



# Immunotoxicology Specialty Section Newsletter

**2013-2014  
Executive Committee**

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Dr. Kinta Serve**

**Student Representative  
Aimee Hillegas**

The ImTox SS Newsletter is published 3 times/year (Summer, Fall, and Winter). If you would like to share an item of interest with members of the ImTox SS, please send it to the Communications Committee Chair. All comments on, or suggestions to, the newsletter are welcome.

**Ashwini Phadnis-Moghe**  
[phadnisa@msu.edu](mailto:phadnisa@msu.edu)

## President's Message

**Gary Burleson, PhD**

Time flies as it seems that only yesterday I was writing the incoming President's Message. However, during that time, the ITSS Executive Committee has been busy with scheduled teleconferences the second Wednesday of each month. We welcome input from the membership and I want to encourage you to contact one of the members of the executive committee if you have items you want discussed.



Dr. Gary Burleson  
President, ImTox SS  
2013-2014

Please remember to select membership in the Immunotoxicology Specialty Section when you renew your SOT membership. We are the fourth largest of all 27 SOT Specialty Sections and we continue to grow as more and more toxicologists are interested in immunotoxicology. Central to our success is the integration of toxicology and immunology where we recognize the importance of the immune system in protection against infectious and neoplastic disease, and in the inadvertent immune stimulation by xenobiotics that results in hypersensitivity reactions or autoimmune disease. Your membership is important in keeping us a growing and vibrant Specialty Section.

The ITSS has a new Graduate Student Representative – Aimee Hillegas. Aimee is a PhD student at the University of the Sciences in Philadelphia and was nominated by her PhD advisor Dr. Vandana Miller. Welcome Aimee! Danuta Herzyk is Chair of the Program Committee for the upcoming SOT meeting and has worked hard to obtain proposals for the 2014 SOT. Please consult the SOT Program and support the Immunotoxicology Specialty Section sessions.

<b>President's Message.....</b>	<b>1</b>
<b>Student Post-doctoral Committee Report.....</b>	<b>2</b>
<b>Regulatory Committee Report.....</b>	<b>3</b>
<b>Awards Committee Report.....</b>	<b>4</b>
<b>Financial Committee Report.....</b>	<b>5</b>
<b>Program Committee Report.....</b>	<b>6</b>
<b>Membership Committee Report.....</b>	<b>7</b>
<b>Recent publications.....</b>	<b>9</b>

The ITSS Executive Committee has initiated a new Award entitled: “Outstanding Senior Immunotoxicologist Award.” We now have the following awards that will recognize immunotoxicology scientists of distinction at every career stage: Outstanding Young Immunotoxicologist Award, Outstanding Senior Immunotoxicologist Award, and the Vos Lifetime Career Achievement Award. Please examine the details and requirements for such an award at the SOT Website: Immunotoxicology Specialty Section Award Descriptions and Deadlines. The deadline for nominations is 18 January 2014. We all know of many deserving candidates. Please take the time to nominate and recognize a deserving immunotoxicologist. I look forward to seeing you at the SOT Annual Meeting on 23-27 March 2014 in Phoenix, Arizona!

## Student & Postdoctoral Report

*Submitted by Kinta Serve, PhD*

Greetings, student and postdoctoral members! Please join me in welcoming our new graduate student representative, Aimee Hillegas, a PhD student from the University of the Sciences in Philadelphia, PA. Welcome, Aimee! In future newsletters, Aimee will keep us informed of the latest Graduate Student Leadership Committee developments and plans. If you have any questions or comments concerning graduate student activities or awards, please contact Aimee at [ahillegas@mail.usciences.edu](mailto:ahillegas@mail.usciences.edu).

As the end of the year approaches, I hope you are all getting excited for the 53<sup>rd</sup> annual SOT meeting. Remember that there are many great opportunities for students and postdocs to get involved, including creating a video for the YouTox challenge. Students and postdocs are invited to submit a short video answering the question “Why did I become a toxicologist?” Cash prizes will be awarded, so get creative and have some fun! (Deadline is Jan 15; more information available at <http://toxicology.org/ai/spd/studentservices.asp>). Additionally, the deadline for award nominations is quickly approaching. Awards available to students and postdoctoral ImmunoTox 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.

A big thank you to all those who attended the Postdoctoral Assembly webinar in September entitled “Exploring Alternative Career Paths in Toxicology.” This webinar was presented as part of Postdoc Appreciation Week. If you weren’t able to attend, the recording is available on the SOT website.

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! Upcoming events include Chat with an Expert, Poster Tours, and Student/Postdoc Mixers at the annual SOT meeting. If you would like to get involved in planning these great events, or have any comments/suggestions, please contact Kinta Serve ([servkint@isu.edu](mailto:servkint@isu.edu)) or Aimee Hillegas ([ahillegas@mail.usciences.edu](mailto:ahillegas@mail.usciences.edu)).

## Regulatory Committee Report

**Submitted by Peter Thomas, PhD.  
Chair, Regulatory Subcommittee**



The following regulatory update may be of interest to the Immunotoxicology specialty section

### EPA Conducts Retrospective Analysis of Pesticide TDAR assay.

In response to a CropLife America (CRL) request, that the EPA consider granting waivers for the OPPTS. 870.7800 immunotoxicity study, the Agency conducted a retrospective analysis of over 170 pesticide studies where this guideline was followed. This analysis included study data from 155 chemicals to determine (1) whether the results of the guideline-driven immunotoxicology study impacted human health risk assessment; (2) if there is sufficient justification for granting waivers for this study; and (3) propose a path forward.

The guideline-driven immunotoxicity study (TDAR assay) is designed to measure the immunosuppressive potential of a chemical by measuring the antibody response to a T-cell dependent antigen (SRBCs) in rodents treated for at least 28 days.

As background, CRL conducted a retrospective evaluation of 82 TDAR studies and noted that a reduction in TDAR was noted in 4/82 studies at the high dose only. They concluded that in no case was the finding the most sensitive endpoint when compared to other toxicity endpoints.

In the EPA review, all 155 chemicals were assessed by the TDAR using the PFC assay or ELISA methods in rats or mice of both genders. In addition, a Natural Killer cell activity assay was conducted for 11 chemicals. For the majority of chemicals tested, there was a lack of toxicologically-relevant effects on the T-dependent antibody response. No effect on the TDAR response up to the highest dose was seen in 140 of 155 chemicals tested. Ten percent of the chemicals (15) produced suppression of the anti SRBC TDAR response at “relatively high doses”. For 9 of the 15 chemicals, immunotoxicity was seen at the same, or at higher doses than which systemic toxicity was noted.

To assess the impact of the immunotoxicity study on human health risk assessment, a comparison was made of the NOAEL/LOAEL established for the TDAR to the “points of departure” selected for different risk assessment scenarios for the various chemicals. The EPA stated that since immunotoxicity was not the most sensitive endpoint in the database of the chemicals used in this analysis, it would not have been used for risk assessment. Based on this and other factors, the Office of Pesticide Programs will be receptive to requests that it grant waivers for the immunotoxicity study. Such waivers should be made on a case-by-case basis and include a scientifically sound rationale.

US Environmental Protection Agency Memorandum “A Retrospective Analysis of the Immunotoxicity Study (OCSP Test Guideline 870.7800). Feb 2013  
[www.epa.gov/pesticides/regulating/immunotoxicity-retro-analysis.pdf](http://www.epa.gov/pesticides/regulating/immunotoxicity-retro-analysis.pdf)



## Call for Nominations from the Awards Committee

*Submitted by Peyton Myers, PhD.  
Chair, Awards Committee*

It's that time again! Awards for our outstanding Immunotoxicology colleagues!

Recognizing the scientific contributions of our students and colleagues is one of the most important things we do. It not only recognizes them, but also publicizes the accomplishments of our Specialty Section toward the mission of SOT. The Awards Committee strongly encourages you to nominate your colleague(s), including self-nominations, for the various awards presented by the Immunotoxicology Specialty Section. We hope to continue to see the same high quality of nominees that challenges the Committee to choose among our very best!

Also note, we have a NEW Award this year! The Outstanding Senior Immunotoxicologist Award goes to the outstanding candidate that has contributed to immunotoxicology for more than 10 years (the limit for the "young" investigator award) but has not yet received the Vos Career Award! This award is designed to fill the gap in our awards platform to recognize many of our outstanding senior investigators that continue to advance the field of immunotoxicology.

### **Vos Award – Lifetime Career Achievement Award in Immunotoxicology**

An award named for the late Prof. Jeff Vos shall be presented to a Senior Investigator with outstanding achievements in immunotoxicology. Nominations should be submitted to Gary Burleson by January 18, 2014.

### **Outstanding Senior Immunotoxicologist Award**

Senior Investigator whose work has made significant contributions to the field of Immunotoxicology. This award is for scientists in academia, industry, or those who have had an impact on regulatory issues. Nominations should be submitted to Danuta Herzyk by January 18, 2014.



### **Outstanding Young Investigator Award**

Promising young investigator(s) who have already had an impact on academic, regulatory or industrial areas of immunotoxicology shall be awarded. Nominations should be submitted to Danuta Herzyk by January 18, 2014.

### **Best paper of the Year Award**

This honored award shall go to the authors of the best paper in immunotoxicology published between Jan 1, 2013 and December 31, 2013. Date of first publication (e-version or paper version) is considered the publication date for awards consideration purposes. Nominations should be submitted to Peyton Myers by January 18, 2014.



## Call for Nominations from the Awards Committee (continued)

### **Best Presentation by a Postdoctoral Trainee Award**

Nominees are asked to submit a complete written version of an immunotoxicology presentation that is to be made at the 2013 SOT Annual Meeting, along with a letter of nomination from the Postdoctoral Trainee's advisor. Nominations should be submitted to Peyton Myers by January 18, 2014.

### **Best Presentation by a Student Award**

Nominees are asked to submit a complete written version of an immunotoxicology presentation to be made at the 2013 SOT Annual Meeting, along with a letter of nomination from the student's advisor. Nominations should be submitted to Peyton Myers by January 18, 2014.

### **HESI Immunotoxicology Young Investigator Travel Award**

This award is offered by ILSI HESI to encourage young investigators within 5 years of receiving a Ph.D. to present their research at the 2014 SOT Annual Meeting. Nominations should be submitted to Gary Burleson by January 18, 2014.

Detailed descriptions of all the awards are on the website:

<http://www.toxicology.org/ISOT/SS/imtox/deadlines.asp>.

Gary Burleson ([gburleson@brt-labs.com](mailto:gburleson@brt-labs.com)), Danuta Herzyk ([danuta\\_herzyk@merck.com](mailto:danuta_herzyk@merck.com)), and Peyton Myers ([Peyton.Myers@fda.hhs.gov](mailto:Peyton.Myers@fda.hhs.gov)) will accept nominations after December 1, 2013

## SOT 2014 meeting - upcoming deadlines



### **Deadlines**

2<sup>nd</sup> abstract submission – January 6, 2013

Early Bird Registration – January 31, 2014

Standard Registration – February 28, 2014

## Financial Report (2012-2013)

**Submitted by Haley Neff-LaFord, PhD**

*The fiscal year runs for 12 months ending on June 30<sup>th</sup> (Data shown for end of year, June 2013)*

<b>ImTox SS General Ledger</b>	
Ordinary Income/Expense	
Income	
Contributions	2000
Membership Dues	5445
Misc. Income	
Registration	2706
Interest	802
<b>Total Income</b>	<b>10,953</b>
Expense	
Awards - Sections	1,650
Plaques	790
Contributions	-
Executive Meetings	-
Miscellaneous	46
Newsletter	-
Reception	
Symposia	-
Travel	-
Web Development	-
<b>Total Expense</b>	<b>8,858</b>
Excess (Deficiency) of Revenue over Expenses	2,096
Net Assets Beginning of year	14,745

<b>HESI Endowment Fund</b>	
Ordinary Income/Expense	
Income	
Contributions	1150
Employer Matching Funds	-
SOT 50 <sup>th</sup> Anniversary Matching	-
<b>Total Income</b>	<b>1150</b>
Gain (loss) on Investments	-
Interest & Dividends	1163
Gain /(Loss)	3873
<b>Total Return</b>	<b>5,036</b>
Expense	
Awards	1,650
<b>Total Expense</b>	<b>-</b>
Excess (Deficiency) of Revenue over Expenses	6186
Net Assets Beginning of year	39,110
<b>Net Assets End of Year</b>	<b>45,297</b>

All entries listed in USD, rounded to the nearest dollar. Income includes dues (paid with SOT membership) and registration (based on the number of ImTox SS members at the SOT Annual Meeting).

Expenses include the ImTox SS Executive Meeting & Reception held at the SOT Annual Meeting, miscellaneous expenses (monies for ImTox Pool of Lecturers, Student/Postdoc Mixer etc.)

## Program Committee Update for 2014 SOT meeting

*Submitted by Danuta Herzyk, PhD*

On behalf of the 2013-2014 ITSS Program Committee, I want to thank everyone for submitting their proposals for the 2014 SOT Annual Meeting. Our Specialty Section will be represented at the meeting in Phoenix, AZ with three sessions listed below:

### **Symposium – To Bug or Not to Bug the Immune System: Benefits and Consequences of Altering the Microbiome**

Co-Chairs: Victor J. Johnson and Berran Yucesoy

### **Symposium – Ocular Immunotoxicology: A Privileged View**

Co-Chairs: Brian Christian and JoAnn Schuh

### **Workshop - Contribution of Nonimmune Cells to Adverse Immune Responses: Implications for Toxicology**

Co-Chairs: Peer Karmaus and Barbara Kaplan

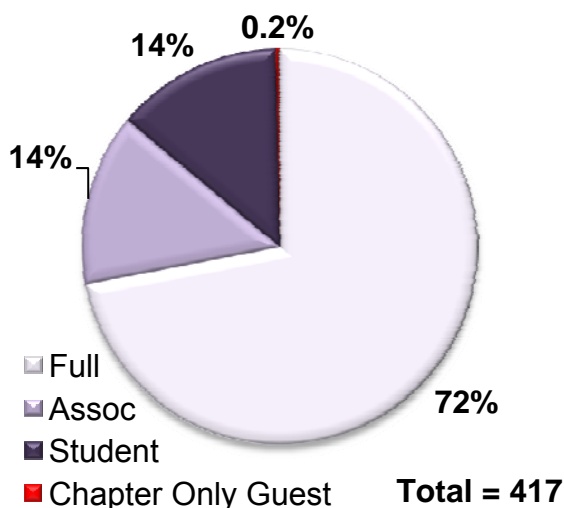
While the number of ITSS-sponsored programs is down from the last year where we had five programs (2 Symposia, 1 Workshop, 1 CEC and 1 Informational Session), it reflects the fact that all proposals were submitted primarily as symposia, the most competitive program category. At the same time, the higher bar for acceptance of proposals results from both the greater number of SOT Specialty Sections and the greater quality of all submissions. Therefore, the Program Committee extends congratulations not only to those who have been accepted but to ALL who submitted their valuable proposals.

## Membership Committee Report

*Submitted by George DeGeorge, Ph.D*

By Membership Category

**Nov 2013**

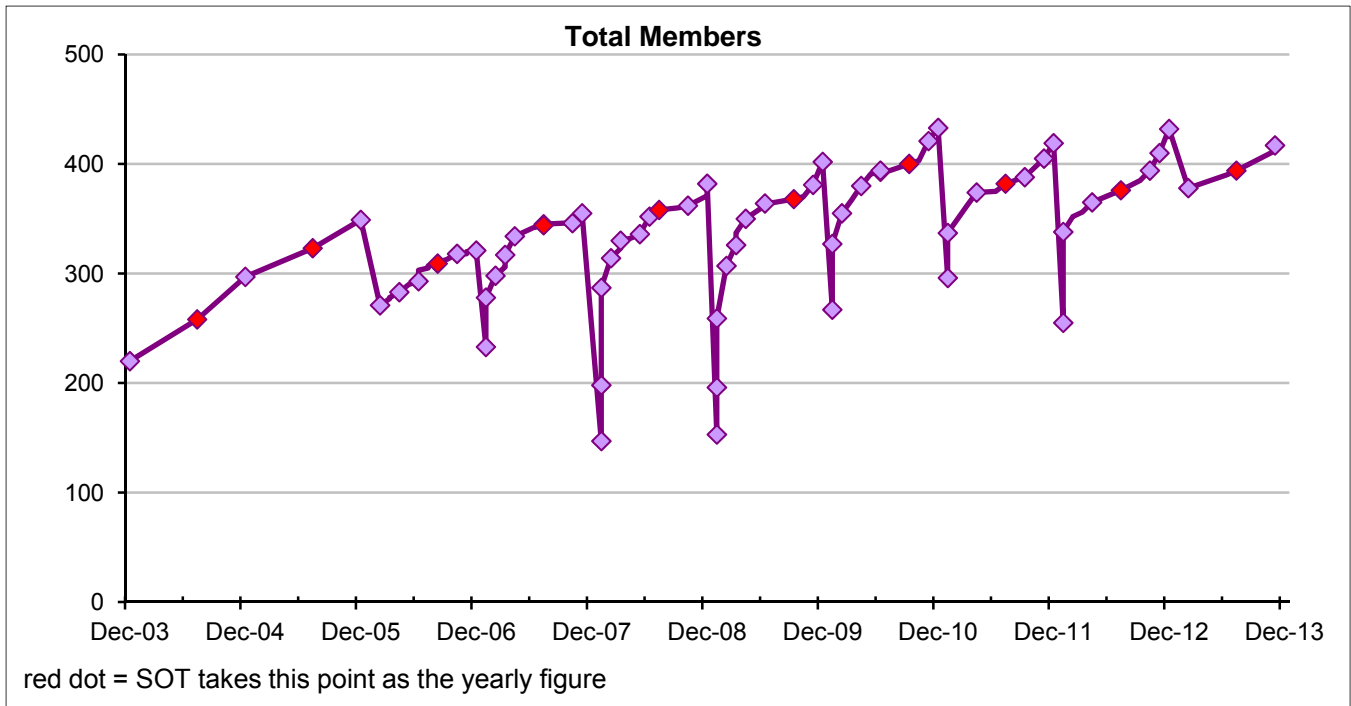


By Organization Category

**Nov 2013**

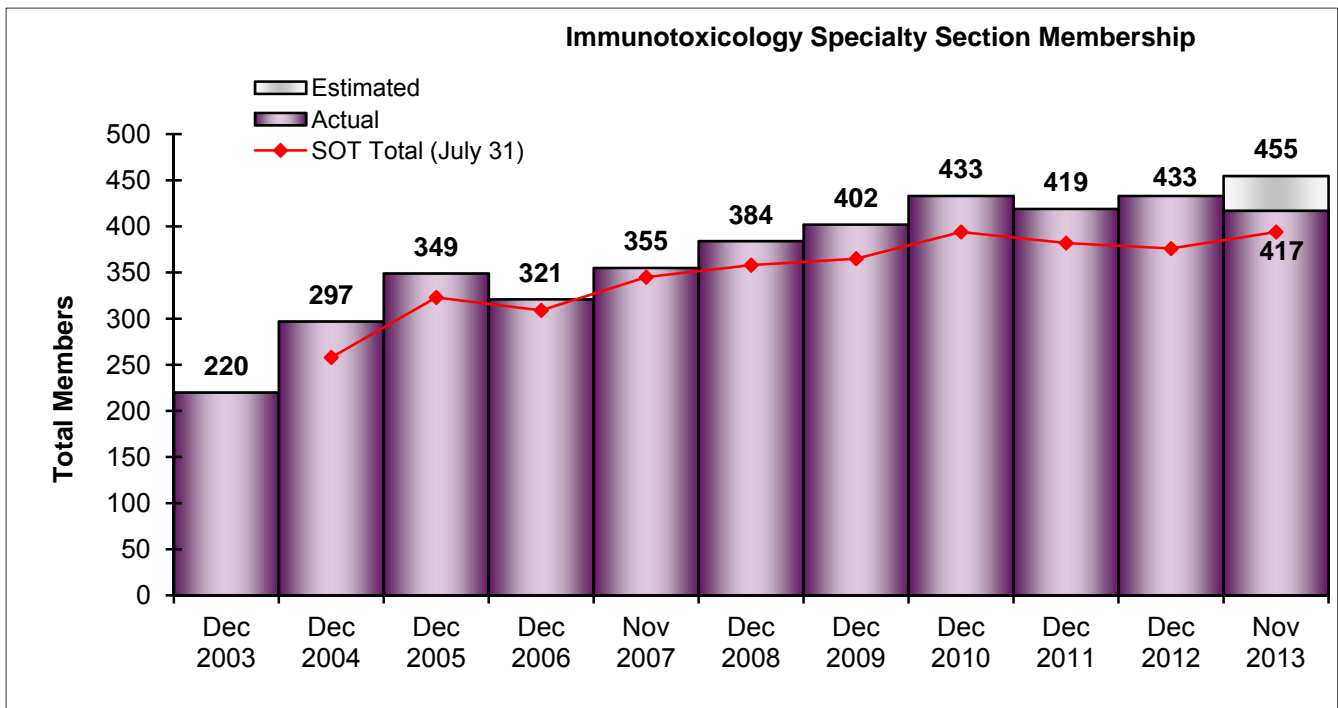


## Membership Committee Report (continued)



**Note:**

- The "dip" occurs when SOT deletes those who haven't renewed
- "estimated" in the graph below indicates an arbitrary 5% increase over Dec of last year





## Recent Immunotoxicology Publications

*Compiled by Haley Neff-LaFord, PhD*

Anytime you have a new fully-published or electronically-available article to report, please send the citation at any time to the coordinator, Haley Neff-LaFord: [hnlaford@seagen.com](mailto:hnlaford@seagen.com)

### **Asthma, Allergy, Autoimmunity & Hypersensitivity**

Bølling AK, Holme<sup>1</sup> JA, Bornehag CG, Nygaard UC, Bertelsen RJ, Nånberg E, Bodin J, Sakhi AK, Thomsen C and Becher R. Pulmonary phthalate exposure and asthma – Is PPAR a plausible mechanistic link? *EXCLI J* 12:733-759, 2013.

Choi J, Kim JR, Kim H, Kim YA, Lee HJ, Kim J and Lee KW. The atopic dermatitis-like symptoms induced by MC903 were alleviated in JNK1 knockout mice. *Toxicol Sci* 136:443-449, 2013.

El Ali Z, Gerbeix C, Hemon P, Esser PR, Martin SF, Pallardy M and Kerdine-Romer S. Allergic skin inflammation induced by chemical sensitizers is controlled by the transcription factor Nrf2. *Toxicol Sci* 134:39-48, 2013.

Lalko JF, Kimber I, Dearman RJ, Api AM and Gerberick GF. The selective peptide reactivity of chemical respiratory allergens under competitive and non-competitive conditions. *J Immunotoxicol* 10:292-301, 2013.

Nygaard UC, Samuelsen M, Marioara CD and Løvik M. Carbon nanofibers have IgE adjuvant capacity but are less potent than nanotubes in promoting allergic airway responses," *BioMed Res Int* 2013 Epub: doi: 10.1155/2013/476010.

### **Developmental Immunotoxicology**

Buczynski BW, Yee M, Martin KC, Lawrence BP and O'Reilly MA. Neonatal hyperoxia alters the host response to influenza A virus infection in adult mice through multiple pathways. *Amer J Physiol Lung Cell Mol Physiol* 305:L282-290, 2013. Selected as "Editor's Pick" in June, 2013.

Dietert RR. Natural childbirth and breastfeeding as preventive measures of immune-microbiome dysbiosis and misregulated inflammation. *J Anc Dis Prev Rem* 1: 103. doi:10.4172/2329-8731.1000103, 2013.

Granum B, Haug LS, Namork E, Stølevik SB, Thomsen C, Aaberge IS, van Loveren H, Løvik M and Nygaard UC. Pre-natal exposure to perfluoroalkyl substances may be associated with altered vaccine antibody levels and immune-related health outcomes in early childhood. *J Immunotoxicol* 10:373-379, 2013.

Hansen JS, Nygaard UC, Andreassen M, and Løvik M. Offspring IgE responses are influenced by levels of maternal IgG transferred in early life. *Am J Reprod Immunol* 70:359-371, 2013.

## Recent Immunotoxicology Publications

Roy A, Gaylo A, Cao W, Saubermann LJ and Lawrence BP. Neither direct nor developmental exposure to bisphenol A alters the severity of experimental inflammatory colitis in mice. *J Immunotoxicol* 10:334-340, 2013.

### General Immunotoxicology

Abbès S, Salah-Abbès JB, Sharafi H, Jebali R, Noghabi KA and Oueslati R. Ability of *Lactobacillus rhamnosus* GAF01 to remove AFM<sub>1</sub> *in vitro* and to counteract AFM<sub>1</sub> immunotoxicity *in vivo*. *J Immunotoxicol* 10:279-286, 2013.

Auttachoat W, McLoughlin CE, White KL and Smith MJ. Route-dependent systemic and local immune effects following exposure to solutions prepared from titanium dioxide nanoparticles. *J Immunotoxicol*. Epub: DOI: 10.3109/1547691X.2013.844750.

Bernstein DI, Kashon M, Lummus ZL, Johnson VJ, Fluharty K, Gautrin D, Malo JL, Cartier A, Boulet LP, Sastre J, Quirce S, Germolec D, Tarlo SM, Cruz MJ, Munoz X, Luster MI and Yucesoy B. CTNNA3 ( $\alpha$ -catenin) gene variants are associated with diisocyanate asthma, a replication study in a Caucasian worker population. *Toxicol Sci* 131:242-246, 2013.

Bodin J, Bølling AK, Samuelsen M, Becher R, Løvik M, and Nygaard UC. Long term bisphenol A exposure accelerates insulinitis development in diabetes-prone NOD mice. *Immunopharmacol Immunotoxicol* 35:349-58, 2013.

Boverhof DR, Krieger SM, Hotchkiss JA, Stebbins KE, Thomas J and Woolhiser MR. Assessment of the immunotoxic potential of trichloroethylene and perchloroethylene in rats following inhalation exposure. *J Immunotoxicol* 10:311-320, 2013.

Chen Y, Liu F, Weng D, Song L, Li C, Tang W, Yu Y, Dai W and Chen J. T<sub>reg</sub> cells may regulate interleukin-17 production by modulating T<sub>H</sub>1 responses in 1,3- $\beta$ -glucan-induced lung inflammation in mice. *J Immunotoxicol* 10:253-261, 2013.

Deng X, Nanduri B, Tan W, Cheng B, Fan R and Pruett SB. Sodium methyldithiocarbamate exerts broad inhibition of cellular signaling and expression of effector molecules of inflammation. *Toxicol Sci* 136:430-442, 2013.

El-Gharabawy RM, El-Maddah EI, Oreby MM, Salem HAS and Ramadan MO. Immunotoxicity and pulmonary toxicity induced by paints in Egyptian painters. *J Immunotoxicol* 10:270-278, 2013.

Guo TL, Germolec DR, Zhang LX, Auttachoat W, Smith MJ and White KL. Contact sensitizing potential of hair dye components pyrogallol and 5-amino-*o*-cresol in female BALB/c mice. *Toxicology* 314:202-208, 2013.

## Recent Immunotoxicology Publications

Hammad LN, Abdelraouf SM, Hassanein FS, Mohamed WA and Schaalán MF. Circulating IL-6, IL-17 and vitamin D in hepatocellular carcinoma: Potential biomarkers for a more favorable prognosis? *J Immunotoxicol* 10:380-386, 2013.

Head Wheeler JL, Martin KC and Lawrence BP. Novel cellular targets of AhR underlie alterations in neutrophilic inflammation and iNOS expression during influenza virus infection. *J Immunol* 190:659-668, 2013.

Inada T, Ueshima H and Shingu K. Intravenous anesthetic propofol suppresses leukotriene production in murine dendritic cells. *J Immunotoxicol* 10:262-269, 2013.

Karimian P, Kavooosi G and Amirghofran Z. Anti-inflammatory effect of *Mentha longifolia* in lipopolysaccharide-stimulated macrophages: Reduction of nitric oxide production through inhibition of inducible nitric oxide synthase. *J Immunotoxicol* 10:393-400, 2013.

Karmaus PWF, Wagner JG, Harkema JR, Kaminski NE and Kaplan BLF. Cannabidiol (CBD) enhances lipopolysaccharide (LPS)-induced pulmonary inflammation in C57BL/6 mice. *J Immunotoxicol* 10:321-328, 2013.

Kimber I, Nookala S, Davis CC, Gerberick GF, Tucker H, Foertsch LM, Dearman RJ, Parsonnet J, Goering RV, Modern P, Donnellan M, Morel J and Kotb M. Toxic shock syndrome: Characterization of human immune responses to TSST-1 and evidence for sensitivity thresholds. *Toxicol Sci* 134:49-63, 2013.

Latorre MA, López González EC, Larriera A, Poletta GL and Siroski PA. Effects of *in vivo* exposure to Roundup® on immune system of *Caiman latirostris*. *J Immunotoxicol* 10:349-354, 2013.

Manning CM, Johnston CJ, Hernady E, Miller JH, Reed CK, Lawrence BP, Williams JP and Finkelstein JN. Exacerbation of lung radiation injury by viral infection: The role of Clara cells and Clara cell secretory protein. *Radiat Res* 179:617-629, 2013.

Nworu CS, Nwuke HC, Akah PA, Okoye FBC and Esimone CO. Extracts of *Ficus exasperata* leaf inhibit topical and systemic inflammation in rodents and suppress LPS-induced expression of mediators of inflammation in macrophages. *J Immunotoxicol* 10:302-310, 2013.

O'Brien E, Dolinoy DC and Mancuso P. Bisphenol A at concentrations relevant to human exposure enhances histamine and cysteinyl leukotriene release from bone marrow-derived mast cells. *J Immunotoxicology* 11:84-89, 2014.

Olmedo H, Herrera M, Rojas L, Villalta M, Vargas M, Leiguez E, Teixeira C, Estrada R, Gutiérrez JM, León G and Montero ML. Comparison of the adjuvant activity of aluminum hydroxide and calcium phosphate on the antibody response towards *Bothrops asper* snake venom. *J Immunotoxicol* 11:44-49, 2014.

## Recent Immunotoxicology Publications

Panahi Y, Ghanei M, Vahedi E, Ghazvini A, Parvin S, Madanchi N, Bagheri M and Sahebkar A. Effect of recombinant human IFN $\gamma$  in the treatment of chronic pulmonary complications due to sulfur mustard intoxication. *J Immunotoxicol* 11:72-77, 2014.

Pascuan CG, Uran SL, Gonzalez-Murano MR, Wald MR, Guelman LR and Genaro AM. Immune alterations induced by chronic noise exposure: Comparison with restraint stress in BALB/c and C57Bl/6 mice. *J Immunotoxicology* 11:78-83, 2014.

Popov A, Mirkov I, Vasilijic S, Zolotarevski L, Kataranovski D and Kataranovski M. Impact of the magnitude of sensitization dose on the incidence and intensity of CHS to dinitrochlorobenzene (DNCB): Insight from ear swelling and challenged-skin draining lymph node response in rats. *J Immunotoxicol* 10:355-360, 2013.

Rohlman D, Punj S, Pennington J, Bradford S and Kerkvliet NI. Suppression of acute graft-versus-host response by TCDD is independent of the CTLA-4-IFN $\gamma$ -IDO pathway. *Toxicol Sci* 135:81-90, 2013.

Salazar KD, Copeland CB, Wood CE, Schmid JE and Luebke RW. Evaluation of anti-nuclear antibodies and kidney pathology in Lewis rats following exposure to Libby amphibole asbestos. *J Immunotoxicol* 10:329-333, 2013.

Serve KM, Black B, Szeinuk J and Pfau JC. Asbestos-associated mesothelial cell autoantibodies promote collagen deposition in vitro. *Inhal Toxicol* 25:774-784, 2013.

Shao J, Katika MR, Schmeits PCJ, Hendriksen PJM, van Loveren H, Peijnenburg AA and Volger OL. Toxicogenomics-based identification of mechanisms for direct immunotoxicity. *Toxicol Sci* 135:328-346, 2013.

Singh KP, Bennett JA, Casado FL, Walrath JL, Welle SL and Gasiewicz TA. Loss of aryl hydrocarbon receptor promotes gene changes associated with premature hematopoietic stem cells exhaustion and development of a myeloproliferative disorder in aging mice. *Stem Cells Dev* Epub: DOI: 10.1089/scd.2013.0346

Smith MJ, Germolec DR, Frawley RP and White KL. Immunomodulatory effects of black cohosh (*Actaea racemosa*) extract in female B6C3F1/N mice. *Toxicology* 308:146-157, 2013.

Soromou LW, Jiang L, Wei M, Chen N, Huo M, Chu X, Zhong W, Wu Q, Balde A, Deng X and Feng H. Protection of mice against lipopolysaccharide-induced endotoxic shock by pinocembrin is correlated with regulation of cytokine secretion. *J Immunotoxicol* 11:56-61, 2014.

White KL, DeLorme MP, Beatty PW, Smith MJ and Peachee VL. Jet fuel kerosene is not immunosuppressive in mice or rats following inhalation for 28 days. *J Toxicol Env Health A* 76:778-797, 2013.

## Recent Immunotoxicology Publications

Xing Y, Song HM, Wei M, Liu Y, Zhang YH and Gao L. Clinical significance of variations in levels of Epstein-Barr Virus (EBV) antigen and adaptive immune response during chronic active EBV infection in children. *J Immunotoxicol* 10:387-392, 2013.

Yousefzadi M, Riahi-Madvar A, Hadian J, Rezaee F, Rafiee R, Biniiaz M. Toxicity of essential oil of *Satureja khuzistanica*: *In vitro* cytotoxicity and anti-microbial activity. *J Immunotoxicol* 11:50-55, 2014.

Yucesoy B, Talzhanov Y, Johnson VJ, Wilson NW, Biagini RE, Wang W, Frye B, Weissman DN, Germolec DR, Luster MI and Barmada MM. Genetic variants within the MHC region are associated with immune responsiveness to childhood vaccinations. *Vaccine* 31:5381-91, 2013.

Zagorski JW, Turley AE, Dover HE, Vandenberg KR, Compton JR, and Rockwell CE. The Nrf2 activator, tBHQ, differentially affects early events following stimulation of Jurkat cells. *Toxicol Sci* 136:63-71, 2013.

Zhu X and Uetrecht J. A novel T<sub>H</sub>17-type cell is rapidly increased in the liver in response to acetaminophen-induced liver injury: T<sub>H</sub>17 cells and the innate immune response. *J Immunotoxicol* 10:287-291, 2013.

### Methods/Models

Collinge M, Thorn M, Peachee V and White K Jr. Validation of a *Candida albicans* delayed-type hypersensitivity (DTH) model in female juvenile rats for use in immunotoxicity assessments. *J Immunotoxicol* 10:341-348, 2013.

Gibbs S, Corsini E, Spiekstra SW, Galbiati V, Fuchs HW, Degeorge G, Troese M, Hayden P, Deng W and Roggen E. An epidermal equivalent assay for identification and ranking potency of contact sensitizers. *Toxicol Appl Pharmacol* 272:529-541, 2013.

Kamperschroer C, O'Donnell LM, Schneider PA, Li D, Roy M, Coskran TM and Kawabata TT. Measuring T-cell responses against LCV and CMV in cynomolgus macaques using ELISPOT: Potential application to non-clinical testing of immunomodulatory therapeutics. *J Immunotoxicol* 11:35-43, 2014.

Peachee VL, Smith MJ, Beck MJ, Stump DG, and White KL. Characterization of the T-dependent antibody response (TDAR) to keyhole limpet hemocyanin (KLH) in the Göttingen Minipig®. *J Immunotoxicol*. Epub: DOI: 10.3109/1547691X.2013.853716

Van Mierlo GJD, Cnubben NHP, Wouters D, Wolbink GJ, Hart MHL, Ganderup NC, Kuper CF, Aarden L and Penninks AH. The minipig as an alternative non-rodent model for immunogenicity testing using the TNF $\alpha$  blockers adalimumab and infliximab. *J Immunotoxicol* 11:62-71, 2014.

## Recent Immunotoxicology Publications

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## Other Notable Items

### JOB OPPORTUNITIES



We are starting a new section to benefit anyone who is looking for a new job or a career transition. If you are aware of a job opening that you would like to see posted here, please email the details to the ImTox Communications committee chair, Ashwini Phadnis-Moghe [phadnisa@msu.edu](mailto:phadnisa@msu.edu). We will update this section in the upcoming newsletters and also post them online on our website.

Employers who have job openings and would like to advertise them in our newsletter can send the information to us in this format.

Position Available:

Institution or Company: Bottles R Us

Description: Chief Bottlewasher

Contact: Dr. Serve

## SAVE THE DATE!

**53<sup>rd</sup> Annual Society of Toxicology Meeting**

**March 23-27, 2014**

**Phoenix, Arizona**

**2<sup>nd</sup> Abstract Submission deadline: January 6, 2014**