



# Communiqué

Spring Issue 2012

## SOT News

### President's Message



*President  
William Slikker Jr*

Following the very successful 51st Annual Meeting of the Society of Toxicology, it is easy to remain excited about the progress of the Society and the accomplishments of its many dedicated members. It is not easy to fathom that with the clanging of the historic cable car bells still in our ears, preparations for the 52nd Annual Meeting are in progress. So before we can all enjoy the sounds of the Mariachi and jazz bands along the River Walk in festive San Antonio, we must prepare our best work for presentation at the next Annual Meeting, March 10–14, 2013. SOT will begin accepting regular abstract submissions on August 13, 2012.

In honor of the many accomplishments associated with the Annual Meeting, I thank all those dedicated SOT members and AIM staff, under the able leadership of Past President Jon Cook, who made the San Francisco Annual Meeting a tremendous success. From the record number of abstracts presented, the outstanding Symposia, Workshops, Roundtables, and Informational Sessions to the Plenary and MRC lectures, the quality and impact of the scientific information presented was excellent. The highlights of the recently concluded Annual Meeting were substantial and global. For the second year, a Global Collaboration Coffee was held and 50 representatives, including international societies, Special Interest Groups, and award winners, attended and expressed their appreciation for this opportunity to network and seek areas of future collaboration. Plans are underway for the third Global Collaboration Coffee to be held at the 2013 SOT Annual Meeting. Moreover, this year 28 societies from around the globe participated in the Global Gallery of Toxicology in the ToxExpo Exhibit Hall. Posters showcased the formation, key accomplishments, strategic initiatives, and current and future activities of the societies. SOT and these societies aim to increase the reliance of international decision makers on the science of toxicology to advance human health and disease prevention. Now also in its second year, the Global Gallery of Toxicology will be repeated at the 52nd SOT Annual Meeting in San Antonio.

The preliminary analysis of the Annual Meeting survey indicates that over 80% of respondents reported that the overall scientific content was “outstanding/very good.” In addition, the Continuing Education courses were very highly rated, as were the many venues for scientific networking, global outreach, and mentoring. So a heartfelt thank you to the many Committees, Specialty Sections (SS), Special Interest Groups (SIG), Regional Chapters, and Task Forces that provided the leadership to actualize the many facets of the Annual Meeting.

Another group deserving thanks are fellow members who agreed to be candidates for elected office; the Society benefits from their commitment every day. We congratulate our new Nominating Committee members Martin A. Philbert, Rosonald R. Bell, James V. Bruckner, and Alison C.P. Elder. Congratulations also are in order to our new Membership Committee members Michelle J. Hooth and Tao Wang and to our Awards Committee members Samuel M. Cohen, Yvonne P. Dragan, and Mary E. Gilbert. And, finally our new Councilors Lorrene A. Buckley and Ivan Rusyn, as well as our Treasurer-Elect Denise Robinson Gravatt and Vice President-Elect Norbert E. Kaminski. Well-deserved congratulations are extended to these newly elected SOT leaders

In addition, I thank the many members who have successfully completed their immediate service to the Society as committee members, officers, or representatives. SOT is a volunteer organization and many members prove it year in and year out by serving in a multitude of ways. An important value of SOT membership is the leadership training opportunities provided by the Society. From the officers of each of the 27 Specialty Sections to the leadership of the many extremely active student groups, leadership training opportunities abound in the SOT. In each case, as the current term is completed, we also remember just how much we have learned and benefited from those who have served, and no higher praises can be sung than for Peter Goering, our outgoing Secretary, and Michael P. Holsapple, our Past President.

This year we look forward to executing SOT's new strategic plan that Council, with valuable input from many individual members and a host of component groups within SOT, has prepared. With the strategic guidelines delineated, input has been requested and received from the SS, SIGs, Committees, and others as to the best approaches to implement the plan. During the May SOT Council meeting, initial decisions and support mechanisms will be adopted so that the many good ideas can begin to be activated in support of SOT's membership. As an example, global initiatives have achieved record numbers thanks to the leadership of the Global Strategy Task Force among others. Membership dues discounts for scientists from eligible developing countries, no fee CE courses, the Global Senior Scholar Exchange Program, travel fellowships, and Global Toxicology Scholar Program are just some of the actions that are reaching scientists from developed and developing countries everywhere.

So as we look down the trail and get ready to ride into [Old San Anton](#), one of the Nation's leading recreation destinations, remember that there is much more than the Alamo. At the 52nd SOT Annual Meeting, thanks to our Scientific Program Committee under the leadership of Lois D. Lehman-McKeeman, the most recent Nobel Laureate ever to present at the SOT meetings, Dr. Bruce Beutler (recipient of the 2011 Nobel Prize in Physiology and Medicine) already is scheduled for the Plenary Lecture. So polish your boots and your research presentations and get ready to head to San Antonio for yet another great Annual Meeting.

William Slikker Jr, PhD, ATS  
SOT 2012–2013 President

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## **The Future of Toxicology Education: Outcomes of the Toxicology Educational Summit**

*Every member of SOT can be an educator, can be a mentor, and can communicate the value of toxicology.*

The statement above reflects the vision of the Education Summit Organizing Team after more than a year of effort to focus future Society of Toxicology (SOT) programs and the actions of individual members. Recognizing that new paradigms for multidisciplinary, technologically complex, and collaborative approaches in toxicological sciences require shifts in recruitment, training, and retention of scientists are required, SOT hosted fifty thought leaders at the Toxicology Educational Summit in October 2011. The goal was to assess the challenges and develop recommendations for strengthening toxicology education at undergraduate, graduate, postdoctoral, and professional levels to effectively equip toxicologists for success.

These recommendations were published in *Toxicological Sciences* [“The Toxicology Education Summit: Building the Future of Toxicology Through Education”](#) and were featured in the roundtable “The Future of Toxicology Education: Outcomes of the Toxicology Educational Summit” at the 2012 SOT Annual Meeting. Based on stimulating presentations by Jim Bus (SOT past president), Sally Rockey (NIH Deputy Director for Extramural Research), Victoria McGovern (The Burroughs Wellcome Fund), and other speakers, the preparatory work of the Education Summit Organizing Team, and in-depth discussion in break out groups, Summit participants tackled tough questions, provided insight on current realities, considered exemplary programs, and developed recommendations for further consideration. Links to all of the presentations and reports from the Education Summit are available on the [Education Summit](#) webpage.

During the roundtable, Education Summit Chair Aaron Barchowsky presented an overview of challenges faced by

toxicology, including recognition as an important integrative and viable field of endeavor. Deliberations and recommendations were grouped into five areas, and members of the Education Summit Organizing team—Gary Carlson, Mary Beth Genter, Stephen Safe, and Courtney Sulentic—provided perspectives. Insightful comments from the audience ranged from recognition of the valuable current education programs such as the undergraduate program to bring students to the meeting, Toxicology Scholar campus visits, and mentoring activities like Chat with an Expert, to concern about the impact of declining funding on graduate training, suggestions for joint training efforts by industry and academia, and encouragement that SOT continue to position itself as a global resource.

In partnership with other entities—government, professional societies, and foundations—SOT can strive to increase educational opportunities and integrate toxicology principles in diverse curricula. Quality training and mentoring can support early career toxicologists and ensure a diverse workforce.

## **Recommendations**

Noting that SOT is already heavily invested in significant education-related activities, the Education Summit Organizing Team, after considering the deliberations of the participants in the Summit, the roundtable participants, and other input, offers the following suggestions for SOT to consider in facilitating training and retraining of toxicologists at all career stages.

### **Programs Recommended for Continuation**

1. Continue and EXPAND efforts to communicate the value of toxicology in promoting a safer and healthier world
  - Including with administrators, deans, etc.
2. Continue support of successful SOT programs that recruit minority and underserved undergraduates into advanced education and careers in toxicology
3. Continue and MAKE MORE VISIBLE mentoring opportunities at all levels of education and practice
  - Including mentoring activities such as Chat with an Expert, Poster Tours, Trainee Discussion with the Plenary Speaker, MentorMatch
4. Sustain visiting scholar programs (ToxScholar Outreach Grant and Global Senior Scholar Exchange Program)
5. Continue development of undergraduate teaching resource library and consider a parallel resource for graduate education to take advantage of training opportunities in the news (breast implants, melamine); participate in national undergraduate science curriculum reform
6. Continue support of successful SOT educational programming at all levels from K–12 through continuing education
  - Including at the Regional Chapter level
7. Continue and expand webinars and online CE courses for ongoing training

### **Ideas for New Programs/Initiatives**

1. Work with other professional societies, government, and academia to promote integration of toxicology into diverse curricula including medical school, training of emergency room physicians, EMS technicians, public health professionals, engineers, chemists
2. Perform a formal needs assessment to identify gaps in training and needed curricular changes
3. Define a “Total Toxicologist” and promulgate core competency list (including “soft skills”) and mechanisms to provide the total toxicology tool set and critical impact points for career development
4. Facilitate academic, industrial, and government partnerships that provide opportunities for toxicology training and reduce skills gap for trainees seeking industry positions
  - Internship opportunities for students and postdocs
  - Sabbatical and/or short-term on-site experiences for faculty or individuals retraining
  - Platform for developing and making available case studies that apply toxicology principles to promote hands-on learning and non-routine problem solving
  - Provide opportunities for management training
    - this would probably not have to be an SOT-led initiative—good opportunity to partner with industry or non-profits

5. Create a catalog of training opportunities outside of SOT including university and industry transitions (whole animal experimentation, risk assessment, regulatory skills)
6. Assess the value of increasing meetings/professional development opportunities that include techniques and wet lab experiences
  - Additional approaches for career transitions Encourage toxicology training and career transition support globally
7. Use of endowment funds or industry support to provide small equipment grants for researchers and teachers at smaller institutions to build research capacity for students
8. Increase awareness of underutilized NIH funding mechanisms such as supplements to fund minority students or teachers
9. Develop a plan to access faculty and students at community colleges for incorporation of toxicology content
10. Consider ways to encourage toxicology training and career transition support globally
11. Initiate a focus on communication skills, particularly for graduate students and postdocs
12. Link Continuing Education (CE) to Contemporary Concepts in Toxicology (CCT) conferences and Regional Chapter meetings

## Concerns

The reduction of federal funding for toxicology research will decrease support for future graduate students and the ability of mentors to train students.

## SOT Council Funds Aspirational Proposals Aligned with SOT's Strategic Priorities

SOT Leadership announced its intention in March to provide additional funding to the Society's committees and task forces for programs and activities aligned with the [2012–2015 Strategic Priorities/Goals](#) of SOT. Of the \$100,000 allocated for this support from the Society's Emerging Initiatives Funds, \$99,640 has been approved for proposals that:

- Increase Scientific Impact
- Promote Recognition of Toxicology
- Build for the Future of Toxicology
- Enhance Member Engagement
- Strengthen Organizational Effectiveness

It should be noted that provision of these funds did not necessitate an increase in annual member dues or member registration fees at the SOT Annual Meeting. A brief overview of the funded proposals follows:

### For the SOT Board of Publications:

- Strategic review of *Toxicological Sciences*, not conducted since 2007
- Development of a mechanism to alert the SOT Communications Committee of relevant articles to promote recognition of the importance of toxicology to human health and disease prevention
- Communications initiatives to raise awareness about and appreciation for the increasing integration of the SOT and *ToxSci* websites, including the development of Widgets on Specialty Sections websites that will display articles of particular interest to each of the 27 groups.

### For the Career Resource and Development (CRAD) Committee

- Formal review of the Job Bank to determine enhancements to this already appreciated and highly utilized tool
- Refinements to Mentor Match to increase the effectiveness of this tool throughout the career of a scientist
- Targeted mentoring initiative with the Postdoctoral Assembly (PDA) and Graduate Student Leadership Committee (GSLC) under the auspices of CRAD to support an Annual Meeting Mentoring Breakfast and related

activities throughout the year

### **For the Committee on Diversity Initiatives**

- Support of four additional students and SOT mentors to participate in the Annual Meeting Undergraduate Education Program

### **For the Disease Prevention Task Force**

- Funding support for additional Non-SOT Speakers to increase recognition of the importance of toxicology to human health and disease prevention
- Funding for videotaping of additional scientific sessions for posting on the SOT website
- Contemporary Concepts in Toxicology (CCT) Webinar—Strategic planning and implementation

### **For the Education Committee**

- Student internships to engage the next generation of toxicologists
- K–12 Outreach Workshop for the 2013 SOT Annual Meeting

### **For the Postdoctoral Assembly**

- Mentoring activities in collaboration with CRAD and GSLC as described above

### **For the Professional Needs Assessment Task Force**

- Completion of the Job Outlook Survey

### **For the Scientific Liaison Coalition**

- Enhancement of participation of sister societies in the SOT Annual Meeting to strengthen partnerships
- Position papers and comment endorsement and development to increase the recognition of toxicology and related sciences to human health and disease prevention

SOT remains committed to its mission “To Create a Safer and Healthier World by Advancing the Science of Toxicology.” The support described above will help SOT to address its central challenge: “Enhance the Impact and Recognition of Toxicology.”

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## **SOT Members Need To Sustain Years of Effort Toward Establishing CSR’s SIEE SEP**

On May 7, 2012, SOT President William Slikker Jr. forwarded a message received from Seymour Garte of the Center for Scientific Review (CSR) announcing that the Special Emphasis Panel (SEP) called Systemic Injury by Environmental Exposure (SIEE) had been reinstated to review grant applications “in the fields of Environmental Health and Toxicology.” CSR is encouraging potential applicants in the fields of toxicology and environmental health sciences to consider submitting applications directed to this study section. (The referral guidelines for the reinstated SIEE Study Section have changed; please view the [new guidelines for SIEE](#).)

At this point, CSR staff has begun the process of preparation for the return of SIEE, including recruitment of reviewers, setting dates for meetings, etc. It is anticipated that the first meeting will be held in February 2013 to review applications submitted for the October/November 2012 deadlines.

SOT leadership worked with the CSR for a number of years regarding the need for a Study Section focused on toxicology. Reinstating the SIEE review panel is the next step in that process and builds on the efforts and

accomplishments of many individuals, as briefly outlined below:

- **2004–2008:** An NIH Funding Task Force was appointed by 2004–2005 SOT President Linda Birnbaum and charged with collecting data on the fate of member grant applications. This task force was chaired by David Eaton and subsequently by Ronald Hines.
- **2007:** SOT Council met with then NIH Director Elias Zerhouni and presented both the rationale and data supporting the value of creating a new Integrated Review Group (IRG) with toxicology and therapeutics study sections. SOT also sent two members to each of six Open Houses sponsored by then NIH CSR Director Toni Scarpa. The SOT representatives included Martin Philbert and Shawn Lamb (March 2, 2007, Neurological IRGs), Debra Cory-Slechta and Bruce Kelman (August 25, 2007, Behavioral and Social Science IRG), Travis O'Brien and Vernon Walker (June 29, Disease-based IRGs), Ronald Hines and Chris States (August 24, 2007, Integrated Biological IRGs), Aaron Barchowsky and Steve Pruett (November 9, Integrated Biological IRGs), and Ken Ramos and Alvaro Puga (December 18, Biomolecular IRGs).
- **2008:** On February 20, 2008, Dr. Scarpa and NIEHS Acting Director Sam Wilson announced the formation of a new Systemic Injury by Environmental Exposure (SIEE) Special Emphasis Panel (SEP) in the Digestive Disease IRG. SIEE was to review applications from June 2008 and operate for a one-year probationary period. SOT 2007–2008 President George B. Corcoran noted in his President's Message in the *Communiqué* Special Issue 2008 that "it is imperative for toxicologists to request that their qualifying grants be assigned to this SIEE." Dr. Scarpa attended the 2008 SOT Annual Meeting in Seattle, Washington and made a presentation on March 19 describing "Enhancements in the Review of NIH Grant Applications." Dr. Scarpa commended the Society for participating in the CSR initiative to identify highly qualified, volunteer reviewers to serve on NIH peer review study sections. He stated that "Since their names were entered into the registry in March of 2008, 29 of the 51 volunteers from the Society of Toxicology have served on NIH study sections."
- **2009:** In August, SOT 2009–2010 President Cheryl Lyn Walker encouraged SOT members to communicate to CSR the importance of the continuation of the SIEE SEP. In July 2009, Seymour Garte became the Director of the Division of Physiological and Pathological Sciences at CSR.
- **2010:** However, CSR decided to discontinue the SIEE SEP in 2010, citing data demonstrating grant applications fared no better in SIEE than they did in other study sections. The CSR developed a two-stage panel process for more complex and multi-disciplinary grant applications. Under this system, CSR might invite 2,000 scientists to serve on its first panel named the "College of CSR Reviewers." These scientists were to act as first-stage expert reviewers and might provide written analysis for up to 12 applications a year. A second panel was to take the written comments into consideration, evaluate the applications, and assign final priority scores. SOT nominated reviewers and a number of SOT members served in this capacity.
- **2011:** SOT continued to monitor this process and to urge Dr. Garte and Acting NIH CSR Director Richard Nakamura to consider the importance of reconstituting the SIEE SEP. Many of the names mentioned above continued to be involved in these activities, including Drs. Hines, Walker, and many others.
- **2012:** In January 2012, Dr. Garte convened a working group chaired by Dr. Cheryl Walker and involving several SOT members. The working group was charged with evaluating data on the review outcomes of environmental health-oriented grant applications and making recommendations to improve the process if substantial inequities were supported by the data. The working group recommended reconstituting SIEE with new and broader referral guidelines.

Based on the recommendations of the working group, the SIEE SEP has been re-constituted by CSR. SOT members are encouraged to review the new referral guidelines and submit grant applications to this study section as appropriate. Thanks to the many SOT members who championed the need for an environmental health focused review panel, there is now a new opportunity. The support of the toxicology community is essential to ultimately reaching a successful outcome.

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## Announcing Six New Online CE Courses!

In addition to the 21 Continuing Education (CE) Courses from the 2009, 2010, and 2011 SOT Annual Meetings, **six additional courses** from the 2012 Annual Meeting in San Francisco are now available:

- Alternative *In Vitro* Toxicology Testing for the 21st Century (Basic)
- Basic Embryology and Developmental Toxicity Testing (Basic)
- Concepts of Green Chemistry and Its Role in the Identification and Design of Safer Chemicals and Products (Basic)
- Cutaneous Toxicity: *In Vitro* Methods for Toxicity and Safety Evaluation (Advanced)
- Overview and Application of the WHO-IPCS Harmonized Guidance for Immunotoxicity Risk Assessment for Chemicals (Basic)
- Stem Cells in Toxicology (Basic)

The full list of [CEd-Tox courses](#) can be found on the SOT website. These courses offer a great, low-cost way to expand your professional development, or stay current in the field of toxicology, all year long.

Written transcriptions are available with registration to select CEd-Tox courses. Graduate Student and Postdoctoral SOT Members receive complimentary access to all courses.

Please visit the [CEd-Tox](#) section of the website for a full list of courses available.

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## Member Spotlight

### **Kenneth Olden To Direct of US EPA's NCEA and HHRAP**

Lek Kadeli, Acting Assistant Administrator, Office of Research and Development (ORD) US Environmental Protection Agency (US EPA) announced that on July 2, Kenneth Olden will direct both the National Center for Environmental Assessment (NCEA) and the Human Health Risk Assessment Research Program (HHRAP). Mr. Kadeli noted that “Ken comes to US EPA with a strong legacy of promoting scientific excellence in environmental health.” Dr. Olden served as the Director of the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP) in the US Department of Health and Human Services from 1991–2005. He made history as the first African American to direct one of the National Institutes of Health.

Dr. Olden has published extensively in the peer-reviewed literature, chaired or co-chaired numerous national and international meetings, and has been an invited speaker, often a keynote, at more than 200 symposia. Dr. Olden joined SOT in 1996 and served on the Science Strategy Committee (2005–2007) and on the Awards Committee (2006–2008). He was the recipient of the 2004 SOT Public Communications Award.

In 2005, he returned to his research position as chief of The Metastasis Group in the Laboratory of Molecular Carcinogenesis at the NIEHS, and for academic year 2006–2007, held the position of Yerby Visiting Professor at the Harvard School of Public Health. Dr. Olden has received a long list of honors and awards including the Presidential Distinguished Executive Rank Award, the Presidential Meritorious Executive Rank Award for sustained extraordinary accomplishments, the Toxicology Forum's Distinguished Fellow Award, the HHS Secretary's Distinguished Service Award, the American College of Toxicology's First Distinguished Service Award, and the National Minority Health Leadership Award. Alone among institute directors, he was awarded three of the most prestigious awards in public health—the Calver Award (2002), the Sedgwick Medal (2004), and the Julius B. Richmond Award (2005). He was elected to membership in the Institute of Medicine at the National Academy of Sciences in 1994 and appointed member of the Visiting Committee for the Harvard University Board of Overseers from 2007–2010. Dr. Olden received his Bachelor of Science in biology from Knoxville College, a Master of Science in genetics from the University of Michigan, and a Doctorate in cell biology and biochemistry from Temple University. He is currently the Founding Dean of the School of Public Health at the Hunter College, City University of New York.

### **SOT Members Participate in National Academies “Systems Biology—Informed Risk Assessment” Workshop**

The National Academies hosted a two-day workshop entitled “Systems Biology—Informed Risk Assessment” at The Academies Building, June 14–15, 2012, and several SOT members participated as moderators or panelists. [The National Academies](#) hosted this event as 2012 marks the 5th anniversary of the report, “Toxicity Testing in the 21st Century.” SOT speakers included Kim Boekelheide, Robert Devlin, Dean Jones, Lauren Zeise, George Daston, Donna Mendrick, and Joyce Tsuji. The Emerging Science standing committee holds three to four meetings per year on the use of new discoveries, tools, and approaches for guiding environmental health decisions. These meetings provide a public venue for communication among government, industry, environmental groups, and the academic community. This National Research Council activity is sponsored by the [National Institute of Environmental Health Sciences](#) (NIEHS). NIEHS, located in Research Triangle Park, North Carolina, is one of 27 research institutes and centers that comprise the [National Institutes of Health](#) (NIH), [US Department of Health and Human Services](#) (DHHS). The mission of the NIEHS is to reduce the burden of human illness and disability by understanding how the environment influences the development and progression of human disease.

## **Curtis D. Klaassen Receives 2012 Merit Award**

The Society of Toxicology, at its 2012 Annual Meeting in San Francisco, awarded its highest member honor, the [Merit Award](#), to Curtis D. Klaassen. The Merit Award is presented in recognition of distinguished contributions to toxicology throughout an entire career in areas of research, teaching, consulting, and service to the Society. Following is the



introduction to Dr. Klaassen’s award presentation by 2012–2013 SOT Vice President Lois Lehman-McKeeman, who received her PhD, from the University of Kansas Medical Center. “It is likely that I need to make no further introduction, as Curt is widely recognized for his leadership and service to toxicology. However, I will try to highlight his many contributions to capture the essence of honoring him with this award.

*Peter Goering, Lois Lehman-McKeeman, Curtis Klaassen, and Michael Waalkes*

Dr. Klaassen is presently University Distinguished Professor at the University of Kansas Medical Center, where he has worked for the past 44 years. During this time he has been instrumental in establishing his department as one of the top departments for research and training in toxicology in the world. In addition to departmental leadership, he has directly trained over 100 PhD students and postdoctoral fellows. From his incredibly productive research efforts, he has published more than 500 original research manuscripts and over 125 book chapters or review articles. If you do the math, he has published on average more than 1 paper a month. He has been recognized internationally as a “highly cited researcher,” and in 2007, ranked as the 7th most-cited researcher in Pharmacology and Toxicology in the world. In addition to those who formally trained with him, Curt developed the Mid-America Toxicology Course, which is frequently used by those seeking certification as toxicologists, and he has been Co-Editor or Editor of the major textbook in toxicology since the 2nd edition of Casarett and Doull’s *Toxicology* was published.

Dr. Klaassen has served SOT as our president in 1990–1991 and on too many committees to recount. When *Toxicological Sciences* was launched as the official SOT journal, Society leadership turned to Curt to be its inaugural editor because he brought instant scientific credibility and stature to the journal, and he held this position for more than 5 years. He also served as the President of IUTOX, providing international leadership to toxicology. Curt has won numerous awards for his leadership and service as an educator and scientist. From SOT, he has been recognized with our Achievement Award, Education Award, and the prestigious Burroughs Wellcome Toxicology Scholar Award. In 2010, he was honored by the Women in Toxicology with their Mentoring Award. He also has been recognized at the University of Kansas with numerous awards for research, mentoring, and teaching, and he has been recognized internationally with countless honors of achievement and service to toxicology.

I would be remiss to not briefly comment on Curt Klaassen, the man. He is devoted to his family—a dedicated son, brother, husband, dad, and granddad who enjoys simple family time. He also is a scientific father to all of his trainees, providing compassionate counsel and comfort in times of both professional and personal challenges. Despite how busy he is, he is passionately fanatical about Kansas basketball, and somehow, it is only fitting that the University of Kansas can claim James Naismith, the inventor of the game of basketball, and Curt Klaassen, an architect of toxicology, in its legacy.

The Merit Award is presented to an SOT member to recognize distinguished contributions in areas such as teaching, research, and service to the Society throughout an entire career. Curt Klaassen epitomizes the attributes recognized by the Merit Award. SOT is a better organization, and toxicology is a better science because of Curt Klaassen, and on behalf of the Society, I am honored to present him with the 2012 Merit Award.”

## **Sue Ford To Attend Summer Institute on Actively Engaging Students in Science**

Sue Ford, St. John’s University, and her colleague, Felicia Carvahlo, have been accepted to the 2012 Howard Hughes Medical Institute/National Academies Summer Institute on Undergraduate Education in Biology from June 11–16 at Harvard University. Multiple Institutes are held throughout the year at different venues, bringing together science faculty and instructional staff from various colleges and universities. The goal is to focus on creating ways to actively engage students in science and scientific thinking. The Institute will include intensive discussions, demonstrations, and working sessions on research-based approaches to undergraduate education. More information on the program can be found on the [Academies Summer Institute on Undergraduate Education in Biology website](#). Dr. Ford is the 2012 SOT Undergraduate Educator Award recipient and chair of the Education Committee Undergraduate Education Subcommittee.

## **Phillip Wexler and Linda S. Birnbaum Participated in “Poisons in the Press” Panel Discussion**

Phillip Wexler, recipient of the SOT 2010 Public Communications Award, coordinated a panel discussion on “Poisons in the Press: Deciding for Yourself What’s ‘Safe’” on March 13, 2012, at the Commonwealth Club in San Francisco, California. SOT 2004–2005 President Linda S. Birnbaum was among the panel participants. A podcast of this public outreach event is online at the [Commonwealth Club website](#). The posted description of this podcast states: When the news media report on contamination in the air, drinking water, or food supply, the public understandably demands to know straight away, “Is it safe?” A distinguished panel of toxicologists and environmental journalists discussed why the questions defies straightforward answers, what’s keeping the public in the dark, and how citizens can make informed decisions on toxic risks in the absence of certainty.

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## **In Memoriam**

### **In Memoriam**

James D. Fenters

Yugal Luthra

Randall O. Manning

Anne Wolven-Garrett

## **Randall Oliver Manning**

*Submitted by James V. Bruckner*

After a six-year struggle with cancer, Randall Oliver Manning died peacefully at his home on Monday, January 16, 2012. He graduated with bachelors, masters, and doctorate degrees from the University of Georgia (UGA). He received his PhD in 1986 under the direction of Roger Wyatt, and then worked with me, James Bruckner, as a postdoctoral associate. In 1990, Dr. Manning became the State Toxicologist for the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources. He dealt with a variety of problems with chemical contaminants of air and water in the state, serving as a liaison among the EPD, the US Environmental Protection Agency (US EPA), Centers for Disease Control and Prevention (CD), and the Agency for Toxic Substances and Disease Prevention (ATSDR), and people living in affected areas. Dr. Manning was competent, patient, and effective in dealing with local residents who were frequently distraught about what they perceived as serious threats to their health.

He was certified as a diplomat of the American Board of Toxicology and was a long-term member of the Society of Toxicology (SOT) and the Society of Environmental Toxicology and Chemistry (SETAC). He joined SOT in 1991 and served as the SOT Southeastern Regional Chapter President and was a member of the Risk Assessment Specialty Section. He was an Adjunct Professor at the Rollins School of Public Health at Emory University as well as the UGA Interdisciplinary Toxicology Program (ITP). Dr. Manning played a very active role publishing research, serving on dissertation committees, and acting as a mentor each summer for undergraduate environmental health students. He expertly taught exposure and risk assessment in the ITP's Principles of Toxicology and Chemical Toxicology graduate courses for 13 consecutive years (1997–2010). Dr. Manning served on the Board of Directors of Toxicology for Excellence in Risk Assessment (TERA) and frequently was a consultant to the US EPA and CDC/ATSDR.

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## **Regional Chapters, Specialty Sections, and Special Interest Groups**

### **MASOT “Juvenile Toxicology” Webinar Attracts Over 450 Participants**

On May 15, 2012, the Mid-Atlantic Regional Chapter (MASOT) held a very successful webinar on “Juvenile Toxicology.” MASOT President Janet Gould served as the webinar moderator and Robert M. Parker, Gregg D. Cappon, and Lynne Haber provided presentations that are briefly summarized below. In addition to many webinar attendees from the United States, scientists from around the globe participated from Canada, Denmark, France, Germany, India, Japan, the Netherlands, and the United Kingdom. The webinar is posted on ToXchange and can be accessed by SOT members at [MASOT Juvenile Toxicology Webinar](#).

Dr. Parker's presentation focused on “Juvenile Toxicity Study Design and Methodology for Pharmaceuticals.” He provided toxicologists with a more detailed understanding of the technical and logistical factors involved in the performance of juvenile toxicity study. Juvenile toxicity designs range from general toxicity studies initiated in juvenile animals to highly complex study designs that include CNS, immunological, reproductive, and/or other target organ evaluations.

Dr. Cappon's presentation addressed the “Application of Data Obtained from Juvenile Animal Toxicity Studies in the Pharmaceutical Industry.” A major factor in designing appropriate studies to provide the most meaningful information is an understanding of how data from juvenile animal toxicity studies can be used in risk assessment and risk management. He discussed the value of juvenile animal toxicity studies and how that information may influence future considerations on the appropriate strategy for nonclinical support for pediatric drug development.

Dr. Haber's presentation examined the challenges of “Evaluating Children's Risk for Industrial Chemicals: Approaches and Issues.” Unlike the situation for pharmaceuticals, where targeted testing to evaluate juvenile risk can be done on as needed basis, information on industrial chemicals is often more limited. Consideration of children's risk for industrial chemicals often must be done with the available data, without the possibility for additional testing. This analysis requires consideration of basic risk assessment principles and mode of action (MOA) information available for the chemical of interest.

The MASOT Program Committee (2011-2012) that developed this webinar includes Drs. Gould (Chair), Ray York, Jason Blum, Todd Davidson, George DeGeorge, John M. Mitchell, Gloria Post, Prathibha Rao, Kenneth Ruehl, Ravi Sitapara, Ric Stanulis, Karl Traul, Myra Weiner, and Arlene Weiss.

Support for this webinar was provided by SOT Headquarters. SOT members are encouraged to develop webinars and to submit proposals to facilitate their implementation. Additional information regarding this webinar support is available on the [SOT Website](#). To learn more about this SOT Regional Chapter, visit the [MASOT website](#).

## **National Capital Area Chapter Holds Spring Symposium on Systems Toxicology**

*By Cal Baier-Anderson, Melanie Biggs, and Laurie Roszell*

On May 14, 2012, the National Capital Area SOT Regional Chapter held its Spring Symposium on “Systems Toxicology” at Lister Hill Auditorium on the NIH campus in Bethesda, Maryland. To better understand how exposure to xenobiotics can lead to adverse outcomes, systems toxicology incorporates multiple levels of toxicological information, biological organization, and technological platforms. This framework is expected to lead to better predictive methods. The invited speakers provided an overview of systems toxicology from origin to the potential for application in risk assessment.

The symposium was keynoted by Dr. Bruce Fowler, ICF International, who provided an historical overview of systems toxicology, beginning with its origins in cell and molecular biology. Technological advances, such as electron microscopy and electrophoretic techniques, allowed scientists to develop models linking subcellular events to larger system-wide processes. As our understanding of the complex relationships between organelles, cells, tissues, organs, and systems increased, so did our capacity to describe toxicological mechanisms. The dual biological and technological revolutions led to the generation of massive amounts of data, which requires computational techniques for analysis. Computational toxicology can work hand-in-hand with systems biology to conduct rapid screening to predict potential adverse outcomes. Dr. Fowler stressed that asking the right questions and understanding the limitations of the tools you use are critical for informing risk management decisions.

Donna Mendrick, Director, Division of Systems Biology, US Food and Drug Administration (US FDA), described how serious adverse effects from pharmaceuticals is rising faster than the number of drugs and prescriptions. Little is known about drug-drug interactions for the majority of pharmaceuticals in use, and this may be one of the reasons behind the rise in adverse effects. There are limitations to current test systems, such as animal testing under-predicting human effects and missing individual patient susceptibilities. This has prompted the search for new biomarkers to increase predictive capabilities. While biomarkers, such as blood pressure and serum glucose, have been standard practice for many decades, new biomarkers derived from ‘omic technologies can expand our ability to predict potential adverse effects. Among the challenges is finding useful biomarkers that are sufficiently specific. US FDA relies on a consortium to identify and test potential biomarkers that might be useful in predicting outcomes in heterogeneous populations.

Jennifer Sekowski, US Army Edgewood Chemical Biological Center (ECBC), presented the ECBC’s program for using ‘omics and computational toxicology to improve the characterization of chemical threats. Such threats not only encompass chemical warfare material but also pesticides, drugs, and industrial chemicals. The program will use the systems biology of host responses to understand risks to humans. Collaboration with academic research labs will allow the group to access and integrate different levels of biological organization. One approach will use the stamina biomarker in human pluripotent stem cells (WA09) to examine the effects of methyl parathion on early reproductive endpoints.

Integrating information from cells to tissues to behavior is the focus of Marion Ehrich’s research. Dr. Ehrich, Virginia Tech, described her interest in understanding how chemicals modulate behavior, noting that this is very difficult to model *in vitro*. Since many molecular effects are non-specific, potential markers must be screened for relevance and specificity. Dr. Ehrich described different types of assays that can provide insight into perturbation of the nervous system. There are, for example, *in vitro* systems that mimic the blood brain barrier, which can be used to test if compounds can pass through it. Also, target esterases can serve as useful indicators of neurotransmitter system perturbation. Ultimately, cross-disciplinary research teams are needed to implement systems toxicology approaches, and

this has been an important goal at Virginia Tech.

Kevin Crofton's research focuses on the relationship between thyroid perturbation and altered neurodevelopment. Dr. Crofton, US Environmental Protection Agency (US EPA), began by describing thyroid biology, including the role of the hypothalamus, pituitary, and liver. The linkage between thyroid hormone deficiency and impaired neurodevelopment is very well known, and impacts of certain xenobiotics on this system, such as propylthiouracil (PTU), perchlorate, and PBCs, have been characterized. Research questions focus on better characterization of adverse outcome pathways. To characterize these pathways, the molecular initiating event that leads to cellular effects that first manifest at the individual level needs to be determined. These effects can then have population effects. For example, the molecular-initiating effect of perchlorate is inhibition of iodine uptake, which results in thyroid hormone synthesis suppression. In pregnant women this can result in altered nervous system development, and at the population level, this can lead to a negative shift in population IQ. Community impacts can include a loss of productivity and increase in healthcare costs, with additional impacts at the family and social level. At each "node" in the pathway, there are mechanisms to return to homeostasis, and the processes are quantifiable. By studying the nodes as a system, we gain predictive power. Dr. Crofton emphasized that different pathways may be operative in different species, illustrating this concept with triclosan. Triclosan is a biocide that induces proteins CAR and PXR. In rodents, PXR is induced, whereas in humans, CAR is induced. This makes it possible to begin to define the triclosan adverse outcome pathways that are differentially operative in rodents and humans.

With tens of thousands of chemicals in commerce, can computational and systems toxicology facilitate risk management? This is the question addressed by Lynne Haber of Toxicology Excellence for Risk Assessment (TERA). Systems toxicology provides a framework to use high-throughput and computational data to move towards faster, predictive, and science-based decision making. Risk characterization incorporates hazard, dose-response, and exposure, and systems toxicology can play an important role in each of these areas. For example, hazard characterization can be informed by identification of adverse outcome pathways, including molecular initiating events, but also variability and susceptibility. Dose-response can be understood if biomarkers are well characterized with dose extrapolation. Computational methods can facilitate the understanding of cumulative and aggregate exposures. Dr. Haber reminded the audience of the importance of phenotypic anchoring for the interpretation of 'omics data and that biological systems can be incredibly complex. For example, developmental toxicity is very complicated and requires communication between tissues. Progress is clearly being made with a number of multi-institutional efforts. Moving forward, validation of assays for probing system effects will require a multi-stakeholder dialog to bridge uncertainty.

The symposium ended with a panel discussion that allowed speakers and the audience to engage in discussion. Symposium presentations are available on the [NCAC-SOT website](#).

## **North Carolina Regional Chapter Meeting Focuses on "TT21C: Network Biology and Toxicity Pathway"**



*NC SOT Spring Meeting speakers (L to R): Sudin Bhattacharya, Avi Ma'ayan, Paul Carmichael, Richard Judson, Mel Andersen, and NC SOT President Darol Dodd*

The North Carolina Regional Chapter (NC SOT) held its Annual Spring Meeting on February 23, 2012, on the main campus of the US Environmental Protection Agency in Research Triangle Park, North Carolina. The theme of the meeting was "TT21C: Network Biology and Toxicity Pathways" and included speakers that represented all sectors, from academia to industry, in a range of disciplines including chemistry, toxicology,

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campus of the US Environmental Protection Agency in Research Triangle Park, North Carolina. The theme of the meeting was “TT21C: Network Biology and Toxicity Pathways” and included speakers that represented all sectors, from academia to industry, in a range of disciplines including chemistry, toxicology, bioinformatics, and engineering. There were approximately 140 attendees at this meeting on Toxicity Testing in the 21st Century (TT21C).



*NC SOT Spring Meeting Student Poster Presentation Awardees (L to R): Jessica Sorrentino (1st Place tie), Jessica Wignall (2nd Place tie), NC SOT President Darol Dodd, and Sandra Losa-Ward (2nd place tie)*

Mel Andersen, The Hamner Institutes for Health Sciences, introduced the mini-symposium and emphasized that the approach of determining adverse outcome pathways is still in its infancy. Paul Carmichael from Unilever provided an industry perspective with regard to the European Union’s ban on animal testing for cosmetic ingredients driving the need for alternative technologies. Richard Judson from US EPA’s National Center for Computational Toxicology provided a framework for the use of *in vitro* data for *in vivo* predictions. Avi Ma’ayan from the Mount Sinai School of Medicine emphasized that we are studying networks versus singular pathways, and he presented a range of databases, algorithms, and tools that he developed or used in his research with kinase signaling cascades. The last presentation was given by Sudin Bhattacharya from The Hamner Institutes, who summarized research efforts on elucidating the network and associated pathways for peroxisome proliferator activated receptor alpha (PPAR??) signaling.

The meeting also included a brief business meeting led by Darol Dodd, NC SOT President, announcing the election results of new officers for 2012–2013, recognition of officers rotating off of Council, approved changes in the Bylaws, and announcement of graduate student award winners for both the poster and platform competitions.



*NC SOT Spring Meeting Student Platform Presentation Awardees (L to R): Raju Prasad, Samantha Snow, NC SOT President Darol Dodd, and Maxwell Leung (1st Place)*

Eighteen students competed for cash awards in the annual poster competition. Tied for First Place were Jessica Sorrentino of the University of North Carolina-Chapel Hill (Advisor: Dr. N. Sharpless) and Xinyu Yang of Duke University (Advisor: Dr. J. Meyer). Tied for Second Place were Sandra Losa-Ward of North Carolina State University (Advisor: Dr. H. Patisaul) and Jessica Wignall of UNC-CH (Advisor: Dr. K. Guyton).

New this year was NC SOT’s student platform presentation competition. Graduate students submitted abstracts to the Council with four students ultimately competing in this inaugural event. Students receiving cash awards were First Place winner Maxwell Leung of Duke University (Advisor: Dr. J. Meyer) and participation award winners Samantha Snow of UNC-CH (Advisor: Dr. D. Diaz-Sanchez), Raju Prasad of UNC-CH, (Advisor: Dr. D. DeMarini), and Leslie Thompson of East Carolina University (Advisor: Dr. C. Wingard).

## **Northland Regional Chapter Spring Meeting on “The Emerging Practice of Medical Device Toxicology”**



*NLSOT meeting—Brian (Medtronic Tech Forum President)*

The Northland Regional Chapter of SOT (NLSOT) held its spring meeting on Thursday, April 12 at Medtronic World Headquarters in Minneapolis, Minnesota. The meeting was titled “The Emerging Practice of Medical Device Toxicology,” and was cosponsored by 3M Toxicology and Compliance Assurance and the Medtronic Technical Forum. The meeting was extremely successful with approximately 100 participants attending in person and over 30 viewing the meeting online.

Speakers on the topic of medical devices included Charles Swanson, Program Director of Regulatory Affairs and Services at St. Cloud State University; Jon Cammack, President and CEO of The Science Cooperative; Molly Ghosh from the US FDA; and John Gorski, President and CEO of NAMSA.

The Spring Meeting started with a brief welcome and meeting agenda overview conducted by NLSOT President Nathan Pechacek and Medtronic Technical Forum President Brian Bechard. The first speaker of the morning was Dr. Swanson, who gave an overview on medical device regulations, followed by Dr. Cammack’s presentation on the challenges in assessing the toxicity of medical devices. After these presentations, the morning session adjourned for lunch during which attendees had a chance to network. A new meeting feature during the break was a “Lunch with an Expert” program, an opportunity for graduate and postdoctoral students attending the meeting to engage toxicology professionals in an informal setting. This new program was modeled on the SOT “Chat with an Expert” program provided in recent years at the SOT Annual Meeting. Initial feedback on this new NLSOT meeting feature was very positive.



*Charles Swanson (presenter), Nathan Pechacek (NLSOT President), John Gorski (presenter), Jon Cammack (presenter),  
Molly Ghosh (front—presenter) and Kelly Coleman (Back—NLSOT 2-year councilor)*

The afternoon session commenced with Nathan Pechacek leading the NLSOT business meeting where topics included the current status of the organization, announcement of the 2012–2013 NLSOT executive board, highlights from the past 12 months, and potential future NLSOT initiatives.

Dr. Ghosh led off the technical component of the afternoon session with a presentation on the assessment of innovative medical devices and Mr. Gorski finished the meeting with a presentation on the value of CROs in evaluating product safety and efficacy. Meeting attendees also had the opportunity to view posters related to medical device toxicology presented at the meeting, as well as tour some of the laboratories at Medtronic, a leader in medical technologies.

NLSOT serves toxicologists in Minnesota, North Dakota, South Dakota, and Montana. For more information about this chapter, please contact President [Nathan Pechacek](#) or go to [Northland Regional Chapter website](#).

## **Annual Meeting & ToxExpo**

# **SOT 2012 Annual Meeting Draws 7,320 Toxicologists from More Than 50 Countries to San Fran**

Participants from as far away as New Zealand attended the Society of Toxicology's 51st Annual Meeting and ToxExpo. International attendees accounted for 20% of the attendance at this five-day meeting, which continues to be the largest gathering of toxicologists anywhere in the world.

The scientific program featured five scientific themes including Aberrant Gene Expression in Toxicity and Disease—Epigenetics and microRNAs, Characterizing Toxic Modes of Action and Pathways to Toxicity, Clinical Toxicology from Bedside to the Bench and Back, Influence of Global Climate Change on Environmental Health Issues, and Regulatory Science: Bridging the Gap between Discovery and Product Availability. Thematic sessions continued to enhance the scientific program, allowing toxicologists to gain a depth of analysis that is difficult to find anywhere else.

The CE Committee identified two target areas that highlighted ground-breaking areas of research, new and exciting toxicological developments, cross-cutting activities in support of science, technology, and education. The two CE target areas were Drug Metabolism and Noncoding RNAs and Their Role in Biology and Toxicology. More than 90 scientists were involved in the organization and presentation of 13 Continuing Education (CE) courses that drew 2,438 attendees. CE course topics ranged from computational toxicology and alternative toxicology testing, to stem cells and Green Chemistry. Many of the courses will be available in an online format through the SOT CE<sub>d</sub>-Tox program as well as sessions from previous meeting. For more information on CE opportunities, please visit the SOT website. With significant input from the SOT Specialty Sections, Special Interest Groups, and Committees, the program was structured into more than 190 sessions that included both featured and special lectures that accounted more than 3,000 presentations during the Annual Meeting.

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SOT's ToxExpo, which is the largest exhibition of its kind anywhere in the world, included more than 344 exhibiting companies. The ToxExpo featured 46 Exhibitor Hosted Sessions over the three-day show period. The exhibition included 62 first time exhibitors, 73 international companies from 22 countries: Brazil, Canada, China, Denmark, France, Germany, Hungary, India, Ireland, Italy, Japan, Mauritius, Netherlands, Poland, Republic of Korea, Singapore, Slovakia, Spain, Switzerland, Taiwan, United Kingdom and the United States. A total of 271 US companies exhibited from 39 states.

We look forward to seeing you at the [2013 SOT Annual Meeting](#) in San Antonio, March 10–14, 2013.

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## **51st SOT Annual Meeting Photos—SOT Members Are Welcome to Add to This Photo Gallery**

SOT members are encouraged to visit the [Historical Images photo galleries](#), located on ToXchange. There are more than 110 images of the 2012 SOT Annual Meeting, including the Welcome Reception, Awards presentations, K–12 Outreach event, ToxExpo Diamond Level Sponsors, 25th Anniversary Exhibitors, and much more. Scroll over the photo to see the caption and click on the image for additional information that may be provided.

Many of you no doubt have pictures to share as well. SOT members can logon to ToXchange and upload photos and

captions. If you have questions or need assistance, contact [Marcia Lawson](#).

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## 52nd SOT Annual Meeting Plans Are Underway—Mark Your Calendar!

The [52nd Annual Meeting of the Society of Toxicology](#) and [ToxExpo](#) will be held March 10–14, 2013, at the Henry B. Gonzalez Convention Center in San Antonio, Texas. The Society of Toxicology Annual Meeting is the largest toxicology meeting and exhibition in the world, with an expected attendance of more than 7,500 scientists from academia, government, and industry from various countries around the globe. From the Plenary Opening Lecture and featured lectures to the wide range of scientific sessions and Continuing Education courses, the Annual Meeting offers an unparalleled depth of analysis and relevant toxicological issues. From basic to advanced topical issues, the thematic approach provides each attendee with an opportunity to learn about emerging fields. Whether you are speaking in or chairing a session, honoring a colleague as the recipient of an SOT award, or collaborating with your peers at an SOT event, this meeting has something for every attendee.

The 2013 Annual Meeting website is open and is a vital resource to help you prepare for attendance in San Antonio. This is a website you will want to bookmark: [SOT 2013 Annual Meeting](#). To assist with your planning, key deadline dates are provided below:

**Abstract Submission:** October 3, 2012

**Award Nominations:** October 9, 2012

**Early Bird Registration:** January 25, 2013

**Housing Reservation:** February 8, 2013

**Standard Registration:** February 15, 2013

**Cancellations:** February 15, 2013

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## SOT 2013 Annual Meeting Sponsorship Opportunities Are Available

The SOT Annual Meeting is the largest scientific meeting of toxicologists in the world and the 52nd Annual Meeting is sure to draw thousands of attendees. Becoming a sponsor of this important event demonstrates your organization's commitment to SOT's mission of "creating a safer and healthier world by advancing the science of toxicology." The Society appreciates the generous contributions of the [SOT 2012 Annual Meeting Sponsors](#).

There are many opportunities to become a sponsor for the 52nd SOT Annual Meeting to be held March 10–14, 2013, at the Henry B. Gonzalez Convention Center in San Antonio, Texas.

Being a sponsor provides an opportunity for better name recognition of your organization among SOT members and the Annual Meeting attendees and helps keep registration fees low, enabling the Society to attract nearly 7,500 scientists from academia, industry, and government—at all stages of their careers—and from around the globe. Many of these attendees are directly involved in the application of toxicology and related sciences to human health and disease prevention. Five levels of sponsorship are offered, with the higher levels providing greater visibility for your organization. The categories are indicated below as follows:

- Diamond (\$10,000 and more)
- Platinum (\$5,000–\$9,999)
- Gold (\$2,500–\$4,999)
- Silver (\$2,000–\$2,499)

Contributor (\$1,000–\$1,999)

Acknowledgement signs, on which sponsors are grouped by the level of sponsorship for those at Silver Level and above, will be displayed prominently on-site. In addition, sponsors will be recognized in the *Preliminary Program, Program*, the pre- and post-meeting newsletters, *ToxExpo Directory*, on the [SOT 2013 Annual Meeting website](#), and in the PowerPoint presentation shown in each session room. In appreciation for this contribution, Annual Meeting Sponsors at the Silver Level and above are invited to attend the SOT President's Reception.

Your sponsorship also will help offset the cost of functions such as the Undergraduate Program, K–12, and other Public Outreach activities, Student/Postdoctoral Scholar Events, Continuing Education Program, refreshments, and the Welcoming Reception. If you are interested in SOT Sponsorship, contact [Liz Kasabian](#) at 703.435.3115 ext.1454.

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## **Importance of Toxicology to Disease Prevention—2012 Session on E-Waste Recycling**

The SOT Disease Prevention Task Force sponsored and supported the videotaping of the 2012 SOT Annual Meeting session, “Global Health and Environmental Impacts of E-Waste Recycling,” which illustrates the important role of toxicology in disease prevention. SOT is committed to communicating the contributions of toxicology in disease prevention to policy makers, politicians, and the general public. There is no quick fix to this issue, however, a greater emphasis in highlighting the importance of prevention in the science of toxicology, and the presentation of this science to other stakeholders, will better position SOT and toxicology in general, as a central component of discussions establishing societal priorities for safety and preservation of health.

An abstract summary of this session and the presentations are below:

Communicating electronically is considered inherently green because it reduces paper waste and its associated transit. Rapid innovation has produced a constantly growing inventory of outdated electronic equipment that is eventually disposed of as electronic waste, or e-waste. Concerns about contamination from e-waste have led to bans from local landfills and the development of a new e-waste recycling industry to reclaim valuable metals and ideally manage the release of hazardous materials. The current production of e-waste overwhelms local recycling sites and e-waste is sometimes exported along with donations of usable electronics to developing countries, where workers often lack the technology and training to dispose safely of e-waste. Informal recycling releases heavy metals and persistent organic pollutants into the soil, water, and air. Global efforts to reduce damage caused by e-waste include the Basel Treaty, which aims to reduce exports of e-waste to developing countries. Efforts to quantify the hazardous components of e-waste are underway in California, where high levels of brominated flame retardants have been found in residents and wildlife. Although the toxicology of many e-waste components is well characterized, some newer materials, such as gallium and indium arsenides found in newer semiconductors, are less well understood. Their incorporation into nanomaterials may increase bioavailability in unanticipated ways. Developing children and fetuses may be particularly vulnerable to toxins found in e-waste, and early epidemiological studies near informal e-waste recycling sites indicate potential developmental neurotoxicity. Understanding the hazards of e-waste, the impacts of its disposal, and the dangers of informal or careless recycling will help reduce or prevent disease outcomes associated with exposure to e-waste components.

[Global Health and Environmental Impacts of E-Waste Recycling-Introduction](#) (video)

Presenter: Erica L. Dahl

[The Scope of the Problem—International Regulation and the Basel Treaty](#) (video)

Presenter: Oluwasanmi O. Areola

[Regulated and Unregulated Contaminants in California Waste Streams](#) (video)

Presenter: Myrto Petreas

[Mechanisms of III–IV Semiconductor Toxicity—Prospects for the Future of E-Waste Disease Prevention](#) (video)

Presenter: Bruce Fowler

[E-Waste Recycling in Developing Countries: Concerns of Developmental Toxicity](#) (video)

Presenter: Amin Chen

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## **2012 SOT Annual Meeting Videos Available—Landmark Presentation, Plenary and MRC Lectures**

### **SOT 51st Annual Meeting Landmark Presentation to Bruce Ames, Plenary Opening, and Keynote Medical Research Councils Lectures are Posted on the SOT Website**

Attendees at the 2012 Annual Meeting, March 11–15, 2012, in San Francisco, California, were fortunate to hear brief remarks by Bruce Ames regarding his landmark achievement of the “Ames Test” as well as to experience presentations by two internationally recognized scientists, Plenary Opening Lecturer Leroy Hood and Keynote Medical Research Council (MRC) Lecturer Witold Filipowicz. You can relive the experience of hearing their remarks and, if you were not able to attend the meeting, you will be reminded of why this year’s conference and exposition attracted 7,300 scientists from around the globe.

Nearly 4,000 scientists were present for the Plenary “Systems Medicine, Systems Toxicology, Transformational Technologies and the Revolution from Reactive to Proactive (P4) Medicine.” SOT 2011–2012 President Jon Cook introduced Dr. Hood, who along with his colleagues, developed the DNA sequencer and synthesizer and the protein synthesizer and sequencer—four instruments that paved the way for the successful mapping of the human genome. Dr. Hood’s accomplishments are many, including the concept of the 4Ps in medicine—Predictive, Preventive, Personalized, and Participatory—which lead to Dr. Hood’s receipt of the prestigious 2011 Russ Prize, awarded by the Academy of Engineering. Access the [Plenary](#) video.

It was standing room only at the MRC “Role of microRNAs in Control of Gene Expression in Human Physiology and Pathology.” Introduced by incoming SOT 2012–2013 President William Slikker, Jr, Dr. Filipowicz’s lecture provided current knowledge about the mechanism of miRNA-mediated repression of gene expression, procedures to identify miRNA targets, as well as a role of miRNAs in selected human pathologies and the use of miRNA profiling as a diagnostic tool in human diseases and in tissue and cell injuries. View this [MRC](#) lecture.

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## **SOT Landmark Award Placed Permanently at the University of California at Berkeley**



*Baker Hall—UC Berkeley*

The SOT Communications Committee awarded the Landmarks Program Award to the Ames Test in recognition of its significance to our field and to science in general. The plaque was given to Dr. Bruce Ames, who with his colleagues at the University of Berkeley, developed the *Salmonella* reverse mutation assay (widely known as the Ames Test) in his laboratory in Barker Hall in the 1970s.

The test revolutionized the field of genetic toxicology, stimulated new directions in cancer research, and was truly a landmark in the field of toxicology. The Chancellor of Berkeley approved the positioning of this plaque hung outside of classroom 110 in Barker Hall on March 8, 2012, the classroom that was dedicated to Dr. Ames.

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## **Xuemei Huang is First Recipient of SOT Translational/Bridging Travel**

# Award

*Submitted by Xuemei Huang*



*Xuemei Huang and William Slikker Jr.*

It is truly a unique honor to be the first recipient of the [Translational/Bridging Travel Award](#) from the Society of Toxicology. I feel the responsibility to establish a standard for future awardees, and while I am unsure if I am up to this task, I shall do my best to begin this process.

This award actually represents a return to my scientific roots. As background, I am a board-certified neurologist specializing in Parkinson's disease and other movement disorders. Yet an early part of my training was a PhD earned from the Department of Pharmacology and Toxicology at Purdue University. Working with Professor David Nichols, I studied the mechanisms of neurotoxicity of MDMA and its effects on dopamine and serotonin systems. This started my career focus on neurodegenerative diseases and led to a fellowship with Professor Curt Freed at the University of Colorado that cemented my interest in Parkinson's disease (PD). After finishing my internship and residency, I was honored to be able to do a fellowship in

Movement Disorders at Emory University under the guidance of Ray Watts, Mahlon Delong, and Jorge Juncos. Not only did I receive wonderful training in clinical medicine, it was very exciting to be in an environment where research in the areas of my interest abounded.

I took my first faculty position at the University of North Carolina at Chapel Hill, and I was able to leverage the training I had received at Emory University with the exceptional mentorship of Greg McCarthy and Martin McKeown in neuroimaging, and thus generate my first NIH award. This K23 grant became my research foundation, and in the decade since that award began, my research program has been very exciting. Through imaging, my lab has learned a great deal about the anatomical and functional changes that occur in the course, and possibly in advance of the diagnosis, of PD. During this same period of time, the Parkinson's community became very focused on genetic causes of PD, spurred by the findings of how a few specific mutations could cause the disorder. I was greatly influenced by Honglei Chen (an epidemiologist with focus on Parkinson's disease at NIEHS), Richard Mailman (an SOT Burroughs Wellcome Scholar in Toxicology many years ago), and Michael Flynn (an industrial hygienist) to realize that rather than having a largely genetic basis, environmental factors and our human behavioral were as critical in interacting in subtle ways with a host of genetic susceptibility genes to ultimately cause most PD. Thus, their influence and the results from many scientists (with some small contributions from my group) have dragged me back to my roots in neurotoxicology.

This communication is not the place for scientific details, but I have become convinced by the evidence that several key environmental factors, coupled with some genetic characteristics not commonly realized, interact in important ways to cause PD and possibly some related disorders. This travel award brought me for the first time to an annual meeting of the Society of Toxicology. It was particularly satisfying because it evoked my nostalgia for the wonderful basic science experiences I had in graduate school, but as importantly, it led to a discovery of new perspectives that will enrich my future research. During the meeting, I was inspired by hearing about the lifetime of achievements of the recent leaders in toxicology such as Ernest Hodgson and Curtis Klaassen. Of particular relevance to my translational efforts was my exposure to cutting-edge basic research on neurotoxicants such as manganese, paraquat, and rotenone. These experiences caused the realization that the Society of Toxicology is an important venue for me for future interactions with scientists who are likely to influence the interpretation of my own work. For these reasons, I have decided to apply for SOT membership. In turn, as someone who is expert in clinical medicine and in research translational, I hope I can in turn make a small contribution to the SOT, and thus enrich my colleagues as they have enriched me. I also intend to communicate to my colleagues in neurological venues the potential impact of research done in fields that they may consider tangential to their interests. If I can facilitate such exchanges, I feel I will have begun to repay the honor for this award.

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# Continuing Education Sessions at the 2012 SOT Annual Meeting Were A Great Success!

The Continuing Education (CE) courses at the SOT Annual Meetings offer a wide range of topics that cover established knowledge in toxicology, as well as new developments in toxicology and related disciplines. At the 2012 SOT Annual Meeting there were 2,438 registrants in the 13 course held on Sunday, March 11. Plans are already underway to develop course offerings at the [2013 SOT Annual Meeting](#) that will help expand your knowledge and expertise. SOT provides a number of [online continuing education courses](#) that are posted on the SOT website.

## SOT K–12 Subcommittee Promotes Toxicology Outreach at Annual Meeting



*A young toxicologist displays his earned certificate*

From the top of the hills of the University of California Berkeley campus to the middle of San Francisco at the Moscone Convention Center, the Education Committee K–12 Subcommittee conducted and promoted toxicology outreach in conjunction with the SOT 2012 Annual Meeting.

**K–12 Outreach Event**—About 370 young learners and their parents found out “What do the Madhatter, Snow White, and Romeo and Juliet have in Common? Toxicology!” at a special event March 10 hosted by SOT at the Lawrence Hall of Science, a premier science center literally at the top of the UC Berkeley campus. Northern California Regional Chapter members Toufan Parman (event coordinator), Jeff Tepper, and Luoping Zhang, assisted by Erica Lachenauer and Nairi Hartooni of the UC Berkeley Toxicology Student Association (ToxSA), worked with the SOT K–12 Subcommittee to engage young and older museum

visitors in the fun of scientific experimentation and introduce toxicological and other scientific terms and principles. With the assistance of 45 volunteers, including 25 undergraduates from ToxSA and many from SRI, three different themed rooms had continuous hands-on activities and a theatrical performance occurred at intervals in a fourth room.

The first room, Risks At Home, focused on Household Hazards Identification/ Lookalike products. Concepts included 1) understanding that signal words on labels such as danger, caution, and warning, can help determine if something is toxic, and 2) distinguishing “safe” and “toxic” items that look similar in unlabeled containers to stress the importance of never eating or drinking these substances and being cautious with unlabeled items. Kids also participated in a contest to see who could put photos of everyday items into “toxic” and “nontoxic” categories the fastest.

The second room, Things that Wiggle, focused on understanding the phrase “Dose makes the poison.” First, students learned about concentration, and how this may vary based on the amount of solute added to different amounts of solvent. Discussion included how dose is dependent on the size of the person since adding the same amount of dose (food coloring) applied to the smaller person (solvent) yields a larger concentration. A hands-on experiment examined exposure of blackworms to ethanol. Students also learned about the importance of a control experiment to determine what is normal in order to compare the impact of the exposure. Varied doses were used to demonstrate that the amount of damage caused by the chemical depends on the dose that enters the body.

In the third room, the Earth Room, participants examined pH and what changes in pH might mean to the environment. An activity

demonstrated that acids cause chalk to deteriorate and kids tested the pH of different household items, saw their impact on a simulated lake, and discussed what this means and that everyone can have an impact on what happens to our water sources.



Finally, participants were invited to enjoy a skit involving storybook characters who discussed the main points from the demos/experiments. Snow White and Sleepy both took the same size bite of a poisoned apple, but only Sleepy felt the effects; Pocahontas and Ariel discussing the impact of pollution on the oceans while breaking into a song about pH; and the audience helping one of the Three Little Pigs to figure out if unlabeled items from his kitchen were safe to eat and drink. Responses to toxicology questions posed to the audience during the skit indicated that these K–5 students understood the influence of body size on response to a toxicant and of other safety principles that were presented. At the end of the skit, participants were encouraged to “Meet the Toxicologists” at tables staffed with SOT members who signed “Junior Toxicologist” certificates and answered questions about toxicology.

*Students learn that unlabeled products may not be safe to eat or drink*



*The inhabitants of ToxTown reinforced toxicology concepts learned during the experiments*

Feedback from the participants and volunteers was largely positive. Parents expressed that it was not only a great learning experience for the students, but for themselves. Interaction including questioning of participants during the experiments and the skit demonstrated that the participants had an understanding of the topics presented. The undergraduate volunteers appreciated the opportunity and experience in interacting with and presenting toxicology concepts to a diverse audience. A video of [the skit](#), [interviews with a couple of the student participants](#), and [an interview with the ToxSA chair](#) are available. We extend appreciation to the Eastman Charitable Foundation, SRI, and Staples for underwriting some of the costs.

**High School Poster Exposition**—With the goal of increasing awareness of toxicology among students and teachers at the high school level and to encourage SOT members to serve as research mentors, the K–12 Subcommittee hosts a poster display for high school students at the Annual Meeting most years. Two high school student presentations were featured this year, Mohan Avula, student of Jacqueline Liu at Los Altos High School, “Computational Analysis of Cancer Preventing Proteins,” and Antara Sinha, Nova High School, Davie, Florida, “The Effects of UV-B Rays on Skin Cells with and without Application of Sunscreen,” work conducted at the Department of Environmental and Occupational Health with Robert Stempel. Both of the students were hosted by an SOT toxicologist and both reported their appreciation and the positive impact of this opportunity for them.

**Education Poster Session at Annual Meeting**—To promote awareness of activities and tools for education outreach, track ongoing toxicology outreach activities, and engage meeting attendees in order to recruit and encourage others to participate in K–12 outreach, the K–12 Subcommittee takes an active role in preparing and encouraging submission of posters for the SOT Annual Meeting Education and Legal Issues session. This year there were 17 posters in the session,

with the majority education-oriented and those split among K–12, undergraduate, and public activities. The Education poster session was very well attended, with a large amount of cross-communication among the presenters as well. A follow-up meeting hosted by Maureen Gwinn, chair of the K–12 Subcommittee, was attended by 12 interested SOT participants, including not only many of the RC K–12 liaisons but also by SOT members interested in getting involved in outreach.

**Regional Chapter K-12 Outreach Contacts**—The K–12 Subcommittee and Regional Chapter Coordination and Communication Committee have worked together for appointment of K–12 contacts in each of the Regional Chapters, and this network met during the last year to brainstorm and discuss mutual and individual efforts. This group, lead by Rafael Ponce and Courtney Sulentic, had a face-to-face meeting in San Francisco. One of their projects will be to organize a workshop for San Antonio to provide opportunities to explore successful ways to conduct K–12 outreach.

**K–12 Outreach Resources**—To facilitate idea sharing and easy access to resources that can be used for K–12 outreach, Angela Slitt and Teri Fick are leading the K–12 Subcommittee efforts to collect quality materials for different age groups and types of interactions to support toxicology outreach. This will be a major activity of the K–12 Subcommittee in 2012–2013.

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## Mentoring Breakfast Event a Success!

*Submitted on behalf of the WIT Mentoring Breakfast Planning Committee*



Mentoring constitutes one of the most important aspects of a scientific society, and SOT has been recognized on many occasions for their dedication to the mentoring of underrepresented minorities and the support to diverse populations. This year, the Women in Toxicology (WIT) Special Interest Group (SIG) organized a Mentoring Breakfast pilot event at the SOT Annual Meeting in San Francisco in collaboration with the Career Resource and Development (CRAD) Committee, the SIG-Collaboration Group (CG), and the Postdoctoral Assembly (PDA) to foster mentor-mentee relationships. Besides the classical mentoring of students and postdoctoral fellows, this initiative was targeted to span a vast audience, inclusive of individuals at all stages of their career from academia, industry, and regulatory agencies searching for a mentor without any boundaries or limitations.

The event was held on Monday, March 12, 2012, and included a continental breakfast, followed by panel presentations, breakout groups, and a mentor-match questionnaire to facilitate matching. Guest speakers from various stages in their career presented their experiences receiving and giving mentoring, discussed strategies to find mentors, and provided suggestions on how to keep a good mentor-mentee relationship that benefits both participants. Trained facilitators at each table then conducted discussions guided to collect information about the mentees that would help match them with potential mentors. Questionnaires also were filled out by mentees to enable facilitators to match and introduce them to their new SOT mentor via ToXchange just weeks after the breakfast. It is anticipated that the mentor-mentee relationship will be followed up over the next three years to monitor whether the relationship has been beneficial for both parties and to identify ways to improve the event and program in the future.

This year, nearly 50 mentees were enrolled in the pilot event, and we look forward to reaching out to an even greater number of mentees as we continue this program at next year's SOT Annual Meeting in San Antonio, Texas!

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## Issues Session Addresses Strategic Initiatives for Endowment Fund:

## Building for Future of Toxicology

On March 15, the Issues Session “Building for the Future: Strategic Initiatives for the Endowment Fund,” provided a forum to discuss the need for “increased effort to develop and grow Endowment Fund(s) to support the strategic objectives of SOT.” This session was presented by 2012–2013 Vice President Lois D. Lehman-McKeeman, and 2012–2013 Vice President-Elect and 2011–2012 Endowment Fund Board Chair Norbert E. Kaminski.

Dr. Lehman-McKeeman explained the importance of holding an Issues Session on the SOT Endowment. Key points emphasized by Dr. Lehman-McKeeman included the use of endowment funds to enable SOT to support new initiatives and long-term activities not supported by the SOT operating budget.

During this session, Dr. Kaminski also presented important facts about the management of the Endowment Funds to session attendees that included:

- One hundred percent of each contribution goes toward supporting endowment activities. All of the Endowment administrative costs are defrayed by the SOT operating budget.
- Donations to each named fund are accounted separately.
- The goal of the Endowment is to support long-range activities, many of which are in perpetuity.
- Typically SOT operating funds are used to support activities for the entire membership; whereas, the endowment funds are often targeted toward specific subgroups within SOT.

Since the inception of the Endowment Fund(s), SOT Leadership and Endowment Fund Board members have sought input from the membership on aspirational goals that these funds could support that would generate interest and enthusiasm by SOT members. Toward this end, an Endowment Fund Survey was conducted in early 2012 and followed up with focus group meetings held during the SOT 51st Annual Meeting. Feedback indicated support for initiatives such as:

- Early and mid-career development opportunities, including career internship programs;
- Training opportunities for Undergraduate, Graduate Student, and Postdoctoral Trainees;
- Award travel scholarships for relevant meetings other than SOT, such as Junior Investigator Awards;
- Granting mechanisms to provide a bridge to independent research; and
- Training opportunities for international scientists, such as the Global Senior Scholar Exchange Program.

The SOT Endowment Fund Board will be working to develop strategies by which new opportunities can be established from a well-funded endowment. For more information on contributing to the Endowment Funds, visit the [SOT website](#).

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## Tox ShowDown Debuted at 2012 SOT Annual Meeting



*Jessica Placido, Sue Ford, Phil Wexler, Winning Team of Toni Hayes, Lou Trombetta, and Peter Goering and Marion Ehrich (judge)*

*What curious Australian egg-laying mammal is venomous? Corexit 9500 and Corexit 9527 are the names of two substances used to help in the cleanup of what recent environmental accident? The TUNEL assay is used to assess \_\_\_\_\_. To which drug was Sherlock Holmes addicted?*

If you know the answers to these questions, you could have been a prize-winning contestant at SOT's rousing *Tox ShowDown*, held on the evening of March 13 in conjunction with the 2012 SOT Annual Meeting in San Francisco. An *It's Academic* style game, inspired by the North American Congress of Clinical Toxicology's long running *Toxicology Quiz Bowl* and St. John's University's *Tox ThrowDown*, the *ShowDown* tested contestants' knowledge of a cornucopia of toxicological fact and fancy.

The event was organized by Sue Ford (recipient of SOT's 2012 Undergraduate Educator award) and Jessica Placido of St. John's, timekeeper and scorekeeper, respectively, and Phil Wexler of the National Library of Medicine, emcee. In spite of competition from other tempting social activities, the *Tox ShowDown*, aided by its mix of education, entertainment, prizes, cash bar, and just plain craziness, drew a sizeable and enthusiastic audience. Good-humored cheering and jeering students constituted about half the crowd. The contestants brought an admirable mixture of toxicology knowledge and personal panache to the game. The three teams were:

- *The Toxic Metabolites*: Brent Kerger, ChemRisk; Mark Maddaloni, US EPA; Alessandro Venosa, Rutgers University
- *The Free Radicals*: Peter Goering, US FDA (and SOT 2010–2012 Secretary); Lou Trombetta, St. John's University; Toni Hayes, Pfizer (**winning team**)
- *The Endocrine Disruptors*: John Duffus, Edinburgh Centre for Toxicology (and recipient of SOT's 2012 Education Award); Prasad Krishnan, Penn State University; Anne Pilaro, US FDA

The distinguished judge for the evening was Marion Ehrich of the Virginia-Maryland Regional College of Veterinary Medicine and past president of SOT. Dr. Ehrich wielded a spiffy gavel consisting of a crab mallet donated by SOT headquarter's staff, topped by a purple rubber squeeze toy.

In Round 1, teams were asked questions sequentially and allowed to confer. They were awarded one point for a correct answer. In Round 2, a question was posed to all teams, and the first contestant to raise a hand in reply to a question would be called upon to answer. His or her team would get one point for a correct answer, and be given a multi-part bonus question to accrue more points.

The Graduate Student Leadership Committee (GSLC) was the primary SOT affiliated sponsor for the event. Prizes donated by Elsevier (laptop bags, mouse pads, and Zagat's *America's Top Restaurants* guides) were distributed to all participating contestants, while prize books for the winning team were donated by CRC Press/Taylor and Francis Group (*Handbook of Laboratory Animal Science*, 3rd ed. Vol 1, Newman's *Fundamentals of Ectotoxicology*, 3rd ed, and *The Toxicology of Fishes* ). CRC Press also provided three door prize books (*Laboratory Mouse Procedural Techniques*, *Laboratory Rat Procedural Techniques*, and Wexler's *Chemicals, Environment, Health: A Global Management Perspective*). Finally, a crystal beer stein, elegantly engraved by Matt Geraci, a clinical toxicologist in Jacksonville, Florida, and donated by his firm, *The Blasting Furnace*, was awarded to Marion Ehrich.

And although the contestants could undoubtedly quote toxicological chapter and verse on *phthalates*, one of their biggest challenges of the evening was spelling the word itself.

Mike Gallo of Rutgers, in attendance with several of his students, commented, "The ShowDown was a great experience that brought together toxicologists, from students to seasoned practitioners. Terrific esprit de corps. Questions ranged from Shakespeare to current topics. A teachable moment for all attendees, contestants, and judges. Phil Wexler deserves special thanks. This is an event that should be continued at future SOT meetings."

*Tox ShowDown* is planned for San Antonio, and if you'd like to participate, it's not too early to express your interest; just contact [David Rossé](#).

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## PDA Career Session on Art of Negotiation Was Standing Room Only

Art of Negotiation Career Session at SOT 2012 Annual Meeting A Success!

*Submitted by Larissa Williams and Ebany Martinez-Finley, SOT PDA*



*Larissa Williams introduces speaker Ellen Kandell*

The “Art of Negotiation: A Fundamental Skill for Scientists” Education-Career Development session was held on Tuesday, March 13 at the SOT 2012 Annual Meeting in San Francisco, California. The session was chaired by Postdoctoral Assembly (PDA) board members Larissa Williams and Ebany Martinez-Finley. There was “Standing Room Only” for the event with attendance estimated at over 250 meeting participants! The session was sponsored by the PDA and endorsed by the Career Resource and Development (CRAD) Committee and the Hispanic Organization for Toxicologists and Women in Toxicology Special Interest Groups (SIGs).

The audience spanned a wide variety of ages and backgrounds, from undergraduate and graduate students, and postdocs to department chairs and project managers. Ellen Kandell of Alternative Resolutions, LLC introduced audience members to the various aspects of interest-based negotiation, the idiosyncrasies of negotiation, and walked through a negotiation-planning guide.

After the formal lecture, four panelists Jeff Wong (California US EPA), John Budroe (California US EPA), Jerry LeBlanc (North Carolina State University), and Ron Gerson (Gerson Pharma Solutions) shared their experiences in negotiation across various sectors of toxicology including pharma, academia, and government. During the remaining 45 minutes, it was open microphone time for questions from the audience. Questions ranged from advice for specific situations to general questions concerning how to identify what is negotiable.



Survey results indicate that the career session was a huge success, providing the varied toxicology community that attended with information and assistance they can use in their work.

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## SOT Is Going Green! New Options for the SOT Annual Meeting Program

The 2012–2013 SOT Council is reviewing the Annual Meeting as a strategic Mega Issue. Part of this process involves a review of all available data including input from the Annual Meeting Survey. In reviewing this information, some interesting details about the distribution and use of the Annual Meeting *Program* came to light.

The Annual Meeting *Program* is a useful resource for all members—historically it has been printed and mailed and has also been made available in PDF for download via the SOT website. In May, SOT Council discussed that the Annual Meeting *Programs* are sent to all SOT members even though they may not be attending the Annual Meeting. In addition, copies of the SOT *Program* are freely available at the Annual Meeting. The impact of this practice is that approximately 12,000 *Programs* are printed, and every member receives a copy in the mail whether they attend the meeting or not. Each year, several hundred books are printed but never used and then discarded for recycling. Additionally, some members do not use the *Program* at all, as options such as the Itinerary Planner are available to search and organize schedules for the meeting. In an effort to be more “green” and cost efficient, the following changes

are being implemented for the 2013 Annual Meeting on a trial basis:

- Individuals who register for the Annual Meeting will be asked to indicate on the registration form whether they wish to have the SOT *Program* mailed to them or choose to pick it up at the meeting. There will be a check box added to the registration form to indicate the desired option.
- For those members who do not register for the meeting, SOT *Programs* will be mailed only if requested. Members will have to contact SOT Headquarters to request the *Program*. As noted above, the Annual Meeting *Program* (i.e., Sessions, Abstracts, and Meetings) is posted on the SOT website in January for download in PDF.

We will pilot this change for the 2013 Annual Meeting and then solicit feedback after the Annual Meeting. It is our hope that this change will significantly reduce the number of unused SOT *Programs* and bring savings to the Society.

Additionally, please feel free to contact any Council member or SOT staff with your ideas to support SOT becoming a more green society!

SOT Mega Issue Team—Denise Robinson-Gravatt (Chair), Jon C. Cook, Norbert E. Kaminski, Lois D. Lehman-McKeeman, and Betty Eidemiller

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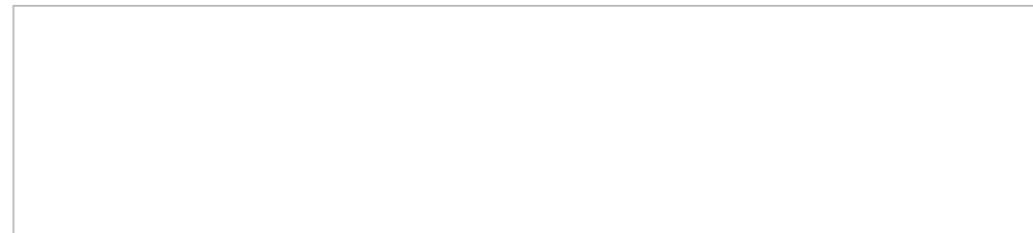
## SOT Annual Meeting Lost and Found Items—Contact SOT Headquarters

At the conclusion of the 2012 SOT Annual Meeting in San Francisco, California several items remained unclaimed in the SOT Headquarters lost and found. These items include a cell phone case, two pairs of glasses, a watch with a maroon and black band, black vinyl notebook, and a blue and black jacket. To reclaim these items, please contact [SOT Headquarters](#).

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### Science News

## ToxSci June 2012; Vol. 127, No. 2 Now Online: SOT Education Summit Summary



Dear Colleague,

The June 2012, Vol. 127, No. 2 of *Toxicological Sciences* is now available [online](#).

This issue includes [“The Toxicology Education Summit: Building the Future of Toxicology Through Education”](#) by Aaron Barchowsky, Lorrene A. Buckley, Gary P. Carlson, Vanessa A. Fitsanakis, Sue M. Ford, Mary Beth Genter, Dori R. Germolec, Teresa L. Leavens, Lois D. Lehman-McKeeman, Stephen H. Safe, Courtney E. W. Sulentic, and Betty J. Eidemiller.

The Society of Toxicology convened the [Toxicology Education Summit](#) to discuss the state of toxicology education and to strategically address educational needs and the sustained advancement of toxicology as a profession. The Summit focused on core issues of: building for the future of toxicology through educational programs; defining education and training needs; developing the “Total Toxicologist”; continued training and retraining of toxicologists to sustain their

careers; and, finally, supporting toxicology education and professional development. This report summarizes the outcomes of the Summit, presents examples of successful programs that advance toxicology education, and concludes with strategies that will insure the future of toxicology through advanced educational initiatives.

Proceeds from the publication of *Toxicological Sciences* are used by SOT to fund programs benefitting researchers in academia, industry, government, and other scientific organizations. By subscribing to *ToxSci*, submitting papers, and reviewing submissions, you make a direct contribution to the toxicology research community. Thank you.

With an increased impact factor of 5.093 (up from 4.814), *ToxSci*, the official journal of SOT, is the top original research journal in Toxicology.

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## **CSR Reinstates Special Emphasis Panel: Environmental Health and Toxicology Grant Applications**

Dear SOT Members,

I am forwarding a message received from Seymour Garte of the Center for Scientific Review (CSR) announcing that the Special Emphasis Panel (SEP) called Systemic Injury by Environmental Exposure (SIEE) has been reinstated to review grant applications “in the fields of Environmental Health and Toxicology.” SOT leadership worked with the CSR for a number of years regarding the need for a Study Section focused on toxicology. This is the next step in that process and builds on the efforts and accomplishments of many individuals. You are encouraged to submit your proposals to this SIEE and the guidelines for submission are included in Dr. Garte’s message below.



Thank you,

William Slikker Jr., PhD, ATS  
2012–2013 SOT President

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### **Systemic Injury by Environmental Exposure (SIEE)**

On January 13, 2012, an expert Working Group met in Bethesda to advise CSR on how to proceed with the review of grant applications in the fields of Environmental Health and Toxicology. That Working Group agreed on a recommendation to reconstitute the Special Emphasis Panel called Systemic Injury by Environmental Exposure as a chartered Study Section in the DKUS IRG. The Working Group also developed a set of guidelines to define the scope of the new study section.

Following the Working Group meeting, senior staff at CSR have discussed and considered these recommendations. One consideration was that new Study Sections are generally established directly after the successful conclusion of a trial SEP. Since it has been three years since the final meeting of the SIEE trial SEP, it has been decided to reconstitute SIEE as a SEP, to meet for 1 to 3 review cycles, before moving on to request permanent chartered status. This will give the scientific community time to generate and submit a sufficient number of high quality applications for review, and will give CSR and its Advisory Council sufficient data to ensure the viability of the new Study Section in the current timeframe. Meanwhile, the new SEP will function as a regular study section dedicated to review of environmental health and toxicology applications.

At this point, CSR staff has begun the process of preparation for the return of SIEE, including recruitment of reviewers, setting dates for meetings, etc. We anticipate the first meeting to be in February 2013, to review applications submitted for the October/November, 2012 deadlines.

We encourage potential applicants in the field of toxicology and environmental health sciences to consider submitting applications directed to this study section, and to view the [new guidelines for SIEE](#).

**Applicants are strongly advised to include a cover letter asking for their applications to be reviewed in the SIEE Special Emphasis Panel (SEP).** The future success of this study section will largely depend on the response from the research community in this vital discipline. Best of luck to all applicants.

Seymour Garte, PhD

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## **NIH Requests Information on Proposal to Modify Biosketch—June 29 Deadline**

Currently the Biographical Sketch (Biosketch) section of National Institutes of Health (NIH) grant, cooperative agreement, and fellowship [forms and applications](#) includes the applicant's personal statement, position and honors, peer-reviewed publications, and current and prior research support. In response to concerns that this format does not fully allow applicants to describe the nature and significance of their achievements, NIH is requesting feedback ([NOT-OD-12-115](#)) on a proposed model and welcomes other proposed changes. [Comments](#) are encouraged and accepted electronically through June 29.

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## **Calls for Interoperability to Advance Science and Address Data Intergration Needs: CCT Workshop**

*Multi-Scale Integration of Human Health and Environmental Data Is Emerging Standard of Best Practice*

*Submitted by Annie M. Jarabek and Glenn Suter, National Center for Environmental Assessment, US Environmental Protection Agency*

*Disclaimer: The views expressed in this article are those of the authors and do not necessarily represent the views or policies of the US Environmental Protection Agency.*

An SOT Contemporary Concepts in Toxicology (CCT) workshop entitled “Multi-scale Integration of Human Health and Environmental Data,” co-sponsored by the US Environmental Protection Agency (US EPA), was held at the US EPA campus in Research Triangle Park, North Carolina on May 8–11, 2012. The Society of Environmental Toxicology and Chemistry (SETAC), International Society of Exposure Science (ISES), the Society of Risk Analysis (SRA), and the International Environmental Modelling and Software Society (iEMSs) also co-sponsored the workshop along with several other governmental agencies including the US Food and Drug Administration (US FDA), USA Army Engineer Research and Developmental Center (ERDC), US Geological Survey (USGS), US Department of Agriculture (USDA), Pacific Northwest National Laboratory (PNNL), and US Nuclear Regulatory Commission; and private sector supporters including the American Chemistry Council, Environ, TERA, OpenMI, Open Geospatial Consortium, and ICF.

CCT workshops are intended as in-depth meetings of significant duration to explore cutting-edge topics. The objective of this meeting was to provide a unique opportunity to convene scientists from different sectors (government, industry,

NGO, and academia) and across the exposure-dose-response-analysis continuum for both ecological and health endpoints to discuss the timely topics of data integration, data management, and model interface needs with software developers, software engineers, database architects and administrators, and data analysts. The special aspect of including software and database experts was so these computational experts could hear the needs and then speak to the technology and design issues that transcend the scientific disciplines to ensure recommendations for a computational infrastructure to support all endeavors, especially data integration.

The workshop consisted of plenary presentations and thematic breakout sessions for five different disciplines: (1) Exposure, transport, and transformation; (2) Ecological risk, ecosystem services, and climate change; (3) Dose-response, Tox21, and risk; (4) Life-cycle/multi-criteria assessment and cost: benefit analysis; and (5) Information technology.

## **Plenary Presentations**

The first day of the workshop was devoted to plenary talks from each of the sectors and from different disciplines within each to introduce the range of issues and perspectives. Virtually all the talks emphasized the need to make data and models from diverse sources more available and more useful through interoperability. Both real-time exposure monitoring and new assays in molecular toxicology are creating huge data sets that must be integrated across exposure durations and different receptors. One speaker noted that we are in the era of a highly technical, “knowing generation” that expect data to be easily discovered electronically, asserting that if data cannot be located via Google then they essentially do not exist.

One participant felt that databases and computational tools must be maintained “live,” reflecting curation and annotation as data or models are used in various applications. Speakers also noted the need to extrapolate across steps in the development process (bench to bedside) and across scale, including the levels of organization within an organism to various locations (gene to globe). The ability to visualize and display data was considered a tool of great utility to convey content and aid inferences. Semantics was identified as a critical issue regarding interoperability for exchanging information across the disciplines. As examples, a vein is not the same in a leaf, fly, or mammal; and “species” in different modeling arenas may represent a reaction molecule or a rat.

An example of interoperability in the environmental arena was provided by Daniel Ames of Idaho State University. He described the Consortium of Universities for the Advancement of Hydrologic Science’s (CUAHSI) open Hydrologic Information System (HIS) including Hydrosolver, HydroDesktop and HIS Central. Together, they provide a complete platform for storing and organizing hydrologic and water quality data and then extracting, organizing, plotting, mapping, and linking to models. HIS achieves consistency, interoperability and transparency through standards and open licensing. It was noted that such comprehensive environmental descriptions will need to be linked to human health, toxicological, and life-cycle or benefit assessment models to achieve characterization of sustainability for environmental decision making.

The speakers from NGOs emphasized the need for openness both for their own projects and for the public. The information technology speakers described efforts to standardize data and model management in ways that enhance interoperability. The Open Modeling Interface Standard (Open MI) and Open Geospatial Consortium were presented as efforts that have achieved integrated dynamic environmental modeling via use of international standards for spatial data and interfaces. Resource description format (rdf) is a family of World Wide Web Consortium (W3C) specifications that were originally designed as a metadata data model that can be used as a general method for conceptual description or modeling of information that is implemented in web resources, using a variety of syntax formats.

## **Disciplinary Breakout Sessions and Thematic “Ambassadors”**

Experts in each of the five theme areas served as invited participants and joined other workshop attendees to grapple with articulating best practices and recommendations to facilitate data integration both within and across the disciplines. “Ambassadors” from other disciplines joined the discussions to foster cross-fertilization and stimulate development of interfaces and data integration, and feedback indicated that this was a particularly useful construct as each theme learned a great deal about the needs and challenges in the disciplines, representing some resonant and others disparate with their own. Consistent messages across the disciplines were heard with respect to the need for data discovery and modular

“plug and play” capabilities to facilitate comparisons and transparency in given derivations or decisions. The need for maintenance and curation to ensure quality assurance of databases also was a prominent recommendation.

### **Next Steps—Stay Tuned for Publications**

Participants in each session are developing state-of-the-science manuscripts that describe perspectives on best practices and summary of information technology needs to advance that discipline. A separate synthesis manuscript will articulate a set of recommendations for standards on interoperability and computational systems to support data integration across the disciplines.



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## **PPTOX III International Meeting on Role of Environmental Exposures and Nutrients: CCT Workshop**

*“Fantastic effort to bring together diverse subjects/people around the fetal programming issue.”*

*“The size of the conference was perfect and conducive to interaction.”*

*“The numerous opportunities to network and discuss with speakers and attendees were greatly appreciated.”*

*“This conference brought two separate fields together: threats from environmental chemicals and nutrition, both impacting early life development and disease risk in later life.”*

The [PPTOX III International Conference](#) held May 14–16, 2012, in Paris, France, focused on “Environmental Stressors in the Developmental Origins of Disease: Evidence and Mechanisms.” Immediately above are some of the survey comments received from conference attendees regarding this third SOT Contemporary Concepts of Toxicology conference (CCT) on Prenatal Programming and Toxicity (PPTOX). The first PPTOX conference took place in Torshavn, Faroe Islands in 2007 and the second in Miami, Florida in 2009.

This May 2012 international conference focused on the role of environmental exposures and nutrients during

development on subsequent diseases/dysfunctions in later life. The conference examined the animal and human data supporting this hypothesis (developmental basis of disease) by disease, organ system, and mechanism in order to review the current state of the literature and to identify mechanisms for the effects as well as to identify research gaps and challenges and integrate the basic and applied science.

Presentations and discussions addressed broad and diverse topics such as the following:

- New epidemiological and toxicological evidence for the contribution of developmental exposure to adult disease
- Predictive value of animal and alternative models
- Essential contribution of epigenetics to programming
- Effect of chemical or physical insults as well as nutritional imbalance on stem cells
- Long path from discovery to regulation

The Organizing Committee for PPTOX III included the following members

- Robert Barouki, Co-Chair (France)
- Peter Gluckman (New Zealand)
- Philippe Grandjean, Co-Chair (Denmark)
- Mark Hanson (United Kingdom)
- Jerrold Heindel (United States)
- Gérard Lasfargue (France)

This committee drafted a “consensus paper” on the current scientific insight in this field and the implications for future research and public health and sought the comments of conference attendees. Following a review of the comments, the organizing committee submitted this paper to the online journal, *Environmental Health* for publication. The June Issue of NIEHS *Environmental Factors* also includes an article on this conference, [“Scientists explore developmental origins of disease.”](#)

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## **Scientific Liaison Coalition Holds Fourth Successful Face-to-Face Meeting in San Francisco**

The fourth face-to-face meeting of the Scientific Liaison Coalition (SLC) was held in San Francisco, California on March 11, 2012, in conjunction with the SOT 2012 Annual Meeting. SLC Chair David G. Kaufman welcomed the society representatives and encouraged the members of this coalition to broaden the base of excellent topics and activities undertaken by this diverse group. In addition to Dr. Kaufman, who serves as one of the representatives of the American Association for Cancer Research (AACR), the meeting participants included John Benitez (American College of Medical Toxicology, ACMT), Sally Darney (Society for the Study of Reproduction, SSR), John DeSesso (Teratology Society), Patrick D. Guiney (Society of Environmental Chemistry and Toxicology, SETAC), Kenneth L. Hastings, (SOT Scientific Liaison Task Force, SLTF), Mary Jeanne Kallman (Safety Pharmacology Society, SPS), Thomas Knudsen (SLTF), Shawn Lamb (SOT Executive Director), Lois D. Lehman-McKeeman (SOT Vice President and Council Contact), Kevin McDorman (Society of Toxicologic Pathology, STP), Kenneth McMartin (American Academy of Clinical Toxicology, AACT), Donna Mendrick (SOT Disease Prevention Task Force, DPTF), Ofelia Olivero (Environmental Mutagen Society, EMS), Trevor Penning (American Chemical Society, ACS–Division of Chemical Toxicology), Sue Pitsch (STP Executive Director), Allister Vale (SOT Clinical and Translational Toxicology Specialty Section, CTTSS), Paul Watkins (SLTF, via phone), and Marcia Lawson, SLC Staff Administrator. Representatives to the SLC from the American Society for Pharmacology & Experimental Therapeutics (ASPET), The Endocrine Society (ENDO), International Society for the Study of Xenobiotics (ISSX), and the Society for Risk Analysis (SRA) were not available to attend this meeting.

The mission of the SLC was reviewed and affirmed by the meeting participants as follows:

- Improve the ability of societies to partner with other domestic and international organizations with the goal of

- increasing the impact of science to improve human and environmental health;
- Strengthen partnerships among scientific and health-based organizations to increase awareness of the impact of toxicology and related science on human health; and
- Function as a means to enhance cooperation among societies as equals with the goal of accomplishing objectives benefiting human health and disease prevention through joint and shared activities.

Significant outcomes of this meeting included the development and submission of two 2013 SOT Annual Meeting proposals and the request to endorse two proposals. Efforts are now underway to develop two Contemporary Concepts in Toxicology (CCT) conferences. All the endeavors of the SLC are related to human health and disease prevention.

The next face-to-face meeting of the SLC will be held in mid-November 2012 in the Washington, DC metro area. The SLC welcomes the participation of other societies whose missions are aligned with that of this coalition. For more information, please contact [Marcia Lawson](#), SLC Administrator.

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## Science News Alert

News Head

### SOT Sponsored and Endorsed Non-SOT Meetings

**Please see the information below and contact the organizers directly if you wish to participate.**

**You are encouraged to seek support for your meetings through the funding available for [Non-SOT Meeting support](#) and [Global Initiative Funding](#).**

#### Teratology Society 52nd Annual Meeting—June 23–27

The 52nd Annual Meeting of the Teratology Society will be held June 23–27, 2012, in Baltimore, Maryland. The 2012 meeting theme is “Global Perspectives in Teratology” and will highlight birth defects research and issues, which have global impact. Topics include maternal/fetal health in developing countries, impacts of nuclear disasters on reproduction and development, effects of Vitamin D deficiency on maternal and fetal health, international controversies concerning hazard- versus risk-based regulations, and novel computational approaches for assessing safety during pregnancy and development. The interdisciplinary nature of the Society provides unique opportunities to look broadly at these complex issues. For more information, visit the [Teratology Society Annual Meeting website](#).

#### Upcoming Training Opportunities from Toxicology Excellence for Risk Assessment (TERA)

Toxicology Excellence for Risk Assessment (TERA) has 2 upcoming Dose-Response Assessment Boot Camps. TERA’s Dose-Response Assessment Boot Camp is an intensive, hands-on training course in hazard characterization and dose-response assessment. TERA has trained over 300 people from 11 different countries in the last 5 years! Upcoming courses are a 4-day Course: July 23–26, 2012, in Sydney, Australia (following the World Congress on Risk) and a 5-Day Course: October 15–19, 2012, in Washington, DC. For more details visit the [TERA courses website](#).

TERA is also offering a webinar entitled “WEBINAR: Practitioner’s Guide to Risk Assessment for Developmental and Reproductive Toxicology (DART).” The webinar will be held on Wednesday, June 13, 2012, from 1:00 pm–5:00 pm EDT. The course is intended for health scientists and product stewardship professionals who need to consider the

potential for reproductive and developmental effects of their chemicals or products. Learning objectives of the course include: interpreting adversity and clinical relevance of DART endpoints; applying dose-response techniques; evaluating mode of action and human relevance; optimizing testing needs and strategies; and understanding key concepts in current risk assessment guidance for DART. For more details visit the [TERA webinars website](#).

For more information on any of the training offered by TERA, please contact: [Patricia Nance](#) at 513.542.7475, Ext 25.

### **Society of Toxicologic Pathology 31st Annual Symposium June 24–28**

“Mechanisms of Toxicity” is the theme of the Society of Toxicologic Pathology (STP) 31st Annual Symposium to be held June 24–28, 2012, at the Boston Marriott Copley Place. The global regulatory agencies and the general public require outstanding scientific rigor and quality in the human risk assessment of xenobiotics. To meet these demands, the toxicology and pathology professions are positioned to take advantage of key learnings captured from major advances in the molecular understanding of host defense, disease, and toxicity processes. The purpose of the 2012 Annual Symposium will be to examine the mechanism of toxicity in six general sessions covering tissue injury related to 1) host factors; 2) chemical structure; 3) xenobiotic cellular targets (on- and off-target); 4) new technologies (e.g., nanotechnology, siRNA therapy, and immunoconjugates); 5) cellular organelle specific effects; and 6) high profile environmental chemicals and consumer products. For additional information, please visit the [STP 31st Annual Symposium website](#).

### **Environmental Mutagen Society 43rd Annual Meeting September 8–12**

The 43rd Annual Meeting of the Environmental Mutagen Society (EMS), “EMS: The Next Generation,” will be held September 8–12, 2012, at the Hyatt Regency Bellevue, in Bellevue, Washington. The meeting provides a broad scientific forum for basic and applied researchers as well as students and teachers to review the latest information linking environmental conditions to adverse health outcomes. The emphasis of the meeting is to 1) present cutting-edge basic research in the areas of DNA repair, regulation of gene expression, epigenetics, systems biology, mutagenesis, inflammation cancer, and aging in eight symposia and seven keynote lectures; 2) present emerging “next generation” technologies and approaches in genomic research, genetic toxicology, and risk assessment; 3) feature the work of students, new and early stage investigators, and EMS members in six platform sessions; 4) network with students, mentors and colleagues at ten Special Interest Group (SIG) meetings, two receptions and a banquet; and finally 5) entice students and new and early stage investigators to become the “Next Generation” EMS members. This is a meeting not to be missed. For additional information, visit the [EMS 2012 Annual Meeting website](#).

### **8th Congress of Toxicology in Developing Countries—September 10–13**

The 8th Congress of Toxicology in Developing Countries (8CTDC) will be held from September 10–13, 2012, in Bangkok, Thailand. The 8CTDC will provide an opportunity to cover a wide range of topics representing the latest scientific advancements as well as toxicological problems in developing countries. Present your work by submitting an abstract by the submission deadline of April 30, 2012. Abstract submission instructions can be found on the [8CTDC website](#). Those who submit an abstract may be eligible to receive a travel award to assist in attending this world class meeting. Full information and award application can be found on the [IUTOX website](#). A scientific program is planned that will allow attendees to participate and benefit from the exchange of views and ideas from around the world. Due to its natural beauty and rich cultural heritage, Bangkok is a unique city with lots to offer its visitors. Register for 8CTDC by June 2, 2012, to receive discounted [registration rates](#). Full meeting details may be found on the [8CTDC website](#).

### **Safety Pharmacology Society, October 1–4**

The [SPS 12th Annual Meeting](#), which will be held October 1–4, 2012, in Phoenix, Arizona provides a dynamic forum for sharing the latest in safety pharmacology. The scientific program offers in-depth discussion of relevant topics to keep you “in the know.” This meeting will feature a diverse range of scientific sessions organized into two thematic tracks and covering issues specific to important therapeutic areas, new regulatory developments, and new technologies. Please consider [submitting an abstract](#) for presentation as a poster by the deadline of June 15, 2012. From these submissions, a number will be selected for short oral communications. The meeting will kick off with a full day of [Continuing Education](#) courses in a broad range of topics. In an effort to support attendance from our younger

colleagues, please note that SPS offers [Student and Junior Investigator Travel Awards](#). [Register now](#) to receive the Early Bird rate.

### **2012 Careers in Toxicology Workshop—July 18–20**

The Curriculum in Toxicology at the University of North Carolina at Chapel Hill will hold a workshop on career tracks in toxicology at the North Carolina Biotechnology Center in Research Triangle Park, North Carolina. This workshop is targeted to students enrolled in graduate training programs in toxicology. Its aim is to expose trainees to employment paths beyond traditional academic research settings, including research and regulatory careers in the private and public sectors. The program will include presentations by toxicologists in senior positions in the pharmaceutical, consumer products, energy and chemical industries, as well as government agencies and private consulting firms. Additional information will be available on the [NCbiotech website](#).

### **2nd International Conference on Environmental Pollution, Restoration, and Management: Hanoi, March 2013—Abstract Submission Open**

This international conference will be held in Hanoi, Vietnam, March 4–8, 2013. In addition to SOT, the sponsoring organizations include the Society of Environmental Toxicology and Chemistry (SETAC), Loyola University of Chicago, and Hanoi University of Science. According to the conference organizers, “this conference is important for understanding and solving environmental problems and is critical to scientists, managers, and students in developing countries.” Participants from 54 different countries attended the first conference, and this second conference is anticipated to provide great opportunities for research and education collaborations for students and scientists around the world. The [abstract submission site](#) is now open. More information can be found on the [conference website](#) or contact [Tham Hoang/Rachel Pryor](#), or [Nhan Dang](#).

### **Other Meetings of Interest**

#### **Short Course on Industrial Toxicology and Pathology July 23–27**

The 9th Biennial Short Course on Industrial Toxicology and Pathology, sponsored by the University of Illinois College of Veterinary Medicine and co-sponsored by the Society of Toxicologic Pathology, will be held July 23–27 in Champaign, Illinois.

Session One: *Toxicology & Pathology in Drug Discovery and Development* including Emerging Issue: Metabolic Syndrome. This session is designed for toxicologists, pathologists, and other professionals working in the pharmaceutical, chemical, and consumer products fields with a primary emphasis on drug discovery and development. The session also is applicable to professionals responsible for design and evaluation, safety assessment, and regulatory issues associated with product development in industry, government, and contract laboratories. The objective of the session is to address current global issues in the rapidly advancing fields of toxicology and pathology; to enhance attendees’ skills in interpreting animal safety studies; to facilitate interactions with federal regulatory agencies; and to provide networking opportunities.

Session Two: *Contemporary Concepts in Target Organ Toxicologic Pathology*. Renal and Respiratory Systems: This session is designed for pathologists, toxicologists, and other professionals working in toxicology-related fields such as the pharmaceutical, chemical, consumer, and environmental areas. The objective of the session is to provide an understanding of the basis and manifestations of target organ responses to xenobiotic injury as well as cutting-edge concepts. Further information available on the [course website](#).

SOT sponsors two types of meetings outside of the SOT Annual Meeting: [Contemporary Concepts in Toxicology \(CCT\)](#) and [Non-SOT meetings](#). CCT meetings are one- to two-day focused, open registration, scientific meetings in contemporary and rapidly progressing areas of toxicological sciences. Non-SOT meetings are sponsored by other not-for-profit organizations and SOT will either endorse or provide

sponsorship money to toxicology-related meetings.

Mark your calendar SOT Annual Meeting [March 10–14, 2013!](#)

## **Legislative and Regulatory Update**

### **SOT Urges Hill to Increase Funding for NIH and NIEHS**

SOT and a number of scientific societies and nongovernmental organizations will be submitting a letter in early April urging leaders of both House and Senate Appropriations Subcommittees to provide an appropriation of \$32 billion for the National Institutes of Health and \$717.7 million for the National Institute of Environmental Health Sciences in FY2013. The \$32 billion represents a 4.5 percent increase over the FY2012 level of \$30.7 billion. The letters will be sent to the Chairman and Ranking Member of the House Appropriations Subcommittee on Interior, Environment and Related Agencies and to the Chairman and Ranking member of the Senate Appropriations Subcommittee on Labor, Health and Human Services, Education and Related Agencies. In the letters, SOT and others urge the Members of Congress to “sustain, not curtail, the innovative biomedical research pipeline into prevention, treatments, and cures for diseases affecting millions of Americans.”

In related developments, more than 150 Members of the House of Representatives sent a letter to the House Appropriations Committee leadership requesting a funding level for NIH of at least \$32 billion. The bipartisan letter signed by Reps. Edward Markey (D-MA) and Brian Bilbray (R-CA) the Member said, “We feel this level is absolutely vital in order for NIH to continue improving health through medical science breakthroughs and to maintain international leadership in science and biomedical research.”

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### **Obama Administration Releases Bioeconomy Blueprint**

The Office of Science and Technology Policy (OSTP) has released the “[National Bioeconomy Blueprint](#),” which highlights the steps the federal government could take to accelerate economic growth that comes from discoveries in biological research. The five strategic objectives that are outlined in the Blueprint include the following:

1. Support for R&D investments, including trans-disciplinary and research across federal science agencies.
2. Facilitate transition of inventions from research labs to market, including a focus on translational and regulatory sciences.
3. Develop and reform regulation to reduce barriers and streamline processes.
4. Update training programs and align academic institution incentives with student training for national workforce needs.
5. Identify and support opportunities for public-private partnerships and precompetitive collaborations.

Upon releasing the [Blueprint](#), OSTP Director John P. Holdren said, “This Administration is committed to accelerating these advances and ensuring that federal agencies and private entities work together to bring the benefits of the bioeconomy to market as quickly as possible.”

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### **International Animal Research Regulations: Impact on Neuroscience Research Workshop Summary Released**

The Institute of Medicine sponsored a workshop that brought together key stakeholders to discuss animal research regulations from a global perspective and emerging and current trends in animal regulations as they apply to neuroscience. A report, which summarizes that workshop, is now available on the [Institute of Medicine’s website](#).

To consider animal research regulations from a global perspective, the IOM Forum on Neuroscience and Nervous System Disorders, in collaboration with the National Research Council and the Institute for Laboratory Animal Research, held a workshop in Buckinghamshire, UK, July 26–27, 2011. The workshop brought together neuroscientists, legal scholars, administrators, and other key stakeholders to discuss current and emerging trends in animal regulations as they apply to the neurosciences. This [document](#) summarizes the workshop.

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## **US EPA Identifies 18 Chemicals for Review and Assessment in 2013 and 2014**

The US Environmental Protection Agency (US EPA) has identified 18 chemicals for review and assessment in 2013 and 2014 as part of the US EPA's comprehensive approach to enhance the Agency's chemical management program. Additional information about this effort, which includes the list of 18 chemicals, can be found at [US EPA Existing Chemicals](#) website (Identifying TSCA Work Plan Chemicals).

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## **NAS to Review US EPA IRIS Assessment Development Process**

The National Academy of Sciences (NAS) plans to conduct a comprehensive review of the US Environmental Protection Agency's (US EPA) Integrated Risk Information System (IRIS), which is designed to protect Americans' health and the environment. In 2011, NAS issued a series of recommendations to improve the program, and US EPA has incorporated those recommendations. NAS plans to review current methods for weight of evidence analyses and recommend approaches for weighing scientific evidence for chemical hazard identification. For more information about IRIS go to, the US EPA's [Integrated Risk Information System \(IRIS\) website](#).

### **Position Advertisement(s)**

## **Employment Position: Sally Beauty Holdings, Product Safety Scientist**

Sally Beauty Holdings, the world's largest wholesale and retail distributor of beauty supplies, is currently searching for a Product Safety Scientist. Our world headquarters is conveniently located just five minutes north of Lake Lewisville, Texas off of I35E.

The Product Safety Scientist will be responsible for providing the technical expertise for product safety assessments and ensures chemical ingredient regulatory compliance.

- Develops and maintains databases to house chemical ingredient safety and regulatory information. Interacts with vendors/raw material manufacturers and obtain all necessary technical information, including BSE certificates. Researches available literature for safety data on ingredients. Reviews and summarizes safety data from all sources.
- Works closely with Merchandizing Department on private label product development. Evaluates quantitative formulas for regulatory compliance and safety assessment of the products.
- Develops and maintains a database to house fragrance material information. Interacts with vendors to obtain IFRA compliance certificate and safety evaluation for each fragrance composition. Obtains semi-quantitative fragrance disclosure and enters in the database. Assesses product impact as per IFRA annual amendment and other regulations affecting fragrances.
- Researches and maintains up-to-date ingredient regulatory status from various US and international regulatory agencies.
- Prepares safety assessment section of PCPC Safety Information Summary for each private label product.
- Maintains a close watch on developing science/toxicology issues related to cosmetic ingredients. Responds to PCPC and other ingredient use surveys.

Provides safety testing and claim substantiation support for private label products. Selects and qualifies outside labs to perform required studies. Coordinates with outside lab on study protocol preparation, testing sample submission, etc.

**Requirements:**

- PhD in toxicology, pharmacology, biomedical sciences, chemistry, or biochemistry required.
- One to three years of industry and/or academic laboratory experience.
- Understanding of pre-clinical and clinical studies and able to summarize findings accurately. Experience in US and international regulatory issues a plus.
- Good knowledge of computer software including Microsoft Word, Excel, and database systems like Access, etc.
- Versed in various Internet literature search engines.
- Good writing ability, communication skills, and organization skills. Must be familiar with chemical names and technical terms.

To apply, visit the [Careers at Sally Beauty website](#).

We offer a competitive salary, outstanding benefits package that includes medical, dental, vision, life Insurance, paid vacation and sick days, paid holidays, merchandise discounts, tuition reimbursement, profit sharing, and 401(k) with company match.

Sally Beauty is an Equal Opportunity Employer.

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