

# Immunotoxicology Specialty Section Newsletter



2001 - 2002

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### Councilor

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Mr. L. Peyton Myers

*The Immunotoxicology Specialty Section Newsletter* is published 3 times/year (May, August and November). 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

*MaryJane Selgrade*

By the time you read this many of you will have the 2002 annual meeting on your mind as the October 1 abstract deadline will be looming. The Immunotoxicology Specialty Section Program Committee's hard work has once again paid off in that 4 symposia/workshops have been accepted for the 2002 program. It's important to remember these programs are only part of what makes for a successful meeting. The abstracts submitted by the membership for the poster and platform sessions are the other important ingredient. Hence, I encourage all of you to present your work at the meeting. Also, if you know of several colleagues that are presenting similar work, consider proposing a Poster Discussion session. Poster Discussion sessions can include from 8-13 abstracts. If you only know of 6 abstracts, submit them as a package anyway. It's likely the Program Committee will have others they can add to it. If you have an idea and want some help, let me know. Also, I would encourage all members to volunteer to chair a session. (You can do that when you submit your abstract.) The only requirement is that the chairperson must be a member of SOT.

Speaking of membership, SOT is now making the specialty sections more accountable for the money we spend. The Membership Committee is hard at work trying to keep track of our membership. (See their column later in this issue). So, putting it bluntly, we need your money. When you pay your dues remember to include the Immunotoxicology Specialty Section. Also, mentors should encourage their students to join the specialty section. Membership for one specialty section is free for students. It would help us in our planning if you pay your dues sooner rather than later.

We have a new student representative, Peyton Myers who is a student in Steve Pruett's lab at Louisiana State University. Susan McKarns's term as student representative ended in May. Thanks to Susan for doing a wonderful job. By the time you read this Susan will have defended her thesis. She accepted a post-doc position at NCI (Bethesda campus) to study mechanisms of autoimmunity, regulation of cytokine gene expression, and tumor immunology with Dr. John Letterio and planned to be there by September first. We all wish her well.

Please consider submitting nominations for awards (see the Awards Committee Report). The Executive Committee has decided that we need at least 3 nominations for all award categories in order to have a viable competition. Please take the time to nominate colleagues you think deserving of these awards. The rules have changed somewhat for the young investigator award.

The newsletter has been publishing citations for recent Immunotoxicology publications based on a literature search. If we have missed one of your recent publications, no slight is intended. It's tough to include all the right key words in a search. To remedy this problem we are asking our members to let us know when they publish a paper. (Please see the list of Recent Immunotoxicology Publications for more information). This is a great way to know who's doing what in the specialty section, but we need your help to make the list complete.

Our committee chairs have been hard at work so please read on. I'm looking forward to a great year. I'm always happy to hear your thoughts on the Immunotoxicology Specialty Section and its activities, so keep in touch.

## Proposed Change to Bylaws

MaryJane Selgrade

At our March 2002 meeting we will vote on the following change to the Article IX (Committees) of the Bylaws. Section 4 currently reads: *The Nominating Committee shall consist of the President, the Vice President Elect and the three most recent past Presidents.* The proposed would read as follows: *The Nominating Committee shall consist of the President, the Vice President, the Vice President Elect and the three most recent past Presidents.* The reason for the change is to include the Vice President in the nominating process because that person will be presiding over the process the following year.

## Membership Committee Report

Submitted by B. Paige Lawrence

Hopefully all of you have received an email inquiry from the Membership Committee regarding your perceived status as a member of the Immunotoxicology Specialty Section. For those of you who have responded, we thank you. We've heard from about 40% of you thus far. For those of you who have not, we implore you to do so (see our contact information below). For those of you who did not receive a pesky email from us, email me, please! The fact that you did not hear from us probably means that the email address currently on file for you is no longer correct.

The two goals of this email campaign are:

**1** to improve the accuracy with which membership in the Immunotoxicology Specialty Section is documented by SOT and our Specialty Section, and

**2** to strongly encourage those of you who enjoy the benefits of membership but have not paid Specialty Section dues to pay your dues. As MaryJane indicated in her message to you, SOT is making us more accountable for the money we spend, and this means that we need all our members to pay their dues. If you have not paid your 2001 dues, you may send a check to SOT using the following address:

**Society of Toxicology**  
Attn: Nii Koranteng, Membership Department  
1767 Business Center Drive, Suite 302  
Reston, VA 20190-5332

### Checks need to be clearly marked Immunotoxicology dues payment

In addition to contacting us regarding your current address and status as a member, please share any concerns or ideas with us. The current roster for the Membership Committee and our email addresses are as follows:

If you have any concerns or ideas, please contact us by email at:

B. Paige Lawrence, Ph.D.	bpl@mail.wsu.edu
M. Ian Gilmour, Ph.D.	gilmour.ian@epa.gov
Ranulfo Lemus, Sc.D	lemus@imap.pitt.edu
Kathleen Phillips McKeever, Ph.D.	mpk@gene.com
L. Peyton Myers	lmyers@lsuhsc.edu
Prakash Nagarkatti, Ph.D	pnagark@hsc.vcu.edu
Beth Vorderstrasse, Ph.D.	vordersb@wsu.edu

## Communications Committee Report

Submitted by Mitch Cohen

For 2001-2002, the Communications Committee members are Peyton Myers, Dr. Robert House, and Dr. Mitch Cohen (Chair). In keeping with the goals set by previous Chairs, this committee will do its best to provide Immunotoxicology Specialty Section members with timely information pertaining to meeting announcements, recent publications, job availability, grant announcements, etc.

This committee (with the aid of Membership Committee) is also responsible for keeping our Specialty Section e-mail list up to date. While the list is usually just used for rapid communications to all members, it is also presently being used to help us get a handle on exactly how many members our section really has. This is a critical issue as there seems to be some confusion about these numbers; in turn, this affects the total level of funds (out of annual membership dues) we receive back from SOT.

While the e-mail list has been a great help in this and other ways, some issues of concern to Immunotoxicology Specialty Section members have arisen since its inception. As a result, a set of rules was adopted by the Executive Committee to govern future use of the list. These include:

### Rules For Use Of The Immunotoxicology Specialty Section Computerized E-mail List

1. The list shall not be used for job solicitation purposes. For those seeking employment or those seeking to fill positions, the information should be forwarded to the Communications Committee and it will be placed on the Immunotoxicology Specialty Section webpage (updated monthly) and in the Immunotoxicology Specialty Section Newsletter as well.



2. Access to the list shall be by only a few Executive Committee Members- this would include the heads of Membership, Communications, the President, Vice-President, and Secretary/Treasurer.
3. The list, while not proprietary, will not be made available to non-Members for any reason.
4. All messages requested to be mass e-mailed shall first be approved of by the President.
5. The list shall, in conjunction with Membership, be maintained by the Communications Chair.
6. All members will be given the opportunity to opt out of the listing.
7. The list shall be used for queries of entire membership (for example, requests by the Program Committee for ideas for presentations at upcoming National Meetings) or for dissemination of important information to all (such as upcoming meetings of interest, funding opportunities, etc.).
8. Usage of the list by the Student Representative shall be governed by the same rules as above.

To accommodate members impacted upon by the first rule, a site has been established for those who want to post positions to be filled and for those who want to advertise that they are seeking positions. The information can be found under the EMPLOYMENT tag at our Immunotoxicology Specialty Section webpage in the SOT website, and will be updated monthly. As a backup, for the first few months, an e-mail will go out to all members to let them know that the site has been updated and to suggest that they check it out. The same information will also be available in the Immunotoxicology

Specialty Section Newsletter which comes out three times a year. This Committee hopes that both of these sites will potentially serve as a timely resource for all Immunotoxicology Specialty Section members. If you have any comments or suggestions, please let me know (send to cohenm@env.med.nyu.edu). If you would like to have information placed on the sites, please send that along as well.

Lastly, although I currently serve as Senior Councilor for the Immunotoxicology Specialty Section, I agreed to also act as Chair of the Communications Committee for the period of 2001-2002 with the understanding that a new Chair will be in place for 2002-2004. As you can see from all the progress made under previous leadership, our Specialty Section has, and always will be, far ahead of the curve with respect to all other sections and often (it seems) to SOT National itself. The e-mail list, the biannual Directory, the website, the electronic Newsletter, the job-site, and even the "not quite yet there" Resource Guide, are all examples of how this Committee has helped the Immunotoxicology Specialty Section be at the forefront in fostering interaction among, and assistance to, its members. We are always looking for even newer concepts to implement to further the cause. Please consider joining the Committee when we meet again in Nashville - if you would like to be considered for Chair, please feel free to e-mail me and I will pass the information on to the Executive Committee. Thanks.

## AWARDS COMMITTEE REPORT

*Submitted by Mitch Cohen*

For 2001-2002, the Awards Committee is composed of Drs. Jeanine Bussiere, Don Frazier, Dori Germolec, Ian Kimber, Greg Ladics, Mike McCabe, Leigh Ann Naas, Henk van Loveren, Ed Yurkow, Judith Zelikoff, and Mitch Cohen (Chair). The Immunotoxicology Specialty Section awards which will be available for the 2002 meeting in Nashville are: Career Achievement; Best SOT Journal Paper of the Year, Best Presentation by a Student; Best Presentation by a Post-Doctoral Trainee; and, Outstanding Young Immunotoxicologist Award. The Career Achievement Award will be judged by the Nominating Committee (President, Vice President-Elect, and last three Past-Presidents) and the Vice President. The three Councilors will judge the Best SOT Journal Paper of the Year. The Awards Committee will be responsible for reviewing all applications for Best Presentation by a Student and by a Post-Doc. Members of the Awards Committee will also now serve to aid the Vice President in the selection of the Outstanding Young Immunotoxicologist Award; in the past, this was decided solely by the Councilors.

A description of each of the awards, along with the requirements for eligibility for each and submission deadlines, is indicated below. It is now a requirement that a minimum of three (3) nominations (including any carry-over nominees from the year before) be received for any given award.

**PLEASE** take some time to review the available awards and then nominate individuals you feel are deserving of recognition for their work in the field of Immunotoxicology.

### **Career Achievement Award**

A Senior Investigator whose body of work represents an outstanding achievement in Immunotoxicology will receive an engraved plaque from the Specialty Section. Nominators are required to provide a letter which discusses the role that the nominee's work has played in advancing the field of Immunotoxicology, along with the nominee's *curriculum vitae* and bibliography. Additional letters of recommendation by other Investigators are suggested but not required. All nominations of candidates that have not received the award will be retained and considered for two additional years unless the nomination is withdrawn by the original sponsor. Determination of the awardee will be by the Nominating Committee and the Vice-President. Please send nominations to Dr. MaryJane Selgrade, MD-92, USEPA, Research Triangle Park, NC 27711, (T) 919-541-1821, (F) 919-541-4284, e-mail: Selgrade.MaryJane@EPA.Gov. **Deadline for submission is November 30, 2001.**

### **Best SOT Journal Paper Of The Year Award**

The Author(s) of the best paper in the area of Immunotoxicology, published either in *Toxicological Sciences* or *Toxicology and Applied Pharmacology* between July 1, 2000 and June 30, 2001 will receive an engraved plaque from the Specialty Section. The nominator should provide a full citation of the paper and a short discussion of the value of the published research to the field of Immunotoxicology. A list of all potential papers will be provided to members by e-mail and will be posted in the November Newsletter. Determination of the awardee will be by the three Councilors. Please send your nomination to Dr. Mitch Cohen, Department of Environmental Medicine, New York University, 57 Old Forge Road, Tuxedo, NY, 10987, (T) 845-731-3527, (F) 845-351-5472,

e-mail: cohenm@env.med.nyu.edu.

**Deadline for submission is November 30, 2001.**

### **Outstanding Young Immunotoxicologist Award**

A young investigator whose body of work has made significant contributions to the field of Immunotoxicology will receive an engraved plaque from the Specialty Section. This award is **NOT LIMITED** only to those in academia. Investigators who have had an impact upon regulatory issues or within industry will also be considered. The nominee must have **less than 15 years of experience** since obtaining their highest degree. Exceptions to the 15 year limitation can be made if careers have been interrupted for family or health reasons, by clinical practice, etc. Reasons for the exception should be documented in the nomination. Nominators are required to summarize the contributions of the candidate and should also provide a *curriculum vitae* and bibliography. All nominations of candidates that have not received the award will be retained and considered for two additional years unless the nomination is withdrawn by the original sponsor. Determination of the awardee will be by the Vice President and members of the Awards Committee. Please send nominations to Dr. Robert House, Covance Laboratories Inc., Department of Toxicology, P.O. Box 7545, Madison, WI, 53707, (T) 608-241-7226, (F) 608-242-2736, e-mail: robert.house@covance.com. **Deadline for submission is November 30, 2001.**

### **Best Presentations By A Student And By A Post-doctoral Trainee Awards**

The student(s) and/or post-doctoral trainee whose work is judged to be the best of all the year's applicants by the Awards Committee will receive both a plaque and a cash award (usually on the order of \$250). The award requirements are submission of a complete

written version (including all graphs and tables) of an Immunotoxicology presentation to be made at the National Meeting. While electronic submissions are encouraged, a hard copy must also be submitted. **NO MANUSCRIPTS PLEASE.** This is to be accompanied by a letter of nomination by the nominee's advisor. Determination of the winners will be by the Awards Committee. Please send submissions directly to Dr. Mitch Cohen, Department of Environmental Medicine, New York University, 57 Old Forge Road, Tuxedo, NY, 10987, (T) 845-731-3527, (F) 845-351-5472, e-mail: cohenm@env.med.nyu.edu. **Deadline for submission is February 8, 2002.**

## **Important Deadlines...**

### **SOT (www.toxicology.org)**

#### **October 1, 2001**

- Deadline for Electronic submission of abstracts for Nashville.
- Hardcopy submission deadline is Sept 14.

### **Immunotoxicology Specialty Section**

#### **November 30, 2001**

- Deadline for nomination for the following awards:
- Career Achievement,
  - Best SOT Journal Paper of the Year,
  - Outstanding Young Immunotoxicologist.

#### **February 8, 2002**

- Deadline for submission of presentations for the following awards:
- Best Presentation by a Student,
  - Best Presentation by a Post-Doctoral Trainee.

## Student Representative

*L. Peyton Meyers*

As your new student representative, I will strive to address the concerns of the students and assist in promoting camaraderie between students and researchers. It is very important to get participation and feedback from students of the Immunotoxicology Specialty Section. I encourage anyone who has concerns or ideas which deal with students in the Immunotoxicology Specialty Section to contact me at [LMyers@lsuhsc.edu](mailto:LMyers@lsuhsc.edu). Further, if you know any students who may be interested in participating in the specialty section, please send me their email address and I will contact them personally.

Since networking is vital for the progression of a student's career, we are planning a mixer for the students at the national SOT meeting. Also, we are planning small group dinners during the meeting with an academic person, an industry person, and a small group of students and postdocs. If any students or postdocs are interested in participating in a dinner, please email me ([LMyers@lsuhsc.edu](mailto:LMyers@lsuhsc.edu)). If any academics or industry people are interested, please email Dr. Selgrade ([Selgrade.MaryJane@EPA.gov](mailto:Selgrade.MaryJane@EPA.gov)) so we can begin to organize a dinner which will be beneficial to everyone involved.

I am very excited about the upcoming year as your student representative. Please do not hesitate to contact me if you have ideas for the students in the upcoming year.

## Regulatory Committee Report

*Submitted by Ken Hastings*

### OECD

The Organization for Economic Cooperation and Development (OECD) has issued a draft guideline on the murine local lymph node assay (Test Guideline 429), dated 18-June-2001. The draft was approved at the 13th Meeting of the Working Group of National Coordinators of the Test Guidelines Programme (May 2001) and was submitted to the Heads of Delegation to the Joint Meeting of the Chemicals Committee and the Working Party on Chemicals for endorsement. The draft guideline has been endorsed and has been submitted to the Environmental Policy Committee. Ultimately, it is anticipated that the guidance will be submitted to the Council for formal adoption and inclusion in the OECD Guidelines for the Testing of Chemicals.

The document [OECD Guideline for the Testing of Chemicals Draft New Guideline 429: Skin Sensitization: Local Lymph Node Assay](#) does not appear to be available for general distribution (I checked the OECD website and could not find it), but in general the test description conforms to the protocol proposed by the Interagency Coordination Committee on the Validation of Alternative Methods (ICCVAM; NIH Publication No. 99-4494). There are a few aspects of the draft guideline that may be different from the ICCVAM protocol. Consistent with the ICCVAM report, the murine local lymph node assay (LLNA) can be used as an alternative to standard guinea pig tests, as opposed to previous OECD guidelines in which the LLNA was recommended for use as a pre-screen. The limitations of the LLNA are noted and do not differ from the ICCVAM report. Although a positive control should be used with

each assay, the OECD guideline states that "...there may be situations in which test laboratories will have available historic positive control data to show consistency of a satisfactory response over a six-month or more extended period. In those situations, less frequent testing with positive controls may be appropriate..." The draft guideline also allows for the use of a non-standard vehicle where needed for regulatory purposes (e.g. clinically/chemically relevant formulation), in which case "...the possible interaction of a positive control with this unconventional vehicle should be tested." (The guideline recommends a list of standard vehicles). The guideline allows for either pooling of lymph nodes from all animals in a treatment group (pooled treatment group approach) or determination of individual animal response (individual animal approach). Results would be calculated and expressed as the stimulation index (SI) and statistical analysis of the data would be conducted if the individual animal approach was used. Possible problems in statistical analysis are recognized "...that may necessitate a data transformation or a non-parametric statistical analysis." Specific suggestions are made concerning method of statistical analysis. A SI of  $\geq 3$  is recognized as the benchmark for a positive response, although consideration should be given to dose response and "...where appropriate, statistical significance." Finally, although incorporation of radio-label is the accepted method for determining cell proliferation, the guideline also allows for consideration of other endpoints "...provided there is justification and appropriate scientific support..." The guideline, when published, should be available at [www.oecd.com](http://www.oecd.com). (Thanks to Ian Kimber for information on this issue.)

### ICH

At a recent meeting of the Steering Committee of the International Conference on Harmonization of

Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH), a proposal was made to include immunotoxicology as a guidance topic. The document Draft Concept Paper for Immunotoxicology Studies was jointly submitted by the Japanese Ministry of Health, Labour and Welfare (MHLW) and the Japanese Pharmaceutical Manufacturers Association (JPMA) Currently with respect to drugs, there are two immunotoxicology guidances that have been published: the European Agency for the Evaluation of Medicinal Products (EMA) Committee for Proprietary Medicinal Products (CPMP) Note for Guidance on Repeated Dose Toxicity (3BS2A) and the draft US Food and Drug Administration Guidance to Industry "Immunotoxicology Evaluation of Investigational New Drugs". The joint MHLW/JPMA notes that there are certain differences in the two guidances and that ICH might be an appropriate forum for resolving these issues. Stay tuned.

Two recent publications are relevant to the discussions concerning immunotoxicology evaluation of drugs:

Immunotoxicology Technical Committee. (2001): Application of flow cytometry to immunotoxicity testing: summary of a workshop. *Toxicology* 163:39-48.

Kimber I, *et al.*, (2001): Skin sensitization testing in potency and risk assessment. *Toxicol. Sci.* 59:198-208.

In addition a meeting sponsored by the Drug Information Association (DIA) is scheduled in November: *Assessment of Immunotoxic Potential of Human Pharmaceuticals*, Nov. 19 – 20, 2001, Hotel Oranje, Noordwijk, The Netherlands. Information on this meeting can be obtained at [www.diahome.org](http://www.diahome.org).

## Useful Web Sites

*Thanks to Bob Lange for this information*

US Food and Drug Administration, <http://www.fda.gov/>

European Agency for the Evaluation of Medicinal Products, <http://www.emea.eu.int/>

Pharmaceutical and Medical Safety Bureau--Japan, <http://www.mhlw.go.jp/english>

International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use, <http://www.ifpma.org/ich1.html>

The Common Technical Document for the Registration of Pharmaceuticals for Human Use: 08-24-00, <http://www.fda.gov/cder/guidance/4022dfts.htm>

Photosafety Testing 07-05-00, <http://www.fda.gov/cder/guidance/3281dft.htm>

Skin Irritation and Sensitization Testing of Generic Transdermal Drug Products 06-01-00, <http://www.fda.gov/cder/guidance/2887fnl.htm>

## Meeting Report

*Mike Holsapple*

A workshop entitled Developmental Immunotoxicology and Risk Assessment was held on June 12-13, 2001 in Washington DC. The workshop was organized jointly by the Immunotoxicology Technical Committee of the International Life Sciences Institute's Health and Environmental Sciences Institute with input from the U.S. Environmental Protection Agency. Growing public concern that early exposure of the developing immune system to immunotoxic compounds may cause significant or persistent postnatal immunosuppression prompted the workshop. The main goal of the workshop was to examine scientific questions that underlie developmental

immunotoxicity tests and the interpretation of the results as they relate to human risk assessment. A second goal was to provide a framework, based on current scientific knowledge, for the development of meaningful testing guidelines.

The workshop focused on a series of questions that included how to address critical windows of exposure, how to develop and apply more predictive endpoints, does early chemical exposure cause transient or permanent effects on the immune system, as well as other related questions. On the first day, experts were invited to give scientific presentations relating to comparative developmental immunology, models of immunosuppression, and the regulatory aspects of developmental immunotoxicology. The second day was devoted to a panel discussion that

included all the speakers as well as meeting participants, which attempted to answer each of the specific questions raised at the workshop.

In general, it was acknowledged that there are a variety of techniques available for assessing immunosuppression in adult animal models, but there is uncertainty about how to apply these to a developing animal, especially if the goal is to have some standard procedure that can be applied for regulatory risk assessment. It was pointed out that although we know a lot about the developing immune system of individual species, we do not know how to relate the significance of drug or chemical effects on these systems in terms of human hazard. Overall, the panel deemed the area of developmental immunotoxicity to be still in its infancy and outlined strategies that could lead to the development of standard practices. A detailed summary of this workshop along with the presentations will be submitted for publication early next year.

## **Meeting Announcements**

### **American College of Toxicology**

The 22nd Annual American College of Toxicology (ACT) Meeting will be held November 4-7, 2001 at the Renaissance Washington DC Hotel. Specific topics in immunotoxicology include a Symposium on New Methods in Immunotoxicology and Continuing Education Courses: Regulatory Update (including an immunotoxicology section) and Practical Approaches to Applying the Immunotoxicology Guidelines to Safety Assessment. The Capital Steps will be performing at the Welcoming Reception held on Sunday evening. For more information on registration or planned symposia/courses, contact Eve Kagan ([ekagan@actox.org](mailto:ekagan@actox.org)) or visit the ACT web site at [www.actox.org](http://www.actox.org).

### **Immunotoxic Potential of Human Pharmaceuticals**

A meeting entitled *Assessment of Immunotoxic Potential of Human Pharmaceuticals*, sponsored by the Drug Information Association (DIA) will be held November 19 – 20, 2001, Hotel Oranje, Noordwijk, The Netherlands. Information on this meeting can be obtained at [www.dia-home.org](http://www.dia-home.org).

### **Federation of Clinical Immunology Societies**

The Federation of Clinical Immunology Societies (FOCIS) will hold its second meeting June 28-July 1, 2002 in San Francisco. For more information on the Federation and the meeting see [www.focisnet.org](http://www.focisnet.org).

## **Toll-like Receptors**

For those of you who are fascinated by the evolving story of Toll-like receptors and their role in innate resistance to infection in animals, the "Insight" section of the June 14 issue of *Nature* is dedicated to host resistance in plants. There are articles on the cellular receptors involved in defense, adaptive resistance to virus infection via gene silencing, the role of low molecular weight natural products, and even apoptosis as mechanisms to control infection.

## Book Review

*Parasite Rex: Inside the Bizarre World of Nature's Most Dangerous Creatures*

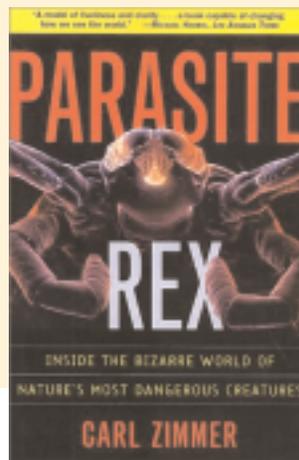
By Carl Zimmer

Copyright 2000, Touchstone Books;

ISBN: 074320011X

Hardback available at most bookstores and at Amazon.com

Paperback available September 2001



### Reviewed by Robert House

Except for the few of us who made an exclusive study of them in graduate school, parasites concern most immunotoxicologists only to the extent that they can serve as (notoriously labor-intensive) models of host resistance. In fact, in the course of my study of parasites, I learned the definition of a parasitologist as “someone who sits on one stool while looking at another”, which is not a job description likely to draw hordes of acolytes. However, in spite of the seemingly endless hours of memorizing complex life cycles and the frequently grotesque nature of the lab courses, most parasitologists would doubtless agree that the structure, adaptations, and life style of these organisms – at once totally alien and completely down-to-earth, is a fascinating area of investigation.

Trouble is, it's pretty hard to convince most people that parasites are very interesting. In the developed countries, anything having to do with parasitic infection is seen as “filthy”; the reactions I have elicited by informing friends of the almost universal human colonization by the eyelash mite *Demodex folliculorum* often border on the irrational.

We appear to have an almost visceral horror to parasitism, which has

been successfully manipulated by Hollywood (the title character of the



Here's looking at you!  
*Demodex folliculorum*

Alien movie series is but one case in point). Now, Carl Zimmer has written an exceptionally interesting book on parasites that promises to demystify these common passengers.

More than another dry recitation of endless life cycles and feckless predictions of someday eliminating diseases caused by these organisms, *Parasite Rex* convincingly makes the case that parasitism, often perceived as the result of devolution, has driven the direction of evolution for most of the Earth's life forms. Along the way to developing this thesis, Zimmer describes in imaginative detail how parasites go about their daily existence. Tales of castrated slaves, vampirism, treacherous navigation of the bloodstream, and creation of virtual zombies, mainstays of any decent science fiction adventure, are the tales of life unseen yet all around us. These adventures, interesting told, however, serve as the prelude to Zimmer's description of what he calls “evolution from within”. We proceed from macroscopic to microscopic, eventually ending up at the molecular level of parasitic DNA and transposons; this latter subject, I have to admit, never interested me much until I read about it in the context of parasitism. Zimmer also covers the controversial hypothesis that the population pressures exerted by parasitism served to drive the development of sexual reproduction. (I must confess that I'm a bit skeptical regarding this last concept; nevertheless, the hypothesis is a

serious one and is described quite well in this book.)

*Parasite Rex* is written in an engaging, almost conversational style that easily transcends levels of sophistication. Zimmer does not assume that he is writing for the technical crowd, and so he succinctly explains some biological concepts that might not be familiar to the layman. On the other hand, the book never becomes so simplistic that (most) scientists would find it boring. Completely appropriate quotes from the movie *Alien* and scenes from the television series *The X-Files* nicely illustrate the barely perceived yet strong influence of parasitism on our collective psyche.

The photos in *Parasite Rex* are an eclectic, and sometimes offbeat, contrast to the grainy, decades-old mainstays of elephantiasis sufferers wheeling their scrota around in wheelbarrows (not that those pictures didn't leave an impression of their own). Particularly high on the creepiness factor are a parasitic crustacean that devours a fish's tongue and then takes its place, assisting the fish in gripping and swallowing prey; in the book's photo, the vermiform crustacean appears to be peeping, almost cartoon-like, out of the fish's open mouth. There are numerous electron micrographs of exquisite detail, revealing the complex structure of these creatures (including the perennial parasitology textbook favorite, the fierce maw of the hookworm). Less appealing, but clearly illustrating the damage that parasites can do, is the photo of a botfly larva that has excavated a spacious home inside a young boy's brain.

Admittedly, *Parasite Rex* will not advance your understanding of these creatures as a host resistance model; for those who read only for work and not for pleasure, this book is probably not for you. On the other hand, if you're looking for a thoroughly enjoyable read in your spare time, this book is an excellent choice and is highly recommended.

## Tenure-Track Position

The Department of Pharmaceutical Sciences is seeking applications for an Immunotoxicologist, ASSISTANT or ASSOCIATE PROFESSOR. The successful candidate will be a core member of the Center for Environmental Health Sciences (website: [www.umt.edu/cehs](http://www.umt.edu/cehs)) within the Department. A competitive start-up package is available. The CEHS is building in the areas of molecular mechanisms of metal-induced alterations of immune function and/or respiratory toxicology. Requirements are a Doctoral degree and a strong record of research accomplishments including active or potential for research funding and teaching interest. Send letter of application, curriculum vitae, statement of research goals and teaching interests, and three letters of reference to:

Andrij Holian, Chair, Immunotoxicology Search Committee  
Department of Pharmaceutical Sciences  
The University of Montana  
Missoula, MT 59812  
Telephone: 406-243-4018  
FAX: 406-243-2807

Screening of applications will begin August 1, 2001, and continue until the position is filled. Equal Opportunity/Affirmative Action Employer.

## Postdoctoral Position

Pulmonary Immunotoxicology at the New York University School of Medicine, Department of Environmental Medicine, Laboratory of Pulmonary Biology and Toxicology

A post-doctoral position is available at New York University School of Medicine, Tuxedo New York Campus, for an individual to participate in research studies examining the effects of occupational and ambient air pollutants upon the respiratory tract immune system. Investigations are performed at levels ranging from molecular to whole animal physiological. Competitive salary commensurate with experience. Interested persons send vita to:

Dr. Mitchell Cohen  
Dept. of Environmental Medicine  
NYU School of Medicine  
57 Old Forge Road  
Tuxedo, NY 10987  
e-mail: [cohenm@env.med.nyu.edu](mailto:cohenm@env.med.nyu.edu)

## Postdoctoral Position

Pulmonary Immunotoxicology at the New York University School of Medicine, Department of Environmental Medicine, Laboratory of Pulmonary Biology and Toxicology

A post-doctoral position is available at New York University School of Medicine, Tuxedo New York Campus in the area of pulmonary immunotoxicology. Willingness to work with rodent models and knowledge of immunotoxicological techniques necessary, but will train in the area of inhalation toxicology. Competitive salary commensurate with experience. This position is for 2 years. Interested persons should contact Dr Zelikoff at 845-731-3528 or by email at [judyz@env.med.nyu.edu](mailto:judyz@env.med.nyu.edu) as soon as possible. The position should be filled by December 2001.

## Postdoctoral Position

Automated Assessments of Chemotaxis at the University of Connecticut, Department of Molecular and Cell Biology

A postdoctoral position is available in a multidisciplinary laboratory setting, working on the development and application of an automated system for measuring chemotactic responses of mammalian immune cells. Candidates should have a Ph.D., M.D., or equivalent. Skills related to immunology, cell biology, cell culture, and/or materials science and bioengineering are highly desirable. Competitive salary commensurate with experience. Send vita and names and addresses of three references to:

Dr. Michael Lynes  
University of Connecticut  
Storrs, CT 06269-2092  
e-mail: [lynes@uconnvm.uconn.edu](mailto:lynes@uconnvm.uconn.edu)

Compiled by Helen Ratajczak

ANYTIME you have a new publication to report, please send it to [hratajcz@rdg.boehringer-ingelheim.com](mailto:hratajcz@rdg.boehringer-ingelheim.com) It will be included in the next newsletter.

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