



Immunotoxicology Specialty Section Newsletter

2014-2015
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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

Outgoing President's Message

Submitted by Gary R. Burleson, PhD.

It seems like only yesterday I was writing the Incoming President's Message for the Immunotoxicology Specialty Section (ITSS) but, while time flew by quite quickly, it has been an exciting year for our Specialty Section.



Dr. Gary Burleson
President, ImTox SS
2013-2014

I was fortunate to have an excellent, dedicated, and proactive Executive Committee consisting of: Past President Greg Ladics, Vice President Danuta Herzyk, Vice-President-Elect Rafael Ponce, Secretary/Treasurer Haley Neff-LaFord, Senior Councilor Peyton Myers, Junior Councilor Jamie DeWitt, Postdoctoral Representative Teri Girtsman followed by Kinta Serve, and Student Representative Kinta Serve followed by Aimee Hillegas. We were supported by our Extended Executive Committee Chairs: Judy Zelikoff (Education), George DeGeorge (Membership), Ashwini Phadnis (Communications), Mitch Cohen (International Exchange), and Peter Thomas (Regulatory). We are also indebted to Raul Suarez (SOT Liaison to Awards Committee, Specialty Sections, and Special Interest Groups) for the prompt, courteous, and professional advice provided cheerfully to our many questions and requests for assistance.

We inherited a strong and vibrant Specialty Section that is expected to have continued growth because of the important health issues resulting from exposure to agents that are immunotoxic. Our Specialty Section consists of 374 members, is in the top 5 of all 27 Specialty Sections (2013-2014 SOT Membership Directory),

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and reflects the tremendous interest in immunotoxicology as an important component in the safety assessment of chemicals, biologics and new chemical entities.

The Executive Committee decided to not have stated goals at the beginning of our term in 2013, but rather to develop issues of interest and goals at our monthly teleconference calls. This flexible approach worked well to promptly address current issues. We also worked diligently toward defining who we are, where we're going, and how to determine the best way to get there.

As an Executive Committee we described and discussed the importance of education and appropriate training of immunotoxicologists. The rapid growth of the field of immunotoxicology reflects those interested in the field for a variety of reasons, e.g., knowledge of a specialized discipline important for a thorough safety evaluation. Properly trained immunotoxicologists require both educational and laboratory training in order to properly design, conduct, and interpret studies. In order to recognize outstanding immunotoxicologists, we established a new award entitled: Outstanding Senior Immunotoxicologist Award to recognize an immunotoxicologist for his/her significant contributions to the field of immunotoxicology. This award filled the career gap between the Outstanding Young Investigator Award to a promising young investigator who has had an impact on the field of immunotoxicology, and the Vos Lifetime Career Achievement Award that recognizes a lifetime of career achievement in immunotoxicology. These 3 awards now recognize excellence at all stages of one's career. The winners of these ITSS prestigious awards will be described in detail in subsequent sections of the newsletter, but I want to take the opportunity to congratulate this year's award winners: Dr. Robert Luebke, for the Vos Lifetime Career Achievement Award, Dr. Norbert Kaminski for the Outstanding Senior Immunotoxicologist Award, and Dr. Ashlyn E. Bassiri and Dr. Cheryl E. Rockwell who shared the Outstanding Young Investigator Award.

The 2014 national SOT meeting in Phoenix, Arizona was a success. Danuta Herzyk, Vice President of the ITSS, served as the Program Chair for the 2014 meeting and the committee's efforts were rewarded by many ITSS submissions and acceptances for the Phoenix meeting. The Executive Committee and the Extended Executive Committee meeting of the ITSS was held during the 2014 national SOT meeting. As President, it was my privilege and pleasure to introduce the new officers: incoming VP-Elect Peyton Myers, incoming Senior Councilor Jamie DeWitt, and incoming Junior Councilor Cheryl Rockwell, and Guests ITSS Past President Leigh Ann Burns Naas, and Kazuichi Nakamura. The financial report was presented by Treasurer Haley Neff-LaFord and discussion focused on the monetary award for the five types of awards (Student Awards with 1st place \$500, 2nd place \$300, and 3rd place \$200), the Postdoctoral Award of \$500, and the HESI Young Immunotoxicology Travel Award to cover the cost of travel. The monetary awards, in addition to the prestige of the award itself, should assure continued excellence in submissions from students, our future generation of immunotoxicologists.

The ITSS and the JSIT (Japanese Society of Immunotoxicology) have a rich history of collaboration for pursuit of excellence in immunotoxicology. The ITSS invited Kazuichi Nakamura, DVM, PhD as a featured speaker at the ITSS reception to discuss the continuing and important collaboration between the ITSS and JSIT.

Rafael Ponce, the current ITSS Vice President, led the Program Committee for the 2015 meeting in San Diego, California. Thanks to the committee's efforts, there were a large number of submissions and we can again be assured of a strong Immunotoxicology presence for the 2015 meeting.

It was with great pride, honor and trepidation that I began my term as President of the ITSS – following many who have held this office with honor and dedication. It is with thanks to those on the Executive Committee, the Extended Executive Committee, and our active membership that I believe we have had an impact as we go forward.

Gary R. Burleson
Past President, ImTox SS (2013-2014)

Incoming President's Message

Submitted by Danuta Herzyk, Ph.D

It is a great honor for me to receive the baton to continue the path as President of the Immunotoxicology Specialty Section that is approaching its 30th anniversary of existence. I hope to carry on the great work and dedication of all Past Presidents, from our founder, Dr. Jack Dean (1985-86), to my immediate predecessor, Dr. Gary Burleson. I would like to thank Gary for his leadership in the past year and thank all ITSS members for your support and contribution to the section.



**Dr. Danuta Herzyk
President ImTox SS
2014-2015**

The driving force in the ITSS is a volunteer Executive Committee that is a mix of seasoned members ensuring continuity and new members bringing in “fresh breath”. Congratulations to our newly elected officers: Peyton Myers (Vice-President Elect) and Cheryl Rockwell (Junior Councilor). I look forward to working with our newly elected and current officers of the Executive Committee: Rafael Ponce (Vice-President and Chair of the Program Committee), Haley Neff-LaFord (Secretary-Treasurer), Jamie DeWitt (Senior Councilor) and Aimee Hilegas (Student Representative). My sincere thanks go to Kinta Serve for her contributions as the Postdoctoral Representative and I wish her good luck in her new career. At the same time, a warm welcome is extended to our newly elected Postdoctoral Representative - Ashwini Phadnis! Ashwini holds a Postdoctoral Research Associate position at Dr. Norbert Kaminski's Laboratory at Michigan State University. Ashwini is not a stranger to the ITSS as she has been a very active graduate student member of the SOT and the communication liaison between the SOT and the ITSS in recent years. Congratulations and good luck to Ashwini in her new role! The new term of the ITSS started in the spring with great intensity for the Program Committee that is in charge of reviewing all ITSS-sponsored program proposals for the 2015 Annual SOT meeting. Rafael and the members of the Program Committee have completed their diligent work on these proposals and we very much appreciate their effort.

As mentioned, the ITSS is approaching its 30-year anniversary in 2015. This milestone should stimulate us to reflect on the history and also to think about the future of the ITSS. Our group has grown over time and our members' involvement has been crucial in the success and positive influence the ITSS has demonstrated in both the immunotoxicology community and the broader SOT forum. I would also like to encourage the ITSS members to

share their thoughts and reflections on our 30 years of service to Immunotoxicology in future Newsletter issues.

Please send your article submissions to Ashwini Phadnis (phadnisa@msu.edu) and publications to Haley Neff-LaFord (hnlaFord@seagen.com), who lead the Communications Committee.

Let us make the 2014/2015 ITSS term very special and exciting.

Danuta Herzyk, PhD

President, ImTox SS (2014-2015)

Student & Postdoctoral Report



Submitted by Aimee Hillegas

Hello to all student and postdoctoral members of the ImTox SS! I hope you are having a great and productive summer! We must say goodbye and a big thank you to our outgoing postdoctoral representative, Kinta Serve, for a job well done these past two years and wish her best of luck in her future endeavors! At the same time I would like to extend a warm welcome to the newly elected postdoctoral representative, Ashwini Phadnis. Ashwini is currently a postdoctoral research associate at Michigan State University.

I would also like to thank everyone who made it to the big Student/Postdoc mixer during the 53rd SOT meeting in Phoenix. We had a wonderful turn out and lots of fun. Additionally, we had an ImmunoTox SS mixer at the District American Kitchen just prior to the annual ImmunoTox reception and award ceremony. Although the turnout was small, we had a great time and some good discussion of ways for students and postdocs to get more involved in the specialty section.

SOT and the Continuing Education Committee invite the Immunotox Specialty Section to register for online continuing education courses offered by **CEd-Tox**. Currently there are 27 online courses available for viewing. http://www.toxicology.org/Al/ce/ce_video/index.asp. A few of these courses may be of special interest to Immunotoxicology Specialty Section members:

Comparative Biology of the Lung (2010)

Drug Hypersensitivity Reactions: Risk Assessment and Management (2011)

Overview and Application of the WHO-IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals (2012)

These courses are a great way to expand professional development or stay current in the field of toxicology. Many additional courses are available from the Annual Meetings from 2009-2012. Registration provides 30-day unlimited access to complete the course at any time or location. Course attendance certification letters are available upon completion of the course. ***Graduate Student and Postdoc members of SOT receive free access to courses!*** Contact Email: David Rossé (davidr@toxicology.org)

As always, I would like to thank you for this opportunity to serve you. If you would like to participate in organizing/planning any events or if you have any questions, please feel free to contact me at ahillegas@mail.usp.edu. I would love to have everyone's involvement.



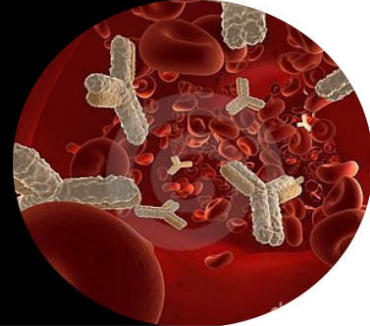
Announcements!

Workshop on **Immunomodulators and Cancer Risk Assessment**

20-21 October 2014
Silver Spring, MD



Organized by the
**ILSI Health and Environmental Sciences Institute
Immunotoxicology Technical Committee**



Background Information: Epidemiology data indicate that significantly altered immunity (immunosuppression or chronic inflammation) increases the risk of cancer. Oncogenic viruses are implicated in some but not all instances of increased risk associated with immunosuppression. There is also a dynamic relationship between immunity and tumor development, where immune responses can shape both pro-tumorigenic and anti-tumorigenic microenvironments and influence tumor progression. The current nonclinical assessment of cancer risk associated with immunomodulatory therapies conducted in the pharmaceutical and biotechnology industry and by regulators includes target-related information, standard toxicology studies, certain immune status/function assessments (case-by-case), and, when applicable, rodent carcinogenicity studies, even though it is recognized that rodent carcinogenicity studies are not necessarily predictive of the cancer risk associated with immunomodulation. In addition, in many cases rodents are not pharmacologically relevant species for biologics, and such rodent carcinogenicity studies cannot be conducted. The overall goal of this workshop is to provide clarity on what can be done to better inform risk of cancer with immunomodulatory therapies.

Objectives of the workshop:

Review current knowledge on human cancer risk associated with altered immunity and the current understanding of the associated mechanisms driving cancer development

Review the available models, tools and approaches available to conduct appropriate weight-of-evidence based assessments of cancer risk associated with new immunomodulatory therapies.

Identify knowledge gaps / opportunities for research efforts to help improve ability to conduct appropriate assessments of cancer risk associated with new immunomodulatory therapies

Define the points to consider for building an appropriate weight-of-evidence based assessment of cancer risk associated with new immunomodulatory therapies

For additional information or questions, please contact Dr. Connie Chen
(cchen@hesiglobal.org).

JOB OPPORTUNITIES

The National Institute for Occupational Safety and Health (NIOSH), Health Effects Laboratory Division (HELD), located in Morgantown, West Virginia has an opening for a postdoctoral fellow in the Allergy and Clinical Immunology Branch. The focus of the lab is to identify occupational and environmental chemical hazards by evaluating immune function using murine models. The candidate should have a PhD in immunology or a related field. A background in toxicology is preferred but not mandatory. Excellent graduate training, good publication record, experience with in vivo mouse models is desirable. Salary range starts at \$57,982.

CDC-NIOSH is an affirmative action/equal opportunity employer. Interested applicants should email their curriculum vitae, a statement of current and future research interests and why you are interested in our research, and complete contact information of three references to Sanderson4@cdc.gov.

Stacey Anderson, Ph.D.
Team Leader
Hazard Identification and Immunotoxicology Lab
1095 Willowdale Dr. M/S 4020
Morgantown, WV 26505
Phone (304) 285-6024 Fax (304) 285-6126



If you are aware of a job opening in the specific area of Immunotoxicology that you would like to see posted here, please email the details to Ashwini Phadnis-Moghe at phadnisa@msu.edu.



2014 Awards Committee Report

Submitted by: L. Peyton Myers, Ph.D.

Congratulations to our many award recipients as well as the nominees for 2014! It was a great pleasure to Chair the Awards Committee in 2014 and see the depth and scientific breadth of the many nominees from our ImTox SS. Recognizing our students and colleagues is an important aspect of our Specialty Section. By taking the time to nominate your colleagues, it not only provides recognition of their efforts, but it also helps publicize their accomplishments to the rest of the Society.

ImTox SS Awards Committee was proud to award this year's winners at the reception during the SOT Annual Meeting in Phoenix, Arizona. We had multiple nominees for every category. The submissions were exceptional and the decisions were, as always, very challenging!

The Awards Committee would like to thank the nominators for taking the time and effort to support your fellow ImTox SS members by submitting nominations. I would like to thank the Awards Committee for their efforts to review the packages thoroughly and thoughtfully. I would also like to thank Jamie DeWitt, who worked tirelessly (and quickly!) and was my right hand during the process. Jamie is your incoming Awards Chair for 2015 and I know she will do a stellar job!

Again, congratulations for the Awards Winners!

2014 Awards (continued)



Recognizing the scientific contributions of students, postdoctoral trainees, and colleagues is one of the highlights of the ITSS reception at the annual meeting. At this year's meeting we presented *ten* awards, including a new award, *The Outstanding Senior Immunotoxicologist Award*. This award was instituted as a way to honor those colleagues who have made significant contributions to the field of immunotoxicology and who are at a "mid-point" in their careers. The first recipient of this award was Dr. Norbert "Norb" Kaminski, who is a professor in the Department of Pharmacology and Toxicology at Michigan State University and the Director of the Center for Integrative Toxicology, also at Michigan State University. Dr. Kaminski was nominated by a previous graduate student who highlighted Dr. Kaminski's many scientific accomplishments and advancements in the field of immunotoxicology. More importantly, the nominee emphasized Dr. Kaminski's strong work ethic, "desire to continue to propel the field of immunotoxicology forward" and ability to find the balance between confidence and humility. It was the honor of the ITSS Awards Committee to present this award to **Dr. Norb Kaminski**.



Vos Award for Lifetime Career Achievement in Immunotoxicology

The final award presented at the ITSS reception is the *Vos Award for Lifetime Career Achievement in Immunotoxicology*. This award is presented to an individual in recognition of career achievements in advancing the field of immunotoxicology through service, leadership, and scientific contributions. This year's honoree was **Dr. Robert "Bob" Luebke**, a Research Biologist at the U.S. Environmental Protection Agency. Dr. Luebke began his career at the EPA in 1981 and in the 30+ years at the agency, he has contributed substantially to the field of immunotoxicology through his work with host resistance models, the study of immunosuppression in rodent models and its relevance to immunotoxicity testing, how the immune system responds to various toxic agents at different life stages, and the application of immunotoxicity data to the risk assessment process. Dr. Luebke was nominated by a four-person team, including a supervisor, a colleague, and two of his past postdoctoral mentees. The nominators emphasized Dr. Luebke's critical influence on a number of formative events crucial to the development of immunotoxicology as a highly respected area of toxicology. These contributions have included every office within the ITSS as well as NIEHS panels and working groups, the World Health Organization, the Organization for Economic Cooperation and Development, HESI/ILSI, and EPA-level initiatives. Notably, Dr. Luebke has had productive multidisciplinary collaborations with neurotoxicologists, developmental toxicologists, and statisticians. The breadth and depth of his contributions to the field have are truly impressive. Additionally, even though training is not a standard part of the terms of his employment with the EPA, he has mentored several postdoctoral trainees and students who continue to make contributions to the field of immunotoxicology, thus cementing his influence on future generations. Dr. Bob Luebke has devoted the majority of his professional career to development field of immunotoxicology and the ITSS Awards committee was enormously pleased to honor him with this award.



2013 Awards (continued)



Outstanding Young Investigator Award

Dr. Ashlyn E. Bassiri

Department of Immunologic Toxicology, GlaxoSmithKline



Dr. Cheryl Rockwell

Department of Pharmacology and Toxicology
Michigan State University



Presentation by a Postdoctoral Trainee Award

Dr. Nikki B. Marshall

National Institute for Occupational Safety & Health

Early immunomodulatory effects of dermal triclosan exposure in mice





Immunotoxicology Awards continued

Best Presentation by a Student Award

First Place

Lisbeth A. Boule

University of Rochester Medical Center

Developmental activation of the AhR enhances the CD4+ T cell response in the influenza virus infected lung



Second Place

Juyoung Shim

University of Maine

Inorganic Arsenite Suppresses Mast Cell Degranulation via a Pathway Target Upstream of Calcium Signaling



Third Place

Joseph W. Zagorski

Michigan State University

Inhibition of IL-2 production by the Nrf2 activator, tBHQ, correlates with inhibition of NFkB activation in activated Jurkat T cells



Immunotoxicology Awards Continued

Best Paper of the Year Award

Jennifer L. H. Wheeler, Kyle C. Martin, Emily Resseguie, and B. Paige Lawrence
University of Rochester School of Medicine and Dentistry, Rochester, NY

Differential Consequences of Two Distinct AhR Ligands on Innate and Adaptive Immune Responses to Influenza A Virus
Toxicological Sciences 137(2):324-334, 2014

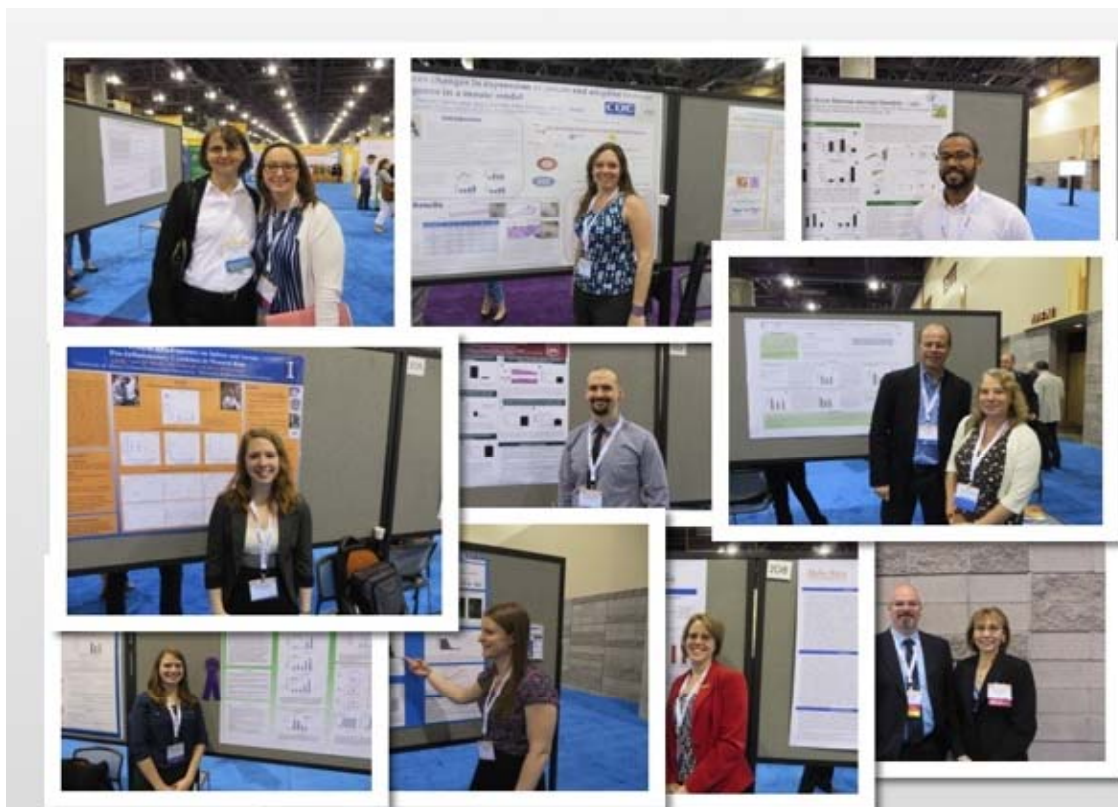
HESI Immunotoxicology Young Investigator Travel Award

Dr. Edmund O'Brien
Department of Pathology
University of Vermont

CONGRATULATIONS



Pictures from the ImTox reception and poster session – SOT 2014



Immunotoxicology Specialty Section Committee Lists – 2013/2014

Awards Committee

Jamie DeWitt (Sr. Councilor/Chair)

M. Firoze Khan
Berran Yucesoy
Sarah Blossom
Michael Laiosa
Malvin Stern
Yasumitsu Nishimura

Program Committee

Rafael Ponce (Vice President/Chair)

M. Firoze Khan
Narendra Singh
David Lawrence
Michael Lynes
Berran Yucesoy
David Lehmann
Peer Karmaus
Venkatesh Hegde

Communications Committee

Ashwini Phadnis-Moghe (Chair)

Haley Neff-LaFord
Anand Ravindran

Regulatory Committee

Peter Thomas (Chair)

Greg Bannish
David Lehmann
Andrew Rooney
Narendra Singh

Education Committee

Judith Zelikoff (Chair)

David Lawrence
Venkatesh Hegde

Membership Committee

George DeGeorge (Chair)

If you would like to join a committee, there are still openings on the Regulatory, Communications, Education and Membership Committees.

Please contact the ImTox SS Secretary-Treasurer or the Chairperson of the committee(s) if you are interested in joining.

Recent Immunotoxicology Publications

Compiled by Haley Neff-LaFord. Anytime you have a new fully-published or electronically-available article to report, please send the citation to Haley Neff-LaFord at hnlaford@seagen.com

Asthma, Allergy, Autoimmunity & Hypersensitivity

Albrekt AS, Johansson H, Börje A, Borrebaeck CAK, Lindstedt M. Differentially regulated pathways in MUTZ-3 cells stimulated with skin sensitizers. *BMC Pharmacol Toxicol* 15:5, 2014.

Chapman VL, Zollinger T, Terranova R, Moggs J, Kimber I and Dearman RJ. Chemical allergen induced perturbations of the mouse lymph node DNA methylome. *Toxicol Sci* 139:350-361, 2014.

Corsini E, Papale A, Galbiati V, and Roggen E. Safety evaluation of cosmetic ingredients: in vitro opportunities for the identification of contact allergens. *Cosmetics* 1:61-74, 2014.

Galbiati V, Papale A, Galli CL, Marinovich M, and Corsini E. Role of ROS and HMGB1 in contact allergen-induced IL-18 production in human keratinocytes. *J Invest Dermatol*, 2014. doi: 10.1038/jid.2014.203.

Lefebvre DE, Pearce B, Fine JH, Chomyshyn E, Ross N, Halappanavar S, Tayabali AF, Curran I and Bondy GS. In vitro enhancement of mouse T helper 2 cell sensitization to ovalbumin allergen by carbon black nanoparticles. *Toxicol Sci* 138:322-332, 2014.

Pot LM, Coenraads PJ, Goebel C, and Blömeke B. Assessment of the elicitation response in subjects weakly sensitized to p-phenylenediamine. *Br J Dermatol*, 2014. doi: 10.1111/bjd.13142

Ter Burg W, Bouma K, Schakel DJ, Van Wijnhoven SWP, Van Engelen J, Van Loveren H, and Ezendam J. Assessment of the risk of respiratory sensitization from fragrance allergens released by air fresheners. *Inhal Toxicol* 26:310-318, 2014.

Toomer OT, Ferguson M, Pereira M, Do A, Bigley E, Gaines D and Williams K. Maternal and postnatal dietary probiotic supplementation enhances splenic regulatory T helper cell population and reduces ovalbumin allergen-induced hypersensitivity responses in mice. *Immunobiol* 219:367-376, 2014.

Developmental Immunotoxicology

Ahrenhoerster LS, Tate ER, Lakatos PA, Wang X and Laiosa MD. Developmental exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin attenuates capacity of hematopoietic stem cells to undergo lymphocyte differentiation. *Toxicol Appl Pharmacol* 277:172-182, 2014.

Bailey KA, Laine J, Rager JE, Sebastian E, Olshan A, Smeester L, Brobna Z, Styblo M, Rubio-Andrade M, Garcia-Vargas G and Fry RC. Prenatal arsenic exposure and shifts in the newborn proteome: inter-individual differences in tumor necrosis factor (TNF)-responsive signaling. *Toxicol Sci* 139:328-337, 2014.

Dietert RR. Macrophages as targets of developmental immunotoxicity (DIT). *OA Immunol* 18:2(1)2, 2014.

Recent Immunotoxicology Publications

Developmental Immunotoxicology Continued

O'Brien E, Bergin IL, Dolinoy DC, Zaslona Z, Little RJ, Tao Y, Peters-Golden M and Mancuso P. Perinatal bisphenol A exposure beginning before gestation enhances allergen sensitization, but not pulmonary inflammation, in adult mice. *J Dev Orig Health Dis* 5:121-31, 2014.

General Immunotoxicology

Corsini E, Luebke RW, Germolec DR, and DeWitt JC. Perfluorinated compounds: Emerging POPs with potential immunotoxicity. *Toxicol Lett*, 2014. doi: 10.1016/j.toxlet.2014.01.038.

Doedee ACM, Boland G, Pennings JLA, de Klerk A, Berbers GAM, Van der Klis FRM, De Melker HE, Van Loveren H, and Jandden R. Effects of prophylactic and therapeutic paracetamol treatment during vaccination on Hepatitis B antibody levels in adults: Two open-label, randomized controlled trials. *PLOS one*, 2014. DOI:10.1371/journal.pone.0098175

Hagen MO, Katzenback BA, Islam MDS, El-Din MG and Belosevic M. The analysis of goldfish (*Carassius auratus* L.) innate immune responses after acute and subchronic exposure to oil sands process-affected water. *Toxicol Sci* 138:59-68, 2014.

Huang YY, Xia MZ, Wang H, Liu XJ, Hu YF, Chen YH, Zhang C and Xu DX. Cadmium selectively induces MIP-2 and COX-2 through PTEN-mediated Akt activation in RAW264.7 cells. *Toxicol Sci* 138:310-321, 2014.

Looker C, Luster MI, Calafat AM, Johnson VJ, Burlison GR, Burlison FG and Fletcher T. Influenza vaccine response in adults exposed to perfluorooctanoate and perfluorooctanesulfonate. *Toxicol Sci* 138:76-88, 2014.

Nayak AP, Hettick JM, Siegel PD, Anderson SE, Long CM, Green BJ and Beezhold DH. Toluene diisocyanate (TDI) disposition and co-localization of immune cells in hair follicles. *Toxicol Sci* 140:327-337, 2014.

Osman A, and Van Loveren H. Matrin 3 co-immunoprecipitates with the heat shock proteins glucose-regulated protein 78 (GRP78), GRP75 and glutathione S transferase π -isoform (GST π 2) in thymoma cells. *Biochimie* 101:208-214, 2014.

Schmeits PCJ, Katika MR, Peijnenburg ACM, van Loveren H, and Hendriksen PJM. DON shares a similar mode of action as the ribotoxic stress inducer anisomycin while TBTO shares ER stress patterns with the ER stress inducer thapsigargin based on comparative gene expression profiling in Jurkat T cells. *Toxicol Lett* 224:395-406, 2014.

Schmeits PCJ, Van Kol S, Van Loveren H, Peijnenburg ACM, and Hendriksen PJM. The effects of tributyltin oxide and deoxynivalenol on the transcriptome of the mouse thymoma cell line EL-4. *Toxicol Res* 2014. DOI: 10.1039/c3tx50100k

Shao J, Berger LF, Hendriksen PJM, Peijnenburg ACM, van Loveren H, and Volger OL. Transcriptome-based functional classifiers for direct immunotoxicity. *Arch Toxicol* 88:673-689, 2014.

Recent Immunotoxicology Publications

General Immunotoxicology Continued

Spiering R, Wagenaar-Hilbers J, Huijgen V, van der Zee R, van Kooten PJS, van Eden W and Broere F. Membrane-bound metallothionein 1 of murine dendritic cells promotes the expansion of regulatory T cells in vitro. *Toxicol Sci* 138:69-75, 2014.

Tadagavadi R, Dagainakatte G, Ramesh G, and Reeves WB. Dendritic cells in drug-induced toxicity. *Clin Exp Pharmacol* 4:150

Vandebriel RJ, Tonk ECM, De la Fonteyne LJ, Gremmer E, Verharen HW, Van der Ven L, Van Loveren H, and De Jong WH. Immunotoxicity of silver nanoparticles in an intravenous 28-day repeated-dose toxicity study in rats. *Particle and Fibre Toxicol* 11:1-21, 2014.

Methods/Models

Finco D, Grimaldi C, Fort M, Walker M, Kiessling A, Wolf B, Salcedo T, Faggioni R, Schneider A, Ibraghimov A, Scesney S, Serna D, Prell R, Stebbings R and Narayanan PK. Cytokine release assays: current practices and future directions. *Cytokine* 66:143-155, 2014.

Johansson H and Lindstedt M. Prediction of skin sensitizers using alternative methods to animal experimentation. *Basic Clin Pharmacol Toxicol* 115:110-117, 2014.

Teunis MA, Spiekstra SW, Smits M, Adriaens E, Eltze T, Galbiati V, Krul C, Landsiedel R, Pieters R, Reinders J, Roggen E, Corsini E, and Gibbs S. International ring trial of the epidermal equivalent sensitizer potency assay: reproducibility and predictive-capacity. *ALTEX*, 2014.
doi:<http://dx.doi.org/10.14573/altex.1308021>.

Reviews/Books/Commentaries

Kimber I, Dearman RJ, Basketter DA and Boverhof DR. Chemical respiratory allergy: reverse engineering an adverse outcome pathway. *Toxicology* 318:32-39, 2014.

Gundert-Remy U, Bernauer U, Blömeke B, Döring B, Fabian E, Goebel C, Hessel S, Jäckh C, Lampen A, Oesch F, Petzinger E, Völkel W, and Roos PH. Extrahepatic metabolism at the body's internal-external interfaces. *Drug Metab Rev* 46:291-324, 2014.

SAVE THE DATE!



54th Annual Society of Toxicology Meeting
March 22-26, 2015
San Diego, California
Abstract Submission: October 7, 2014
Award Nominations: October 9, 2014