

ONLINE



Communiqué

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SOT News

SOT President's Message



President Peter L. Goering

"Do you know what it means to miss New Orleans?" Hearing the refrain of this Billie Holliday/Louis Armstrong jazz standard on drive-time jazz radio a couple weeks ago reminded me that it is time to start making plans to attend the 55th Annual Meeting of our Society to be held in one of my favorite US cities—New Orleans, Louisiana. There are several compelling reasons why you don't want to miss our Annual Meeting and the city itself.

You won't want to miss the:

- Stellar and informative scientific program featuring the latest developments in toxicology, including symposia, workshops, roundtables, educational sessions, and debates.
- New plenary session format. I'm pleased to announce that the Scientific Program Committee has organized not one, but two plenary sessions, each featuring two outstanding, world-renowned scientists addressing cutting-edge, translational science. The new format is consistent with the new [SOT Strategic Plan Objectives](#) to promote transformative science in toxicology, further interdisciplinary collaborations in toxicology, and translate the impact of toxicology to improve public and environmental health.
- Opportunity to share your latest research. Don't forget the submission deadline for abstracts is just around the corner on October 7.
- Occasions to network and establish collaborations. Many of you can attest to the value of face-to-face conversations at past Annual Meetings that have led to research collaborations.
- Rich and unique blend of culture, food, music, and history that is New Orleans.

In addition to the new, two-day plenary session format, other innovative programming for next year's Annual Meeting also promises to be "too good to miss." As many of you know, SOT's Contemporary Concepts in Toxicology (CCT) meetings offer 1- to 2-days of novel and emerging science focused on high-impact and high-visibility research topics. These conferences seek to address the Central Challenge articulated in our Strategic Plan to *"Shape the Future of Toxicology in a Changing Scientific Landscape."*

For the first time, a CCT meeting will convene in conjunction with the Annual Meeting. ***The miRNA Biomarkers for Toxicology*** CCT meeting will be held on the Saturday preceding the Annual Meeting. This conference will be followed by a second half-day of related talks in the ***Continuing Education course Continuing Discovery and Validation of miRNA Biomarkers Bridging Preclinical and Clinical Toxicity: Lessons Learned from Hepatotoxicity***. Both the combined CCT meeting and CE course on miRNA biomarkers will bring together stakeholders with a shared interest in the discovery and validation of miRNA biomarkers for use in toxicologic pathology and nonclinical and clinical safety assessment. Special registration fee options will allow you to maximize your participation in both the CCT and Annual

Meeting.

SOT also is organizing additional CCT meetings that serve as forums outside of our Annual Meeting that are aligned with the Strategic Objective of keeping toxicology at the forefront of scientific advancements that benefit public and environmental health. I urge as many of you as possible to register for the [FutureTox III: Bridges for Translation—Transforming 21st Century Science into Risk Assessment and Regulatory Decision-Making](#) conference to be held November 19–20, 2015, at the Hilton Crystal City at Washington Reagan National Airport, Arlington, Virginia. FutureTox and FutureTox II meetings focused on advancing Toxicity Testing in the 21st Century science approaches of using high-throughput *in vitro* data and in silico models to enhance prediction of human health risks. FutureTox III will focus on “where the rubber meets the road,” i.e., how to address the challenges in moving TT21C approaches towards implementation for regulatory decision-making. This CCT meeting is being held in the very backyard of our federal agencies where the impact and value of these approaches will be realized.

We can also look forward to another highly impactful CCT meeting ***Ocular Toxicology, Pharmacology and Drug Delivery: An Eye on the Future*** in June 2016 on the Genentech campus, South San Francisco. The overarching objective of this meeting is to improve our understanding of ocular toxicology, pharmacology, and safety assessment and to increase our understanding of the challenges associated with development of the next generation of ocular drugs and devices. This meeting is responsive to the SOT Strategic Objectives of fostering translational science as well as increasing interactions with other scientific societies to promote cross-disciplinary collaborations between the toxicological sciences and other scientific disciplines. A best outcome for this meeting will be to develop strong interactions between researchers working primarily on ocular toxicology and those working in the fields of ocular drug delivery, pharmacokinetics, and translational medicine.

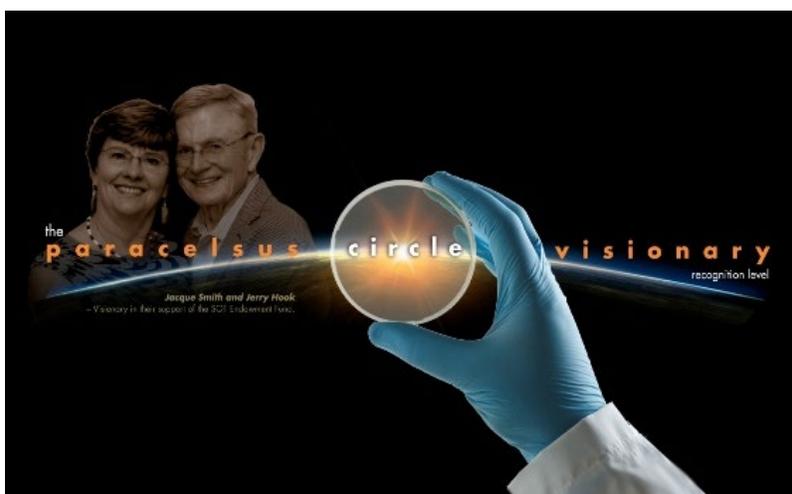
As we plan for the year ahead, we know that now is the time to nominate distinguished scientists for the many and diverse awards to be presented during the 2016 SOT Annual Meeting. The major SOT Awards recognize member contributions to the discipline of toxicology and acknowledge scientific excellence and achievement. Don't miss the opportunity to recognize your colleagues for their accomplishments—nomination letters and applications for these prestigious [2016 SOT Awards](#) are due by October 9. What an ideal way to begin your New Orleans celebrations by joining in honoring our distinguished colleagues at the annual Awards Ceremony at the Annual Meeting.

I hope at this point you begin to realize what it will mean to miss New Orleans. See you there for the SOT 2016 Annual Meeting.

Peter L. Goering

SOT 2015–2016 President

Contributions to SOT Endowment Funds Support the Future of Toxicology



“Most of us don’t have the foresight to predict the needs of toxicology 10 years from now, but through my contributions to the SOT Endowment Society Funds, future Councils will have funds to support programs that could have a significant impact on toxicology,” says Jacqueline Smith, one of the Task Force members responsible for implementing the Endowment Fund and a former Board Chair.

Adds Jerry B. Hook, SOT President 1987–1988, “I wanted to create a situation where SOT Council could support an innovative idea faster and with more impact than waiting for traditional funding agencies to react. I wanted the bulk of my donation to go where it is needed and can be most creatively used.”

Earlier this year, Dr. Smith and Dr. Hook each made donations to the SOT Endowment Fund at levels that have made them the Society’s first Visionary Contributors. Instead of creating new Named Funds, each elected to contribute to established funds that they felt passionate about supporting.

One of these funds was the Education Society Fund. Dr. Hook notes how much the Society’s Continuing Education program has grown over the years and how this kind of program is not offered by many other professional scientific societies. He donated to the fund because he wants to see SOT’s education efforts continue to flourish.

“Introducing children to the science of toxicology at an early age is something the Society has done very well,” says Dr. Smith, who also contributed to the Education Society Fund. She believes this exposure is important for the field’s future.

The desire to see the impact of their donations led Dr. Smith and Dr. Hook to make their donations now instead of as part of their estates. “We wanted to make contributions that could have an impact—and we look forward to seeing that impact in the years to come,” says Dr. Hook.

“We wanted to show our confidence in the Society and its leadership,” adds Dr. Smith. “We’re so thankful for the impact SOT has had on our lives. SOT brings people together who may never have professionally worked together, but can accomplish so many other things through the SOT organization. We’d love nothing more than to see this endowment continue to grow.”

“We encourage our friends and fellow toxicologists to make donations to the SOT Endowment in a way that makes sense for them. I am overjoyed with the progress of high quality work emerging from the SOT. The Endowment Fund will help the Society continue to progress and have a great impact.”

SOT and the Endowment Fund Board thank Dr. Smith and Dr. Hook for their generosity in supporting the following individual funds:

- **Strategic Priorities Society Fund**

“Strategic planning gets things off the ground. It harnesses the energy of groups to a positive benefit. These Council-led initiatives have greatly impacted SOT membership and engagement.”—Jacqueline Smith

- **Celebrating Women in Toxicology Award Fund**

“Helping promote the visibility of women in toxicology and the Society is one of the things I am most proud of accomplishing during my time as SOT President. This contribution will help continue the Society’s commitment to and support of female toxicologists.”—Jerry Hook

- **Diversity Initiatives Fund**

“SOT has a strong history of including minorities, and I want to see that work continue.”—Jacqueline Smith

- **Renal Toxicology Fellowship Award Fund**

“I was a renal toxicologist and want to ensure the future of aspiring renal toxicologists.”—Jerry Hook

- **Education Society Fund**

The Society has enriched each of our careers through education in different ways. Our support of the Education Fund is to honor those in classrooms, lecture halls, and laboratories who are role models and educators to all of

Endowment Fund Board News: Daniel and Patricia Acosta Fund is Supporting Diversity Initiatives

by Mathew Bogdanffy, 2015–2016 Chair, SOT Endowment Fund Board



The [SOT Endowment Fund](#) continues to grow and support the many initiatives and awards to advance the science of toxicology by providing financial support for the Society’s programs. The Endowment Fund includes general purpose funds that support general education, global activities, and strategic priorities of the Society. There are 39 named funds that support travel and educational awards mainly from the Specialty Sections and Special Interest Groups. To ensure sustained support for the initiatives, funds must achieve a balance of \$50,000.

Recently, the Daniel and Patricia Acosta Diversity Student Fund crossed the threshold and now is an established permanent fund. “Pat and I are thrilled that the fund has achieved this milestone and has received such generous contributions from our colleagues,” said Dr. Acosta. Currently Deputy Director for Research at FDA’s National Center for Toxicological Research and formerly Dean of the University of Cincinnati’s James L. Winkle College of Pharmacy and with the University of Texas College of Pharmacy, Dr. Acosta established the award to encourage individuals from ethnic groups under-represented in the sciences to enter the field of toxicology.

The Daniel and Patricia Acosta Diversity Student Fund aims to fund more students to attend the SOT Undergraduate Education Program, allow for an extended stay during the Annual Meeting, and enable outreach to institutions enrolling under-represented individuals interested in toxicological sciences. This aligns with other fund initiatives and is just one example of how named funds can synergize with other components of the Endowment Fund to further the objectives of the Society. Visit the SOT website for more information about the [Endowment Fund](#) and how you can [support](#) the initiatives and programs.

SOT FDA Colloquium on Path Forward for Using Computational and *In Vitro* Methods: October 13.



Colloquium—A Path Forward for Using Computational and *In Vitro* Methods for Food Ingredient Assessments

OCTOBER 13, 2015

FDA, College Park, Maryland

This is the next colloquium of a series presented by the Society of Toxicology (SOT) in conjunction with the **US Food and Drug Administration (FDA) Center for Food Safety and Applied Nutrition**. These colloquia present high-quality, cutting-edge, future-oriented toxicological science to provide a well-grounded foundation to inform the work of FDA employees.

This colloquium is following up on the “**Contemporary Issues in Risk Assessment**” (June 17, 2015) colloquium and extends the discussion to the use of new computational and *in vitro* science, approaches, and technologies for risk assessment and regulatory decision-making. Specifically, this session will cover (1) an overview of risk- and hazard-based decision contexts at the FDA; (2) a case study of replacement of an animal test with a battery of *in vitro* tests; (3) examples of how *in vitro* and *in silico* data aid in developing category and analogue read-across; and (4) the use of *in vitro* data to fill in data gaps in a traditional cancer hazard assessment.

Overall, the learning objective for this session is to demonstrate recent examples of the implementation of the novel information streams from computational and *in vitro* methods into the practice of risk assessment across a wide array of decision contexts.

For additional information and to register, please visit the [website](#).

**FutureTox III CCT Bridges For Translation, November 19–20, 2015:
Register Now**

FutureTox III is an SOT Contemporary Concepts in Toxicology (CCT) meeting addressing the challenges and opportunities associated with implementing 21st Century toxicity testing technologies and tools into improved, science-informed hazard prediction and risk assessment.

This CCT meeting is focusing on building the high throughput risk assessment paradigm, taking the science of *in vitro* data and *in silico* models forward; thus, the conference will explore the central question: *What progress is being made to address challenges in implementing the emerging "big data" toolbox for regulatory decision-making?* This meeting was developed by the Scientific Liaison Coalition. For additional information and to register, please visit the [website](#).

Transforming 21st Century Science into Risk Assessment and Regulatory Decision-Making



FutureTox III
Bridges for Translation

November 19–20, 2015
Arlington, Virginia

SOT | Contemporary Concepts in Toxicology

Increase Your Participation in SOT: Volunteer by Thursday, November 12.

Opportunities to Become More Involved in SOT Include the 2016 SOT Annual Meeting!!

There are many ways to increase your participation in the Society of Toxicology (SOT) by volunteering to help with programs and activities that are of particular interest to you by using the [Volunteer Form](#). SOT Volunteers are the heart of the Society. Our strength is the result of the time and effort provided by SOT members at every stage of their career.

For example, you can offer your assistance at the [SOT Annual Meeting in New Orleans, Louisiana, March 13–17, 2016](#). You will find volunteer opportunities that are the right fit for you, whether you can commit a year, a month, or a day. Consider hosting an undergraduate student, serving as a toxicology expert during an informal graduate student lunch, promoting the Society's programs and activities at the SOT Pavilion, or offering to serve as a member of an SOT

Committee or Task Force.

SOT leadership reviews these volunteer submissions when selecting members for appointment or nomination to elected positions. You are encouraged to submit your preferences on the [Volunteer Form](#) by no later than Thursday, November 12. To learn more about the SOT Elected and Appointed Committees, please visit the [SOT website](#).

If you volunteered previously, you are aware that not every volunteer can be placed when and where requested. However, please indicate your interest on the Volunteer Form this year to reaffirm your willingness to serve. In addition, please contact the leadership of your [Regional Chapter](#), [Special Interest Group](#), or [Specialty Section](#) to find out how you can become more involved in those groups.

You Are Invited to Be a ToxScholar

by John Philip Buchweitz, MS, PhD, DABT

Dear Colleagues,

I would like to bring your attention to an amazing program sponsored by the Society of Toxicology (SOT) Education Committee and the Committee on Diversity Initiatives called the [Domestic ToxScholar Outreach Grants](#).

I am currently serving as the Michigan Regional Chapter K-12 Committee Representative. I have two kids in K-12 public schools and am passionate about “getting involved.” Last fall, I saw this opportunity advertised in an email from SOT Headquarters and decided “Why not? What better way do I have to share my experiences and inform others about what I do than by visiting schools and seeing students face to face in their setting and answering their questions directly.”

So, in February of 2015, I made a visit to Olivet College, a small liberal arts school, located in south central Michigan. This college does not have a toxicology program, so I coordinated with a faculty member in their chemistry department ahead of time to pay a visit in conjunction with their seminar series sponsored by their chemistry club. My talk provided students with some history of toxicology, defined some general terms and concepts, and ended with some examples of veterinary toxicology cases that I have seen while working at the Michigan State University Diagnostic Center for Population and Animal Health. Afterward, I spent time having lunch with the students and shared stories about life in graduate school and some of my work experiences thereafter. Although I was initially uncertain as to how this visit would be received, I was pleased to have two students follow up on an offer to job shadow in my lab during the summer.

SOT seeks ambassadors to help undergraduate students learn about toxicology as a scientific discipline and career field. The Education Committee and the Committee on Diversity Initiatives have funding to support costs related to [Domestic ToxScholar](#) visits. Perhaps you graduated from a primarily undergraduate institution, have a colleague who teaches undergraduates, or are geographically close to a school that does not have a toxicology program. You can make contact with a potential host at that institution and submit an application by October 9 for reimbursement of up to \$500 costs related to the visit.

Additional information, the application, and reports from other visits are accessible on [Domestic ToxScholar](#) portion of the SOT website.

SOT PDA 2016 Best Postdoctoral Publication Awards: October 1, 2015

Deadline

by Gabriel A Knudsen, BS, MS, PhD



The work of postdoctoral scholars advances new discoveries and knowledge to address the important questions in toxicological sciences. Each year the Postdoctoral Assembly (PDA) is proud to recognize the outstanding toxicological research published by Society of Toxicology (SOT) postdoctoral members through the Best Postdoctoral Publication Awards (BPPA). In this way, the PDA recognizes the contributions of postdoctoral fellows to the science of toxicology.

The PDA is pleased to announce the availability of the 2016 BPPA recognizing outstanding postdoctoral researchers who have recently published papers in the field of toxicology as a result of the work conducted during his or her postdoctoral research experience. The PDA encourages all SOT members to identify and nominate postdoctoral scholars who have contributed to the advancement of toxicology and have their findings published in peer-reviewed papers (online, in print, or in press).

The PDA Board, in collaboration with subject matter experts in the appropriate fields, reviews all applications. The review process follows the National Institutes of Health conflict-of-interest, confidentiality, and nondisclosure policies. Three awards will be presented at the PDA Luncheon during the SOT 2016 Annual Meeting in March. Awardees receive \$250 and a plaque recognizing their achievement.

Information about the award and a listing of previous recipients can be found on the [Best Postdoctoral Publication Awards page](#).

Should you have any questions, please contact [Gabriel Knudsen](#) or [Rachel Woodson](#).

Eligibility for 2016 Nominations

- The research reported in the paper must have been conducted while the applicant was engaged in a postdoctoral research experience.
- The applicant must be a member of SOT or must have submitted a membership application by the award application deadline.
- The applicant must be the first author on a peer-reviewed paper published online, in print, or in press, between October 1, 2014 and September 25, 2015.
- Review articles will not be accepted unless they contain unique data, methods, and/or analysis (meta-analyses, decision analyses, etc.).
- Co-first authored papers will be accepted with clear delineation of the applicant's effort.
- The application must be supported by a letter from the research advisor.
- Only one publication may be submitted by each applicant.
- PDA Board Members are eligible to apply, but if they do, they will not participate in the award review process.

Applications are due by 12:00 midnight Eastern Time on October 1, 2015.

National Postdoctoral Appreciation Week—I've Got a PhD! Now What?

by Sandra Chang, PhD Postdoctoral Representative, Medical Devices and Combination Product Specialty Section, Toxicologist, Ethicon, Johnson & Johnson



In addition to finishing off experiments, crunching data, and writing my dissertation, one of the most stressful parts of wrapping up my PhD was madly applying for jobs. Because I wasn't interested in going into academia, I did not consider applying for traditional postdoc positions. I wanted to land a position as a toxicologist in industry. Initially, I was just shooting my resume to every position that had the word "toxicology" in it. I wasted a lot of time on applications that were obviously not a good fit (for example, principal scientist positions) when I had no time to waste.

As a new PhD graduate, I wanted a position in industry, but in order to get the position, I needed experience. I needed a job to get experience. I needed experience to get a job—and so on. To add to this problem, I was told that if I applied for associate scientist positions without a PhD requirement (but did require experience!), I would most likely be excluded from the pool of candidates. It is frequently thought that PhDs merely want these positions as a foot in the door; where upon being hired, they will leave for something better as soon as they can. It became very evident that my PhD was not going to get me any job I wanted—it was going to qualify me for a different type of job. I just had to find the right fit.

Once I realized a different approach would be more effective, I focused my search for industry postdoc positions and entry level positions for PhDs. The search was only half the battle because there was a limited number of available positions. However, I received call backs. It was a miracle.

Industry postdocs are gaining attention because of the difficulty landing that first job in industry with a new PhD. The traditional postdoc is often research based and more geared towards those who want to be in academia. But the industry postdoc offers a varied role. Postdoc positions can be a way to get new PhDs into the company with the intention of having a trial period. However, it's important to ask a lot of questions to clarify what the role will be. I was lucky enough to interview for a postdoc at Ethicon with Johnson & Johnson as a toxicologist evaluating the safety of medical devices and combination products. Because I've known I want to do toxicology in industry, it's been a great match. I get extensive training from amazing mentors, which is what I need coming straight out of graduate school.

Looking back, the shotgun approach was fruitful as well, but did not lead me to positions that I was truly interested in. I found the most success when I focused my search on positions where my brand new PhD was welcomed. Importantly, in these positions the company knows you need a lot of training and is willing to mentor you so that you will thrive in industry and achieve your career goals.

National Postdoc Appreciation Week: Congratulations to All SOT Postdoc Award Recipients



In honor of National Postdoc Appreciation Week, the Postdoctoral Assembly would like to recognize the following postdoctoral scholars awarded by their Regional Chapter, Specialty Section, or Special Interest Group during the 2015 SOT Annual Meeting. Congratulations to all these award recipients on their accomplishments. The listing of award recipients can be accessed by SOT members at this [SOT webpage](#).

National Postdoc Appreciation Week—SOT PDA Recognizes Gordon Research Award Recipients

by Karilyn Sant, PhD, Councilor, SOT Postdoctoral Assembly



The Gordon Research Conference (GRC) and Gordon Research Seminar (GRS) on Cellular and Molecular Mechanisms of Toxicity were held August 8–14, 2015, at the Proctor Academy in Andover, New Hampshire. The conference is held biannually and hosts more than 100 toxicology scholars and trainees from around the world.

The GRS is a one-day seminar before the GRC that provides a forum for student and postdoctoral trainees to share their research in an informal setting while learning from experts about emerging technologies. The 2015 GRS was chaired by Rhiannon Hardwick, Organovo, and Alessandro Venosa, Rutgers University. This year's GRS highlighted the use of 3D culture and complex systems in toxicological research and provided trainees the opportunity to network with leaders across the sectors to explore future career opportunities.

The GRC and GRS highlight emerging, cutting-edge research from scientists across the sectors. This year's GRC was chaired by Dana Dolinoy, University of Michigan School of Public Health, and vice-chaired by Yanan Tian, Texas A&M University. The GRC was opened and closed with keynote sessions on "Mechanistic and Personalized Approaches to Evaluating Toxicity and the Microbiome" and "Genetic and Epigenetic Mechanisms of Toxicology/Communicating Science and Risk," and featured sessions on systemic approaches to toxicological evaluation and emerging models for mechanistic toxicology.

Congratulations to all the scientists who were awarded for their outstanding poster and platform presentations:

Gordon Research Seminar

Poster Presentation: Sharanya Kalasekar, University of Houston*; Julia Tobacyk, University of Arkansas for Medical Sciences; and Anika Dzierlenga, University of Arizona*

Platform Presentation: Natalie Holman, University of North Carolina Chapel Hill*; Phillip Wages, University of North Carolina Chapel Hill*; and Dwayne Carter, University of Texas Medical Branch*

Gordon Research Conference

Poster Presentation: Jessica Camacho, University of California Los Angeles*; Brian Johnson, University of Wisconsin Madison*; Christal Lewis, Rutgers University*; Jennifer Panlilio, Woods Hole Oceanographic Institution; Jeff Willy, Indiana University*; and Phillip Wages, University of North Carolina Chapel Hill*

Platform Presentation: Peter Loskill, University of California Berkeley; and Elizabeth Marchlewicz, University of Michigan School of Public Health*

Above and Beyond Award:

Julie Castaneda, University of California Los Angeles*

***SOT Member**

The GRC and GRS provide an informal, more intimate setting for toxicological engagement, and are considered to be a favorite conference by many scientists. The Society of Toxicology was among the sponsors for this GRC and GRS.

The next GRC and GRS on Cellular and Molecular Mechanisms of Toxicity will be held in August 2017. Please stay tuned for future updates on 2017 participation.

National Postdoc Appreciation Week—Message from the Postdoctoral Assembly Executive Board

by Caitlin Murphy, PhD, 2015-2016 PDA Chair



Thank you to everyone who participated in this year's National Postdoc Appreciation Week. Whether it was in the Postdoctoral Assembly (PDA) Fall Career Webinar or in an event at your institution, we hope that Society of Toxicology (SOT) postdocs and their colleagues nationwide had an opportunity to celebrate their hard work and major accomplishments!

As SOT 2015–2016 President Peter L. Goering wrote in his address to SOT postdocs at the beginning of the week, this is a “postdoctoral organization run by postdocs, for postdocs, that provides experiences and opportunities that will build and benefit your careers.”

The PDA was established to identify and meet the needs of SOT postdocs. Through establishing communication with postdoc members, forming long-term collaborations with other SOT Committees, and promoting recruitment and transition to careers, the PDA formulates and implements programs of interest to its members and those in fields intersecting with toxicology. All SOT members who are postdoctoral scholars are part of the PDA, and the PDA Board is elected by the Assembly to lead their activities.

The mantra we hope to leave with all postdoc members is “get involved, stay involved, and get others involved.” The PDA’s activities are successful in large part due to the dedicated volunteers who come forward from the PDA Representatives and the Assembly as a whole to contribute and provide feedback throughout the year. We are excited as planning begins for the PDA-hosted programs that will take place during the upcoming SOT Annual Meeting in New Orleans, Louisiana. The PDA Board will be organizing a number of activities to include Poster Tours for Trainees, a PDA Career Development session, a co-sponsored scientific session with the Graduate Student Leadership Committee, and the Postdoctoral Assembly Luncheon. Stay tuned this fall for updates on these activities.

We look forward to facilitating professional development for the SOT postdocs again this year!

Caitlin Murphy, PhD, 2015–2016 PDA Chair

SOT Council Responds to Request for Comments on NIH-Wide Strategic Plan

Society of Toxicology (SOT) members were encouraged in a recent [Communiqué blog](#) to respond to a request from the National Institutes of Health (NIH) to comment on its draft [5-Year Strategic Plan Framework](#). SOT Council was pleased

to respond as many of the areas in the Framework mirror or are aligned with the key elements of the [SOT 2015–2018 Strategic Plan](#).

Both NIH and SOT recognize that the central challenge is the “changing scientific landscape.” For SOT, that is “Shaping the Future of Toxicology in a Changing Landscape” by striving to:

- Strengthen the Impact and Relevance of Toxicology;
- Develop and Support Toxicologists to Capitalize on Future Opportunities;
- and Expand Outreach and Impact Globally.

The SOT Strategic Plan Preamble states that: “Life science is in the midst of rapid change as the result of new insights derived from biotechnology, powerful computational tools, and systems-level approaches that identify the underlying basis for the emergent properties that characterize living systems.”



SOT 2004–2005 President Linda Birnbaum

SOT Past President Linda Birnbaum stated during a recent exchange with me that she is very pleased that we sent the invitation to the [Scientific Liaison Coalition](#) and the [Specialty Sections](#) and [Regional Chapters](#) leadership to provide comments independent of SOT Council. “The more input NIH receives related to environmental health, toxicology, exposure science, and the need for focused research, the better served NIH will be in developing an inclusive strategic plan,” she replied.

Below are the comments from SOT provided to NIH that are aligned with the SOT Strategic Priorities that include “Foster the Integration of Other Scientific Disciplines with Toxicology, Bridge Existing and Emerging Science in Toxicology, Promote Transformative Science in Toxicology, and Promote Translation of Evolving Technology into Clinical Practice and Public Health.” Moreover, the SOT and NIH also share common goals in training the next generation of scientists to meet changing and diverse career paths in biomedicine and toxicology. Thus, the Society will continue to demonstrate its dedication to “Develop and Support Toxicologists to Capitalize on Future Opportunities” by providing resources to clarify and communicate the evolving roles and skill sets for toxicologists and promote the recruitment, education, and development of a diverse and creative community of toxicologists.

Although not specifically addressed in the comments to NIH, as the world continues to shrink due to increasing international interactions, the SOT Strategic Priority of “Expand Outreach and Impact Globally” is paramount to all those involved in public health. Thus, SOT’s Priorities, such as to “Foster International Toxicology Activities” and “Be a Forum for Discussion of Public and Environmental Health Policies/Issues” serve as a foundation for approaching the challenges of global health and disease prevention.

The SOT comments to NIH are provided in their entirety below.

- **Potential benefits, drawbacks/challenges, and areas of consideration for the current framework**

Advances in **fundamental science** are providing opportunities to further our understanding of the links between our genetics and factors in our environment and our diet. While a small fraction of the total burden of chronic disease can be attributed to a single gene, or a single environmental agent, or a single nutritional deficiency, the vast majority of **human disease** is attributable to a complicated interplay of all three. As we elucidate the **molecular events** that underlie common disease states (like cancer, birth defects, metabolic, cardiovascular, respiratory, and neurological disorders), we are beginning to understand how a change in function of a particular gene or set of genes can be influenced not only by an individual’s inborn genetic sequence, but also by environmental or dietary factors to which we are frequently exposed (such as chemicals, non-chemical stressors, pathogens, individual microbiomes, and excesses and deficiencies of nutritional components). As we uncover this information through the work of **synthetic, interdisciplinary fields like toxicology** that combine information from a variety of sources, it is becoming increasingly possible to understand the

factors that increase or decrease the risk of developing chronic disease, and therefore to prevent these diseases, or to ameliorate their effects in people who already have them. Fundamental research in toxicology provides a basis for addressing human disease that has a significant environmental component. This includes an understanding of **basic mechanisms** of toxicity, the basis for **individual susceptibility at critical life stages** (e.g., prenatal), and the identification of **vulnerable and resistant populations**. Specific areas of research include studies on gene-environment interactions, hypothesis-driven epidemiology, exposure studies, and methodologies to study the effects of large numbers of individual chemicals and chemical mixtures in human-relevant model systems. This research also will suggest novel prevention and treatment strategies that are based on understanding of how these diseases start.

- **Additional concepts in Institutes, Centers, and Offices (ICO) strategic plans that are cross-cutting and should be included in this trans-NIH strategic plan.**

NIH should continue to support integrated, systems biology approaches such as in the Toxicology Testing in the 21st Century paradigm, including high throughput cell-based assays, 'omics methods, and bioinformatics/computational modeling tools. These approaches represent a **technology leap** that will link molecular pathway events to human diseases and lead to advances in predicting toxicological pathologies and disease, improved assessments of health risks from the totality of exposures (**the Exposome**, e.g., environmental chemicals, non-chemical stressors, pathogens, individual microbiomes, and excesses and deficiencies of nutritional components) at the **individual and population levels**, and provide improved interventions for disease prevention and cures.

- **Future opportunities or emerging research needs**
 - **Workforce development and training**

Understanding the causes of chronic diseases that are a product of genetic, dietary, and environmental interactions requires individuals with **interdisciplinary and integrative science skills**. In this regard, it is essential that NIH (NIEHS) continues to support **interdisciplinary training** programs in toxicology and environmental health to ensure that the next generation of scientists possesses the requisite interdisciplinary skills to tackle the complex health challenges that lay ahead.

NIH must continue to lead in addressing **issues of workforce supply and demand** in biomedical fields to help trainees transition to the appropriate professional career path. For example, postdoctoral fellows and graduate students are increasingly discovering that the traditional path to tenure track assistant professor or principal investigator at a pharmaceutical or biotechnology company may no longer represent a viable option. This changing employment environment will require new or enhanced training program options that will prepare a workforce for **diverse career paths in biomedicine** that not only include these traditional options, but also other critical areas in biomedicine such as science policy, laboratory management, communications, technical writing, patent law, and business development.

Promoting **scientific and toxicology/environmental health science literacy** in primary and secondary school curricula is critical to maintaining a steady pipeline of scientists ready to contribute to the challenges in health promotion and disease prevention. Improving environmental health science literacy broadly across the population will result in better health decision-making. NIH also must continue to lead in building opportunities to recruit and retain underrepresented minority group participation in biomedical disciplines.

SOT Releases Eminent Toxicologist Lecture Series

by Joshua P Gray, BS, PhD

What happens when Society of Toxicology Past Presidents are asked to put together a lecture giving historical perspective on their research areas and are placed in front of a camera? SOT gets outstanding presentations that are historically valuable, of interest to toxicologists and the public, and a set of valuable resources that can be used in upper level undergraduate as well as graduate courses. These now are available as the [Eminent Toxicologist Lecture Series](#) on

the SOT website.

The Education Committee Undergraduate Subcommittee recognized the value of capturing important themes in toxicology research delivered by those who participated in the development of the area. Working with the SOT Historian and SOT leaders, four Past Presidents who have been recognized by receiving the most prestigious SOT Awards were selected to develop the first set of lectures. The bonus was the addition of a talk John Doull presented in 2011.



John Dull



Marion Ehrich



Curtis Klaassen



Ken Ramos



Cheryl Walker

The lectures include the following:

- John Doull—How Toxicology Became an Academic Discipline
- Marion Ehrich—Pesticide Neurotoxicity More or Less
- Curtis Klaassen—How We Adapt to Chemicals
- Ken Ramos—Reprogramming of the Human Genome by Toxic Injury
- Cheryl Walker—Environmental Genomics: The Developmental Origins of Health and Disease

For the last four presentations, the recording and slides are available. The Undergraduate Subcommittee will be developing teaching resources that complement these lectures that will be available for use by other educators. In addition, planning is in progress to add to the collection by recording additional presentations at the March 2016 SOT Annual Meeting.

As chair of the group who coordinated this activity in 2014–2015, I extend thanks to the others who contributed to the development of this important collection, including Leigh Ann Burns Naas, Dori Germolec, Barb Kaplan, and Mindy Reynolds.

Explore a New SOT...Website That Is!

by Peter L. Goering, PhD, DABT, ATS

SOT's web presence has received a facelift, but this change wasn't just skin deep. We overhauled the entire site and hope you like what we've done.

The motivation for this change was twofold. We wanted to enable the website's ability to continue to be a relevant communications tool and resource to take advantage of new technologies, and we wanted to restructure the website to serve our members and potential members first.

With these objectives in mind, there are a few features of the new site to which I would like to draw your attention:

- **The new site is customized for the individual user.**

When you log into the site using the button in the upper right corner, the main homepage and navigation areas become specific to your membership. Links to the websites of specific Regional Chapters, Special Interest Groups, and Specialty Sections in which you hold membership are now available directly on the homepage. If there are pages you visit on a regular basis, you can bookmark them through the "My Links" area in the orange main navigation bar, so these links will be available to you no matter what page of the site you're visiting. If you're looking to access your membership information, update your contact information, pay your dues, etc., you just need to click on the membership picture icon in the upper right to be taken to your membership management page.

- **The new site emphasizes core SOT activities and membership benefits.**

The new site makes it easier to get to information on many of the Society's most popular programs, such as the Annual Meeting and ToxExpo, Toxicological Sciences, SOT Awards, and career and education resources. With the Members & Groups area, you also can quickly get to the areas of membership that are most relevant to you, whether it is a Regional Chapter or Student Membership information. If you're not familiar with some of SOT's groups, I encourage you to go exploring and join the ones applicable and important to you.

Many of the changes to the site were recommended by you through a membership feedback survey distributed last summer. Thank you to those who provided us with invaluable information on what is important to you in a website.

I want to thank the Website Task Force (Chair Sarah Champion, Weimin Gao, Nicole Churchill Kleinstreuer, Teresa Leavens, Matthew Thomas Martin, Carolyn Mattingly, Postdoctoral Representative Chad Broucker, Student Representative Kathy Siyu Xue, and SOT Council Contact John B. Morris) for their dedication to this process and guidance. They spent countless hours creating and reviewing the membership survey and developing the organization of the new site, and I am thrilled with their efforts.

I also applaud the SOT Headquarters staff for their efforts on taking the vision of the Website Task Force and making it a reality.

Since its launch, I've enjoyed exploring the new site. Some of the elements that I've particularly noted are that the content on the homepage feels more concise and better organized and that it is easier to navigate to various areas of the site to find the most up-to-date information on SOT events and programs. I hope you will take some time to explore the new site and provide us with your observations and feedback. A website is always a work in progress and we want to make sure the SOT site continues to serve our members and those interested in the field of toxicology.

SOT Welcomes Our New and Recently Upgraded Members

The Society of Toxicology (SOT) recently reviewed the membership applications that were completed by our May 1 deadline, and we would like to extend a very warm welcome to our [new and upgrading members!](#)

There are many benefits to your new SOT membership. Membership at any level provides distinction and recognition among your peers, as well as members-only access to the SOT website, ToXchange (the online member network), the [SOT Job Bank](#), and [Mentor Match](#), and important communications about your Society and discipline. As a member, you receive discounted registration for the SOT Annual Meeting and a reduced rate for the Toxicological Sciences journal. You also are eligible for many prestigious awards, grants, and fellowships offered by SOT and its Endowment Fund, [Regional Chapters](#), [Special Interest Groups](#), and [Specialty Sections](#).

As a **Student Member**, you are eligible to participate in the Graduate Student Leadership Committee. The GSLC regularly disseminates information about internships, awards, fellowships, and career tips. You also are eligible to serve as a student representative for a Regional Chapter, Specialty Section, Special Interest Group, or SOT Committee. SOT Student members receive one Specialty Section membership and one Special Interest Group membership at no cost.

As a **Postdoctoral Member**, you are included in the Postdoctoral Assembly, which is a great resource for scientific growth, networking, and career advancement. You are eligible to serve as a postdoctoral representative for a Regional Chapter, Specialty Section, Special Interest Group, or SOT Committee, and you receive membership in one Specialty Section and one Special Interest Group at no cost.

As an **Associate Member**, you are eligible for leadership opportunities on many of SOT's appointed committees that foster the development of the strategic initiatives of the Society. You may serve in the President or Treasurer chain of a Regional Chapter, Special Interest Group, or Specialty Section, and you may chair sessions at the SOT Annual Meeting.

As a **Full Member**, you have all the membership benefits of an Associate Member plus increased opportunity to help shape the future and direction of the Society. You are eligible to hold leadership positions including elected membership on the SOT Council. You also receive voting privileges and the ability to [sponsor](#) applicants for SOT membership.

Did you miss the May deadline? Not to worry! There is another full review coming up in September—be sure to have your completed application submitted by September 1.

For more information, please contact SOT Membership Services at [SOT Headquarters](#) or 703.438.3115.

International ToxScholar Grant Supports Speaker at African Internship Program 10-Year Anniversary

by Chudy I Nduaka, MS, DVM, PhD, DABT

The Society of Toxicology (SOT) International ToxScholar Grant provides support for toxicologists to visit developing countries to expand awareness of toxicology and promote toxicology careers through the interaction of toxicologists with undergraduate and graduate students. SOT members are encouraged to take advantage of this opportunity. The next application deadline is October 9.

A ToxScholar Grant recently provided support for me to travel to Nigeria for an important occasion. Over a decade ago, the Africa Education Initiative, a non-profit organization I started, launched an ambitious program for aspiring young scientists in Africa, the toxicology internship program. The mission was simple: to encourage young African scientists and students to pursue careers in toxicology. The Foundation partnered with a premier research institution in Nigeria, the National Veterinary Research Institute in Jos, Nigeria, to begin mentoring students in toxicological sciences. This year marked the 10-year anniversary of the program through which over 60 interns have successfully passed.



SOT members Chudy Nduaka and Jose Manautou (4th & 5th from left) were part of the team that visited Nigeria

This past summer, SOT member Jose Manautou and I were part of a team that traveled to Nigeria to commemorate the 10-year anniversary of this program. There were over 150 students and staff scientists in attendance including high level government officials and representatives of three college presidents. During the closing ceremony, interns presented the work they did during the 3-month internship program.

Dr. Manautou and I talked about the importance of the toxicology internship and how it is relevant to pursuing careers in industry, academia, or government. The success of the program was recognized by highlighting the number of interns who now have pursued careers in toxicology and biological sciences research. A number of these past interns were in the audience and stood up to be acknowledged; the impact was palpable.



SOT member Chudy Nduaka reads to children at the orphanage

The team also had an opportunity to visit an orphanage in rural Nigeria; they presented toys, books, clothing, and food to the children and their caregivers. For more information, please visit the [Foundation website](#).

2015 International ToxScholar Grants Awarded for Presentations in Ukraine and Nigeria

by Vicente Santa Cruz, PhD, DABT

The Society of Toxicology (SOT) Education Committee has selected two additional toxicologists for [International ToxScholar](#) funding to visit institutions in [developing countries](#) to promote education and careers in toxicology. The

next program application date is October 9 so this is a good time to begin exploring opportunities for future visits.

Andrey Korchevskiy, Chemical and Industrial Hygiene, Inc., will visit Ternopil State Medical University in the Ukraine next October. About 200 graduate and undergraduate students and faculty members are expected to participate in an eight-hour lecture course in English and Russian dedicated to advances in asbestos toxicology and health risk assessment. In a country that is in transition politically and economically, a new generation of toxicology professionals is needed. The issue of asbestos exposure in the country is a good topic to illustrate the role of toxicology as an advanced, multi-disciplinary, theoretically solid, and widely applied field of study leading to many career opportunities in toxicology and health risk assessment.

Chudy Nduaka, Pfizer, Inc., will go to Vom, Nigeria, during August. The African Education Initiative and National Veterinary Research Institute conduct a three-month summer intern program and this year there are six interns from Cameroon, Ghana, and Nigeria. He will present a keynote address to the interns, faculty, undergraduates, and graduate students; it is anticipated that about 150 people will be present. Dr. Nduaka also will confer with the interns before they present their research.

Two others trips funded by this program in 2014–2015 were highlighted in recent blogs. Michael Peterson and Patrick Allard described their trips to [Nepal](#) and [South Africa/Kenya](#), respectively. Other [blogs](#) describe additional International ToxScholar trips.

United Continents Apart: Toxicology and Environmental Health in Botswana and South Africa

by Patrick Allard, PhD

In April 2015, as part of the Society of Toxicology (SOT) International ToxScholar program, I had the privilege of visiting two institutions in Southern Africa: the University of Botswana (UB) in the city of Gaborone and the University of Johannesburg (UJ) located in South Africa. These two institutions had been identified based on their need and desire to strengthen their Toxicology and Environmental Health programs as well as their international connections. Both are relatively young universities, UB created in 1982 and UJ in 1968, and have seen tremendous change and growth in recent years with the creation of their Schools of Public Health.

I spent two days at each institution where I had the pleasure to meet the faculty and students, present on career avenues in the field of toxicology, and then discuss opportunities offered by the SOT as well as by the NGO Seeding Labs. This mission was supported by the International ToxScholar Award, one of several global initiatives by SOT, as well as the Department of Environmental Health Sciences at the University of California, Los Angeles, and Seeding Labs. More information on each of these organizations can be found below.

University of Botswana

The University: The University of Botswana, also called UB, is the first institution of higher education in Botswana and was established in 1982. The university has four campuses across the country including two in the capital Gaborone where the visit took place, one in Francistown, and another in Maun. The main campus in Gaborone is vast and encompasses a wide array of fields of study and research centers. Of particular relevance to my visit, the main campus is the site of the Faculty of Health Sciences that includes the School of Public Health and of Medicine and the Faculty of Sciences that includes the School of Biological Sciences, Chemistry, and Environmental Science.

Structure of the Visit: I was welcomed at UB by Prof. Bontle Mbongwe, head of the Department of the Environmental Health within the School of Public Health, for the April 13–14 visit. On the first day, I had the opportunity to give my presentation to students and faculty from various departments around the campus. I also was introduced to the faculty of

the School of Public Health, its Dean, Dr. Reginald Matchaba-Hove, as well as the Dean of Health Sciences, Dr. Yohanna Mashalla. On the second day, I met with the core faculty of three other departments on campus, including Biological Sciences, Chemistry, and Environmental Sciences.



Welcoming committee at the University of Botswana
(Prof. Bontle Mbongwe is third from the right in front)

What I Learned: Botswana offers an ideal setting for the study of several important emerging questions in toxicology. For example, most of Botswana has a particularly arid climate—70% of the country is covered by the Kalahari desert—making Botswana particularly vulnerable to issues related to climate change. This makes the question of water quality even more salient. Some of the contaminants being analyzed currently at UB that make their way into the waterways and food are lead as well as retroviral drugs used by a large proportion of the population (over 25% of the population has AIDS, one of the highest declared rates in the world). Another research axis examines the presence of active ingredients and contaminants in health supplements, a critical problem around the world and especially in Botswana where supplements are a big alternative health market and where most are imported without real knowledge of the purity of the ingredients.

The researchers at UB are tackling these issues head on. They have great people and equipment resources although they are not evenly distributed across campus. For example, in the brand new School of Public Health, the Department of Environmental Health has top-of-the line analytical equipment and infrastructure. However, the department is in great need of personnel, especially in terms of teaching. Conversely, the other departments visited in the Faculty of Sciences seemed to have enough personnel but their infrastructure and equipment lagged behind those of the School of Public Health.

UB offers great opportunities for collaborations to study some of the aforementioned environmental health issues as well as others. There also are great teaching opportunities for US scholars to teach courses in Environmental Health Sciences and Toxicology in collaboration with the Department of Environmental Health at UB. See contacts below if you are interested in these terrific opportunities.



University of Johannesburg
UJ Auckland Campus Library

The University: UJ is in many respects a reflection of the dense history of South Africa. UJ is a very recent university, born in 2005 from the unification of several divided, segregated campuses across Johannesburg. Of the merger was born a new, united, and progressive institution where the campuses are not divided by race or color of the skin but instead by topic and specialty. Today, the University is one of the largest in South Africa boasting close to 50,000 students spread across 90 departments and 4 campuses. It is a vibrant, very multicultural, and dynamic institution ranked within the top 4 percent of universities globally with the goal of reaching the top 3 percent in the near future. As a side note about Johannesburg, and in light of its reputation and some of the recent xenophobic events that made the international news, I found Johannesburg to be quite safe as long as some particular neighborhoods are avoided (neighborhoods where locals themselves do not go).

The Visit: For my visit, I partnered with two SOT members who are active in the Society and in South Africa, Prof. Gulumian, Head Toxicologist at the National Institute for Occupational Health (NIOH), and Ms. Melissa Vetten, scientist at the same institution. Prof. Gulumian also is the President and Ms. Vetten is the Treasurer of the Toxicology Society of South Africa (TOXSA).

The visit was divided over a day and a half. On the first day was an informal meeting with Dr. Andre Swart, Dean of the Faculty of Health Sciences, Ms. Martha Chadyiwa, Chair of the Department of Environmental Health, and Ms. Renay Van Wyk, Lecturer in Environmental Health. The second day, I visited two of UJ's campuses, the largest campus at Auckland Park where my presentation took place and the campus of Doornfontein where the Department of Environmental Health is located. The presentation took place on the 5th floor of the library of the Auckland Park campus and around 100 to 150 students and faculty filled the room.



Students and faculty attending the presentation

I presented about the SOT and Seeding Labs first and then Prof. Gulumian presented the activities and opportunities within TOXSA and at NIOH. Her presentation was very complementary to mine as it gave students and faculty a connection to local scientists who work in the field of toxicology and tackle issues of direct relevance to the country. The talks were followed by an informal lunch during which students were very engaged and asked many questions of Prof. Gulumian and myself. Several of them also followed up by email. After lunch, we traveled to the Doornfontein campus to visit the Department of Environmental Health and its teaching and research laboratories.

What I Learned: Just as in Botswana, the youth of the University manifests itself in several ways, some positive and some a little more problematic. From the faculty to the students, there is a tremendous level of energy and motivation present at UJ. However, there also is an acute need for lecturers and teaching collaborations to address the tremendous growth of the University. Teaching-wise, the Department of Environmental Health at UJ has both undergraduate and graduate programs covering a wide range of topics from microbiology and community development to occupational health and epidemiology. Toxicology and environmental health research at UJ is grouped into two centers, the Laser Research Centre that examines photosensitivity and chemical exposure in the context of cancer therapy and the Water and Health Research Unit that researches the environmental health impact of inadequate or improved services related to water, sanitation, and hygiene.

The NIOH has a very active toxicology group dedicated to the study of particle toxicity led by Dr. Gulumian. Their research includes investigations on the toxicity of mine dust and mine tailings, engineered nanomaterials, and the resultant susceptibility to various diseases and the toxicity, mutagenicity, and carcinogenicity of the particles. Additionally, they perform health risk assessment research for a variety of occupational and environmental hazards.

Interestingly, there is not currently a formal line of communication between UJ and NIOH and the visit was seen as a template for regular and hopefully reciprocal visits that would bolster toxicology in Johannesburg and in South Africa.

Finally, TOXSA is an active and interactive society that has a clear goal of reaching to other countries. As part of this mission, TOXSA has organized the 7th Congress of Toxicology in Developing Countries, organized their own annual meeting in Kenya, and sent participants to the International Union of Toxicology (IUTOX), International Congress of Toxicology (ICT), and SOT meetings. During her presentation on TOXSA and the local needs in toxicology, Prof. Gulumian emphasized the need for risk assessors, a topic that also elicited a lot of interest from the students in attendance. In light of that need, Prof. Gulumian mentioned that training resources should be dedicated to the training of students to become the next generation of risk assessors.

Take Home Message

There are a tremendous number of opportunities to engage in collaborative research and teaching exchanges with the University of Botswana, the University of Johannesburg, and the NIOH. For more information on each institution and societies, see the links below.

[University of Botswana](#): Contact: [Bontle Mbongwe](#), Department Chair of Environmental Health
[University of Johannesburg](#): Contact: [Martha Chadyiwa](#), Department Chair of Environmental Health
[National Institute for Occupational Health](#) and [Toxicology Society of South Africa](#): Contact: [Mary Gulumian](#)
[Society of Toxicology International ToxScholar program](#) and other [global initiatives](#)
[Department of Environmental Health Sciences at the University of California, Los Angeles](#): Contact: [Patrick Allard](#)

Seeding Labs

Seeding Labs is an USAID-financed outreach organization that aims at providing and sharing scientific resources with institutions in developing countries. This includes not only laboratory equipment but also scientific, professional, and career training through international scholar exchange. For more information, please visit the [Seeding Labs programs website](#).

Looking for Career Opportunities in Toxicology? Consider the SOT Job Bank



Looking for Career Opportunities in toxicology? The Society of Toxicology (SOT) [Job Bank](#) is available 24/7! Whether you are looking to advance your career or recruit for an open position, the Job Bank can help.

Job Seekers

Are you looking for a position in toxicology? Seeking to advance your career, or just stay abreast of the current job market? Log in to the [SOT Job Bank](#) today to instantly browse our database of current, toxicology-related positions. This service is free to SOT Members and available for a small cost to nonmembers.

You may activate your Job Bank account to allow your curriculum vitae and contact information to be visible to company recruiters, or you may browse confidentially. Enroll for our bi-weekly digest and receive an email digest of new positions every other week. [Access the Job Bank](#) today to get started.

Employers

Is your organization looking to fill positions for qualified toxicologists? Where better to start your search than the SOT? Simply [register](#) with the Job Bank by creating an Employer Account! Employers can browse resumes, contact active Job Seekers, and post all the information needed to recruit their next toxicologists! New Job Bank listings are emailed to all enrolled job seekers in our bi-weekly digest.

Log in today to [browse the complete listings](#) or [post your own position](#)!

The SOT STEP Award and My Crash Course in Risk Assessment

by Eric Joseph Ditzel, BS

With generous support from the Society of Toxicology (SOT) Supplemental Training for Education Program (STEP), I was able to attend the Toxicology Excellence for Risk Assessment (TERA) Dose-Response Boot Camp in June 2015 in Cincinnati, Ohio, at the University of Cincinnati. This was a week-long intensive course that provided hands-on training in hazard characterization and dose-response assessment with a primary focus on human health risk assessment. Miao Li also attended this course and wrote a [blog](#) on his experience.



SOT STEP Recipients Miao Li pictured second from the left and Eric Ditzel pictured in the far right of the top row.

As my graduate career draws to a close, I am interested in pursuing a career in human health risk assessment, and this course provided a great opportunity to gain the insight and hands-on experience I needed. Outside of on-the-job training, continuing education courses, and self-teaching, there are few ways to become proficient in risk assessment, so this well-regarded course was a great way to prepare myself for my desired career path. As I have been pursuing career opportunities, this course has given me a strong foundation in human health risk assessment that will make my transition to a new career smoother. This training will allow me to distinguish myself for such opportunities as well as to participate in more professional development in risk assessment now that I have the necessary working knowledge.

The course introduced the concept of utilizing a mode-of-action approach to both cancer and non-cancer risk assessment during the hazard characterization process and detailed steps necessary to determine adverse effects, critical studies, and human relevance. We also were given in-depth training on dosimetric adjustment for human inhalation and oral exposure during dose-response assessment. In addition, we learned how to perform Benchmark Dose Modeling (BMD), how to incorporate the models into risk assessments, and how to determine point of departure. Finally, we were introduced to approaches for determining uncertainty factors (for multiple applications and agencies) including how to

utilize Chemical Specific Adjustment Factor (CSAF) methods. We also were made familiar with some of the more cutting-edge strategies in risk assessment including physiologically-based pharmacokinetic (PBPK) modeling and combined exposures.

The primary instructor was Dr. Andrew Maier. The course had a lecture-type format that was very effective in creating an environment where questions and discussion were encouraged allowing everyone to become comfortable with the material. In addition to the lectures, another of the rewarding and beneficial aspects of the course was the ability to work in small groups to perform the various aspects of a risk assessment. As we learned about hazard characterization, dosimetry, BMD, and other areas, we were given opportunities to apply our knowledge and become more comfortable with the concepts by applying them to real world examples.

To bring all of these knowledge areas together, we were given the opportunity to prepare an entire risk assessment from the ground up as a group and then present and justify our work to the class over the course of the week. I cannot recommend this course highly enough for individuals seeking to enhance their knowledge of risk assessment, and I am very appreciative that the SOT STEP gave me the opportunity to participate.

STEP Awardees become “Ova-achievers” at Intensive Reproductive Biology Course

by Jamie Moscovitz and Alisa Suen

Thanks to the financial support of Supplemental Training for Education Program (STEP) Awards granted by the Graduate Education Subcommittee of the Society of Toxicology (SOT), we were able to attend the Frontiers in Reproduction (FIR) course held at the Marine Biological Laboratory in Woods Hole, Massachusetts. FIR is often referred to as a scientific boot camp. It is an intensive six-week laboratory and lecture-based course for scientists-in-training seeking careers in the reproductive sciences. As graduate students in reproductive toxicology, we felt that enriching our knowledge of reproductive biology would enable us to more effectively approach knowledge gaps in our field.



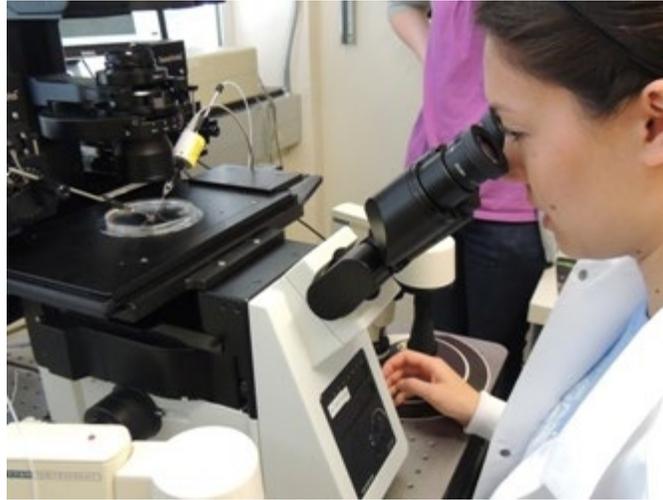
Pictured above Jamie Moscovitz

FIR's small class size (~20 “FIRbees” from around the world) brings together a diverse group of graduate students, postdoctoral fellows, clinicians, and junior faculty to create an intimate environment for learning and idea sharing. FIR promotes the “see one, do one, teach one” method to encourage participants to both impact and benefit from each

FIRbee's own research experience. The course is divided into three two-week sections consisting of lectures, discussions, informal seminars, laboratory exercises, demonstrations, and one-on-one tutorials. Sections are organized, directed, and team-taught by leading scientists in that sub-field and cover a broad spectrum of topics including:

- Signal transduction in the hypothalamic-pituitary-gonadal axis,
- Gametogenesis, fertilization, and stem cells, and
- Implantation, pregnancy, and reproductive tract development.

Most lecturers present current and ongoing research from their own laboratories to truly capture frontiers in reproductive biology. FIR concludes with a two-day symposium featuring student and alumni research presentations.



Pictured above Alisa Suen

Our goal for participating in this program was to learn concepts and techniques important to our training as reproductive toxicologists, but outside the scope of our current graduate research and unavailable at our respective institutions. Upon attending FIR, we quickly learned that the breadth and depth of advanced lecture material and laboratory techniques presented were not only unavailable at our home institutions, but also unparalleled by any other single university program. The intense and rigorous nature of the course allowed it to make a major impact on our abilities to conduct independent research in a relatively short amount of time.

FIR provided us with new techniques and protocols to bring back and initiate in our own labs. In addition, we now are more confident in conducting future research in different models than the ones we currently use, and expanding research to different male and female reproductive organs. Finally, FIR expanded our professional opportunities by enabling us to network with leaders in the reproductive biology field in both formal and informal settings.

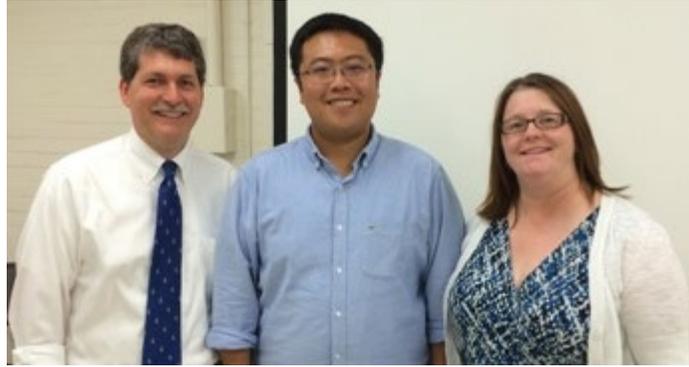
The knowledge that we gained at FIR will impact the general public through our future research. By better understanding mechanism directing reproductive development and function, we can more effectively apply basic science to determining how environmental exposures influence human reproductive health.

My First Step in Risk Assessment: 95% Confidence Achieved in Risk Assessment

by Miao Li, BS, MS

How will the toxicology research conducted in labs help to protect people from exposures in daily life? That is the long-

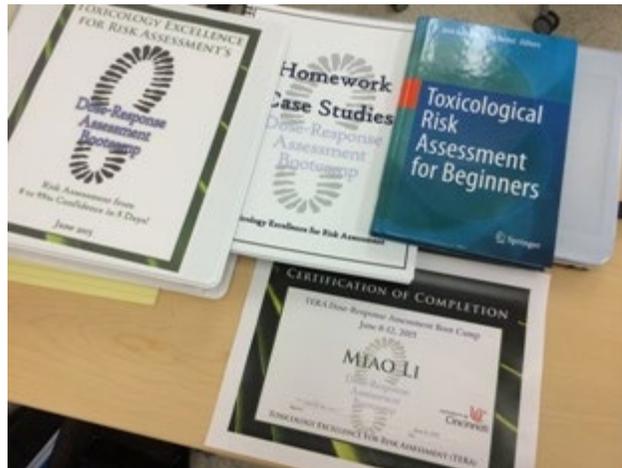
standing question from my study and research experiences in toxicology. Risk assessment is the bridge connecting experimental observations to real-life policies. With the generous support of the Society of Toxicology (SOT) Supplemental Training for Education Program (STEP) and my advisor Gabriele Ludewig, I attended the 2015 [TERA Dose-Response Assessment Boot Camp](#) from June 8–12, 2015, at the University of Cincinnati. The goal of this intensive course is to move trainees from 0% to 95% confidence in risk assessment in five days.



Pictured above from left to right are Dr. Andrew Maier (the main instructor of the boot camp), Miao Li, and Ms. Patricia Nance (boot camp coordinator).

All my journeys in risk assessment started from SOT. For a long time, I have been interested in the research area of PBPK and biological modeling, but I didn't know how to include them in my research in toxicology. I joined the SOT Biological Modeling Specialty Section (BMSS) and Risk Assessment Specialty Section (RASS) and talked with people and got suggestions. I realized that risk assessment is the area that perfectly combines my interests and my research experiences.

I received valuable suggestions from Harvey Clewell and Bob Sonawane to communicate more with people working in the area, take the continuing education courses offered by SOT, and attend the webinars from RASS regularly. However, I still sought a way to get systematic training in risk assessment. During the SOT Annual Meeting in San Diego, Michael Dourson suggested that I take the Dose-Response Assessment Boot Camp to achieve my career goals.



The class material binder, Homework Case Study Book, Textbook, Toxicological Risk Assessment for Beginners, (helped me to survive), The Certification of Completion

When I received the binder of the course slides, the footprint of a heavy-duty boot and the sentence “Risk Assessment from 0 to 95% Confidence in 5 Days!” on the cover caught my eyes. As the trainees in the Boot Camp are diverse, from senior toxicologists with 10 to 20 years experience in risk assessment to graduate students like me, before the course began I was not sure whether I could survive. The introduction removed all my doubts about the Boot Camp.

The courses covered the basic topics, from risk assessment terminology to practical methods used by state agencies for

risk assessment. All the content taught details of the four components of risk assessment: hazard identification, dose-response assessment, exposure assessment, and risk characterization. Cutting-edge methods in risk assessment, such as Adverse Outcome Pathway (AOP) and Biologically-Based Dose-Response (BBDR) models, also were introduced. No matter, amateur or professional in risk assessment, the Boot Camp had some new knowledge for everyone.

The Boot Camp is a well-designed, intensive course. The pop quiz was the first thing every day to keep the adrenaline level high enough for the whole morning. The group work trivia burst at noon helped us stay up with the instructors during the afternoon class. The Boot Camp combined both lectures and hands-on training for risk assessment. The lectures were taught by Drs. Dourson, Lynne Haber, and Andrew Maier, who are well-known in the risk assessment area because of their long-term experience.

The hands-on software training for Regional Deposited Dose Ratio (RDDR), Multiple-Path Particle Dosimetry (MPPD) model, and Benchmark Dose (BMDS) Software was taught by Ms. Ann Parker, assisted by Ms. Patricia Nance, who both have experience preparing software training courses for the US Environmental Protection Agency (EPA). The final project of the Boot Camp was to prepare a risk assessment report based on materials from EPA reports. The application of all the knowledge and methods we learned throughout the course increased our confidence in performing risk assessment by ourselves. Comparison of the BMDS (benchmark doses) we calculated to the EPA report BMDS gave us a better understanding of how the agency carries out risk assessment and highlighted differences for our consideration.

Important parts of the Boot Camp are the group project and networking. The camp was a great opportunity to get to know colleagues who are also interested in risk assessment. Lots of trainees work in the area of risk assessment. It was nice to talk with them and learn about the daily tasks for their jobs as risk assessors working in industry or state agencies. We were lucky to have a combined reception with the experts attending the AOP workshop and met the people famous in the areas of risk assessment and biological modeling.

Through the Dose-Response Assessment Boot Camp, I systematically learned dose-response risk assessment and I achieved 95% confidence in risk assessment. Also, the Boot Camp strengthens my path to career goals in the area of human health risk assessment. However, the Boot Camp is not the end, but the beginning for my risk assessment study. Becoming expert in risk assessment is a process requiring time and experiences, just as Dr. Arnold Lehman said, "Risk assessment is easy. You can learn it in two steps...Each step takes ten years." I just started my first step.

SOT STEP Awardees Gain Experience for Career Paths

by James P Luyendyk, PhD

The Society of Toxicology (SOT) Graduate Education Subcommittee recently selected five students from a highly competitive pool of May applications for the [Supplemental Training for Education Program \(STEP\)](#). Up to \$1,000 is provided for a graduate student who has passed his or her requirements to advance to PhD candidacy and effectively demonstrates the value of the proposed experience in providing professional/scientific development that will enhance opportunities in their career path of choice, but are not provided within their academic program.



Eric Ditzel



Miao Li



Pamella Tijerina

Eric Ditzel of the University of Arizona and Miao Li of the University of Iowa were selected for their proposals to attend the TERA [Dose Assessment Response Boot Camp](#) that was held in June. Pamella Tijerina, New York University School of Medicine, will undertake CyTOF Mass Cytometer Training at the University of Rochester later this summer.



Aseel Eid



Thea Golden

Aseel Eid, University of Rhode Island, will travel in September to Bar Harbor, Maine, for the Short Course on System Genetics at Jackson Labs. Thea Golden from Rutgers University will learn New Methods in Reactive Oxygen Species Measurement at the Wellcome Trust Centre for Human Genetics in Oxford, England, this fall.

There were three students funded in 2014, two earlier this year, and this group brings the total number of STEP recipients to ten. The Education Committee and Graduate Subcommittee thank SOT Council for providing this funding, which typifies the SOT commitment to enriching the experiences of graduate students to assure the future success and impact of toxicology.

SOT will fund [STEP](#) during the SOT 2015–2016 year, however, the next deadline for applications has not been announced. Contact [Betty Eidemiller](#) at SOT Headquarters with any questions.

SOT Welcomes New Affiliate Oxford University Press

The Society of Toxicology is pleased to announce that [Oxford University Press \(OUP\)](#), Oxford, United Kingdom, has become an SOT Affiliate. OUP is the world's largest university press with the widest global presence and has an incredibly diverse publishing program. OUP publishes in many countries, in more than 40 languages, and in a variety of formats—print and digital. OUP currently publishes more than 6,000 titles a year worldwide, in a variety of formats, which range from dictionaries, English language teaching materials, children's books, journals, and scholarly monographs to printed music, higher education textbooks, and schoolbooks. *Toxicological Sciences*, the official journal of SOT, is one of these publications. For more information about this organization, please visit the [Oxford University website](#). Consider demonstrating your organization's support of SOT by becoming an SOT Affiliate. For additional information about SOT Affiliates, please visit the [SOT website](#) and contact [Marcia Lawson](#) at SOT Headquarters.

SOT Welcomes New Affiliate CRC Press/Taylor and Francis Group

The Society of Toxicology is pleased to announce that [CRC Press/Taylor & Francis Group](#) is a new SOT Affiliate. CRC Press is a premier publisher of scientific, technology, and medical resources, reaching around the globe to collect essential reference material and the latest advances and make them available to researchers, academics, professionals, and students in a variety of accessible formats. CRC Press is a member of the Taylor & Francis Group, an informa

business. In addition to global science, technology, and business books in more than 25 areas of specialization, CRC Press publishes a full range of medical and surgical books in plastic surgery, cardiology and cardiovascular medicine, dermatology and cosmetic science, neurology, orthopedics and trauma, pediatrics, family practice, biomedical science, and related areas. Consider demonstrating your organization’s support of SOT by becoming an SOT Affiliate. For additional information, please visit the [Affiliate section](#) of the SOT website and contact [Marcia Lawson](#) at SOT Headquarters.

Ask Ashley—What’s New about ToXchange?

After a brief hiatus, “Ask Ashley” is back to help you navigate the ever-growing world of ToXchange and its many capabilities!

As you may have noticed, SOT’s website recently underwent an update. In an effort to streamline the website for easier accessibility, much of the member-oriented materials have migrated to ToXchange. You will find links to the relevant materials throughout ToXchange and the website. For example, the [SOT 2015-2016 Membership Directory is available to you as a PDF within ToXchange](#). The Directory is a valuable resource to view SOT leadership, awards, activities, and key deadlines within one location.

As we all know, change is inevitable and ToXchange is here to assist you in locating your SOT colleagues. If you are looking for a member, ToXchange has a Member Search! It’s Quick! It’s Easy! Find your SOT colleagues using the [Member Search on ToXchange](#).

- Search by Name (full or partial)
- Search by Company
- Search by City, State, or Country

Home - Members - Member CVs - Blogs - Communities -

Group

Search for Members
View Members by Name
View Members by Company
View Chapter Guests by Name
View Chapter Guests by Company

Search results may not return any viewable data.

Search Form Result Fields

Enter as much information known as possible for best results.

Item	Search Text
Full Name	<input type="text"/>
First Name	<input type="text"/>
Last Name	<input type="text"/>
Job Title	<input type="text"/>
Social Network	<input type="text"/>
Company (Organization)	<input type="text"/>
City	<input type="text"/>
State	<input type="text"/>
Country	<input type="text"/>

otoxicology.org/p/us/lu/

And, the information is current—so be sure to update Your Profile if you have a change in your contact information.

As always, if you have any questions about this blog article or if you have suggestions for a new ToXchange topic, please feel free to email me at [Ashley Pomper](mailto:Ashley.Pomper).

Until next time,

“Ask Ashley”

Member News:

SOT Member Robert Kavlock Sammie Finalist—Cast Your Vote of Support

Society of Toxicology (SOT) member Robert Kavlock is a finalist for the Samuel J. Heyman Service to America Medals, also known as the “Sammies.” Since 2002, these awards have been conferred in recognition of extraordinary federal service by the nonprofit, nonpartisan Partnership for Public Service. From among the 30 finalists, 8 winners will be selected. You have the opportunity to have a voice in ensuring his recognition by casting a vote for the Sammies “People’s Choice Award.” You must have an active Facebook account and follow the guidance on the [People’s Choice Website](#). People’s Choice voting will close at 11:59 pm EDT on September 30, 2015. From nearly 500 nominations, 30 Sammies finalists were announced. While the selection committee votes for 8 category award winners, they want to hear from you.

Dr. Kavlock is being recognized for his long service as a scientist at the US Environmental Protection Agency (EPA), who was instrumental in transforming how industrial and household chemicals are tested for toxicity. The announcement of this honor highlights his role in the establishment of the EPA National Center for Computational Toxicology that has resulted in “how the EPA tests the toxicity of industrial and household chemicals, dramatically increasing the number that are assessed for potential health risks, while reducing the cost, time and need for animal studies.” For additional information, please refer to the his [full award profile](#).

He has been a member of SOT since 1988 and demonstrated his commitment to the Society by serving on the Continuing Education Committee, as President of the North Carolina Regional Chapter, and through his participation in the Reproductive and Developmental Toxicology Specialty Section.

Congratulations to SOT Members Who Have Achieved ATS Fellow Status or Attained Recertification

Since 1981, the Academy of Toxicological Sciences (ATS) has certified toxicologists who are recognized by their peers for their expertise and sound scientific judgment; these toxicologists are awarded the title of Fellow. The purpose of this recognition and certification is to ensure the competence and experience of professionals whose work affects the public welfare.

The Society of Toxicology would like to congratulate the SOT members who have achieved the status of Fellow of ATS during the past year: Jeanine Bussiere, Nathan Cherrington, Mary Ellen Cosenza, Myrtle Davis, Gregory Erexson, Ebenezer Olatunde Farombi, Clay Frederick, Julie Goodman, Maureen Gwinn, Anumantha Kanthasamy, David Lai,

Thomas Lewandowski, Sharon Meyer, Wilson Rhumbeiha, Shakil Saghir, and Yvonne Will.

During that same timeframe, the following SOT members have sought and attained recertification as ATS Fellows: William Allaben, Melvin Andersen, Elizabeth Anderson, Laura Andrews, Herman Autrup, David Basketter, Linda Birnbaum, Jonathan Borak, William Brock, Scott Burchiel, Leigh Ann Burns Naas, Joy Cavagnaro, John Clary, Samuel Cohen, Jon Cook, George Corcoran, Ann de Peyster, Michael Denison, Michael Derelanko, John DeSesso, David Eaton, Marion Ehrich, William Farland, Jeffrey Fisher, Bruce Fowler, Donald Fox, Jay Goodman, James Green, William Greenlee, Joseph Hanig, Gordon Hard, Bryan Hardin, Stephen Harris, Ronald Hines, Mark Hite, Alan Hoberman, Ronald Hood, Robert House, Hartmut Jaeschke, William Kelce, James Klaunig, Lewis Kinter, Michael Madden, Donald Mattison, Charlene McQueen, Frederick Miller, Nancy Monteiro-Riviere, Angelo Moretto, Richard Parent, Douglas Reid Patterson, Robert Phalen, Martin Philbert, Timothy Phillips, James Popp, Lorenz Rhomberg, Jim Riviere, Ruth Roberts, Colin Rousseaux, Tetsuo Satoh, I. Glenn Sipes, William Slikker, Jr., Sidney Stohs, Christopher Teaf, John Thomas, Richard Thomas, Joyce Tsuji, Kendall Wallace, David Warheit, Myra Weiner, and Douglas Wolf.

In Memoriam

Ruth A. Akhtar

The Society of Toxicology (SOT) has learned that International Full Member Ruth A. Akhtar of the United Kingdom passed away on March 7, 2014. Dr. Akhtar became a member of SOT in January 2013.

George Alexeeff

The Society of Toxicology (SOT) has learned of the passing of George Alexeeff, PhD, DABT, on Monday, June 29, 2015. Dr. Alexeeff joined SOT in 1981 and was the President of the Northern California Regional Chapter of the Society as well as a member of the Comparative and Veterinary, Inhalation and Respiratory, Reproductive and Developmental Toxicology, and Risk Assessment Specialty Sections. He also was a recipient of the Risk Assessment Specialty Section Best Overall Abstract Award in 2006. At the time of his passing, he was the Director of the California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OHEEA). Additional information about his distinguished career is posted on the [OHEEA website](#).

Pamela L. Chamberlain

Submitted by SOT 2015–2016 President Peter L. Goering, PhD, DABT, ATS and CAPT Estella Z. Jones, DVM, US Public Health Service, Sr. Regulatory Veterinarian, Office of Counterterrorism and Emerging Threats, Office of the Chief Scientist/Office of the Commissioner/FDA

Pamela L. Chamberlain, DVM, DABT, PhD, Supervisory Veterinary Medical Officer in the US Food and Drug Administration (FDA) Office of Counterterrorism and Emerging Threats, and Institutional Official for the FDA White Oak Animal Husbandry and Welfare Program, recently passed away after a courageous battle with pancreatic cancer.

After graduating from Michigan State University College of Veterinary Medicine, Dr. Chamberlain began her career as a veterinarian in a small, mixed animal practice in Sturgis, Michigan. She then moved to the FDA Center for Veterinary Medicine (CVM) to spend 14 years in the Office of New Animal Drug Evaluation, Division of Human Safety as a reviewer. While at CVM, Pam developed expertise in food safety toxicology. Notable accomplishments during her tenure at CVM included achieving the credential of Diplomate, American Board of Toxicology, and a PhD in Toxicology from the University of Maryland, Baltimore.

She then spent a year at the World Health Organization (WHO), International Programme for Chemical Safety, serving as a temporary advisor on several Joint Food Agriculture Organization/WHO expert committees on food additives, and

serving as the lead Delegate for the US Delegation, Codex Committee on Residues of Veterinary Drugs in Foods.

She started the next chapter of her career as a Study Director at Covance Laboratories in Vienna, Virginia, designing and providing oversight on preclinical toxicology studies, and she was promoted to Study Director Manager and eventually accepted the challenging role as the Associate Director for Veterinary Services at Covance, Vienna. Dr. Chamberlain recently rejoined the FDA to apply her diverse background, experiences, and knowledge to help advance the regulatory science mission of the Office of Counterterrorism and Emerging Threats, leading the Medical Countermeasure initiative public workshop on “Burkholderia: Exploring Current Issues and Identifying Regulatory Science Gaps” in 2012.

Dr. Chamberlain was known for her extensive GLP study conduct knowledge related to animal model data generation, serving as part of the FDA GLP modernization team. She also served as a co-project officer for the FDA cooperative agreement with the University of Texas Medical Branch, “Achieving Data Quality and Integrity in Maximum Containment Laboratories.” Pam most recently served as the Interim Institutional Official for the FDA White Oak Animal Research Program, assuming the responsibilities for the agency-wide Memorandum of Agreement between the FDA, the US Department of Agriculture, and the National Institutes of Health’s Office of Laboratory Animal Welfare to promote the 3 R’s (replacement/reduction/refinement) and laboratory animal welfare efforts.

The many colleagues who worked closely with her greatly enjoyed her wittiness and benefited from her endless ability to find humor in any situation. Pam was a strong, gentle, sensitive, and fearless individual and always stood up for matters she believed in. She was immensely loyal to her friends. She was extremely dedicated to improving the quality of life of many through the research she supported. It comes as no surprise that she decided to donate her body to science so that she could continue to support the advancement of science.

A Celebration of Pamela’s Life was held at the Montgomery Country Club (20908 Golf View Drive, Laytonville, MD 20882) on Tuesday, July 7. The family requests that donations in Pam’s memory be sent the National Pancreatic Cancer Foundation, P.O. Box 1848, Longmont, Colorado 80502 in memory of Pam Chamberlain.

Frances Oldham Kelsey, SOT 2011 Honorary Member

US Food and Drug Administration Scientist Frances Oldham Kelsey, MD, PhD, passed away on August 7, 2015. Her distinguished career was recognized in an August 8 [Washington Post](#) front page article that continued to a nearly full interior page, a tribute worthy of a national public health heroine.

In 2011, at the 50th Anniversary of the Society of Toxicology, she was recognized as an SOT Honorary member “in recognition of her outstanding and sustained contributions to advancing the science and the field of toxicology.” This honor was presented because Dr. Kelsey was “famous for her diligence in evaluating the drug Thalidomide while a medical officer at the US FDA.” Although Thalidomide was used in countries around the globe, “FDA withheld approval of the drug based on her recommendations and the drug was later found to cause birth defects.” For her efforts she was awarded the highest honor given to a civilian in the United States, the President’s Award for Distinguished Federal Civilian Service conferred by President John F. Kennedy.

During her 45 years of service at the FDA, Dr. Kelsey helped to shape and enforce amendments to the FDA drug regulation laws to institutionalize protection of the patient in drug investigations. These regulations required that drugs be shown to be safe and effective, that informed consent be obtained from patients when used in clinical trials, and that adverse reactions be reported to the FDA. In 2005, Dr. Kelsey retired from the FDA at the age of 90.

In a message to FDA employees, Stephen M. Ostroff, MD, Acting Commissioner of Food and Drugs, noted that “In 2010, before hundreds of her FDA colleagues, then-FDA Commissioner Margaret A. Hamburg, MD, conferred the first Dr. Frances O. Kelsey Award for Excellence and Courage in Protecting Public Health on Dr. Kelsey herself.”

Shortly before she turned 100 years of age, Dr. Kelsey wrote about her life and career in a piece called, “[Autobiographical Reflections](#)” that is posted on the [FDA website](#). In his statement, Dr. Ostroff encouraged reading “the historical, inspiring, and extremely interesting life story of this amazing woman whose career exemplified the highest

standards of integrity and dedication to public service.”

Kyong-Son Min

The Society of Toxicology (SOT) has learned that International Full Member Kyong-Son Min of Japan passed away in January 2015. Dr. Min joined SOT In February 2010.

Paul M. Newberne

The Society of Toxicology (SOT) has learned of the passing of Paul M. Newberne, DVM, DPhil, on March 22, 2015, in Bedford, Massachusetts. He joined the Society in 1966 and gained the stature of Emeritus Membership. A Full or Associate member of the Society who has maintained membership continuously for 40 years will become an Emeritus member. Additional information about Dr. Newberne and his distinguished career is provided in his [obituary](#).

William E. Rinehart

The Society of Toxicology (SOT) has learned of the passing of William E. Rinehart. He joined SOT in 1963 and was a member of the Allegheny-Erie Regional Chapter and the Comparative and Veterinary, Inhalation and Respiratory, and Reproductive and Developmental Toxicology Specialty Sections. He was a Full Retired SOT Member.

Malvin L. Stern

The Society of Toxicology (SOT) has learned of the passing of Malvin L. Stern on July 5, 2015. Dr. Stern joined the Society in 1991 as a Full Member. He also was a member of the Mid-Atlantic Regional Chapter and the Comparative and Veterinary, Dermal, Immunotoxicology, and *In Vitro* and Alternative Methods Specialty Sections.

Regional Chapters, Special Interest Groups, and Specialty Sections:

Upcoming Regional Chapter Events—October and November Edition

The Society of Toxicology (SOT) [Regional Chapters](#) hold Annual Meetings and webinars to provide a scientific forum for their members and the greater scientific community in their locale. Below are a number of upcoming Regional Chapter events that may be of interest to you.

October

Northland: The Northland Regional Chapter (NLSOT) meeting will be held on Thursday, October 1, 2015, at the Mayo Auditorium on the University of Minnesota Twin Cities Campus in Minneapolis, Minnesota. The meeting will be a Communicating Science Workshop and speakers will cover topics including Risk Communication, Communicating Science to Skeptical Audiences, and Scientific Storytelling. Registration will include a light breakfast and lunch. For more information, please visit ToXchange.

Central States: The Central States Regional Chapter (CSSOT) meeting will be on Thursday and Friday, October 8–9, 2015, at the Beller Conference Center on the University of Kansas Medical Center Campus in Kansas City, Kansas. The keynote speaker will be SOT 2014–2017 Councilor Aaron Barchowsky, PhD. The meeting also will include presentations from postdoctoral and graduate students. More information can be found on the [Central States website](#).

Southern California: The Southern California Regional Chapter (SOCAL) meeting will take place on Monday,

October 12, 2015, at Isis Pharmaceuticals in Carlsbad, California. This year's topic is "The Human Microbiome in Health and Disease: A Toxicological Perspective." Experts in their fields from academia and industry will speak specifically on the toxicological relevance of the human microbiome. For more information, please visit the [Southern California website](#).

Mid-Atlantic: The Mid-Atlantic Regional Chapter (MASOT) will hold its meeting on Tuesday, October 13, 2015, at the Sheraton Edison Hotel Raritan Center in Edison, New Jersey. The title of this meeting is "Device and Drug Combination Product Toxicology, Past Present and Future." In addition to the engaging agenda, a special session on communicating science will be given by Melissa Marshall. More information on this meeting can be found on the [Mid-Atlantic website](#).

Southeastern: The Southeastern Regional Chapter (SESOT) will hold its meeting on Thursday and Friday, October 15–16, 2015, at the University of South Florida College of Public Health in Tampa, Florida. Platform and poster presentations will be presented in two half day formats. Postdoctoral and Student awards also will be presented. More information can be found on the [Southeastern website](#).

Northern California: The Northern California Regional Chapter (NorCal) will hold its meeting on Thursday, October 22, 2015, at the South San Francisco Conference Center in South San Francisco, California. The theme of this meeting is "A Tail of Two Fields: Reproductive & Juvenile Toxicity, and Public Health & Risk Assessment." The meeting will include "Lunch with Experts" between the morning and afternoon sessions. More information can be found on the [Northern California website](#).

Lone Star/South Central: The Lone Star (LSSOT) and South Central (SCCSOT) Joint Regional Chapter meeting will be held Thursday-Saturday, October 22–24, 2015, at the Sheraton Suites Houston Near The Galleria in Houston, Texas. Registration includes breakfasts, a luncheon, snacks during the meeting, and the Welcoming Reception/Mixer. More information can be found on both the [Lone Star website](#) and [South Central website](#).

North Carolina: The North Carolina Regional Chapter (NCSOT) meeting will be held on Thursday, October 29, 2015, at the NIEHS Main Campus in Research Triangle Park, North Carolina. The meeting theme is "Mouse vs. Man: Where the Differences and Similarities Lie in Today's Toxicological Research." A Career Panel Discussion also will be held during this meeting. For more information, visit the [North Carolina website](#).

Northeast: The Northeast Regional Chapter (NESOT) will hold its meeting Friday, October 30, 2015, at Vertex Pharmaceuticals in Boston, Massachusetts. The topic of this year's meeting will be "Toxicology of Biotherapeutics." The keynote speaker will be Lisa McKerracher, PhD, Founder and Chief Executive Officer of BioAxone BioSciences. More information on the meeting can be found on the [Northeast website](#).

November

Ohio Valley: The Ohio Valley Regional Chapter (OVSOT) meeting will be held on Friday, November 13, 2015, at the Northern Kentucky University in Highland Heights, Kentucky. This year's meeting will feature a keynote lecture by Elaine Faustman, PhD, DABT, ATS. The meeting also will include student and postdoc platform and poster presentations, "Lunch with an Expert," and exciting information about the K–12 activities. More information can be found on the [Ohio Valley website](#).

Translating Toxicology for the General Public: Lessons from the EPA's P3 Competition

by Chris Curran, Ohio Valley SOT Regional Chapter and Northern Kentucky University

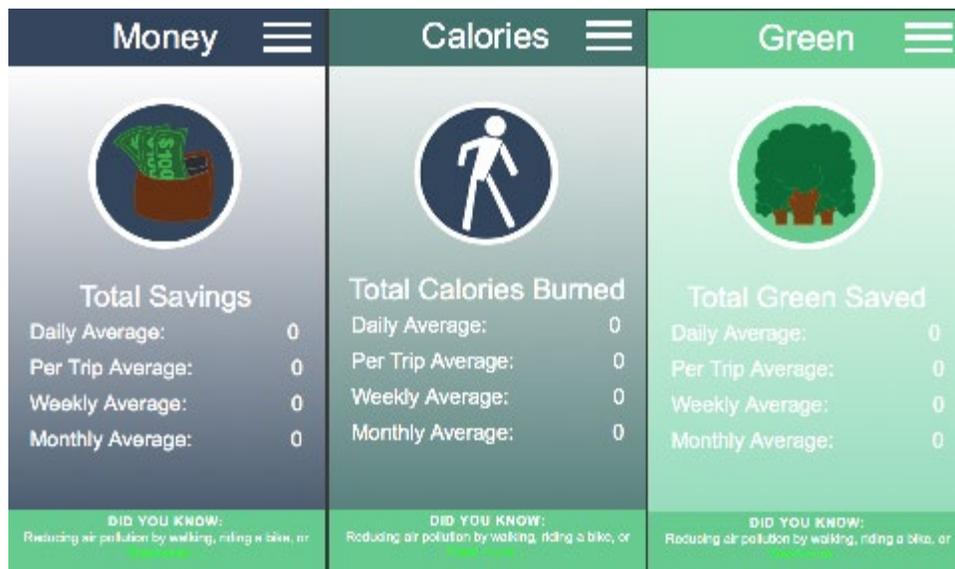
Warning: If you don't like alliteration, this blog will be difficult to follow! First, I need to explain the P3 program: People, Prosperity, and the Planet. The US Environmental Protection Agency (EPA) provides funding to support student-faculty teams at universities across the country that design novel, low-cost solutions to some of the world's worst pollution problems. Teams receiving Phase I funding develop their prototypes and then compete at the national Sustainability Expo for Phase II funding to complete or expand their projects. Some past winners have even gone on to create new companies. P3 turned out to be the perfect program to promote pollution prevention.



P3 team members Jesse Hockenbury, Morgan Lyons, and Kelsie Brown promote increased transit use by encouraging fellow Northern Kentucky University students, faculty, and staff to “Choose Green!” and ride TANK buses.

Okay. Enough with the Ps. It's on to the Ts! As the Ohio Valley SOT Regional Chapter K-12 liaison, I spent several years working with educators to develop lessons plans that could effectively communicate key concepts in toxicology to students from preschool to high school. The result was the Totally Toxic! program that has now been presented to hundreds of students in our region and at the national SOT Annual Meeting in 2011 and 2013. The next “T” is transdisciplinarity. At Northern Kentucky University (NKU), we have embraced the idea that the world's biggest problems can never be solved by staying inside the silos of our own disciplines. So, we're strongly encouraged to reach out to collaborators in other departments and colleges. Just like the sun uses fusion to power our solar system, transdisciplinarity fuses creativity and innovation across disciplines to create something new, exciting, and extremely powerful.

Together, the NKU P3 team included faculty and students in graphic design, computer science, public relations, environmental science, and communication studies. Together, we tackled a persistent problem in the Ohio Valley: traffic-related air pollution (TRAP). Our environmental science students dug through the scientific literature to learn all they could about the effects of TRAP, the economics of commuter choices, and the benefits of choosing green transportation choices. But that wasn't enough. We needed the artistic creativity and communications savvy of our other team members to develop messages and strategies to change commuter behavior. Add in the computer science app development team, and we ended up with a ready-to-launch communications plan and a prototype smart phone app that quickly and clearly helps people make smart commuting choices.



There were three simple messages. How costly is your commute? How green is your commute? How healthy is your commute? The communications and graphic design team members took the information from the environmental science students and crafted flyers, app images, and a website that clearly translated the difficult-to-digest numbers into something easily understandable. They translated toxicology for the general public by showing how burning just one gallon of gasoline is the equivalent of burning hundreds of cigarettes. We even had a traffic trivia game. With the touch of an icon, smart phone app users could learn how much money they could save, how many calories they could burn, or how much carbon dioxide they were saving depending on which reward was most motivating to them personally.



NKU P3 team members demonstrate their smart phone app at the EPA 2015 Sustainability Expo held in Alexandria, Virginia, and explain how traffic-related air pollution can affect public health

Was that one powerful fusion of talent? Absolutely! In addition to earning Honorable Mention at the P3 competition in Alexandria, Virginia, last April (a huge feat considering our undergraduates were competing against many graduate students in engineering and environmental science), the team launched a crowdfunding campaign this fall to keep the project moving forward and earned an NKU University Research Council grant as well. But the real success can be summed up by the response of a visitor to our P3 booth in Alexandria. After listening to the students and viewing our display that clearly showed the benefits of making wise and green transportation choices, a woman dragged her husband over and said: “Look at this! You are taking the TRAIN on Monday!” Additional information is found at [Green App](#)

SOT Recognizes Outstanding Women in Toxicology

by *Alexandria Lau, BS, PhD*

Every year the pool of applicants for the four Society of Toxicology (SOT) Women in Toxicology (WIT) Special Interest Group (SIG) awards (Mentoring Award, Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund Student Award, Graduate Student Achievement Award, and Postdoctoral Fellow Achievement Award) continues to grow. This year the WIT Awards Committee received 56 total applicants, compared to the 50 applicants received last year: 3 applicants for the Mentoring Award, 14 for the Hudson-Weisburger Award, 28 for the Graduate Student Achievement Award, and 11 for the Postdoctoral Fellow Achievement Award.



Pictured from left to right are Jaime E. Mirowsky, Andrée-Anne Hudon Thibeault, Alexandra Colón-Rodríguez, Brenda Faiola (2014–2015 WIT President), Judith T. Zelikoff, Aurore Varela (Charles River), Melissa A. Badding, Jessica M. Sapiro, Kristin M. Bircsak, and Alexandria G. Lau.

WIT is pleased to announce the winners of the 2015 awards:

Judith T. Zelikoff from New York University received the Mentoring Award, which was sponsored by Charles River. The Mentoring Award is given to an individual who has been a major influence in the mentoring of women scientists entering the field of toxicology, and whose leadership and service have provided career development opportunities for women toxicologists. Many of her past and present mentees emphasized that Dr. Zelikoff is “an outstanding role model, respected scientist, and researcher”; “a great source of encouragement and a powerful force for many women”; and that she “nurtures the next generation of toxicologists.”

Andrée-Anne Hudon Thibeault from INRS Armand-Frappier in Laval (Canada) was awarded the Vera W. Hudson and Elizabeth K. Weisburger Scholarship Fund Student Award. This award is given to an SOT graduate student member engaged in a full-time graduate program towards a PhD in toxicology who has demonstrated academic achievement in the field of toxicology and has shown leadership and service in her chosen field and/or community. Jessica M. Sapiro from the University of Arizona was given honorable mention for this award.

The Graduate Student Achievement Award is awarded to an SOT graduate student member who has demonstrated academic achievement in the field of toxicology and has provided leadership and service in their chosen field and/or their community. This year two students were awarded the honor, **Alexandra Colón-Rodríguez** from Michigan State University and **Kristin M. Bircsak** from Rutgers University.

Melissa A. Badding from the National Institute of Occupational Safety and Health received the Postdoctoral Achievement Award, which is conferred to an SOT postdoctoral member who has demonstrated academic achievement

in the field of toxicology and who has provided leadership and service in her chosen field and/or community. **Jaime E. Mirowsky** from the University of North Carolina was given honorable mention for this award.

Congratulations again to all the award winners! The WIT Awards Committee hopes to receive another strong pool of applicants for the 2016 WIT awards. The application deadline for the Mentoring Award is November 2, 2015, and the other award applications are due by December 7, 2015. Contact [Alexandria Lau](#) with any questions.

Lone Star Regional Chapter K–12 Outreach Toxicology Program

by Jeffrey L Larson, PhD, DABT

The Institute for the Development and Enrichment of Advanced Learners (IDEAL) at Texas Tech University, Lubbock, Texas, held “Science: It’s a Girl Thing (SIGT)” summer camp June 9–11, 2015, in Lubbock, Texas. The goal of this residential summer camp is to introduce the under-represented girl students into collegiate experience by providing strong role models in science.

There were 20 5th–6th grade girls who participated in the toxicology program. As a Society of Toxicology (SOT) Lone Star Regional Chapter K-12 outreach volunteer, Logeswari Ponnusamy (The Institute of Environmental and Human Health (TIEHH), Texas Tech University) served as an Instructor along with TIEHH- LE-SETAC (Llano Estacado Student Chapter of the Society of Environmental Toxicology and Chemistry) Outreach Committee volunteers.



DNA Extraction Activity



Dose-Response Curve Hands-On Learning

The three-day summer camp consisted of an interactive introduction to toxicology as a science along with presentations and experiments on various toxicological hands-on training activities and games. Dr. Ponnusamy provided instruction in the molecular toxicology section (including a DNA extraction activity) and analysis on toxicity testing using *Daphnia spp.* and *Hyallela spp.* with pine salt and salt as a “Dose-Response Curve” demonstration.

The main focus of the summer camp was to introduce the different sections of toxicology (such as analytical, environmental, marine, and molecular toxicology along with activities for each section) and wind up with toxicology jeopardy. The camp was an awesome success.

Annual Meeting & ToxExpo

Volunteer to Chair an SOT Annual Meeting Platform or Poster Session



Share Your Expertise with Annual Meeting Attendees: Volunteer to Chair an SOT Platform or Poster Session

Each year, with assistance from several SOT groups including the Specialty Sections and Special Interest Groups that share in the responsibility for review of the Annual Meeting proposals, an impressive program is developed that provides attendees with an opportunity to learn about emerging fields and gain access to cutting-edge research in the field of toxicology.

We hope that you will [submit an abstract](#) of your most recent research results for the upcoming Annual Meeting in New Orleans. In addition to submitting an abstract, we'd like to invite you to consider volunteering to serve as a chairperson for the poster and platform sessions that will be programmed.

Listed below are the categories in which authors can submit their abstracts. During the Scientific Program Committee's review, these broad session topics are broken down into sub-topics related to these categories. As per SOT policy, there will be two chairpersons for each platform session, and each poster session can have either one or two chairpersons. It is required that at least one chairperson for platform sessions be an SOT member.

If you are interested in volunteering to chair a session, please visit the 2016 SOT Annual Meeting website to review the [Session Chairperson Guidelines](#). To volunteer to serve as a SOT session chairperson, please click here: [Volunteer form](#).

If selected, you will be sent an invitation in the weeks prior to the Annual Meeting requesting your assistance. The deadline to submit an abstract is October 7, 2015, at 11:59 PM (Eastern Daylight Time). The cost to submit an abstract is \$50.

Category List:

The categories listed below are used by the Scientific Program Committee to group abstracts focusing on similar subjects as well as for session programming.

- Alternatives to Mammalian Models
- Animal Models
- Autoimmunity/Hypersensitivity
- Bioinformatics
- Biological Modeling
- Biomarkers
- Biotransformation/Cytochrome P450
- Carcinogenesis
- Cardiovascular Toxicology/Hemodynamics
- Cell Death/Apoptosis
- Chemical and Biological Weapons
- Clinical and Translational Toxicology
- Computational Toxicology and Data Integration
- Developmental and Juvenile Toxicology
- Developmental Basis of Adult Disease
- Disposition/Pharmacokinetics
- Ecotoxicology
- Education, Ethical, Legal, and Social Issues
- Emerging Technologies

- Endocrine Toxicology
- Epidemiology and Public Health
- Epigenetics
- Exposure Assessment/Biomonitoring
- Food Safety/Nutrition
- Gene Regulation/Signal Transduction
- Genotoxicity/DNA Repair
- Immunotoxicity
- Inflammation in Disease
- Inflammation: Methods and Mechanisms
- Kidney
- Liver
- Medical Devices
- Metals
- Mixtures
- Nanotoxicology, Carbon-Based Nanomaterials
- Nanotoxicology, Exposure, Dosimetry, and *In Silico*
- Nanotoxicology, General
- Nanotoxicology, *In Vitro*
- Nanotoxicology, *In Vivo*
- Natural Products
- Neurodegenerative Disease
- Neurotoxicity, Developmental
- Neurotoxicity, General
- Neurotoxicity, Metals
- Neurotoxicity, Pesticides
- Ocular Toxicology
- Oxidative Injury and Redox Biology
- Persistent Organic Pollutants (POPs)
- Pesticides
- Pharmacogenomics/Genetic Polymorphisms
- Receptors
- Regulation/Policy
- Reproductive Toxicology
- Respiratory Toxicology
- Risk Assessment
- Safety Assessment: Non-Pharmaceutical
- Safety Assessment: Pharmaceutical-Drug Development
- Safety Assessment: Pharmaceutical-Drug Discovery
- Skin
- Stem Cell Biology and Toxicology
- Systems Biology and Toxicology

Two SOT Award Opportunities: Translational Impact Award and Translational/Bridging Travel Award



The Society of Toxicology (SOT) recognizes the importance of translational research and offers two awards to recognize distinguished scientists for his or her accomplishments.

2016 SOT Translational Impact Award—Nominate a Colleague Today!

The SOT Translational Impact Award is presented to a member or non-member scientist whose outstanding clinical, environmental health, or translational research, in the last ten years, has improved human and/or public health in an area of toxicological concern. Scientists leading multidisciplinary teams that contribute to addressing toxicity-related health problems would make excellent candidates. Nominees can include toxicologists as well as scientists with other backgrounds (e.g., clinicians, basic scientists, epidemiologists, engineers).



SOT 2013–2015 Treasurer Denise Robinson-Gravatt (right) presents Jefferey Burgess with the 2015 Translational Impact Award

If you know someone deserving of this award, please begin the nomination process today by going to the [SOT Awards page](#). Similar to many SOT Awards, nominations for the Translational Impact Award require a primary and seconding letter of nomination from Full members of the Society that include documentation and description of the significant contributions to toxicology by the nominee as well as his or her current curriculum vitae (CV). Please note that letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the important contributions and how the nominee meets the award criteria.

The recipient of this award will be invited to deliver the Translational Impact Award Lecture at the 2016 Annual Meeting in New Orleans, Louisiana as well as receive recognition at the Awards Ceremony.

Past Translational Impact Award Recipients

- 2009 Thomas W. Kensler
- 2010 Kenneth E. McMartin
- 2011 Weida Tong

- 2012 John G. Benitez
- 2013 (not awarded)
- 2014 Timothy Philips
- 2015 Jefferey Burgess

2016 SOT Translational/Bridging Travel Award—Apply for this Award Today!

The Translational/Bridging Travel Award is given to assist up to two individuals to travel to the SOT Annual Meeting. The SOT Awards Committee provides this award to a mid- or senior-level scientist/clinician with at least ten years of experience (postdoctoral research/clinical practice) and who has an active research program, or is currently active in the practice of: clinical toxicology, medical toxicology, disease prevention, or in the application of translational toxicology. This award will be presented during the 2016 SOT Annual Meeting Awards Ceremony in New Orleans, Louisiana.

If you wish to apply for this award, please visit the [SOT Awards Page](#) for additional information. Applications will be accepted through October 9, 2015, and the package should include the following:

- A brief statement about how you will benefit from the travel fellowship;
- Your Curriculum Vitae including your email address;
- Proof of membership in a relevant scientific society;
- Demonstrated ability to meet other expenses to attend the meeting;
- An abstract for the meeting is optional and **MUST** be submitted through the normal abstract process;
- Willingness to write an article about the experience for the SOT Communiqué and for your home society; and
- Willingness to attend the Clinical and Translational Toxicology Specialty Section meeting at the SOT Annual Meeting and contribute to the process for developing ideas for the Scientific Sessions at the 2017 SOT Annual Meeting.

Past Translational/Bridging Travel Award Recipients

- 2012 Xuemei Huang
- 2013 M. Shane Hutson

Help Recognize Achievements in Public Communications: Submit Award Nominations by October 9.



The Society of Toxicology (SOT) presents the Public Communications Award to an individual who has made a major contribution to increasing the general public's awareness of toxicological issues. This accomplishment can be made through any aspect of public communications and should have occurred over a significant period of time. This award will be presented during the 2016 SOT Annual Meeting Awards Ceremony in New Orleans, Louisiana.



SOT 2012–2015 Councilor Lorrene A. Buckley (right) presents Andrew Maynard (left) with the 2015 SOT Public Communications Award

Similar to many SOT Awards, nominations for the Public Communications Award require a primary and seconding letter of nomination from Full members of the Society that include documentation and description of the significant contributions to toxicology by the nominee as well as his or her current abbreviated curriculum vitae (CV). Please note that letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the important contributions and how the nominee meets the award criteria.

If you know an individual deserving of this recognition, please begin the nomination process today by visiting the [SOT Awards page](#)! While nominations are accepted through October 9, 2015, you are welcome to submit the required materials well before the deadline. Nominations for this award can be made for an SOT member or non-member who has made contributions to increase public awareness of toxicology in any of the following qualifying media: books, brochures, continuing education courses, databases, extension bulletins, magazines, newspapers (local or national), public presentations, public forums, radio and television scripts, social media, and workshops.

Past SOT Public Communications Award Recipients

- 1994 Michael A. Kamrin
- 1995 Philip Abelson
- 1996 Bruce N. Ames
- 1997 Audrey Gotsch
- 1999 Ann de Peyster
- 2001 Anna Shvedova
- 2002 Sam Kacew
- 2003 Charlene A. McQueen
- 2004 Kenneth Olden
- 2005 Robert Kreiger
- 2007 Linda S. Birnbaum
- 2010 Philip Wexler
- 2012 Martin A. Philbert
- 2013 Marti Lindsey
- 2014 David L. Eaton
- 2015 Andrew Maynard

Celebrate a Lifetime of Contributions to Toxicology: Nominate an SOT Member for the 2016 Merit Award



The Society of Toxicology (SOT) has been dedicated to recognizing exceptional members with the Merit Award for over 45 years. This award is presented to a member of the Society who has distinguished him- or herself from among their peers through a lifetime of contributions to the field of Toxicology, specifically in the areas of research, teaching, regulatory activities, consulting, and service to the Society.

The 2015 SOT Merit Award recipient was Günter Oberdörster who is a pioneer in the field of research on aerosol behavior. He was recognized for his contributions to the understanding of the toxicity of nanomaterials, which earned him the name of the “Father of Nanotoxicology.” Dr. Oberdörster received his Doctor of Veterinary Medicine degree in 1964 and a PhD in Pharmacology in 1966 from the University of Giessen in Germany.



SOT 2015–2016 President Peter L. Goering (left) presents Günter Oberdörster (right) with the 2015 SOT Merit Award

Similar to many SOT Awards, nominations for the Merit Award require a primary and seconding letter of nomination from Full members of the Society that include documentation and description of the significant contributions to toxicology by the nominee as well as the nominee’s current curriculum vitae (CV). Please note that letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the important contributions of the nominee and how these achievements meet the award criteria.

If you know a colleague and/or other distinguished scientists who deserve to be recognized, please begin the nomination process today by visiting the [SOT Awards website](#)! While nominations are accepted through October 9, 2015, you are welcome to submit the nomination materials well before the deadline. This award will be presented during the 2016 SOT Annual Meeting Awards Ceremony in New Orleans, Louisiana.

Previous Merit Award Recipients

- 1966 Henry F. Smyth, Jr.
- 1967 Arnold J. Lehman
- 1968 R. T. Williams
- 1969 Harold C. Hodge
- 1970 Don D. Irish
- 1971 Kenneth P. DuBois
- 1972 O. Garth Fitzhugh
- 1973 Herbert E. Stokinger
- 1974 William B. Deichmann
- 1975 Frederick Coulston
- 1976 Verald K. Rowe
- 1977 Harry W. Hays
- 1978 Julius M. Coon
- 1979 David W. Fassett
- 1980 Bernard L. Oser
- 1981 John H. Weisburger
- 1982 Harold M. Peck
- 1983 Perry J. Gehring
- 1984 Tom S. Miya
- 1985 Carrol S. Weil
- 1986 Ted A. Loomis
- 1987 Bo Holmstedt
- 1988 Seymour L. Friess
- 1989 Wayland J. Hayes, Jr.
- 1990 Sheldon D. Murphy
- 1991 Toshio Narahashi
- 1992 W. Norman Aldridge
- 1993 John Doull
- 1994 Ernest Hodgson
- 1995 Robert A. Scala
- 1996 Gabriel L. Plaa
- 1997 Mary O. Amdur
- 1998 John A. Thomas
- 1999 Thomas Clarkson
- 2000 Philippe Shubik
- 2001 Donald Reed
- 2002 Bernard Schwetz
- 2003 M. W. Anders
- 2004 Robert Goyer
- 2005 Roger McClellan
- 2006 A. Wallace Hayes
- 2007 James A. Swenberg
- 2008 Hanspeter Witschi
- 2009 Gary Williams
- 2010 Marion F. Ehrich
- 2011 Michael Aschner
- 2012 Curtis D. Klaassen
- 2013 Frederick Peter Guengerich
- 2014 Jay I. Goodman
- 2015 Günter Oberdörster

SOT Distinguished Toxicology Scholar Award: Nominate a Well-Qualified Candidate



The Society of Toxicology (SOT) Distinguished Toxicology Scholar Award is one of the preeminent Society honors. It is presented to a member of SOT who has made substantial and seminal scientific contributions to the understanding of toxicology. The prime consideration for this award is scientific accomplishments. The winner of this award will be invited to deliver the Distinguished Toxicology Scholar Award lecture at the 2016 Annual Meeting in New Orleans, Louisiana.



Ian Kimber (right), is presented with the SOT 2015 Distinguished Toxicology Scholar Award by SOT Treasurer George Daston (left).

If you know of a scientist deserving of such a high honor, please take time to nominate him or her by visiting the [Awards Section of the SOT Website](#). Nominations should be made for members who have made significant and influential contributions to, or made strides advancing, the understanding of the science of toxicology. Nominees should be active scientists currently involved in toxicological research. **Nomination deadline is October 9, 2015!**

As with the majority of SOT Awards, nominations for the Distinguished Toxicology Scholar Award should include the nominee's CV and both a primary and seconding letter of nomination from Full Members of the Society. Please note that letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the importance of the contributions and how the nominee meets the award criteria.

Past Distinguished Toxicology Scholar Award Recipients

- 2003 Henry C. Pitot
- 2004 Gerald N. Wogan
- 2005 Daniel Nebert
- 2006 Sten G. Orrenius
- 2007 Stephen H. Safe
- 2008 Toshio Narahashi
- 2009 Lance R. Pohl
- 2010 Harihara M. Mehendale
- 2011 Oliver Hankinson
- 2012 Ernest Hodgson
- 2013 John J. Lemasters
- 2014 Richard E. Peterson
- 2015 Ian Kimber

Honor a Scientist with a Nomination for the 2016 SOT Leading Edge in Basic Science Award!



The Society of Toxicology Leading Edge in Basic Science Award is one of the newer and more notable awards. This award is presented to a member or non-member scientist who, through research, has made a significant contribution to the areas of basic science that can lead to furthering the understanding of fundamental mechanisms of toxicity. These contributions or findings should have occurred within the last five years. The recipient of this award is invited to deliver the Leading Edge in Basic Science Award Lecture at the 2016 SOT Annual Meeting in New Orleans, Louisiana. Nominations for this award are accepted online via the [SOT Awards website](#) through October 9, 2015.



SOT 2013–2016 Councilor Myrtle A. Davis (left) presents the 2014 Leading Edge in Basic Science Award to Vishal S. Vaidya (right)

Similar to many other SOT Awards, nominations for the Leading Edge in Basic Science Award should include the nominee's CV and both a primary and seconding letter of nomination from Full members of the Society that include documentation and description of the significant contributions to toxicology by the nominee. Please note that letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the important contributions and how the nominee meets the award criteria.

You are welcome and encouraged to submit nominees for this prestigious award. Nominations can be made for scientists both inside and outside of the toxicological world, as long as their research findings are likely to have a strong impact on the field of Toxicology.

Past Recipients of Leading Edge in Basic Science Award

- 2009 John Katzenellenbogen
- 2010 Richard S. Paules
- 2011 Masayuki Yamamoto
- 2012 Myung-Haing Cho
- 2013 Donald E. Ingber
- 2014 Vishal S. Vaidya

Nominate a Deserving Member for the 2016 SOT Achievement Award



The Society of Toxicology (SOT) Achievement Award is presented to a member of the Society, who within 15 years since obtaining the highest earned degree, has made significant contributions to toxicology. One of the longest-standing SOT Awards, the SOT Achievement Award was first presented in 1967. This is one of the first awards envisioned by the Society, and its recipients have achieved success not only early but throughout their careers.



Vishal Vaidya (left) is presented with the SOT 2015 Achievement Award by SOT Vice President John Morris. Dr. Vaidya was recognized for the significant contributions to toxicology that he has made in the early stages of his career.

If you know a colleague who is within 15 years of receiving his or her highest degree in 2016 (i.e., MD, PhD, DVM, or other highest degree received in 2001 or later), please take the time to nominate that distinguished scientist this summer. Don't wait until it's too late! The SOT Achievement Award has been established to recognize early achievements in toxicology.

Similar to many of the SOT Awards, nominations for the Achievement Award should include the nominee's CV and both a primary and seconding letter of nomination from Full members of the Society that include documentation and description of the significant contributions to toxicology by the nominee. Letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the important contributions and how the nominee meets the award criteria.

Make this a summer to remember: nominate a deserving colleague for the 2016 SOT Achievement Award! Nominations are accepted online on the [SOT Awards & Funding section](#) on the SOT website through October 9, 2015.

Past Recipients of the SOT Achievement Award

- 1967 Gabriel L. Plaa
- 1968 Allan H. Conney
- 1969 Samuel S. Epstein
- 1970 Sheldon D. Murphy
- 1971 Yves Alarie
- 1972 Robert L. Dixon
- 1973 (No Award)
- 1974 Morris F. Cranmer
- 1975 Ian C. Munro
- 1976 Curtis D. Klaassen
- 1977 James E. Gibson
- 1978 Raymond D. Harbison
- 1979 Michael R. Boyd
- 1980 Philip G. Watanabe
- 1981 (No Award)
- 1982 Frederick P. Guengerich
- 1983 (No Award)
- 1984 Melvin E. Andersen
- 1985 Alan R. Buckpitt
- 1986 Sam Kacew
- 1987 James S. Bus
- 1988 Jeanne M. Manson
- 1989 James P. Kehrer
- 1990 Michael P. Waalkes
- 1991 Debra Lynn Laskin
- 1992 Michael P. Holsapple
- 1993 David L. Eaton
- 1994 James L. Stevens
- 1995 Lucio G. Costa
- 1996 Kenneth Ramos
- 1997 Kevin E. Driscoll
- 1998 Rick G. Schnellmann
- 1999 Michel Charbonneau
- 2000 Christopher Bradfield
- 2001 Martin Philbert
- 2002 Ruth Roberts
- 2003 Lois D. Lehman-McKeeman
- 2004 David Dorman
- 2005 (No Award)
- 2006 Jose E. Manautou
- 2007 Jeffrey M. Peters
- 2008 Ivan Rusyn
- 2009 Russell S. Thomas
- 2010 Gary W. Miller
- 2011 Nathan Cherrington
- 2012 Donna D. Zhang
- 2013 Wei Xu
- 2014 Matthew J. Campen
- 2015 Vishal S. Vaidya

Nominations Now Accepted for the SOT 2016 Arnold J. Lehman Award



The Society of Toxicology (SOT) Arnold J. Lehman Award, named to honor an SOT founder, is presented to recognize an individual who has made a major contribution to risk assessment and/or the regulation of chemical agents, including pharmaceuticals. This contribution may have resulted from the application of sound scientific principles to regulation and/or from research activities that have significantly influenced the regulatory process.



SOT 2015 Arnold J. Lehman Award recipient Richard Becker (right) is presented with this honor by SOT 2014-2015 Past President Lois Lehman-McKeeman (left).

If you know a deserving colleague who has made a major contribution to risk assessment and/or the regulation of chemical agents, as described above, please take the time to nominate this scientist. Individuals nominated may be employed in academia, government, or industry.

As with the majority of SOT Awards, nominations for the Arnold J. Lehman Award should include the nominee's CV and both a primary and seconding letter of nomination that describes the nominee's significant contributions to toxicology. Nominations are accepted online on the [SOT Awards & Funding section](#) of the SOT website through October 9, 2015.

Past recipients of the Arnold J. Lehman Award are listed below.

- 1980 Allan H. Conney
 - 1981 Gabriel L. Plaa
 - 1982 Gary M. Williams
 - 1983 David P. Rall
 - 1984 Tibor Balasz
 - 1985 Frederick Coulston
 - 1986 Gerrit Johannes Van Esch
 - 1987 John P. Frawley
 - 1988 Kundan S. Khera
 - 1989 Richard H. Adamson
 - 1990 Harold C. Grice
 - 1991 Bernard A. Schwetz
 - 1992 Roger O. McClellan
 - 1993 Thomas W. Clarkson
 - 1994 Bruce Ames
 - 1995 Emil A. Pfitzer
 - 1996 John F. Rosen
 - 1997 (No Award)
 - 1998 Helmut Alfred Greim
 - 1999 (No Award)
 - 2000 Carole A. Kimmel and Janardan K. Reddy
 - 2001 Samuel M. Cohen
 - 2002 Dennis Paustenbach
 - 2003 Michael L. Dourson
 - 2004 Melvin E. Andersen
 - 2005 Rory Conolly
 - 2006 Kathryn Mahaffey
 - 2007 Harvey J. Clewell
 - 2008 Vicki Dellarco
 - 2009 Michael Bolger
 - 2010 Edward V. Ohanian
 - 2011 Bette Meek
 - 2012 Joe L. Mauderly
 - 2013 Moiz Mumtaz
 - 2014 B. Bhaskar Gollapudi
 - 2015 Richard Becker
-

Accepting Nominations for the 2016 SOT Education Award



The Society of Toxicology is committed to excellence in toxicological education and has recognized educators in toxicology for almost 40 years. As a result, SOT bestows the Education Award to an individual who is distinguished in the arena of teaching and training toxicologists, and who has made significant contributions to toxicology.

As with most SOT Awards, nominations for the Education Award should include the nominee's CV and both a primary and seconding letter of nomination from Full Members of the Society that include documentation and description of the significant contributions to toxicology by the nominee. Please note that letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the importance of the contributions and how the nominee meets the award criteria.



Pictured above: SOT Councilor Aaron Barchowsky (right) presents the 2015 Education Award to Theodore Slotkin (left)

If you have benefited from the instruction by a superb educator or know someone highly respected within the realm of education in toxicology, who also has made meaningful contributions to this field, please take a moment to nominate them for the SOT Education Award by visiting the [SOT Awards page](#). Nominations are accepted online through October 9, 2015.

Previous Education Award Winners

- 1975 Harold C. Hodge
- 1976 Ted A. Loomis
- 1977 Robert B. Forney
- 1978 (No Award)
- 1979 Sheldon D. Murphy
- 1996 Robert Snyder
- 1997 Albert E. Munson
- 1998 David J. Holbrook
- 1999 Jules Brodeur
- 2000 Gary Carlson

- 1980 Herbert H. Cornish
- 1981 Frederick Sperling
- 1982 Lloyd W. Hazleton
- 1983 Julius M. Coon
- 1984 Frank Guthrie,
Ernest Hodgson
- 1985 William B. Buck
- 1986 Robert I. Krieger
- 1987 Gabriel L. Plaa
- 1988 John Autian
- 1989 Tom S. Miya
- 1990 Charles H. Hine
- 1991 Hanspeter R.
Witschi
- 1992 Dean E. Carter
- 1993 Curtis D. Klaassen
- 1994 Robert A. Neal
- 1995 William Carlton
- 2001 Harihara Mehendale
- 2002 Joseph Borzelleca
- 2003 Frederick W. Oehme
- 2004 A. Jay Gandolfi
- 2005 Nobuyuki Ito
- 2006 Robert A. Schatz
- 2007 Torbjörn Malmfors
- 2008 Steven Cohen
- 2009 Janice E. Chambers, Serrine S. Lau
- 2010 Tetsuo Satoh
- 2011 Michael Gallo
- 2012 John H. Duffus
- 2013 Rick G. Schnellmann
- 2014 Herman N. Autrup
- 2015 Theodore Slotkin

Apply or Nominate for the 2016 SOT Undergraduate Educator Award!



The Society of Toxicology (SOT) Undergraduate Educator Award is presented to an SOT member who is distinguished by outstanding contributions to the teaching of undergraduate students in toxicology and toxicology-related areas and whose endeavors support SOT's strategic efforts to "Build for the Future of Toxicology."



SOT 2014–2017 Councilor Ofelia Olivero (right) and 2012–2015 SOT Endowment Fund Board Chair Jeff Handler (left)
present the 2015 Undergraduate Educator Award to recipient Mindy F. Reynolds (center)

A qualified undergraduate educator may either apply directly for the award or be nominated by others, including the Education Committee. The nominee should be a member of SOT and have a faculty appointment with primary responsibilities in the teaching of undergraduates. In addition, the nominee should have a distinguished undergraduate teaching record and have made significant contributions to undergraduate education in toxicology. For additional information about the requirements of this award, please visit the [SOT Awards Page](#).

Whether self-nominated or nominated by the Education Committee or others, the application should include:

- Letter of support from Full member of the Society
- Letter of support from campus administrative official
- Curriculum vitae of nominee

Both letters of support should provide documentation of undergraduate teaching and training accomplished by the nominee and analyze the significant contributions made by the nominee to undergraduate toxicology education.

Past Undergraduate Educator Award Recipients

- 2015 Mindy F. Reynolds
- 2014 William D. Atchison
- 2013 Sidhartha D. Ray
- 2012 Sue M. Ford
- 2011 Joan B. Tarloff

SOT 2016 Founders Award—Nominate A Deserving Member Today!



The first Society of Toxicology (SOT) Founders Award was presented in 2008 to recognize the contributions of those professionals who have demonstrated outstanding leadership in the development or application of state-of-the-art approaches that reveal safety levels of chemical and physical agent exposure with a high degree of certainty. This award is funded by the Founders Fund, an [SOT Endowment Fund](#), created to [honor the visionaries](#) who organized and dedicated their time to establish SOT.

Only Full, Emeritus, or Retired members of SOT are eligible for this award. These members must have made significant contributions to toxicology and also clearly demonstrated leadership in fostering the role of toxicology in safety decision-making.



2014 SOT Founders Award Recipient John Thomas (center) received this honor from SOT 2012–2014 Secretary Judith T. Zelikoff (left) and 2012–2015 SOT Endowment Fund Board Chair Jeff Handler (right).

As with the majority of SOT Awards, nominations for the Founders Award should include the nominee's abbreviated CV and both a primary and seconding letter of nomination from Full members of the Society that include documentation and description of the nominee's significant contributions to toxicology. Letters simply listing accomplishments found in the CV are not sufficient without analysis and discussion of the important contributions and how the nominee meets the award criteria. Nominations are accepted online on the [SOT Awards website](#) through October 9, 2015.

Past SOT Founders Award Recipients

- 2008 John Doull
- 2009 Roger O. McClellan
- 2010 James S. Bus
- 2011 Joseph F. Borzelleca
- 2012 John A. Moore
- 2013 William Alfred Suk
- 2014 John A. Thomas

SOT 2016 Enhancement of Animal Welfare Award—Nominate Someone Today!



The Society of Toxicology (SOT) Enhancement of Animal Welfare Award is presented annually to a member of the Society in recognition of contributions made to the advancement of toxicological science through the development and application of methods that replace, refine, or reduce the need for experimental animals. This award recognizes outstanding or significant contributions made by members of SOT to the scientifically sound and responsible use of animals in research. The achievement recognized may be either a seminal piece of work or a long-term contribution to toxicological science and animal welfare.

As with most SOT Awards, nominations for the Enhancement of Animal Welfare Award should include the nominee's abbreviated CV and both a primary and seconding letter of nomination from Full Members of the Society. Please remember to include documentation and description of the significant contributions to toxicology by the nominee in these letters of support rather than merely restating the accomplishments found in the CV.



SOT 2015 Enhancement of Animal Welfare Award Winner Marcel Leist (right) accepts his award from SOT Councilor John Wisler

If you know an SOT Member who has advanced the welfare of research animals or made other major contributions to public awareness of research animals in Toxicology, please take a moment to nominate him or her for this award. To nominate yourself or another scientist, please visit the [SOT Awards page](#). Nominations will be accepted online through October 9, 2015.

Past Enhancement of Animal Welfare Award Recipients

- 2000 Yves Alarie
- 2001 Alan Goldberg
- 2002 Gary Williams
- 2003 Frank G. Gerberick and Ian Kimber
- 2005 Daniel Acosta
- 2006 William S. Stokes
- 2007 Thomas Hartung
- 2009 Sally Robinson
- 2010 Leonard M. Schechtman
- 2013 Martin L. Stephens
- 2015 Marcel Leist

Are You Eligible for SOT Graduate Student Travel Support to the 2016 Annual Meeting?



The Society of Toxicology (SOT) is pleased to provide travel support to graduate students who are PhD candidates in toxicology at the time of the Annual Meeting in March of 2016. Graduate students may apply for travel support by October 9, 2015 via the [Awards and Funding section](#) of the SOT website.

Applicants must present a platform talk or poster at the Annual Meeting and be Student members of SOT or have applied for membership by September 1, 2015.

Recipients are selected by a randomized process giving priority to students with the most seniority in graduate school. Funding amounts for this award are determined annually by the SOT Awards Committee. Award recipients may only receive this funding once.

Key Dates:

October 7, 2015

Abstract Submission Deadline

Note: You must submit an abstract electronically via the Online Abstract Submission System and provide the Control ID number assigned to your abstract in your application for SOT Graduate Student Travel Support.

October 9, 2015

Application deadline for SOT Graduate Student Travel Support to the 2016 SOT Annual Meeting.

SOT 2016 Annual Meeting Ancillary Meetings Can Now Be Reserved: Requests Due December 4, 2015.



Plans are underway for the 2016 Society of Toxicology (SOT) Annual Meeting in New Orleans. If your organization would like to reserve a room for a business or social event, you will need to submit an [Ancillary Meeting Form](#) to SOT Headquarters for approval. Ancillary functions may only be hosted by SOT Affiliates, Exhibitors, Supporters, or organizations otherwise associated with SOT. All ancillary functions are held outside of the New Orleans Convention Center in nearby hotels.*

Ancillary meeting spaces book fast—submit your request now! Only meeting requests made by December 4, 2015, will be listed on the Annual Meeting Calendar in the *Program*. If your organization plans on holding an off-property event, please let [Amy Willis](#) know by February 9, 2016. The Society would like to provide a listing of all SOT-related events to the city bureau and INA Security.

No hospitality functions or ancillary meetings may be scheduled during the following SOT events:

- Sunday, March 13, 8:15 AM–12:00 Noon and 1:15 PM–5:00 PM: Continuing Education
- Sunday, March 13, 5:15 PM–7:30 PM: Awards Ceremony and Welcome Reception

- Monday, March 14, 8:00 AM–9:20 AM: Plenary Session
- Monday, March 14, 9:30 AM–12:15 PM and 2:00 PM–4:45 PM: Scientific Sessions
 - Tuesday, March 15, 8:00 AM–9:20 AM: Plenary Session
 - Tuesday, March 15, 9:30 AM–12:55 PM and 2:00 PM–4:45 PM: Scientific Sessions
 - Tuesday, March 15, 4:45 PM–6:15 PM: Annual Business Meeting (No SOT Events Should Conflict)
 - Wednesday, March 16, 8:00 AM–9:20 AM: Keynote Medical Research Council (MRC) Lecture
 - Wednesday, March 16, 9:30 AM–12:15 AM and 2:00 PM–4:45 PM: Scientific Sessions
 - Thursday, March 17, 9:00 AM–12:15 AM: Scientific Sessions

* The hotels are not permitted to book meeting space without authorization from SOT.

The goal of the Society is to create a safer and healthier world by advancing the science and impact of toxicology. To this end, the Society reserves the right to deny an Ancillary Meeting request from any organization whose objectives, or past actions, are deemed counterproductive to those of SOT.

Science News

ToxSci October 2015 Issue Online: Publishing the Most Influential Research in Toxicology



The October 2015, Vol. 147, No.2 issue of Toxicological Sciences (ToxSci) is now available [online](#). To have the email Table of Contents (eTOC) delivered to you as well as Advance Access notification of the latest papers and research in ToxSci as soon as these articles are accepted and posted to the website, register [online](#).

ToxSci Editor-in-Chief Gary W. Miller notes in this issue: “The transition to autumn is in full swing in October. The days of summer are mere memories (see this month’s [Editorial](#)). Most have submitted their abstracts for the [national Society of Toxicology meeting](#) (due 7 October) and are working on extending those findings before the March meeting. Those of you who follow Twitter may have seen that [@ToxSci](#) is now active. It is just one more way we are promoting the outstanding science in the journal, including exciting papers on heavy metals, aryl hydrocarbon receptor biology, and insecticides in this issue. I encourage readers to look inside ToxSci for the best original research in the field of toxicology.”

Please also [Look Inside ToxSci](#) to read the “Editor’s Highlights” prepared by ToxSci Associate Editors Barbara Hales, Matthew J. Campen, Jeffrey M. Peters, and Brian Cummings.

The mission of ToxSci, the official journal of the Society of Toxicology, is to publish the most influential research in the field of toxicology.

SOT Member Patrick Allard Receives Burroughs Wellcome Innovation in Regulatory Science Award

Society of Toxicology (SOT) Full Member Patrick Allard has been awarded a Burroughs Wellcome Innovation in Regulatory Science Award. He is a professor at the University of California Los Angeles (UCLA) in the Environmental Health Science Department. Dr. Allard and his research team focus on the prevention of adverse health effects from environmental exposure. He is a member of the SOT Education Committee and was a [2015 SOT International ToxScholar](#). Additional information about this award is available on the [UCLA website](#).

Scientific Liaison Coalition Webinar on Regulatory Perspective on Biomarkers Available for Viewing



The Scientific Liaison Coalition (SLC) webinar, Biomarker Utility and Acceptance in Drug Development and Clinical Trials: An FDA Regulatory Perspective, is now available for reviewing on the [SLC website](#). This September 8, 2015, webinar was presented by Shashi Amur, PhD, Scientific Lead of the Biomarker Qualification Program in the Office of Translational Sciences, Center for Drug and Evaluation Research (CDER), US Food and Drug Administration (FDA) and Christopher L. Leptak, MD, PhD, Biomarker and Companion Diagnostics Lead for the Office of New Drugs within CDER/FDA and Co-Director of the Biomarker Qualification Program. This was the first of three SLC webinars discussing issues related to the types of biomarkers, their use, and some of the challenges that lie ahead. The next webinar will be presented by Gene Marcantonio, MD, PhD, Executive Director, Translational Pharmacology Lead, Infectious Diseases & Vaccines and Immunology, Merck, on Wednesday, October 28 from 11:00 am–12:30 pm ET.

The objectives of this webinar were to: (1) define the different types of biomarkers and how they may be used in drug development programs, (2) describe the different pathways that can lead to regulatory acceptance, (3) provide examples of biomarkers accepted into drug development through IND/NDA/BLA submissions, (4) offer specifics about the qualification program pathway including the history that includes qualification of nonclinical safety biomarkers, (5) update of the qualification status, (6) share some best practices to consider when developing a biomarker for regulatory use, and (7) provide information regarding opportunities for engagement with the FDA for those considering developing a biomarker for regulatory use.

Dr. Amur's current research interests include biomarkers in Autoimmune Diseases and in Alzheimer's disease, drug-induced liver toxicity, pharmacogenomics, and HLA-associated adverse events. She is Past Chair of the Pharmacogenomics Focus Group, American Association of Pharmaceutical Scientists.

The focus of Dr. Leptak's work is on biomarker development and diagnostic device utility in clinical trials and drug development, both for drug-specific programs as well as qualification. He is charged with identifying policy, process, and regulatory science needs within the codevelopment space and is involved in multiple inter-office and inter-center working groups to address those needs. The mission of the SLC is "improving the ability of societies to partner with other domestic and international organizations that have objectives consistent with the goal of increasing the impact of the science of toxicology to improve public health" by

- Strengthening partnerships among scientific- and health-based organizations to increase awareness of the impact of toxicology and related subjects on human health; and
 - Functioning as a means to enhance cooperation among societies as equals with the goal of accomplishing tasks benefitting human health and disease prevention through joint and several shared activities.
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SLC Webinar “Gatekeeper and Watchman: the Microbiome Enters the Picture” Now Posted for Viewing



A webinar sponsored by the Scientific Liaison Coalition (SLC) “Gatekeeper and Watchman: the Microbiome Enters the Picture,” is now posted on the [SLC website](#). This webinar was presented by Ellen Silbergeld, Professor, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland. The webinar was moderated by Mary Alice Smith, SLC Representative for the Teratology Society, Professor, University of Georgia, Athens, Georgia.

Microbial communities are found at multiple human body sites. Collectively, an individual’s “microbiome” is now recognized as a key determinant in human health and well-being, including development. An individual’s microbiome is influenced by their lifestyle and environmental history. This raises new and provocative questions about the role of microbiota in commuting toxicological and epidemiological information.

This webinar reviewed the dual function of microbiota in such chemical-microbial interactions, providing specific examples that demonstrate the extent to which an individual’s microbiome affects exposure pathways (toxicokinetics) as “gatekeepers” as biological barriers to chemical exposure, and signaling pathways (toxicodynamics) as “watchman” of human health and well-being.

The research and professional activities of Dr. Silbergeld bridge science and policy, with a focus on the incorporation of mechanistic toxicology into environmental and occupational health policy. She also directs a Fogarty Training Program in Non-Communicable Diseases, which is a collaboration between Hopkins and the School of Public Health of Mongolia.

The mission of the SLC is “improving the ability of societies to partner with other domestic and international organizations that have objectives consistent with the goal of increasing the impact of the science of toxicology to improve public health” by:

- Strengthening partnerships among scientific- and health-based organizations to increase awareness of the impact of toxicology and related subjects on human health, and
- Functioning as a means to enhance cooperation among societies as equals with the goal of accomplishing tasks benefitting human health and disease prevention through joint and several shared activities.

For additional information on the SLC, please contact [Marcia Lawson](#).

National Library of Medicine’s Gateway to Toxicology Information

by Phil Wexler, BS, MLS

With origins dating back to 1967, the [National Library of Medicine’s \(NLM’s\) Toxicology and Environmental Health Information Program \(TEHIP\)](#) is poised to celebrate, in 2017, 50 years as a gateway to an increasingly vast global array

of free resources and tools geared to toxicologists and the general public. From its primary online entry portal, one can navigate through TEHIP's digital boulevards and backroads.

[TOXNET](#) is our major collection of databases on toxicology, hazardous chemicals, environmental health, and toxic releases, and is used extensively by toxicologists worldwide. A streamlined and easy-to-use interface allows searching of an individual database or several simultaneously. Among them is the Hazardous Substances Data Bank (HSDB) that focuses on the toxicology of potentially hazardous chemicals. Notable for its rigorous peer review mechanism, rare for a database, it contains data on human health effects, emergency medical treatment, animal toxicity studies, metabolism/pharmacokinetics, environmental fate and exposure, and much more, and weighs in at over 5,000 chemicals.

[TOXLINE](#) is a database of scientific literature references, over 4 million to date, typically including abstracts and CAS Registry numbers, with an emphasis on the biochemical, pharmacological, physiological, and toxicological effects of chemicals, including drugs. TOXLINE's references come from journals, government reports, meeting abstracts, and other sources, with a large part derived from NLM's primary biomedical bibliographic file, MEDLINE/PubMed.

[ChemIDplus](#) is an online dictionary of chemical names, identifying numbers, synonyms, structures, and links to other information within and outside NLM.

TOXNET also offers [databases](#) in a number of specialized subjects—LactMed (on drugs and breastfeeding), DART (on developmental and reproductive toxicology), CTD (on comparative toxicogenomics), Household Products Database, Haz-Map (on occupational exposure to chemicals), IRIS and ITER (two major risk assessment databases), and ALTBIB (on alternatives to animal testing). Files on chemical carcinogenesis and genetic toxicology also are available. In addition, via the Toxics Release Inventory (TRI) from the US Environmental Protection Agency, one can access 27 years' worth of data on releases of certain chemicals to the environment or stored on site, as mandated by the Emergency Planning and Community Right-to-Know Act. It is complemented by TOXMAP, a geographic interface. Beyond the TOXNET suite, TEHIP's repertory is rounded out by such files as: Dietary Supplements Database, Drug Information Portal, and LiverTox.

Whereas the above databases vary in requiring a greater or lesser technical background, some resources are specifically geared to the public and schoolchildren, as well as educators. [ToxLearn](#), for example, created in collaboration with the Society of Toxicology, is a modular training package highlighting the fundamentals of toxicology and updating portions of NLM's ToxTutor program. Students and educators, on the other hand, can benefit from the Environmental Health Student Portal, ToxMystery, and ToxTown (the latter two for younger and older students, respectively), animations, and games to help teach students about toxic chemicals and environmental health.

Over the years, TEHIP has created [online reference guides](#) consisting of links to reputable sources of environmental health information. Among these are guides devoted to arsenic, climate change, environmental justice, nanotechnology, pesticides, and toxicogenomics.

Closely aligned with NLM's TEHIP is [its Disaster Information Management Research Center \(DIMRC\)](#), a focal point for health information resources in the service of disaster preparedness, response, and recovery. Emergency response tools are available, for example, for dealing with chemicals (CHEMM) and radiation (REMM), while WISER is a system designed to help emergency responders identify hazardous materials and respond to chemical emergencies.

If you use our databases already, you more than likely find them an essential component of your professional activities. If not, give them a try. We think you'll be won over.

Questions? Contact [Phil Wexler](#)

Non-SOT Sponsored Meeting: GTA Conference Focuses on Current Developments in Genetic Toxicology

Submitted by Krista Dobo, Genetic Toxicology Association, Board of Directors Chair

Below is the report of a meeting that was sponsored by the Society of Toxicology (SOT) as consistent with the Society's mission and objectives. For additional information about Non-SOT Meeting funding, please visit the [SOT website](#).

The 2015 Genetic Toxicology Association Meeting (GTA) held at the University of Delaware was a highly engaging conference, jam packed with great scientific presentations, opportunities to make new connections or catch up those already established, learn about relevant vendor products, and have some fun. There were over 120 people from nine different countries in attendance. The main meeting was preceded on the afternoon of May 5 with a "hands on" Dose Response Modeling workshop that was facilitated by George Johnson (Swansea University) and John Wills (Health Canada). Workshop participants, with laptops in hand, were walked through the process of loading data into a number of dose response modeling software applications and provided with guidance on the interpretation of the output.

On the morning of May 6, the GTA Annual Meeting was kicked off by the keynote speaker, Igor Pogribny, US Food and Drug Administration, National Center for Toxicological Research (FDA-NCTR), who gave a presentation regarding the role of epigenetic events in the carcinogenic process and how use of epigenetic biomarkers could improve the assessment of a chemical's carcinogenic risk. Over the next two days, there were five symposia and a mini workshop that focused on topics of interest to the GTA membership, including OECD guidance, risk management case studies, cross industry perspectives on genetic toxicology testing, dose response modeling and quantitative risk assessment, and adverse outcomes pathways.

The symposia were supported by national and international speakers from industry, regulatory agencies, and academia. Another highlight of this year's meeting was the poster speed session, which was held immediately before the traditional poster session. At the speed session, every individual who submitted a poster abstract was given 2 minutes to present highlights of the information in their poster. This was a great opportunity for everyone from first year students to seasoned professionals to present and generate interest in their poster. Overall, the 2015 meeting was very successful thanks to the efforts of many including the speakers, session chairs, vendors, meeting sponsors, GTA board members, and volunteers.

NIH-NSF Ecology and Evolution of Infectious Diseases Program: Multidisciplinary Research Program

Funding notice [NOT-TW-15-005](#) was released on September 14, 2015. The Forgyarty International Center (FIC), the National Institute of General Medical Sciences (NIGMS), National Institute of Allergy and Infectious Diseases (NIAID) of the National Institutes of Health (NIH), the National Science Foundation (NSF), and the United States Department of Agriculture (USDA) have identified ecological and evolutionary sciences, including field biology and mathematical modeling, and socio-ecology, as essential disciplines to understand and predict transmission of zoonotic and other infectious diseases that involve biotic or abiotic vectors, including diseases of humans, other animals, and plants.

FIC, NIGMS, NIAID, NSF and USDA will continue a multi-year collaboration to advance our ability to address these environmental and public health components of disease control. As described in the NSF Program Solicitation ([NSF-14-592](#)) the purpose of the [Ecology and Evolution of Infectious Diseases \(EEID\) Program](#) is to support multidisciplinary teams in the development of predictive models that integrate ecology and evolution with the goal of discovering principles governing the transmission dynamics of infectious disease agents to humans and other hosts.

Proposed projects should include research and associated expertise in diverse disciplines including, for example, modelers, bioinformaticians, genomics researchers, social scientists, economists, epidemiologists, entomologists, parasitologists, microbiologists, bacteriologists, virologists, pathologists or veterinarians, as relevant to understanding the disease transmission system proposed. The EEID program scope includes socio-ecology, pathogen evolution, and

translational research in the overall context of the ecology of disease transmission.

US institutions and foreign institutions are eligible to apply for NIH awards. FIC awards are limited to US institutions and institutions from low- and middle-income countries (LMICs), as defined by the [World Bank](#).

The deadline for submission to NSF is November 18, 2015.

Detailed information about this program can be obtained on the [NIH website](#).

NIEHS Offers Financial Support for Test Method Development

The [National Institute of Environmental Health Sciences \(NIEHS\)](#) will provide additional support to current US federal small business grantees for validation and commercialization of approaches that replace or reduce animal use in toxicology testing required by US federal agencies. These Small Business Innovation Research (SBIR) Phase IIB awards will support further development of non-clinical toxicology tests for use as stand-alone replacements or elements of a weight-of-evidence testing approach. Phase IIB awards will assist small businesses in pursuing the next appropriate milestone(s) necessary to advance promising methods towards US federal agency acceptance and for subsequent commercialization of these test methods for products intended for global markets. Highest priority will be given to supporting development of methods that can serve as stand-alone replacements for animal-based tests currently used or required by US federal agencies.

SBIR Phase IIB awards are available only to US small business concerns that currently receive SBIR/Small Business Technology Transfer (STTR) Phase II funding for their projects from NIEHS, other National Institutes of Health (NIH) institutes, or other federal agencies. However, note that Phase IIB funding will be offered in three rounds during 2015, 2016, and 2017. If your project does not currently qualify for Phase IIB funding, the announcement provides [guidelines for future eligibility](#). Letters of intent for the first round of funding are due October 17, 2015, with applications due November 17, 2015.

View more information on the Phase IIB awards on the [NIH Grants website](#).

FOA: NIOSH and CDC Invite Grant Applications for Educational Research Centers

[National Institute for Occupational Safety and Health and the Centers for Disease Control and Prevention](#)

Announcement Type Reissue of [PAR-10-217](#)

Funding Opportunity Announcement (FOA) Number [PAR-15-303](#)

The National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC), invites grant applications for funding Education and Research Centers (ERCs) that are focused on occupational safety and health training, research training, education, and outreach. NIOSH is mandated to provide an adequate supply of qualified personnel to carry out the purposes of the Occupational Safety and Health Act, and the ERCs are one of the principal means for meeting this mandate. ERCs are academic institutions that provide high-quality interdisciplinary graduate training, research training, continuing education, and outreach in the core occupational safety and health disciplines of industrial hygiene (IH), occupational health nursing (OHN), occupational medicine residency (OMR), and occupational safety (OS), as well as closely related allied disciplines. Research and research training are integral

components of ERCs, with ERC faculty and NIOSH trainees conducting research on issues related to the NIOSH National Occupational Research Agenda (NORA). The ERCs also serve as regional resources for industry, labor, government, and the public.

Key Dates

Open Date (Earliest Submission Date): October 13, 2015

Letter of Intent Due Date(s): October 2, 2015; August 15, 2016; August 14, 2017; August 13, 2018; August 16, 2019

Application Due Date(s): December 3, 2015, October 12, 2016, October 13, 2017, October 11, 2018, October 18, 2019 by 5:00 PM EST.

Earliest Start Date: July 1, 2016, July 1, 2017, July 1, 2018, July 1, 2019, July 1, 2020

FOA: Innovative Basic Research on Adducts in Cancer Risk Identification and Prevention (R01)

Funding Opportunity Announcement (FOA) Number [PAR-15-308](#)

[National Institutes of Health \(NIH\)](#)

Components of Participating Organizations

[National Cancer Institute \(NCI\)](#)

[National Institute for Environmental Health Sciences \(NIEHS\)](#)

This FOA encourages research projects focused on adducts to cellular macromolecules as indicators of exposures to cancer risk factors relevant to human populations. The priority is on projects that will focus on adductomic approaches, i.e., address some aspects of the totality of adducts. These projects should explore the basic aspects of adducts/adductomics that may have a potential utility in cancer detection, cancer prevention, and/or assessing cancer risks. The projects should be relevant to adducts in humans and human populations but may be conducted using various model systems (e.g., cultured cells, animals, etc.). The use of human biospecimens is encouraged and expected if appropriate but not required.

In well-justified cases, innovative studies using the adductomic approaches in the context of cancer etiology and/or gene-environment interaction research may also be appropriate. For projects intended for NIEHS support, the focus may be on innovative technology and method development. For additional information, please visit the [NIH website](#).

Key Dates

Open Date (Earliest Submission Date): October 23, 2015

Letter of Intent Due Date(s): October 23, 2015

Application Due Date(s):

November 23, 2015; July 11, 2016, November 22, 2016; July 11, 2017, November 21, 2017; July 11, 2018, by 5:00 PM local time of applicant organization. All types of applications allowed for this funding opportunity announcement are

due on these dates.

Earliest Start Date: July 2016; April 2017; July 2017; April 2018; July 2018; April 2019

NIH NIDDK FOA: Centers for Diabetes Translation Research

This National Institutes of Health (NIH) National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) [Funding Opportunity Announcement \(FOA\)](#) invites applications for Centers for Diabetes Translation Research (CDTR). The CDTRs support and enhance diabetes type II translation research (e.g., bedside to practice and the community and dissemination and implementation). The purpose of this Centers program is to enhance the innovation and multidisciplinary nature of diabetes translation research. An emphasis on research to reduce diabetes-related health disparities is encouraged. CDTRs are based on the core concept that shared resources aimed at fostering productivity, synergy, and new research ideas among the funded investigators are supported in a cost-effective manner.

Key Dates:

Open Date (Earliest Submission Date): October 23, 2015

Letter of Intent Due Date: October 23, 2015

Application Due Date: November 23, 2015, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.

For additional information, please visit the [NIH website](#).

ERC Announces 2016 Budget and Grant Competitions

The European Commission (ERC) adopted on July 29, 2015, the ERC Work Programme 2016. The [programme](#), established by the ERC Scientific Council, foresees €1.67 billion for grants to top researchers from anywhere in the world who are ready to come or to stay in Europe to pursue their breakthrough ideas.

Within the new series of competitions, the ERC has opened the first one, the call for Starting Grants 2016, with a budget of €485 million that has a deadline of November 17, 2015. This scheme is open to researchers with 2 to 7 years of experience since completion of a PhD and a promising scientific track record.

Other grant competitions will follow according to the work programme's calendar: on October 15, 2015, opens the call for Consolidator Grants (for mid-career researchers, with a deadline of February 2, 2016) and on May 24, 2016, the call for Advanced Grants (for established research leaders, deadline of September 1, 2016).

ERC grant holders also can apply for "Proof of Concept" grants, a top-up scheme to verify the innovation potential of ideas arising from ERC-funded projects. There will be three rounds of this call in 2016.

Among other activities, the work programme also introduces a new action to widen participation in ERC competitions: a support to a consortium of formally nominated ERC National Contact Points (NCPs) to identify and share good practices and raise the quality of support to applicants.

For additional information, please view the resources below.

[Work Programme 2016](#)

[ERC Website](#)

[Striking ERC-Funded Projects](#)

[The EU Framework Programme for Research and Innovation Horizon 2020](#)

Fogarty Emerging Global Leader Award Announcement: International Research Career Development

The purpose of the [Fogarty Emerging Global Leader Award](#) is to provide research support and protected time to a research scientist from a low- or middle-income country (LMIC) with a junior faculty position at an LMIC academic or research institution. This intensive, mentored research career development experience is expected to lead to an independently funded research career. This [Funding Opportunity Announcement \(FOA\)](#) invites applications from LMIC scientists from any health related discipline that propose career development activities and a research project that is relevant to the health priorities of their country.

Key Dates

Letter of Intent Due Date(s) Not Applicable

Application Due Date(s) December 16, 2015; December 14, 2016; and December 14, 2017, by 5:00 PM local time of applicant organization

NIH NIEHS SBIR Alternative Methods Validation Awards

This [Funding Opportunity Announcement \(FOA\)](#), referred to as Small Business Innovation Research (SBIR) Phase IIB, invites Small Business Concerns (SBCs) with funded SBIR/Small Business Technology Transfer (STTR) Phase II awards or contracts, (i.e., SBCs that have completed Phase II research funded by the National Institutes of Health (NIH) or other federal agencies in the last 24 months) to submit applications. Specifically, this funding is for the validation of promising alternative test methods that replace or reduce animal use in toxicity testing/screening and can be used to address current US federal agency testing requirements. The method may be utilized as a stand-alone replacement or developed for use as part of a weight-of-evidence approach; however, higher priority will be given to stand-alone replacement alternative test methods.

The goal of this FOA is to assist SBCs in pursuing the next appropriate milestone(s) necessary to advance promising alternative toxicological test methods towards US federal agency acceptance. Validation of alternative test methods is needed not only for US federal agency acceptance, but also for international acceptance, and the subsequent commercialization of these test methods for products intended for global markets. For additional information, please visit the [NIH website](#).

The NIH and National Institute of Environmental Health Sciences (NIEHS) SBIR and STTR programs have provided the small business community with critical seed funding to support the development of a wide variety of technologies that benefit society. The main objective in SBIR/STTR Phase I is to establish the technical merit and feasibility of the proposed research and development (R&D) efforts; whereas, the Phase II supports the main R&D efforts to advance the

technology toward ultimate commercialization.

At the conclusion of an SBIR/STTR Phase II, it is expected that the SBC will fully commercialize their product or technology using non-SBIR/STTR funds in Phase III. Some projects initiated with SBIR or STTR funding require support beyond the SBIR/STTR Phase II award to achieve commercialization. The development of medical biotechnology products is often impeded by a significant funding gap, known as the “Valley of Death,” between the end of the SBIR/STTR Phase II award and the commercialization stage. One funding mechanism many NIH institutes use for this purpose is the Phase IIB, which provides additional support to mitigate the funding gap.

Legislative and Regulatory Update

VA Solicitation: Nominations for Research Advisory Committee on Gulf War Veterans’ Illnesses

A September 8, 2015, [Federal Register notice](#) by the Department of Veterans Affairs (VA) is seeking nominees to be considered for membership on the Research Advisory Committee on Gulf War Veterans’ Illnesses (Committee). The Committee is authorized by [Public Law 105-368, § 104](#) (statute) to provide advice to the Secretary of Veterans Affairs (Secretary) on the proposed research studies, plans, and strategies related to understanding and treating the health consequences of military service in the Southwest Asia theatre of operations during the 1990–1991 Gulf War.

In accordance with the statute and the Committee’s current charter, the majority of the membership shall consist of non-federal employees, appointed by the Secretary from the general public, serving as Special Government Employees. The Committee provides, not later than December 1 of each year, an annual report summarizing its activities for the preceding year. The Committee reports to the Secretary through the Under Secretary for Health. The Secretary appoints Committee members for a period of 2 to 3 years. A term of service for any member may not exceed 3 years. The Secretary may reappoint members for additional terms.

Self-nominations and nominations of non-Veterans will be accepted. Any letters of nomination from organizations or other individuals should accompany the package when it is submitted.

In accordance with the statute, the members of the Committee are appointed by the Secretary from the general public, including but not limited to:

1. Gulf War Veterans;
2. Representatives of such Veterans; and
3. Members of the medical and scientific communities representing disciplines, such as, but not limited to, epidemiology, immunology, environmental health, neurology, and toxicology.

Nominations for membership on the Committee must be received by October 9, 2015, no later than 4:00 pm, Eastern Standard Time. All nomination packages should be sent to:

Dr. Victor Kalasinsky, Veterans Health Administration, Department of Veterans Affairs, 810 Vermont Avenue NW., Washington, DC 20420.

Should you need additional information, you may contact Dr. Kalasinsky at the address above or by phone at (202) 443-5600. (NOTE: This is not a toll-free number.) You also may email the nomination package to [Victor Kalasinsky](#) or fax to (202) 495-6155.

Support of Enforcement Transparency Act Needed

As discussed in a [July 30 Communiqué post](#), Rep. Rod Blum (R-IA) introduced [H.R.3136, The Enforcement Transparency Act of 2015](#), which would require the US Department of Agriculture (USDA) to make the table of penalty guidelines for violations of the federal Animal Welfare Act used by the Investigative and Enforcement Services at the Animal and Plant Health Inspection Service (APHIS) available to the public on the USDA website. Since introduction, the bill has been co-sponsored by 11 other representatives from both parties and was referred to the Subcommittee on Livestock and Foreign Agriculture in August.

With Congress soon returning from recess, the National Association for Biomedical Research (NABR), of which SOT is a member, is asking its members to encourage the Subcommittee to consider the bill by showing their support for the bill. You can easily show your support for The Enforcement Transparency Act of 2015 by using [NABR's Capwiz system](#) to email your representative.

Position Advertisement(s)

Faculty Position—Assistant/Associate Professor: UAMS Fay W. Boozman College of Public Health



The University of Arkansas for Medical Sciences (UAMS) Fay W. Boozman College of Public Health announces the search for a tenure-earning faculty position in the Department of Environmental and Occupational Health at the assistant or associate professor level. While all areas of specialization related to Environmental Health will be considered, particular areas of interest are food safety, the role of the microbiome in responses to environmental stressors, or tobacco products risks.

The ideal candidate will utilize emerging methods for assessing environmental influences of health, including, but not limited to: systems biology; computational biology; bioinformatics; cell-based technologies; or novel regulatory testing methods and risk assessment methods. Collaborative opportunities exist with researchers across the UAMS campus as well as at the US Food and Drug Administration's National Center for Toxicological Research (FDA NCTR) just south of the UAMS campus. A strong potential for extramural funding is an important qualification, as is a commitment to excellence in teaching and mentoring graduate students.

Candidates should submit an application letter, curriculum vitae, statement of research interest and teaching philosophy, and contact information for three references to Dr. Gunnar Boysen, Search Committee Chair, at gboysen@uams.edu. Review of applications will continue until the position is filled. UAMS is an Equal Opportunity Employer. Women, underrepresented minorities, individuals with disabilities, and veterans are encouraged to apply.

Brown University Department of Pathology and Laboratory Medicine: Assistant or Associate Professor



Brown University

Molecular or Systems Toxicology/Environmental Health Sciences

Assistant or Associate Professor



Department of Pathology and Laboratory Medicine

Applicants with outstanding research accomplishments are invited for a tenure-track Assistant Professor or tenured Associate Professor position in the Department of Pathology and Laboratory Medicine at the Warren Alpert Medical School of Brown University. Appointments at the senior level require a successful track record of peer-reviewed funding and a national reputation. Strong commitment to teaching, mentoring, and advising is expected. Applicants must have a PhD, ScD, and/or MD degree and postdoctoral research experience. Applicants should have a laboratory-based research program in mechanisms of environmentally-induced disease. The appointee will participate in undergraduate, graduate, and/or medical teaching and mentoring. Research space will be provided in a newly-renovated laboratory with modern core facilities for molecular pathology and histology, high content imaging, genomics and proteomics, flow cytometry, analytical chemistry, nanotechnology, and access to Human Tissue Banks. Opportunities for collaborative, interdisciplinary research include an NIEHS Superfund Research Program grant, the Institute of Molecular and Nanoscale Innovation (IMNI), and the Institute at Brown for Environment and Society (IBES). Participation as a mentor in an NIEHS T32 Training Program in Environmental Pathology and the Pathobiology Graduate Program is available.

Interested candidates can apply online at apply.interfolio.com/30658 and the following documents should be uploaded: curriculum vitae, names of five references (three for Assistant Professor applications), and a statement of research plans, career objectives, and teaching philosophy.

Review of applications will begin on October 15, 2015, and will continue until the position is filled. Brown University is an equal opportunity (EEO/AA) employer and is committed to increasing the diversity of its faculty. Nominations and applications are welcomed from minorities, women, and individuals with varied experiences, perspectives, and backgrounds, which would enrich the university's research, teaching, and service missions.