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The Immunotoxicology Specialty Section (ITSS) Newsletter is published three times a year (Summer, Fall, and Winter). If you would like to share an item of interest with members of the ITSS, please send it to Ashwini Phadnis-Moghe or Kristen Mitchell at the email addresses listed below. All comments and suggestions are welcome!

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Immunotoxicology Specialty Section Newsletter

President's Message

In my last letter, I noted the goals underway by the ITSS Executive Committee to ensure that our members have access to continuing education and training opportunities in immunotoxicology for both early and mid-career scientists across all professional disciplines, to develop highly relevant programs for our annual meeting, and to maximize opportunities for engagement with our colleagues. I am pleased to note that we are making progress on all of these fronts. Some of these efforts are already available, such as an expanded mentoring interaction at the 2016 annual meeting. In other cases, we are working diligently with the goal of sharing our progress at the annual meeting.

We are very interested in hearing from you regarding ideas for novel sessions for the 2017 annual meeting, for which submissions will be due in April. Please feel free to discuss these with Vic Johnson, who will take over as the ITSS program chair from Peyton Myers. Our specialty section has historically been highly represented at the annual meeting, and we look forward to discussing your ideas for sessions that will be both scientifically impactful and broadly interesting to the general membership. We will also be voting for new ITSS officers for the 2016-17 term. Please be sure to participate!

I sincerely hope you have a restful holiday season in advance of the bustle of preparations for the annual meeting. As always, please let us know if you have feedback – we would love to hear your ideas for ensuring we remain a robust and energized specialty section. I look forward to seeing you in New Orleans!

Rafael Ponce, Ph.D.
President, ITSS (2015-2016)



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Student & Postdoctoral Report

As the end of the year approaches, I hope that you are all getting excited for the 55th annual SOT meeting in New Orleans, LA. Remember that there are many great opportunities for students and postdocs to get involved, including Chat with an Expert, Poster Tours, the Student/Postdoctoral Scholar Mixer, and the Tox Showdown.

At the 55th annual SOT meeting, the ITSS will again be hosting a Networking/Mentor panel discussion for students and postdocs on **Wednesday, March 16 from 4:45 to 5:45 pm**. Be sure not to miss out on speaking with immunotoxicologists from academia, industry, and the government! Last year's event was a great success, and students and postdocs really valued the interaction they had with the mentors. Be on the lookout for more information.

Don't forget that the deadline for award nominations is quickly approaching. Awards available to students and postdoctoral ITSS members include Best Presentation by a Student, Best Presentation by a Postdoctoral Trainee, and Best Paper of the Year. Many travel awards are also available through the specialty section and through SOT; check out the websites for details and deadlines.

Lastly, I'd like to remind everyone to make sure their SOT member information is current and correct so you don't miss email reminders of the numerous events and activities available to students and postdocs! If you would like to get involved in planning events, or have any comments/suggestions, please contact **Aimee Hillegas** (ahillegas@mail.usciences.edu) or **Ashwini Phadnis** (phadnisa@msu.edu).



Announcements!

Immunotoxicology networking event for graduate students and postdoctoral researchers

Wish there was more time to network with Immunotoxicologists?

Join us for the 2nd Annual 'Immunotoxicology Networking/Mentoring Event' where you can meet a panel of immunotoxicologists from industry, academia, government and consulting firms. It is an opportunity not to be missed, especially if you are a graduate student or postdoc wondering about a future career in this field! This event will be held on **Wednesday, March 16 from 4:45 to 5:45 pm**. More details are soon to follow including a questionnaire to facilitate matching to a mentor. Please watch this space in the next newsletter for more information. Email reminders with questionnaires and a link for signing up will be sent to the graduate student and postdoctoral members of the specialty section soon!



ITSS-sponsored sessions at the 2016 SOT Annual Meeting

The Program Committee received a total of 8 submissions for evaluation for the 2016 annual meeting. All of the submissions were quality proposals, which made ranking them tough work. Of the eight sessions that the Immunotoxicology Specialty Section (ITSS) sponsored for review by the program committee, five were ultimately accepted as sessions at the annual meeting. This reflects the general interest in our discipline and the science we pursue, the broad interactions that immunotoxicology has with other areas of toxicology, and the high quality work conducted by our membership. The sessions sponsored by the ITSS at next year's meeting promise to be extremely compelling and timely. The program for the 2016 meeting in New Orleans is posted on the SOT website. Listed below are the titles, chairs, and date/time of the ITSS-sponsored sessions that were accepted for the 2016 meeting. One ITSS session is scheduled for each day of the meeting, and no sessions are overlapping. In addition to these sessions, immunotoxicology is represented in numerous poster sessions, and inflammation is the theme for the pair of plenary lectures on Tuesday morning.

Congratulations to those who had sessions accepted, and many thanks to all who submitted session proposals! Your efforts in putting these session proposals together are highly appreciated and extremely valuable to our discipline and the broader community. In addition, I want to thank those volunteers who helped review these proposals as we put them forward for consideration by the SOT Program Committee. As we prepare for the year ahead, it's not too soon to begin thinking about important, high impact areas of immunotoxicology that should be discussed in 2017. The clock for these session proposals begins at the end of the annual meeting, with formal proposals due at the end of April, 2016! I'm looking forward to seeing you all in what promises to be a fascinating meeting.

All the best,
L. Peyton Myers, Program Committee Chair

Continuing Education Session (Chairs)

Advancing the Detection, Imaging, and Pitfalls in Monitoring Oxidative Stress in Health and Disease (Maria B. Kadiiska, NIEHS/NIH, Research Triangle Park, NC; and Ronald P. Mason, NIEHS/NIH, Research Triangle Park, NC.) Sunday, March 12, 2016 at 8:15 AM–12:00 Noon

Workshop Session (Chairs)

Developmental Immunotoxicology—Are We Adequately Evaluating Safety? (Peyton Myers, United States Food and Drug Administration and Gary Burleson, Burleson Research Technologies, Inc) Thursday March 17, 2016 at 9:30am – 12:15pm

Roundtable Session (Chairs)

Combination Toxicology: Are We Testing the Right Things? (Leigh Ann Burns-Naas, Gilead Sciences, Inc and Helen Haggerty, Bristol-Myers Squibb Company) Wednesday March 16, 2016 at 12:30pm – 1:50pm

Symposium Session (Chairs)

New, Mechanistic Insights into How the Immune System Drives Adverse Drug Reactions (Robert Roth, Michigan State University and Bob van de Water, University of Leiden) Tuesday March 15, 2016 at 2:00pm – 4:45pm

Historical Perspectives Session (Chairs)

Toxicologic Legacies of Major 21st Century Man-Made/Natural Disasters. (Mitchell Cohen, New York University School of Medicine and Mitsuaki, Institute of Radiation Emergency Medicine, Hiroasaki University) Monday March 14, 2016 at 2:00pm – 4:45pm

Call for Nominations from the Awards Committee

Did you read an outstanding immunotoxicology paper this year? Read a presentation abstract that was amazing? Work with someone who you think embodies excellence in the field of immunotoxicology? If you answered yes to any of these questions, then I urge you to nominate the author, the presenter, or the colleague for an award from the Immunotoxicology Specialty Section (ITSS). Recognizing these important contributions of ITSS students, postdoctoral scientists, and colleagues is one of the most important undertakings of our specialty section. Additionally, acknowledging the excellence of the scientists within ITSS helps to demonstrate how our science furthers the mission of SOT.

Please make it difficult for the Awards Committee to choose recipients for these awards! Please nominate a student, postdoctoral scientist, or colleague for one of the Immunotoxicology Specialty Section Awards. You also may nominate yourself! Descriptions of awards, Awards Committee contacts, and due dates are listed below. **For a more detailed description of the awards and their nomination criteria, please visit the Immunotoxicology Specialty Section web site:** <http://www.toxicology.org/ISOT/SS/imtox/deadlines.asp>

Cheryl Rockwell, Awards Committee Chair

Vos Lifetime Career Achievement Award in Immunotoxicology

This award was named for the late Professor Jeff Vos and will be presented to a senior investigator whose body of work represents an outstanding career in immunotoxicology. Please submit nominations to Rafael Ponce by January 15, 2016.

Outstanding Senior Immunotoxicologist Award

This award will be presented to a senior investigator with more than 10 years of experience since obtaining the highest degree and whose work has made significant contributions to the field of immunotoxicology. Please submit nominations to Peyton Myers by January 15, 2016.

Outstanding Young Immunotoxicologist Award

This award will be presented to a young investigator with 10 years of less of experience since obtaining the highest degree and whose work has made significant contributions to the field of immunotoxicology. Please submit nominations to Peyton Myers by January 15, 2016.

Best Paper of the Year Award

Authors of the paper deemed to be the best paper in immunotoxicology will receive this award. The paper must have been published between January 1 and December 31 of the previous calendar year and the first publication date (paper or e-version) will be considered the publication date. Immuno-toxicology papers published in any peer-reviewed journal are acceptable. Please submit nominations to Cheryl Rockwell by January 15, 2016.

Best Presentation by a Postdoctoral Trainee Award

Postdoctoral trainees who are presenting (poster or platform) at the 2015 SOT Annual Meeting are eligible for this award. Nominees are asked to submit a written version of an immunotoxicology presentation to be made at the Annual Meeting and a letter of nomination from the trainee's advisor. Please submit materials to Cheryl Rockwell by January 15, 2016.

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Best Presentation by a Student Award

Students who are presenting (poster or platform) at the 2016 SOT Annual Meeting are eligible for this award. Nominees are asked to submit a written version of an immunotoxicology presentation to be made at the Annual Meeting and a letter of nomination from the student's advisor. Please submit materials to Cheryl Rockwell by January 15, 2016.

HESI Immunotoxicology Young Investigator Travel Award

ILSI HESI sponsors this award to assist young investigators (<5 years since completing a graduate dissertation) in attending SOT and presenting their research. Both U.S. and international investigators are encouraged to apply. Please submit nominations to Rafael Ponce by January 15, 2016.

MEMBER SPOTLIGHT



Dr. Jean Pfau, currently Professor of Immunotoxicology at Idaho State University, will be moving to Bozeman MT in January 2016 to work as a Research Scientist at Montana State University. This is an exciting move for her both personally and professionally. Professionally, it is an opportunity to focus on her research in environmental autoimmunity in the research-supportive environment of MSU. She has loved her seven years at ISU, where she taught Anatomy & Physiology for the pre-professional programs as well as graduate courses in toxicology and immunology, served as the Director of the Flow Cytometry Core Facility and was a founder and co-Director of the Idaho

Science & Engineering Festival. However, she is passionate about her research, and this new opportunity was made possible through the funding by NIEHS of the University of New Mexico Center for Native American Environmental Health Equity Research (Center Director Dr. J. L. Lewis, SOT member), which partnered with MSU (Dr. Deborah Keil, SOT member) to study health effects of heavy metal-contaminated drinking water on Native American Tribal lands. A major aim of the Center is focused on the apparent rise in the incidence of systemic autoimmune diseases among the Tribes, making this an excellent fit for Jean. Personally, Jean and her husband Alan are moving back to Montana where all of their children and grand-daughter live. Jean says the stars simply lined up one day, and they said, "Time to go home!"

Dr. Pfau will also continue her work in asbestos immunotoxicology. She began working with the asbestos exposed population of Libby MT in 2002 during the early ATSDR screening activities. In 2009, she helped build the Libby Epidemiology Research Program (LERP, funded by ATSDR) that has revolutionized our understanding of asbestos related diseases. The mouse and cell culture work in the lab (funded by NIEHS) is directly translated to the LERP. A major discovery has been the ability of asbestos to cause production of autoantibodies associated with systemic autoimmune disease, such as Systemic Lupus. Most recently, they have demonstrated that asbestos-induced autoantibodies may contribute to a severe and progressive lung disease seen with particular forms of asbestos. The autoantibodies may provide a therapeutic target to help control this devastating disease. Dr. Pfau currently has 42 peer-reviewed publications, 5 book chapters, and over a hundred published abstracts and presentations.

CONGRATULATIONS!



Dr. John Anetor became a Fellow in the Institute of Biomedical Science (FIBMS) of the United Kingdom. Dr. Anetor was also admitted as a Fellow of the American College of Nutrition (FACN) and became a European Registered Toxicologist (ERT). Other accomplishments include being elected as a member of the Committee on Traceability in Laboratory Medicine (C-TLM) of the Scientific Division of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC). Finally, Dr. Anetor was also appointed the Editor-in-Chief of the African Journal Laboratory Medicine and Biomedical Research based in Southern Africa Training Academy, South Africa. John is already a Fellow of the Royal Society of Chemistry (FRSC) and is a Professor in the Chemical Pathology Department in the College of Medicine at the University of Ibadan, Nigeria.



Dr. Judith Zelikoff received the Women In Toxicology (WIT) Specialty Interest Group Mentoring Award. This award is given to an individual in academia, government, industry, or a related field who has been a major influence in the mentoring of women scientists entering the field of toxicology and/or whose leadership and service have provided career development opportunities for women toxicologists or encouraged women to achieve their professional goals.

Dr. Zelikoff is a Professor in the Department of Environmental Medicine at the NYU School of Medicine. She is currently mentoring Pamela Tijerina, who is a fourth year doctoral student studying the immunotoxic effects of pre and post-natal exposure to ambient particulate matter on immune responsiveness in the adult offspring associated with inflammatory diseases such as asthma. Her work focuses on imbalances in T-regulatory cells and TH17 and effects on T-reg function later in life that can alter pulmonary responsiveness.

Asthma, Allergy, Autoimmunity & Hypersensitivity

Krutz NL, Hennen J, Korb C, Schellenberger MT, Gerberick GF and Blomeke B. Activation of the endoperoxide ascaridole modulates its sensitizing capacity. *Toxicol Sci* 147:515-523, 2015.

van der Veen JW, Paskel RF, Smits NAM, Hodemaekers H, van Loveren H and Ezendam J. The involvement of the Toll-like receptor signaling and Nrf2-Keap1 pathways in the in vitro regulation of the IL-8 and HMOX1 for skin sensitization. *J Immunotoxicol* 13:1-6, 2016.

Yucesoy B, Kashon ML, Johnson VJ, Lummus ZL, Fluharty K, Gautrin D, Cartier A, Boulet LP, Sastre J, Quirce S, Tarlo SM, Cruz MJ, Munoz X, Luster MI and Bernstein DI. Genetic variants in *TNFA*, *TGFB1*, *PTGS1* and *PTGS2* genes are associated with diisocyanate-induced asthma. *J Immunotoxicol* 13:119-126, 2016.

Developmental Immunotoxicology

Boule LA, Burke CG, Fenton BM, Thevenet-Morrison K, Jusko TA and Lawrence BP. Developmental activation of the AhR increases effector CD4+T cells and exacerbates symptoms in autoimmune disease-prone *Gnaq*^{+/-} mice. *Toxicol Sci* 148:555-566, 2015.

Laios MD, Tate ER, Ahrenhoerster LS, Chen Y and Wang D. Effects of developmental activation of the aryl hydrocarbon receptor by 2,3,7,8-tetrachlorodibenzo-*p*-dioxin on long-term self-renewal of murine hematopoietic stem cells. *Environ Health Perspect* DOI:10.1289/ehp.1509820, 2015.

General Immunotoxicology

Abbes S, Salah-Abbes JB, Jebali R, Younes RB and Oueslati R. Interaction of aflatoxin B₁ and fumonisin B₁ in mice causes immunotoxicity and oxidative stress: Possible protective role using lactic acid bacteria. *J Immunotoxicol* 13:46-54, 2016.

Bennett JA, Singh KP, Unnisa Z, Welle SL and Gasiewicz TA. Deficiency in aryl hydrocarbon receptor (AHR) expression throughout aging alters gene expression profiles in murine long-term hematopoietic stem cells. *PLoS ONE* doi:10.1371/journal.pone.0133791, 2015.

Cetkovic-Cvrlje M, Olson M, Schindler B and Gong HK. Exposure to DDT metabolite *p-p'*-DDE increases autoimmune type 1 diabetes incidence in NOD mouse model. *J Immunotoxicol* 13:108-118, 2016.

DeWitt JC, Williams WC, Creech NJ and Luebke RW. Suppression of antigen-specific antibody responses in mice exposed to perfluorooctanoic acid: Role of PPAR α and T- and B-cell targeting. *J Immunotoxicol* 13:38-45, 2016.

Recent Immunotoxicology Publications cont'

Fader KA, Nault R, Ammendolia DA, Harkema JR, Williams KJ, Crawford RB, Kaminski NE, Potter D, Sharratt B and Zacharewski TR. 2,3,7,8-tetrachlorodibenzo-*p*-dioxin alters lipid metabolism and depletes immune cell populations in the jejunum of C57Bl/6 mice. *Toxicol Sci* 148:567-580, 2015.

Gallardo-Vera F, Diaz D, Tapia-Rodriguez M, van der Goes TF, Masso F, Rendon-Huerta E and Montano LF. Vanadium pentoxide prevents NK-92MI cell proliferation and IFN γ secretion through sustained JAK3 phosphorylation. *J Immunotoxicol* 13:27-37, 2016.

Kim SN, Jo GH, Kim HA and Heo Y. Aberrant IgG isotype generation in mice with abnormal behaviors. *J Immunotoxicol* 13:92-96, 2016.

Komocsar WJ, Blackbourne JL, Halstead CA, Winstead CJ and Wierda D. Fully human anti-BAFF inhibitory monoclonal antibody tabalumab does not adversely affect T-dependent antibody responses in cynomolgus monkey (*Macaca fascicularis*): A summary of three pre-clinical immunotoxicology evaluations. *J Immunotoxicol* 13:7-19, 2016.

Kumar S, Smith-Norowitz TA, Kohlhoff S, Apfalter P, Roblin P, Kutlin A, Harkema J, Ng SP, Doherty-Lyons S, Zelikoff JT and Hammerschlag MR. Exposure to cigarette smoke and *Chlamydia pneumoniae* infection in mice: Effect on infectious burden, systemic dissemination and cytokine responses: A pilot study. *J Immunotoxicol* 13:77-83, 2016.

Sakthivel KM and Guruvayoorappan C. *Acacia ferruginea* inhibits inflammation by regulating inflammatory iNOS and COX-2. *J Immunotoxicol* 13:127-135, 2016.

Salisbury RL and Sulentic CEW. The AhR and NF- κ B/Rel proteins mediate the inhibitory effect of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin on the 3' immunoglobulin heavy chain regulatory region. *Toxicol Sci* 148:443-459, 2015.

Shao J, Stout I, Hendriksen PJM, van Loveren H, Peijnenburg ACM and Volger OL. Protein phosphorylation profiling identifies potential mechanisms for direct immunotoxicity. *J Immunotoxicol* 13:97-107, 2016.

Sharma R and Tiku AB. Emodin inhibits splenocyte proliferation and inflammation by modulating cytokine responses in a mouse model system. *J Immunotoxicol* 13:20-26, 2016.

Wooten DC, Starr CR and Lyon WJ. A plasmid containing the human metallothioneine II gene can function as an antibody-assisted electrophoretic biosensor for heavy metals. *J Immunotoxicol* 13:55-63, 2016.

Methods/Models

Caldwell RG, Marshall P and Fishel J. Method validation and reference range values for a peripheral blood immunophenotyping assay in non-human primates. *J Immunotoxicol* 13:64-76, 2016.

Reviews/Books/Commentaries

Dinse GE, Jusko TA, Whitt IZ, Co CA, Parks CG, Satoh M, Chan EK, Rose KM, Walker NJ, Birnbaum LS, Zeldin DC, Weinberg CR and Miller FW. Associations between selected xenobiotics and antinuclear antibodies in the national health and nutrition examination survey, 1999-2004. *Environ Health Perspect* DOI:10.1289/ehp.1409345, 2015.

Laios MD and Tate ER. Fetal hematopoietic stem cells are the canaries in the coal mine that portend later life immune deficiency. *Endocrinology* 156:3458-3465, 2015.

Popple A, Williams J, Maxwell G, Gellatly N, Dearman RJ and Kimber I. The lymphocyte transformation test in allergic contact dermatitis: New opportunities. *J Immunotoxicol* 13:84-91, 2016.

SAVE THE DATE!

55th Annual Society of Toxicology Meeting
March 13-17, 2016
New Orleans, Louisiana

Late Breaking Abstract Submission- January 12, 2016
Early Registration Deadline- January 15, 2016
Standard Registration Deadline - February 12, 2016
Housing Reservation - February 12, 2016

