Immunotoxicology Specialty Section Newsletter

The Immunotoxicology Specialty Section Newsletter is published 3 times/year (January, June and November) in both printed and electronic formats. If you would like to share a book review, meeting report, interesting web site or any other item of interest with members of the Specialty Section, please send it to us by the middle of the month preceding the planned publication date. All comments on, or suggestions for, the newsletter are welcome.

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President's Message

by Judith Zelikoff

As we approach Y2K, it is my greatest pleasure to be serving as your president. This coming year will bring lots of new and exciting events and changes to our Specialty Section. What I would like most to see occur this year is greater participation by our membership. Given the number of people who have signed up and are enthusiastically participating in the different Immunotoxicology Committees, I would say that we are off to a good start. Furthermore, we have asked for, and received, a number of suggestions for nominees to be considered for next year's officers. All suggestions are most helpful and will certainly be considered by the Nominating Committee.

If you were unable to attend the Annual Meeting reception in New Orleans, or just recently thought about someone that might make a good candidate for VP-elect, Secretary/Treasurer, or Councilor, it is not too late. The Nominating Committee will begin discussions around the end of the year and will entertain any suggestions up until that time. Just e-mail me (judyz@charlotte.med.nyu.edu) with the name, affiliation, and particular office for which you would like to see this individual considered and I will bring it forth for discussion.

Another adventure we are going to attempt this year is holding our annual reception off-site at one of the local places of interest. This will require some additional work on the part of the Executive Committee, but if we can pull it off I think it will be a huge success. Also, in keeping with the idea of bringing in the new millennium, we are planning on having a "cornerstone" Immunotoxicologist give us an upbeat

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Past President's Message

by Kathleen Rodgers

Welcome back from a great meeting in New Orleans! It has been an awesome year for our Specialty Section. We had great representation at the national SOT with record attendance at our symposia, workshops, poster-discussion sessions and poster session. This rousing success was a result of the expert guidance of your new president, Dr. Judith Zelikoff. My special thanks for all the people who worked so hard to put these sessions together and to chair them. It takes a great deal of perseverance and hard work to make the meeting such a success. For those of you who have never had such an opportunity, may I

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President's Message

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presentation on where Immunotoxicology has been and where it is going in the year 2000 and beyond. All of these processes are moving forward and we will keep you updated in later newsletters once we have information available.

Our Specialty Section contains numerous well-respected Immunotoxicology researchers who deserve recognition. To acknowledge some of their outstanding accomplishments, in addition to our well-established Student Awards, we are going to implement three new awards beginning this year (see below). After reading the details below please start thinking about who you might like to nominate for receiving an award at our reception in Philadelphia. All Specialty Section members (including students, of course) can nominate candidates for each category, but only one person per category. Nominations are due to the appropriate person(s) by November 29th. REMEMBER WITHOUT NOMINATIONS THERE ARE NO AWARDS!

Achievement Award
An engraved plaque will be awarded to a Senior Investigator whose body of work represents an outstanding achievement in Immunotoxicology. The nominator should provide a discussion of the role that the individual's work has played in advancing the field of Immunotoxicology. A curriculum vitae and bibliography should also be included; a second letter of recommendation from another investigator in the field would be helpful. Nominations of unsuccessful candidates will be considered for two additional years unless the nomination is withdrawn by the sponsor. Final decisions will be made by the Nominating Committee. Thus, please send your nominations to either myself, Kathy Rodgers, Scott Burchiel, Peter Thomas, or MaryJane Selgrade.

Paper of the Year Award
An engraved plaque will be awarded to the author(s) of the best paper in the area of Immunotoxicology, published in either *Toxicological Sciences* (formerly *Fundamental and Applied Toxicology*) or *Toxicology and Applied Pharmacology* between July 1, 1998 and June 30, 1999. The nomination should provide a full citation of the paper and a short discussion of the value of the research to the field of Immunotoxicology. Decisions will be made by the Specialty Section Councilors. Thus, please send your nominations to either John Barnett, Liz Sikorski, or Kathy Rodgers.

Young Investigator Award
An engraved plaque and cash stipend will be awarded to a scientist who has made significant contributions to the field of Immunotoxicology. The recipient must have less than 10 years of experience since obtaining her highest earned degree at the time when the award is presented. The nomination should summarize the contributions of the candidate scientist and should include a curriculum vitae and a bibliography. Nominations should be made directly to any of the aforementioned Councilors.

Thanks for your support and I look forward to working with you all throughout this next year. ■

Past President's Message

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encourage you to contact Dr. MaryJane Selgrade. She is our new Vice President-Elect and will be submitting the program next May for the 2001 meeting. We have a terrific line up for next year's meeting that was submitted in the middle of April, and that will be outlined by our Program Committee chair.

I would also like to take this opportunity to thank Dr. Robert House, who is an amazing organizer. Without his guidance and attention to detail, this Specialty Section would not have run so effectively over the last two years. Dr. Robert Luebke, our new Secretary-Treasurer, has large shoes to fill and I wish him the best.

Dr. Zelikoff presented many exciting changes that she would like to initiate in the coming year. A main part of her agenda is to increase the participation of the membership in the specialty section. Please give her your support in this and look for ways that you can help carry the burden of the work required to make this one of the premier Specialty Sections in the SOT. She has served this Specialty Section faithfully in many capacities and should be a brilliant President.

In addition to the new officers mentioned above, Dr. Elizabeth Sikorski is replacing Dr. Steve Pruett as councilor. Our new chairman for the Regulatory Committee, Dr. Ken Hastings, will replace Liz. Our Methods Committee also has some exciting new innovations that they will be implementing in the coming year.

Overall, great things are coming in the future. I thank you for the opportunity to serve you these past several years. ■

1999 - Y2K Lineup

Awards Committee
Chair: John Barnett
Members: Jeanine Bussiere, Mitch Cohen, Don Frazier, Ian Kimber, Mike McCabe, Leigh Ann Naas, Jean Regal, Kathy Rodgers, Larry Updyke, Michael Whitekus, Judith Zelikoff

Program Committee
Chair: Dori Germolec
Members: Mitch Cohen, Don Fraser, Brian Freed, Ian Kimber, David Lawrence, Paige Lawrence, Greg Ladics, Mike Lynes, Mike McCabe, Kathy Rodgers, Kathy Sarlo

Methods Committee
Chair: G. Frank Gerberick
Members: Jeanine Bussiere, Kenneth Hastings, Robert House, Deborah Keil, Greg Ladics, Robert Luebke, Craig Zwicki

Regulatory Committee
Chair: Kenneth Hastings
Members: Don Frazier, Joe Griffin

Membership Committee
Chair: Michael McCabe
Members: Mitchell Cohen, Tai Liang Guo, Craig Zwicki

Education Committee
Chair: Mitchell Cohen
Members: Brian Freed, Steve Holladay, Niel Karrow, David Lawrence, Neil Pumford

Communications Committee
Chair: Robert House
Members: Bob Luebke, Linda Thurmond

Farewell from the Student Representative

by Beth Vorderstrasse

As my term ends, I'd like to take the opportunity to again remind students that the Student Representative is available to present your questions, concerns or suggestions to the Specialty Section. Your suggestions are welcome. For example, as the result of a student suggestion, the Awards Committee has agreed to provide comments and feedback to students who submit their work for consideration for a Specialty Section award. If you have anything you'd like to see addressed, please contact your representative. ■

A Darned Handy Resource

Unless you have a remarkable memory, you may find it hard to keep track of the enormous number of CD (cluster of differentiation) molecules and their functions. If so, try this one on for size: www.ncbi.nlm.nih.gov/prow/cd/index_molecule.htm. This page lists the various CD molecules, their alternative names, statistics, functions, you name it. ■

Awards Committee Report

by John Barnett

As in past years, the Immunotoxicology Specialty Section will be making awards to pre/post-doctoral fellows for the best abstracts in the field of immunotoxicology presented at the Annual Meeting. The award will consist of a cash prize as well as a plaque. As in past years, the following criteria will be used to judge the submissions:

1) Scientific importance (including such issues as innovation, significance, potential impact on the field, etc.)

2) Appropriateness of methodology and statistical analyses

3) Interpretations and conclusions (justification of the data)

4) Overall clarity and impact (language, figures, etc.)

The submissions will be scored using a ranking system similar to that employed by the NIH (i.e., 1.0 = highest; 5.0 = lowest). Consideration will also be given as to whether it is a poster or platform submission. Based upon your input at the last meeting, a summary of the Award Committee's comments will be returned to the applicant sometime after the national meeting. The submission package should include your entire SOT presentation (no manuscripts please) and a letter of nomination from your advisor. The deadline for submission is January 31, 2000. Please send your submissions directly to John B. Barnett, Ph.D., West Virginia University at Morgantown. ■

Regulatory Committee Report

by Kenneth Hastings and Elizabeth Sikorski

ICCVAM

On September 17, 1998, the Interagency Coordinating Committee on the Validation on Alternative Methods (ICCVAM) held a public meeting at the Gaithersburg Hilton in Maryland to consider the validation status of the murine local lymph node assay (LLNA). As a brief background: Public Law 103-43, enacted in 1993, directed the National Institute of Environmental Health Sciences (NIEHS) to develop criteria and processes for validation and regulatory acceptance of alternative toxicological test methods. Subsequent to passage of this act, NIEHS created the National Toxicology Program Interagency Center for the Evaluation of Alternative Toxicological Methods (NICEATM) to take primary responsibility for the process of determining the validation status of candidate alternative methods.

In addition, ICCVAM was established as a companion collaborative effort, with representatives from 14 Federal regulatory and research agenices and programs, to coordinate the evaluation and acceptance of alternative methods. In 1997, Drs. Frank Gerberick, Ian Kimber, and David Basketter proposed the LLNA for consideration by ICCVAM as a stand-alone alternative to currently accepted animal tests for contact sensitizers. Upon receipt of the proposal, ICCVAM contacted the participating agencies for nominees to serve on the Immunotoxicology Working Group (IWG) which was tasked with evaluating the acceptability of the submission and to nominate members of the Peer Review Panel (PRP) which would also evaluate the method. After considerable effort on the part of both the proponents of the LLNA and the IWG, the proposal was considered complete and acceptable and a PRP assembled. The Chair of the PRP was Dr. Jack Dean and the Executive Secretary was Dr. Lorraine Twerdok and there were 14 total members, including one representative from Japan and two from Europe. Although the PRP was asked for a thorough evaluation of the submission using an extensive list of criteria, there were two basic questions that needed to be answered:

- Has the LLNA been evaluated sufficiently and is its performance satisfactory to support its adoption as a stand-alone alternative to the Guinea Pig Maximization Test (GPMT)/ Buehler Assay (BA)?

- Does the LLNA offer advantages with respect to animal welfare considerations (refinement, reduction, and replacement alternatives)?

The unanimous conclusion of the PRP at the Sept. 17 meeting was that the LLNA is an acceptable stand-alone alternative to standard guinea pig assays (GPMT/ BA) for the purpose of hazard identification of strong to moderate chemical sensitizing agents. In addition, the PRP unanimously concluded that the LLNA offers several advantages compared to GPMT/BA with respect to refinement, reduction, and replacement. The PRP report was forwarded to and accepted by the ICCVAM IWG which, following minor modifications, forwarded the report to ICCVAM which also endorsed the conclusions.

The various agencies (esp. EPA, FDA, and NIOSH) are now considering the implications of the report, especially with respect to implementation of the recommendations made by the PRP. Copies of the report "The Murine Local Lymph Node Assay: A Test Method for Assessing the Allergic Contact Dermatitis Potential of Chemicals/Compounds" (NIH Publication No. 99-4494) are avaiable from NIEHS, National Toxicology Program, P.O. Box 12233, Research Triangle Park, NC 27709. Members of the Immunotoxicology community should take pride in the fact that the first assay to be considered and accepted as validated according to the strict guidelines of ICCVAM was an immunotoxicology method.

FDA

The FDA Center for Devices and Radiological Health (CDRH) has published a final guidance document on immunotoxicity testing. The guidance was published on May 6, 1999, and is entitled "Guidance for Industry and FDA Reviewers: Immunotoxicity Testing Guidance". This document is available at the following web address: www.fda.gov/cdrh/ost/ostggp/immunotox.html.

Readers should take note that this document applies only to products regulated by CDRH and does not apply to other FDA Centers. At this time, the draft guidance for immunotoxicology evaluation of drugs has not been made available for public comment, but notice of its availability

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Regulatory Committee Report

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should appear in the Federal Register soon.

EPA

The final test guidelines for the Series 870 - Health Effects Test Guidelines are available. Those of most interest to immunotoxicologists would be 870.2600 Skin Sensitization and 870.7800 Immunotoxicity. The guidelines are available as PDF from EPA's Web site (www.epa.gov/epahome/research/htm) under the heading "Researchers and Scientists/Test Methods and Guidelines/OPPTS Harmonized Test Guidelines." The final guidelines have been harmonized between the Office of Pesticide Programs (OPP) and the Office of Pollution Prevention and Toxics (OPPT) and, to the extent possible, with the Organization for Economic Cooperation and Development (OECD) Guidelines for the Testing of Chemicals. The test guidelines were reviewed at various Scientific Advisory Panel (SAP) meetings and have been revised where appropriate in response to SAP and public comments.

ECETOC

The European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC) has established a Skin Sensitization Task Force. One of the objectives of this Task Force is to draft a report that contains general considerations for skin sensitization testing. The purpose of this report will be to provide recommendations regarding existing regulatory guidelines for skin sensitization. The report will focus on guinea pig tests for skin sensitization as well as the murine local lymph node assay. Some topics to be included in the section on guinea pig tests include recommendations on animal numbers, joint positive controls, hexyl cinnamic aldehyde as a positive control, rechallenge, and SLS pretreatment. This effort is being lead by Dr. Ian Kimber. Information on this report will be passed along when it becomes available to the public.

American Society for Testing and Materials

The American Society for Testing and Materials (ASTM) approved standard F1905 in 1998 entitled "Standard Practice for Selecting Tests for Determining the Propensity of Material to Cause Immunotoxicity". In general, this standard pertains to medical devices and other foreign materials. F04 standards are published in the ASTM Book of Standards, Volume 130. ASTM guidelines are voluntary unless cited in a regulation or contract. To order a copy of this standard on the Internet visit www.astm.org. Under ASTM standards search for Standard F1905. The cost to order a standard is approximately $25.00. ▩

Announcement

1999 Lovelace Respiratory Research Institute Symposium: Respiratory Immunology

This conference will examine the current understanding of the role of the immune system in respiratory health and disease. The symposium will run from October 10 through October 13, 1999 and will be held in the historic La Fonda Hotel in Santa Fe, New Mexico.

The program will include five sessions: Leukocyte Migration and Inflammation, Infectious Diseases, Asthma, Immunotoxicology, and Immunotherapy. Each session will consist of a series of talks by highly qualified invited speakers. Posters on subjects related to these themes are solicited in the call for abstracts. One afternoon has been reserved for workshops and special interest group discussions.

Understanding the immune system of the respiratory tract is a key to preventing its inappropriate responses in allergic diseases including asthma, protecting it against inhaled substances that can either damage the pulmonary immune defenses or increase allergic diseases, enhancing its responses to infectious pulmonary diseases, and optimizing the effectiveness of immunotherapeutic measures targeted toward respiratory diseases. This symposium will address our current understanding of the interactions of cells of the immune system with the respiratory tract, with emphasis on the unique aspects of this vulnerable organ. Attendance will be of value to scientists interested in diseases of the respiratory system, to members of the pharmaceutical industry, and to clinicians.

A full description of the program is available at: www.lovelace-symposium.org/99overview.htm. Or, for more information contact Alice Hannon, Lovelace Respiratory Research Institute, 2425 Ridgecrest Drive SE, Albuquerque, NM, 87108. Phone: 505-845-1124, Toll Free: 888-300-9080, Fax: 505-845-1193, e-mail: ahannon@lrri.org. ▩

Meeting Report

On May 21 and May 22, 1999, the first meeting of the Experimental Contact Dermatitis Research Group (ECDRG) was held in Cincinnati, OH. The meeting was chaired by Dr. Frank Gerberick, along with a distinguished organizing committee made up of scientists and clinicians (Drs. Paul Bergstresser, Kevin Cooper, Ian Kimber, Michael Luster and Francis Storrs). The meeting was generously sponsored by the National Institute of Occupational Safety and Health and the National Institutes of Health-sponsored skin disease research centers at the University of Texas Southwestern Medical Center in Dallas and at Case Western Reserve University/University Hospitals of Cleveland. The task of this committee was to establish a research group in North America that will meet every eighteen to twenty four months to discuss the basic and applied science of experimental contact dermatitis (CD).

The inaugural meeting of the ECDRG was a great success, and Dr. Gerberick and the members of the organizing committee are to be congratulated for an outstanding organizational effort. This meeting attained its goal of gathering together a diverse group of clinical and experimental dermatologists, immunologists, and toxicologists from academia, industry and governmental regulatory agencies whose common focus is some aspect of CD.

The format for the meeting was informal, with the speakers being allotted 10 minutes for their oral presentations, followed by a 5-minute discussion period. There was a total of 45 papers presented at this meeting. The presentations were grouped together into themed sessions. Some of the themes included the immunology of CD (with a particular focus on dendritic cells, including Langerhans cells), clinical studies, regulatory issues, predictive testing, and the immunotoxicology of contact dermatitis. The presentations were excellent and reflected the expertise of this group of investigators. Additionally, the discussions that followed the oral presentations were spirited and lively, reflecting the interests of this group of individuals.

The presentations described a diverse range of techniques applied to the study of CD. Commonly utilized, established techniques such as the in vivo mouse animal model of ear swelling (in normal or gene targeted, "knockout" mice) and local lymph node assay of CD were described. Many of the investigators described their use of tissue culture of keratinocytes, peripheral blood-derived dendritic cells, Langerhans cells and T-lymphocytes to model for CD in vitro. There were skin organ culture models for CD and ex vivo models of CD (immunohistochemistry of skin biopsy specimens) from human volunteers at patch test reaction sites.

Many of the studies focused on the effects of chemical allergens on Langerhans cell (LC) migration (skin organ culture model) or phenotypic maturation (cell surface molecule expression) and/or cytokine profiles, or their ability to activate hapten specific T-lymphocytes in vitro. It is apparent that advances in tissue culture technology now permit investigators to propagate LC-like cells from the skin (such as the XS cell line), peripheral blood, or from existing cell lines (such as KG-1 leukemia cell line). The use of these LC-like cell lines has facilitated the studies of allergens and irritant effects on human dendritic cell populations.

An emerging theme of this meeting was the application of molecular technology to the study of CD. Gene reporter assays, differential display techniques, reverse transcription-polymerase chain reaction, northern analysis and the newest technology, gene array analysis, were described. Most of the techniques allow investigators to study the effects of irritant and allergens on gene expression in a tissue (in vivo or ex vivo) or by defined cell populations in vitro. All of these standard and evolving molecular technologies are being utilized in a rigorous but imaginative manner by a variety of different laboratories. Many of these techniques will need further refinement, but have the potential to have a great impact on our understanding of the mechanisms of CD, and potentially to identify the characteristic cellular response to allergens and irritants at the molecular level.

There were also numerous clinical studies of populations of patients with allergic CD. This type of patient work remains of

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Meeting Report

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central importance, since all of the animal model systems, in vitro and ex vivo studies, and the applied molecular technology are attempting to model dermatologic disease in a patient or groups of patients with allergic or irritant CD.

The ECDRG was well attended, with approximately 90 registrants being present for the one and one-half day long proceedings. Because the ECDRG provided travel scholarships to young investigators, this allowed young scientists, residents and fellows to attend and present the findings of their research during this meeting. It also allowed interactions between the senior and junior investigators during the meeting and at the luncheons and breaks. The young investigator travel grants were supported by a NIAMS grant (# 1 R13 AR 45962-01).

The next meeting of the ECRDG will be held in Dallas, Texas at the University of Texas Southwestern in November 2000. Dr. Paul Bergstresser will be the chairman of the organizing committee for this meeting. I encourage all members of the Immunotoxicology Specialty Section with an interest in experimental CD to attend this highly informative, interactive meeting which will again bring together the collective expertise of clinicians, investigators, and regulators. ▩

Poster Discussion Session Summary

Reported by Bob Luebke and Paige Lawrence

A poster-discussion session was held at the 1999 Annual meeting, entitled "Immunotoxicity: Modulation of T Cell Responses and Host Resistance", chaired by Paige Lawrence and Bob Luebke. The eleven posters included in the session (numbers 21-31 in The Toxicologist 48), addressed direct and indirect effects of xenobiotics on T cell function and activity. Three main topics for discussion were chosen, and several issues were identified for each topic. These included:

Toxicant-induced alterations in T cell function: direct vs. indirect effects.

a. Perturbations in TH1/TH2 balance: Is this paradigm oversimplified?

b. Are lymphocytes and antigen presenting cells equally important as targets of immunotoxic chemicals?

c. Inflammation as a mediator of immunosuppression: Is this more common than we think?

Reconciling data obtained from in vitro and in vivo studies: when are these models appropriate and how should the information be used?

a. How do we utilize in vitro data to understand in vivo mechanisms? Given the complex nature of immune responses, are in vitro models predictive of altered host resistance?

b. Do the data coming from human, rat and mouse immunotox model systems complement or contradict each other? If the latter, how do we interpret this?

c. Why is it (or is it not) important to understand the molecular mechanism when a functional change has been found?

d. Role of host resistance assays in immunotoxicity testing: Do these assays have a place in immunotoxicity testing? When are they appropriate? How should the information be used?

e. With regard to immunoenhancement, do increased responses in exposed animals reliably predict adverse effects or only make writing the discussion section more interesting?

Toxicant-induced alterations in cytokine production: mechanisms vs. screening.

a. Does information on altered cytokine profiles provide useful information regarding the elucidation of mechanism of toxicity?

b. Do altered cytokine profiles serve as predictors of disease?

c. Can/should cytokine profiles be used as a screening method?

Time constraints prevented a thorough discussion of all issues; nevertheless, all participants voicing an opinion agreed that host resistance models comprise an integral part of immunotoxicology. The importance of timing of infection relative to toxicant exposure, plus virulence and life cycle factors of the challenge agent were also discussed.

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Poster Discussion Session Summary

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Several participants commented on the interpretation of cytokine data, expressing concern that we not become overly focused on the TH1/TH2 dichotomy. The tenuous position of TH1 versus TH2 responses as absolutes was highlighted in a discussion of cytokine mRNA or cytokine protein as the more biologically meaningful endpoint. Along this vein, the potential of DNA microarray technology in immunotoxicology was also discussed. No clear consensus was reached on microarrays as a screening tool for immunotoxicity, but their potential utility was acknowledged.

In summary, this session provided examples of xenobiotic-induced functional changes in lymphocytes and accessory cells, which in many cases were expressed as changes in the host response to an infectious challenge. Most participants agreed that a change in resistance to infection is an excellent indicator of immunotoxicity. Based on the number of attendees at the session, resistance to infection, xenobiotics that alter resistance, and the underlying immunotoxicological mechanisms of suppressed resistance remains an area of great research interest.

Book Reviews

Immunobiology: The Immune System in Health and Disease, Fourth Edition, by Charles Janeway, Paul Travels, Mark Walport and Donald Capra; published March, 1999 by Current Biology Publications, Garland Publishing, Taylor and Francis Group; 614 pages, including appendices; Softcover version is approximately $50.

Reviewed by Bob Luebke

The preface to the first edition describes the book as an introductory text for medical students, advanced undergrads and graduate students, but individuals well beyond their years as students or post-docs should still find it a useful resource. The authors approach immunology from the standpoint of "...the host's response to an environment containing myriad species of potentially harmful microbes." Accordingly, many examples used in the text involve the immune response to infectious agents. Examples are provided that illustrate why the immune system responds as it does to various agents, as well as the consequences to the host if the proper response is not made. This strategy provides a "big picture" perspective to discussions of the fine details of immunology at the cellular and molecular levels.

The organization of information is fairly standard for an immunology text. The initial chapters are dedicated to the basic organization of the immune system and a discussion of innate vs. adaptive immunity; functional details of cellular and antibody mediated immunity follow; the final chapters describe the specifics of resistance to infections and cancer, the causes and consequences of autoimmunity and allergy, and therapeutic manipulation of the immune system. Concepts described in the text are also presented as clearly drawn illustrations. And, as a bit of a bonus, there is a key to commonly used illustration icons, e.g., cell types, cytokines and receptors, signal transduction molecules etc. inside the front cover to help the reader keep all the players straight. A distinguishing characteristic of the book is a writing style that takes more of a conversational tone than a dry, didactic recitation of facts.

Some may find it a bit disappointing that immunotoxicology and chemicals of environmental concern are completely ignored. There is not a single mention of dioxins, PCBs, pesticides or any of our other pet chemicals as potential modulators of human immune function, although "environmental pollution" was mentioned as a potential cofactor in the development of atopic allergy and asthma. Furthermore, the only definition offered for "immunotoxin" refers to antibody/toxin combinations used therapeutically as immunosuppressants or in cancer treatment. No doubt most readers of this book will not even notice this glaring omission. And, after all, there are several recent books and book chapters written by members of the Immunotoxicology Specialty Section that are an excellent resource for immunotoxicologists.

There are several reviews of *Immunobiology The Immune System in Health and Disease* available on the www.amazon.com website, although it goes without saying that positive reviews are included. A search for "immunobiology" will take you right to it. There is also a dedicated web site for the book (http://ww.immunobiology.com) that has a couple of useful features: the book's Table of Contents

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Book Reviews

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and an electronic form to request an evaluation copy of the book if you are considering adopting it as a textbook.

An Introduction to Immunotoxicology, by Jacques Descotes. Copyright 1999 by Taylor and Francis, 183 pages, including index; Paperback version approximately $30. ISBN 0-7484-0307-8.

Reviewed by Robert House

The Preface of this book makes an interesting statement that I have found to be true from personal experience: "...toxicologists from other areas of expertise often consider immunotoxicology to be highly specialized, complex, and sometimes tricky." It's not that they don't want to know what we (as immunotoxicologists) do and why, it's just that they often don't have the time or inclination to wade through reams of reprints or quickly outdated book chapters to learn. *An Introduction to Immunotoxicology* may be just the cure to this complaint.

This slim, readable volume covers all of the major topics in an easily-digestible format. Topics are divided into a logical sequence (Immunotoxic Effects and Their Clinical Consequences; Immunotoxicity Evaluation; and Trends and Perspective in Immunotoxicology), and the range of topics include ones often neglected in this type of book (e.g., reactivation of dormant diseases by immunostimulation, immuno-allergic reactions to drugs, immunotoxicology regulatory guidelines, newer methodologies for assessing immunomodulation, and human immunotoxicology.)

A feature that I particularly appreciated was the author's ample use of recent literature as his principal reference material. My only complaint about this book — and one that certainly does not detract from its overall utility — is the quality of the illustrations. On the other hand, the cover art features what has to be one of the best-looking IgM molecule cartoons I've ever seen.

Workaday immunotoxicologists will not gain any deeper understanding of their craft from this book, but then this does not appear to be the book's *raison d'etre.* On the other hand, *An Introduction to Immunotoxicology,* in this reviewer's humble opinion, would make an excellent institutional library resource, or to lend to colleagues who want to be conversant in the field without having to become an expert (I have done this and know that it works). In addition, its concise, yet thorough, treatment of the subject matter should also make it a good choice as an introductory text for graduate students.

For more information or to order, contact Taylor & Francis at 47 Runway Road, Levittown, PA 19057; telephone 800-821-8312, email bkorders@taylorandfrancis.com, web www.taylorandfrancis.com. ▩

Report Available

A report has been published by International Life Sciences Institute (ILSI) entitled *Application of Flow Cytometry to Immunotoxicity Testing: Summary of a Workshop.* This report summarizes a meeting that was organized by the Immunotoxicology Technical Committee and was held in October 9-10 of 1997.

"At this workshop, clinicians, immunotoxicologists, and other scientists examined the available data, discussed the implications of those findings, and identified gaps in scientific understanding that could be resolved through specific research programs. The workshop was organized around two themes: clinical and experimental applications of flow cytometry and the relevance of flow cytometry to human health risk assessment. " (Abstracted from the Introduction.)

For copies of this important and interesting report, or to request additional information, contact Mr. David Sandler at ILSI Health and Environmental Sciences Institute, telephone 202-659-3306 or emial dsandler@ilsi.org. You may also want to visit their website at www.ilsi.org. ▩

Looking forward to the 2000 meeting in Philadelphia

by MaryJane Selgrade

SOT Program Committee

If you would like to see more platform sessions at the meeting, please consider checking that box on your abstract form. The program committee will not assign abstracts to a platform session unless the authors have opted for it. If that box is marked, the program committee may assign an abstract to either a platform or poster session. Last year it was difficult to put together more than one cohesive platform session because there were so few abstracts from which to choose. If you select platform and end up in a poster session, don*t be offended. Sometimes there are just not enough abstracts in a semi-related topic area to put together a reasonable platform session.

While you are checking boxes on the abstract form, please consider indicating your willingness to chair a session. The program committee is particularly interested in including young investigators. The only limitation is that all chairs must be SOT members. If you have an idea for a poster discussion session, please consider talking to colleagues who may be submitting abstracts in that area, so that you can submit the poster discussion form when abstracts are submitted (October 1 deadline).

In case you are wondering how the SOT program committee works, they meet in May to tentatively select symposia, workshops, and roundtables for the following year. In September this portion of the agenda is finalized and time slots are assigned. In November abstracts are reviewed and placed in sessions. This year both Kathy Rodgers and I are on the program committee. Please let us know if you have program suggestions you would like us to communicate to the Society. ■

Recent Immunotoxicology Publications

Intestinal T lymphocytes of different rat strains in immunotoxicity. Bruder, M.C. et al. (1999). Toxicol. Pathol. 27(2):171-179.

Immunotoxicity of pesticides: a review. Voccia, I. et al. (1999). Toxicol. Ind. Health 15(1-2):119-132.

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