book, although old hands will still find plenty of useful tips and maybe even some new technology to add to their repertoire.

In particular, environmental immunotoxicologists will find this to be a valuable resource for immunological techniques involving a number of species such as earthworms, bivalves, fish and birds, in addition to the more commonly used laboratory

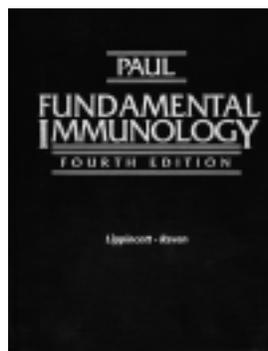
mammals. (This completeness, however, turns strange at times. Need to know how to measure NK activity in polar bears or beluga whales, or perform a mitogen assay using alligator cells? You'll find that information here.) Inclusion of this type of information is almost completely lacking from other immunotoxicology texts, and its inclusion in this manual is welcome.

The biggest drawback of this book is the price: \$59.95 for a slim (141 pages) soft-cover. I'm not saying that the book isn't worth the price, since it contains a lot of valuable information that's not readily available elsewhere. On the other hand, don't be surprised (or, like I was initially, shocked) when the book arrives in a small envelope. For more information, contact CRC Press at 800-272-7737.

Fundamental Immunology, Fourth Edition

edited by William E. Paul.

Copyright 1999 by Lippincott-Raven. ISBN 0-7817-1412-5.



Any good immunotoxicology laboratory will have several reference texts on basic immunology. After

all, how can one evaluate toxicity unless the normal system is

understood? The problem, of course, is that the discipline of immunology is progressing so fast that most textbooks are quickly outdated. What is most needed is a regularly-updated text that not only incorporates new information, but synthesizes that information with well-established facts. William Paul's *Fundamental Immunology* has for a number of years served that role well, and the new, fourth edition of this venerable classic continues that tradition.

The book comprises 45 chapters organized into logical subheadings including: Immunoglobulins and B Lymphocytes; T Lymphocytes; Organization of the Immune System; Regulation of the Immune System; Effector Mechanisms of Immunity, and; Mechanistic Basis of Immunology. There are new chapters on dendritic cells, NK cells, apoptosis, and control of T-cell phenotype.

An interesting and useful feature of this volume, and one that we are likely to see more of in the future, is the inclusion of a CD-ROM. This PC- and Mac-compatible disk contains the complete text of the book (including tables, references and illustrations), along with some Internet links.

Fundamental Immunology, Fourth Edition costs \$135, plus tax, shipping and handling. Given the tremendous amount of up-to-date information contained in this book (almost 1,800 pages worth of dense text, with over 500 illustrations), not to mention the CD-ROM, this is indeed a bargain. To order a copy, or to obtain more information, contact Lippincott-Raven at 800-638-3030. You can also visit their website at www.lrpub.com. ■

Awards Committee

by Stephen Pruett, Chair

Graduate students and postdocs are encouraged to submit your SOT poster or platform presentation for consideration for an Immunotoxicology Specialty Section Award. In addition to recognition, a \$250.00 prize will be given to winners. To be eligible, submit your entire presentation in written form by January 31, 1999 to:

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