

#### 2013-2014 Executive Committee

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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, PhD <a href="mailto:phadnisa@msu.edu">phadnisa@msu.edu</a>

# Immunotoxicology Specialty Section Newsletter

**Pre-SOT bulletin** 

## President's Message

#### Gary Burleson, PhD

Please make your plans to attend the SOT 53<sup>rd</sup> Annual Meeting in Phoenix, AZ March 23-27 2014. The program outstanding and the Immunotoxicology Section highlights include numerous Immunotoxicology Poster Sessions, Symposia: "To bug or Not to Bug the Immune System: Benefits and Consequences of Altering the Microbiome" cochaired by Victor J. Johnson and Berran Yucesoy, and "Ocular Immunotoxicology: A Privileged View" co-chaired by Brian Christian JoAnn Schuh; and the Workshop and



Dr. Gary Burleson President, ImTox SS 2013-2014

"Contribution of Nonimmune Cells to Adverse Immune Responses: Implications for Toxicology" co-chaired by Peer W.F. Karmaus and Barbara Kaplan. The competition for approval and inclusion in the Annual Meeting is fierce. Please applaud the hard work of the members of the Program Committee chaired by Danuta Herzyk.

A list of ITSS committee members is included in this newsletter on page 5. I would like to encourage you to sign up for ITSS 2014-2015 committees, and remember that if you sign up for the Program Committee you must submit a proposal for Continuing Education, Symposium, Workshop, Roundtable, Informational Session, or the Education-Career Development Session. Rafael Ponce will be Chair of the Program Committee for the 2015 Annual Meeting. If you are interested in participating, please contact Rafael.

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An ITSS symposium presented at the 2013 SOT annual meeting was recently highlighted. The SOT highlights and supports sessions presented at the annual meeting. The SOT Scientific Program Committee selected the ITSS symposium entitled "Genetic and Epigenetic Determinants of Susceptibility to Environmental and Occupational Toxicants" co-chaired by ITSS members Drs. Victor J. Johnson and Berran Yucesoy and encouraged submission of the symposium for presentation at the 2014 annual meeting of the American Association for Advancement of Science (AAAS). The SOT supported the travel for session chairs and speakers. This selection should encourage submission of ideas generated by our ITSS members! (See page 4 for a detailed description of this AAAS Symposium).

For those attending the meeting in Phoenix, I would like to remind you that (1) The ITSS Executive Committee Breakfast will be held on Tuesday morning from 6:30 – 8:00 A.M. and (2) The Immunotoxicology Specialty Section (ITSS) Reception will be held on Wednesday at 6:00 P.M.

Please plan to attend the ITSS to meet with your fellow immunotoxicologists and recognize this year's award winners in the following categories:

- ITSS Vos Lifetime Career Achievement Award in Immunotoxicology
- ITSS Outstanding Senior Immunotoxicologist Award (NEW AWARD)
- ITSS Outstanding Young Immunotoxicologist Award
- · ITSS Best Paper of the Year Award
- ITSS Best Presentation by a Postdoctoral Trainee Award
- ITSS Best Presentation by a Student Award
- ITSS HESI Immunotoxicology Young Investigator Travel Award

During the ITSS reception, Kazuichi Nakamura will be a featured speaker. Dr. Nakamura will discuss the continuing and important collaboration between the ITSS and the JSIT (Japanese Society of Immunotoxicology). I look forward to seeing you at the SOT meeting in Phoenix.



Immunotoxicology Specialty Section Reception Sheraton Valley of the Sun C Wed, March 12<sup>th</sup> - 6:00-7:30PM



## **Student & Postdoctoral Report**

#### Submitted by Kinta Serve, PhD

SOT is right around the corner, and we hope you can all join us at the many fun and informational events planned for that week. First, we will kick off SOT with the annual **Student/Postdoc mixer** sponsored by the Graduate Student Leadership Committee. It is FREE to students and postdocs (be sure to sign up when you register for the meeting) and will take place on **Sun, March 23<sup>rd</sup>, 7:30-9pm** at the Sheraton Downtown hotel. This is a great opportunity to network and learn more about specialty sections and regional chapters.

Throughout the week, the Graduate Student Leadership Committee and Postdoctoral Assembly Board will host a number of educational events, including **Chat with an Expert and Poster Tours**. Both these events provide opportunities to meet with and learn from leading experts in the toxicology field. Watch for emails for participant sign-ups.

The **Postdoctoral Assembly Luncheon** will take place on **Tues, March 25 from noon-1:15 pm**. Sign-up when you register for the meeting.

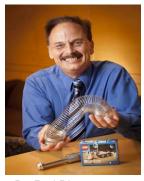
Lastly, there will be two big events for Immunotoxicology SS members on **Wed, March 26**<sup>th</sup>. The **ImTox Student/Postdoc Mixer** will take place from **4:30-6 pm** at the District American Kitchen and Wine Bar inside the Sheraton Downtown hotel. Please join us for happy hour specials and meet your fellow ImTox peers. Then, immediately afterwards, join us at the big **ImTox Reception from 6-7:30 pm** in the Sheraton Downtown hotel. Enjoy appetizers and socializing with fellow ImTox members. Awards will be presented during the reception.

We hope you can join us for all these fun and informative events!

Kinta Serve and Aimee Hillegas, Your ImTox postdoc and student representatives

#### **NEWS AND NOTEWORTHY EVENTS**

## Dr. Rod Dietert wins Excellence in Teaching Award for scientific creativity course



Dr. Rod Dietert Image courtesy: vet.cornell.edu/news

Dr. Rod Dietert won the Inaugural Excellence in Teaching Award for undergraduate and graduate teaching presented by Cornell's Department of Microbiology and Immunology. Being a well-esteemed professor of immunotoxicology, Dr. Dietert had explored a new teaching style and designed and taught a course called Tools for a Lifelong career in Research. The idea of the class was to inspire fresh thinking and creativity. The curriculum was based on a course that Dr. Dietert presented at the 2012 SOT Postdoctoral Assembly-Sponsored workshop in San Antonio. Congratulations Dr. Dietert for your contributions to the field of science education!

For more information see: http://www.vet.cornell.edu/news/dietert.cfm

## **JOB OPPORTUNITIES**

Just a reminder that we are now including a new section in our newsletter 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 Communications Committee Chair at <a href="mailto:phadnisa@msu.edu">phadnisa@msu.edu</a>. 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

## Immunotoxicology representation at the AAAS meeting

Dr. Victor J. Johnson and Dr. Berran Yucesoy organized an exciting and cutting edge symposium on the genetics, genomics, and epigenetics underlying susceptibility to environmental/occupational exposures. The symposium entitled "Genetic and Epigenetic Determinants of Susceptibility to Environmental and Occupational Toxicants" was presented to the toxicology community at the Society of Toxicology 2013 annual meeting. The symposium was well received and the SOT Scientific Program Committee encouraged submission of the symposium for presentation at the 2014 annual meeting of the American Association for Advancement of Science, AAAS.

The AAAS Program Committee accepted the symposium entitled "Genetic and Epigenetic Determinants of Susceptibility to Toxicants" which was recently presented at the 180<sup>th</sup> annual meeting of AAAS (13-17 February 2014) in Chicago. SOT supported the travel for the session chairs, Drs. Johnson (Burleson Research Technologies, Inc.) and Yucesoy (University of Cincinnati), as well as the excellent speakers, Dr. Cliona M. McHale (University of California, Berkley), Dr. Steven R. Kleeburger (National Institute of Environmental Health Sciences), Dr. Dana Dolinoy (University of Michigan), and Dr. David Christiani (Harvard University).

The symposium was well received at the AAAS meeting and the talks generated an engaging discussion regarding the current and future of genetics/genomics/epigenetics in toxicology and risk assessment. Due to the extremely broad diversity of scientists and public that attend the meeting, the AAAS presents a unique challenge for effective communication of the science that we are passionate about. A great lesson learned from this experience was that effective communication of science requires the scientist to engage a broad audience rather than just delivering specialized knowledge to other experts in the field. In such a forum, it is essential to connect the science, the scientist, and the audience in order to deliver the message. In delivery of scientific findings, the ultimate goal should be to capture the interest of those listening so that they leave wanting to know more.



We would like to thank Dr. Kerin, MD from Kerin Occupational Health Associates, Toronto, Canada for his enthusiasm for the science that we presented at AAAS and for kindly providing challenging discussions and the picture.

<u>Left to right</u>: Dr. Noel Kerin, Dr. Cliona McHale, Dr. Berran Yucesoy, Dr. Steve Kleeberger, Dr. Dana Dolinoy, Dr. Vic Johnson.

## **Immunotoxicology Committee Lists (2013-2014)**

#### **Communications Committee**

Ashwini Phadnis-Moghe	phadnisa@msu.edu
Haley Neff-LaFord	hnlaford@seagen.com
Winnie Ng	pwinn.ng@utoronto.ca
Michael Laiosa	laiosa@uwm.edu
Sunil Tomar	amazingsunil@gmail.com
Jennifer Nyland	jnyland@uscmed.sc.edu

## **Regulatory Committee**

Peter Thomas	peter.thomas@covance.com
Rodney Prell	prell.rodney@gene.com
Gaurav Kaushik	
Ashlyn Bassiri	ashlyn.e.bassiri@gsk.com

## **Membership Committee**

George deGeorge	Geodg@aol.com
Jessica Sido	jmsido@gmail.com

#### **Education Committee**

Judy Zelikoff	judith.zelikoff@nyumc.org
Narendra Prasad Singh	narendra.singh@uscmed.sc.edu
Patrick Crittenden	pcrittenden@wooster.edu
Alhaji N'jai	alhaji.njai@gmail.com

## **Program Committee**

Danuta Herzyk	dherzyk@merck.com
Rafael Ponce	rponce@amgen.com
M. Firoze Khan	mfkhan@utmb.edu
Narendra Prasad Singh	narendra.singh@uscmed.sc.edu
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Mindi Walker	mwalker2@its.jnj.com

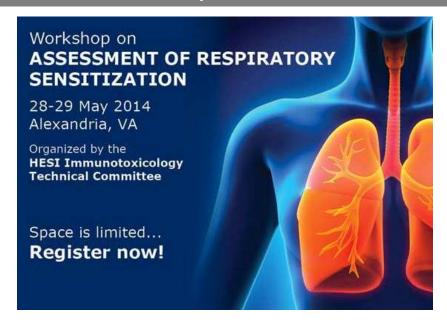
Note: Committee chairs or co-chairs are highlighted in bold

## **Immunotoxicology Committee Lists (cont'd)**

#### **Awards Committee**

Peyton Myers	laine.myers@fda.hhs.gov
Gary Burleson	gburleson@brt-labs.com
Berran Yucesoy	yab7@cdc.gov
M. Firoze Khan	mfkhan@utmb.edu
Pegah Mehrpouya	pegah.mehrpooya@uscmed.sc.edu
Michael Laiosa	laiosa@uwm.edu
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Vic Johnson	vjohnson@brt-labs.com
Jean Regal	jregal@d.umn.edu

## **Workshop Announcement**



#### Abstract:

Sensitization of the respiratory tract has significant acute and chronic health implications. While the existence of inducers of respiratory sensitization is widely recognized for some classes of chemicals, validated standard methods or frameworks for identifying and characterizing the hazard are not available. This workshop aims to (1) discuss the current state of science for identification and characterization of respiratory sensitizer hazard, (2) identify the near-term and long-term information to facilitate development of validated standard methods and frameworks, and (3) consider the regulatory and practical needs regarding risk management.

Registration is now open, and space is limited. For more information and to register, please visit http://www.hesiglobal.org/i4a/pages/index.cfm?pageid=3673.

To learn more, please contact Dr. Connie Chen (cchen@hesiglobal.org).

#### Compiled by Haley Neff-LaFord

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: <a href="mailto:hnlaford@seagen.com">hnlaford@seagen.com</a>

#### Asthma, Allergy, Autoimmunity & Hypersensitivity

Almond RJ, Flanagan BF, Antonopoulos A, Haslam SM, Dell A, Kimber I and Dearman RJ. Differential immunogenicity and allergenicity of native and recombinant human lactoferrins: Role of glycosylation. Eur J Immunol 43:170-181, 2013.

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Corsini E, Galbiati V, Nikitovic D and Tsatsakis AM. Role of oxidative stress in chemical allergens induced skin cells activation. Food Chem Toxicol 61:74-81, 2013.

Foster ES, Kimber I and Dearman RJ. Relationship between protein digestibility and Allergenicity: Comparisons of pepsin and cathepsin. Toxicology 309:30-38. 2013.

Galbiati V, Bianchi S, Martínez V, Mitjans M and Corsini E. NCTC 2544 and IL-18 production: a tool for the in vitro identification of photoallergens. Toxicol In Vitro 28:13-47, 2014.

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.

Goebel C, Troutman J, Hennen J, Rothe H, Schlatter H, Gerberick GF and Blömeke B. Introduction of a methoxymethyl side chain into p-phenylenediamine attenuates its sensitizing potency and reduces the risk of allergy induction. Toxicol Appl Pharmacol 274:480-487, 2014.

Johansson H, Albrekt AS, Borrebaeck CA and Lindstedt M. The GARD assay for assessment of chemical skin sensitizers. Toxicol in Vitro 27:1163-1169, 2013.

Rivera-Mariani FE, Vysyaraju K, Negherbon J, Levetin E, Horner WE, Hartung T and Breysse PN. Comparison of the interleukin-1β-inducing potency of allergenic spores from higher fungi (Basidiomycetes) in a cryopreserved human whole blood system. Int Arch Allergy Immunol 163:154-162, 2014.

#### **Developmental Immunotoxicology**

Bodin J, Bølling AK, Becher R, Kuper F, Løvik M and Nygaard UC. Transmaternal bisphenol A exposure accelerates diabetes type 1 development in NOD mice. Toxicol Sci 137:311-323, 2014.

Mathisen GH, Yazdani M, Rakkestad KE, Aden PK, Bodin J, Samuelsen M, Nygaard UC, Goverud IL, Gaarder M, Løberg EM, Bølling AK, Becher R and Paulsen RE. Prenatal exposure to bisphenol A interferes with the development of cerebellar granule neurons in mice and chicken. Int J of Dev Neurosci 31:762-9, 2013.

Viviani B, Boraso M, Valero M, Gardoni F, Marco EM, Llorente R, Corsini E, Galli CL, Di Luca M, Marinovich M, López-Gallardo M and Viveros MP. Early maternal deprivation immunologically primes hippocampal synapses by redistributing interleukin-1 receptor type I in a sex dependent manner. Brain Behav Immun 35:135-143, 2014.

#### **General Immunotoxicology**

Blum JL, Rosenblum LK, Grunig G, Beasley MB, Xiong JQ and Zelikoff JT. Short-term inhalation of cadmium oxide nanoparticles alters pulmonary dynamics associated with lung injury, inflammation, and repair in a mouse model. Inhal Toxicol 26: 48–58, 2014.

Castano R, Johnson VJ and Cartier A. Challenge exposure to isocyanates induces changes in nasal patency in patients reporting work-related respiratory symptoms. J Occup Environ Med 55:954-959, 2013.

Corsini E, Budello S, Marabini L, Galbiati V, Piazzalunga A, Barbieri P, Cozzutto S, Marinovich M, Pitea D and Galli CL. Comparison of wood smoke PM2.5 obtained from the combustion of fir and beech pellets on inflammation and DNA damage in A549 and THP-1 human cell lines. Arch Toxicol 87:2187-2199, 2013.

Corsini E, Galbiati V, Esser PR, Pinto A, Racchi M, Marinovich M, Martin SF and Galli CL. Role of PKC- $\beta$  in chemical allergen-induced CD86 expression and IL-8 release in THP-1 cells. Arch Toxicol 88:415-24, 2014.

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Ferro A, Zebedeo CN, Davis C, Ng KW and Pfau JC. Amphibole, but not chrysotile, asbestos induces anti-nuclear autoantibodies and IL-17 in C57Bl/6 mice. J Immunotoxicol doi:10.3109/1547691X.2013.847510. Epub 2013.

Looker C, Luster MI, Calafat AM, Johnson VJ, Burleson GR, Burleson FG and Fletcher T. Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate. Toxicol Sci doi:10.1093/toxsci/kft269. Epub 2013.

Lundberg K, Albrekt AS, Nelissen I, Santegoets S, de Gruijl TD, Gibbs S and Lindstedt M. Transcriptional profiling of human dendritic cell populations and models – unique profiles of in vitro dendritic cells and implications on functionality and applicability. PLoS One 8:e52875, 2013.

Ness D, Ren Z, Gardai S, Sharpnack D, Johnson VJ, Brennan RJ, Brigham EF and Olaharski AJ. Leucine-rich repeat kinase 2 (LRRK2)-deficient rats exhibit renal tubule injury and perturbations in metabolic and immunological homeostasis. PLoS One 8:e66164 doi: 10.1371/journal.pone.0066164. Epub 2013.

Nikitovic D, Corsini E, Kouretas D, Tsatsakis A and Tzanakakis G. ROS-major mediators of extracellular matrix remodeling during tumor progression. Food Chem Toxicol 61:178-186, 2013.

Seth RK, Das S, Kumar A, Chanda A, Kadiiska MB, Michelotti G, Manautou J, Diehl AM and Chatterjee S. CYP2E1-dependent and leptin-mediated hepatic CD57 expression on CD8+ T cells aid progression of environment-linked nonalcoholic steatohepatitis. Toxiol Appl Pharmacol 274:42-52, 2014.

Singh KP, Bennett JA, Casado FL, Walrath JL, Welle SL and Gasiewicz TA. Loss of aryl hydrocarbon receptor promotes gene changes associated with premature hematopoetic stem cell exhaustion and development of a myeloproliferative disorder in aging mice. Stem Cells Develop 23:95-106, 2014.

Vogel CF, Khan EM, Leung PS, Gershwin ME, Change WL, Wu D, Haarman-Stemmann T, Hoffmann A and Denison MS. Cross-talk between aryl hydrocarbon receptor and the inflammatory response: A role for nuclear factor-κB. J Biol Chem 289:1866-1875, 2014.

Wheeler JLH, Martin KC, Resseguie E and Lawrence BP. Differential consequences of two distinct AhR ligands on innate and adaptive immune responses to influenza A virus. Toxicol Sci 137:324-334, 2014. *Editor's Choice*.

#### Methods/Models

Klein SG, Serchi T, Hoffmann L, Blomeke B and Gutleb AC. An improved 3D tetraculture system mimicking the cellular organisation at the alveolar barrier to study the potential toxic effects of particles on the lung. Part Fibre Toxicol 10:31, 2013.

Martínez V, Galbiati V, Corsini E, Martín-Venegas R, Vinardell MP and Mitjans M. Establishment of an in vitro photoassay using THP-1 cells and IL-8 to discriminate photoirritants from photoallergens. Toxicol In Vitro 27:1920-1927, 2013.

Rivera-Mariani F. Cryopreserved human whole blood: A human-based in vitro immunotoxicological system. ATLA 41:1-8, 2013.

Teunis MAT, Spiekstra S, Smits M, Adriaens E, Eltze T, Galbiati V, Krul C, Landsiedel R, Pieters R, Reinders J, Roggen E, Corsini E and Gibbs S. An international pre-validation study on the Epidermal Equivalent sensitizer potency assay. Toxicol Lett 221:S133, 2013.

#### **Reviews/Books/Commentaries**

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Boverhof DR, Ladics G, Luebke B, Botham J, Corsini E, Evans E, Germolec D, Holsapple M, Loveless SE, Lu H, van der Laan JW, White KL Jr, and Yang Y. Approaches and considerations for the assessment of immunotoxicity for environmental chemicals: A workshop summary. Regul Toxicol Pharmacol 68:96-107, 2014.

Esser PR, Kimber I and Martin SF. Correlation of contact sensitizer potency with T cell frequency and TCR repertoire diversity. In T Lymphocytes as Tools in Diagnostics and Immunotoxicology. Experientia Supplementum. SF Martin (e.d.). Springer, Basel 2014. doi: 10.1007/978-3-0348-0726-5\_8

Hartung T and Corsini E. Immunotoxicology: challenges in the 21st century and in vitro opportunities. ALTEX 30:411-26, 2013.

Kimber I, Basketter DA, Thyssen JP, Dearman RJ and McFadden JP. Chemical allergy in humans: Fresh perspectives. J Immunotoxicol doi: 10.3109/1547691X.2013.833661. Epub 2013.

Kimber I and Pallardy M. The use of T cells in hazard characterization of chemical and drug allergens and integration in testing strategies. In: Martin SF (Ed.) T Lymphocytes as Tools in Diagnostics and Immunotoxicology. Experientia Supplementum. Springer, Basel, 2014. doi: 10.1007/978-3-0348-0726-5\_1.

Kimber I and Pieters R. Household chemicals, immune function, and allergy: A commentary. J Immunotoxicol 10:169-172, 2013.

Smith MJ, Brown JM, Zamboni WC and Walker NJ. From immunotoxicity to nanotherapy: the effects of nanomaterials on the immune system. Toxicol Sci *Invited Review* doi: 10.1093/toxsci/kfu005 Epub 2014.

Johnson V. Tumor necrosis factor-α. In: Encyclopedia of Immunotoxicology. Vohr H. (Ed.) Springer-Verlag Berlin Heidelberg, 2013.

Yucesoy B, Johnson V and Luster M. Cytokine genes and immunotoxicology, genetic variations. In: Encyclopedia of Immunotoxicology. Vohr H. (Ed.) Springer-Verlag Berlin Heidelberg, 2013.

Johnson VJ, De Vooght V and Vanoirbeek JA. (2013). Animal Models. In: Asthma in the Workplace: Fourth Edition, Revised and Expanded. Bernstein, DI, Chan-Yeung M, Malo J-L and Bernstein IL (Eds.). CRC Press, Boca Raton, FL

## **SAVE THE DATE!**

## 53rd Annual Society of Toxicology Meeting March 23-27, 2014 Phoenix, Arizona



## **Immunotoxicology Meeting/Reception**

Wednesday, March 26 6:00-7:30pm Sheraton Downtown Valley of the Sun C

## **Immunotoxicology Student/Postdoctoral mixer**

Wednesday, March 26
4.30-6:00pm
District American Kitchen and Wine Bar
Sheraton Downtown Hotel