



National Capital Area Chapter  
Society of Toxicology Newsletter  
Electronic Edition

January 2013

Issue No. 33  
*M. Biggs, Editor*

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**CHAPTER MISSION STATEMENT**

The National Capital Area Chapter of the Society of Toxicology (NCAC-SOT) was established to provide a regional focus for scientists of all disciplines interested in toxicology. The Chapter acts to:

- Sponsor and co-sponsor symposia on current issues in toxicology
- Provide annual awards to an outstanding student and postdoc in toxicology to assist in attending the annual meeting of the SOT
- Maintain communication with the National SOT regarding current toxicology and regulatory concerns
- Sponsor Regional Chapter events at the SOT Annual Meetings

## **PRESIDENT'S MESSAGE**

Greetings from the President's chair, and Happy Fall/Winter!

We have had a very productive fall, beginning with our Fall Symposium on NexGen Risk assessment, which was a great success. At the symposium, Dr. Daniel Krewski unveiled his recommendations for a comprehensive framework for risk assessment, which incorporates systems thinking. Other speakers included Dr. Russell Thomas and Dr. Weihsueh Chiu. They presented a range of views on the use of new toxicity testing tools for understanding human health risk. The presentations were followed by a panel discussion exploring opportunities and challenges to implementation. A summary of the symposium is on page 6 of this newsletter.

After the symposium we hosted a short business meeting followed by a social hour. This provided a welcome opportunity to extend the conversation and network with colleagues and friends.

The Fall Symposium was held at the Hall of States, which is more centrally located than the NIH campus. The change in venue, in addition to a later start time, was made in order to recruit more attendees. These modifications appear to have worked as we had the highest number of attendees in years!

As you know, we have decided to raise our regular membership rate from \$20 to \$25 per year. There is no change to student and postdoc membership rates. This modest increase is designed to help defray the increasing costs of our fall and spring symposia and allow us to continue our support of students. We hope you agree that this small increase is worth the benefits it will provide, including venue rental costs.

We are all looking forward to the annual meeting in San Antonio. We will be hosting our traditional get together, the details of which are in the works. And, we are actively working on our Spring Symposium, which will be held in mid-May. I do hope you will be able to join us both in San Antonio and back here in the DC area. Until then, I wish everyone a happy and healthy fall, winter, and holiday season.

*Cal Baier-Anderson, Ph.D.*  
*NCAC-SOT President*

## **GRADUATE STUDENT REPRESENTATIVE'S MESSAGE**

Greetings NCAC-SOT Students,

We recently held our Annual Fall Symposium, NexGen Initiative for Risk Assessment, at the Hall of States in Washington, D.C. Speakers addressed a variety of topics from current tools in risk assessment to agency perspectives. The symposium finished with a question and answer panel, business meeting, and a social happy hour.

Prior to the symposium, students participated in a “Lunch with an Expert” event, which was located at The Monocle Restaurant in D.C. This year our experts included: Dr. Weihsueh Chiu, Dr. Chris Rowlands, Dr. Bruce Fowler, and Dr. Laurie Roszell. Thank you to all of the speakers and students who were able to join us!

If you’re looking to get further involved in NCAC-SOT related activities, we encourage you to participate in the YouTox Video Challenge. You can learn more about the YouTox Video Challenge at <http://www.toxicology.org/ai/spd/studentservices.asp>.

Joining NCAC-SOT as a student only costs \$10.00! This gives you the opportunity to apply for NCAC-SOT awards as well as network with professionals from government, academia, and industry. We highly encourage student participation. Please get in contact with us if you have additional questions or want to get involved!

Our graduate student representative, Anna, will be graduating in December. Congratulations, Anna! We will be now be accepting applications for the vice student representative, the position begins January 2013. Please email [sot.ncac.officers@gmail.com](mailto:sot.ncac.officers@gmail.com) for more information.

You can also contact us online! Find us on ToxChange, and follow us on Facebook (SOT NCAC Group) and Twitter(SOTNCAC) to keep up with current events within the local chapter!

*Abhishruti Saitu Parihar*  
*Student Representative*

### **POST-DOCTORAL REPRESENTATIVE’S MESSAGE**

Dear NCAC-SOT Postdocs,

The 52<sup>nd</sup> Annual Society of Toxicology meeting in San Antonio, TX is right around the corner. When registering, don’t forget to sign up for some of the postdoc-specific activities including the Postdoctoral Assembly (PDA) Luncheon, the Student/Postdoc Scholar Mixer, and the *In Vitro* Toxicology Lecture and Luncheon for Students/Postdocs. A complete list of these activities can be found at the following website:  
<http://www.toxicology.org/AI/MEET/AM2013/studevent.asp>.

The PDA is also sponsoring the Gordon Research Seminar on *Cellular & Molecular Mechanisms of Toxicity* at the Proctor Academy in Andover, NH on August 10-11, 2013 ([http://www.grc.org/programs.aspx?year=2013&program=grs\\_tox](http://www.grc.org/programs.aspx?year=2013&program=grs_tox)). Please consider attending this meeting and presenting your work. The registration deadline is July 13, 2013.

The PDA is in the process of updating the Postdoctoral Scholar section of the SOT website (<https://www.toxicology.org/ai/spd/PD.asp>). If you have any suggestions for things you'd like to see on the website, please contact me at [linnzi.k.wright.ctr@us.army.mil](mailto:linnzi.k.wright.ctr@us.army.mil).

Sincerely,

*Linnzi Wright*  
*NCAC-SOT Postdoc Representative*

### **NCAC-SOT Membership**

Did you remember to renew both your SOT and NCAC memberships this year?? Annual membership fees for NCAC-SOT are only \$25 for regular memberships and \$10 for full-time students. These negligible fees are used to fund our symposium each year and to support a myriad of student activities, including student awards, travel supplements, and K-12 outreach.

If you have not yet renewed your regional chapter membership, please do so today! You can do so online at <http://www.toxicology.org/script/loginredirect2.asp?page=dues>, or just fill out and mail in the membership application found at the end of this newsletter. It's never too late to renew your NCAC-SOT membership for 2013!

## NCAC-SOT EXECUTIVE BOARD MEMBERS

President:	Cal Baier-Anderson (2012-2013) US Environmental Protection Agency 202-564-1933 <a href="mailto:baier-anderson.caroline@epamail.epa.gov">baier-anderson.caroline@epamail.epa.gov</a>	Postdoctoral Representative:	Linnzi Wright (2012-2013) US Army Medical Research Institute of Chemical Defense <a href="mailto:linnzi.k.wright.ctr@us.army.mil">linnzi.k.wright.ctr@us.army.mil</a>
Vice-President/ President-elect:	Bruce Fowler (2012-2013) ICF International 703-934-3324 <a href="mailto:bfowler@icfi.com">bfowler@icfi.com</a>	Graduate Student Representative:	Abhishruti Saitu Parihar University of Maryland School of Medicine 410-706-7307 <a href="mailto:Asparihar@umaryland.edu">Asparihar@umaryland.edu</a>
Past President/ Councilor:	Laurie Roszell (2012-2013) US Army Institute for Public Health 410-436-8774 <a href="mailto:Laurie.roszell@us.army.mil">Laurie.roszell@us.army.mil</a>		
Secretary:	Erik Janus (2012-2015) Steptoe & Johnson LLP 202-429-3025 <a href="mailto:ejanus@steptoe.com">ejanus@steptoe.com</a>		
Treasurer:	Christopher Sheth (2012-2015) National Center for Environmental Assessment 703-347-0207 <a href="mailto:sheth.christopher@epa.gov">sheth.christopher@epa.gov</a>		
Councilors:	Melanie Biggs, Newsletter editor (2012-2015) Consumer Product Safety Commission 301-987-2593 <a href="mailto:mbiggs@cpsc.gov">mbiggs@cpsc.gov</a>		
	Rosemary Schuh, Graduate student liaison (2012-2013) University of Maryland 410-605-7000 x6498 <a href="mailto:rschu003@umaryland.edu">rschu003@umaryland.edu</a>		
	Syril Pettit, Website coordinator (2012-2014) Health and Environmental Sciences Institute 202-659-3306 x189 <a href="mailto:spettit@ilsi.org">spettit@ilsi.org</a>		

## **2012 FALL SYMPOSIUM**

The fall meeting of the NCAC-SOT was held on September 26, 2012 in the Hall of States in Washington DC. The theme of the meeting was “NexGen Initiative for Risk Assessment” and featured first line speakers from Academia, Government, and Industry to discuss the EPA NexGen Initiative for Risk Assessment. This initiative represents a bold agency effort to incorporate the tools of 21<sup>st</sup> Century molecular/computational science into risk assessment practice. Featured plenary speakers included Dr. Dan Krewski from the University of Ottawa, Dr. Russell Thomas from the Hamner Institutes for Health Sciences in Research Triangle Park, NC, and Dr. Weihsueh Chiu from USEPA/NCEA in Washington, DC. Dr. Krewski gave a global overview on the state of the science for incorporation of NexGen approaches into risk assessment. Dr. Thomas provided a lecture on the application of data- driven methods for improving incorporation of molecular data into the risk assessment process. Dr. Chiu gave a lecture on use of NexGen methods for risk assessment within the EPA.

These presentations were followed by an excellent panel discussion, which included the three plenary speakers and Dr. Ramasamy Santhini (USEPA Office of Water, Washington, D.C) and Dr. J. Craig Rowlands (Dow Chemical company, Midland, MI). This panel discussion, with audience participation, provided a broader set of perspectives on facilitating the incorporation of NexGen approaches into risk assessment practice on an expedited basis.

The panel discussion was followed by a business meeting of the NCAC-SOT and a social hour.

### **Speaker Abstracts**

#### **Keynote Address: An Overview of Progress on the NexGen Initiative for Risk Assessment**

*Daniel Krewski, Ph.D., University of Ottawa, Ottawa, Canada*

*Abstract:* Building on recent advances in risk science, the US EPA has conceptualized a new paradigm for the next generation of risk assessment and risk management. The ‘NexGen’ framework is built upon three cornerstones: a renewed focus on new risk assessment methodologies designed to better inform risk management decision making; the availability of new data on toxicity pathways made possible by fundamental advances in basic biology and toxicological science; and the incorporation of a population health perspective that recognizes that most adverse health outcomes involve multiple determinants. Phase I (objectives) focuses on problem formulation and scoping, taking into account the risk context and the range of available or admissible risk management decision making options. Phase II (risk assessment) seeks to identify critical biological pathway perturbations using new toxicity testing tools and technologies and to better characterize risks and uncertainties using advanced risk assessment methodologies. A blueprint for pathway-based toxicity testing was provided by the US National Research Council its 2007 report, Toxicity Testing in the 21st Century: A Vision and a Strategy; guidance on some of the new risk assessment methods is provided by the 2009 report, Science and Decisions, Advancing Risk Assessment. Phase III (risk management) involves the development of evidence-based population health risk management strategies of a regulatory, economic, advisory, community, or technological nature, based on sound principles of risk management decision making. Implementation of the NexGen framework is explored using a

series of case-study prototypes, illustrating those aspects of the framework that have already been adopted into practice.

## **Incorporating 21<sup>st</sup> Century Tools into Chemical Risk Assessment**

*Russell Thomas, Ph.D., The Hamner Institutes for Health Sciences, Research Triangle Park, NC*

*Abstract:* The release of the National Research Council's Report "Toxicity Testing in the 21st Century: A Vision and a Strategy" in 2007 initiated a broad-based movement in the toxicology community to re-think how toxicity testing and risk assessment are performed. Since the release of the report, efforts such as the Human Toxicology Project, Risk21, and others have added to the momentum, but the majority of these efforts have focused more on a vision of how things should be done rather than the development of a data-driven paradigm. The focus on vision has been due to a lack of adequate datasets that would be required to develop a data-driven paradigm. This lack of data is gradually changing with the release of the ToxCast Phase I data, the development of high-throughput dosimetry approaches, and the collection of short-term *in vivo* transcriptomic studies. The seminar will briefly cover a series of studies that together inform what could be seen as a basis for a new data-driven paradigm to toxicity testing and risk assessment. The first study is a comprehensive cross-validation model comparison to evaluate the predictive performance of the more than 600 *in vitro* assays from the ToxCast Phase I screening effort across 60 *in vivo* endpoints using 84 different statistical classification methods. The predictive performance of the *in vitro* assays was compared to that of chemical structure descriptors. The results showed that the current suite of ToxCast high-throughput toxicity assays have limited applicability for predicting *in vivo* chemical hazards using standard statistical classification methods. However, if viewed as a survey of potential molecular initiating events and interpreted as risk factors for toxicity, the assays may still be useful for chemical prioritization. The second study involves the development of high-throughput methods for estimating pharmacokinetics for *in vitro* studies. Hepatic metabolic clearance and plasma protein binding were experimentally measured for a subset of the ToxCast Phase I chemicals using rat hepatocytes and plasma. Computational pharmacokinetic models used these results to estimate the rat daily oral dose necessary to produce steady-state *in vivo* blood concentrations equivalent to the AC50 values obtained in the 600 *in vitro* ToxCast assays. The estimated rat daily oral doses associated with the *in vitro* assays were compared to the low effect levels (LEL) for apical responses obtained from *in vivo* rodent studies.

The results showed that the daily oral dose equivalent for the most sensitive *in vitro* assay provided a conservative estimate of the *in vivo* LEL value. The third study involves short-term *in vivo* transcriptomic measurements that were performed in dose-response and a multiple time points. When transcriptomic changes were grouped by pathway, the transcriptional dose-response changes were strongly correlated with both noncancer- and cancer-related apical endpoints and the correlations appeared stable over time and target tissue. In addition, transcriptional points-of-departure for the most sensitive pathway differed by less than an order of magnitude from the points-of-departure based on traditional apical endpoints.

Together the three studies argue for a new tiered toxicity testing framework that is not based on the traditional model of hazard identification in animals. Rather, the new paradigm identifies a

region of the dose-response curve where no significant biological perturbations are expected. A comparison of the region of safety with human exposure estimates provides a means to eliminate chemicals from further testing or transition chemicals to higher tiers while at the same time providing points-of-departure for risk assessment.

### **NexGen Applications within EPA – An Agency Perspective**

*Weihshueh Chiu, Ph.D., The Environmental Protection Agency, Office of Research and Development, Washington, DC*

*No abstract available*

### **Industry Perspectives on Application of NexGen Approaches to Risk Assessment**

*J. Craig Rowlands, Ph.D., Dow Chemical, Midland, MI*

*Abstract:* Scientific initiatives toward more realistic risk assessment have greatly expanded over the last number of years, taking advantage of new techniques and methods (a.k.a., 21st century toxicology methods). The Environmental Protection Agency (EPA) initiative is called Advancing the Next Generation of Risk Assessment (NexGen) and is a collaborative effort among multiple EPA offices, government agencies and state agencies. Transition to NexGen that will utilize new integrative and predictive molecular and computational techniques will be enhanced through increased collaboration and engagement across the scientific community – including industry scientists – to interpret 21st century toxicology methods for chemical prioritization and safety assessment. Increased transparency of relevant data and algorithms will allow EPA to leverage its intellectual resources and garner stronger understanding of and support for its approaches. While the potential benefits to these new approaches are enormous, incorporation of these new approaches into chemical risk assessment are unproven. Before being used for regulatory decision making, scientific confidence in these methods and their prediction models must be formally established. Traditional validation approaches that define relevance, reliability, sensitivity and specificity may not be readily applied. Therefore, different flexible and transparent approaches are needed that require explicit specification of context and purpose of use such that scientific confidence (validation) can be defined to meet different applications. Whether a traditional EPA IRIS assessment or a NexGen IRIS assessment, the Agency should meet the NAS standards for reviewing studies, namely rely on the best available scientific information regarding hazard and exposure; employ consistent, objective methods and models; utilize transparent evaluation procedures for data quality, cause and effect; and weigh the full body of scientific evidence.

**Panelists (from L to R): Dr. Ramasamy, Dr. Rowlands, Dr. Krewski, Dr. Thomas, and Dr. Chiu**



**Symposia attendees**



## **GIRL SCOUT DAY 2012**

Since 2007, the Girl Scouts Council Nation's Capital Chapter has organized a Girl Scout Science Day to give local Girl Scouts an opportunity to learn more about science in a fun and friendly environment. The goal from day one has been to introduce scientific terms and concepts, but in a way that demonstrates the role of science in day to day life. All participating Girl Scouts also earn a badge in a scientific topic related to the experiments they perform.

I first got involved as a friend of the troop leader in charge of the event. She and I would work on ideas, adapt experimental protocols and talk our science friends into volunteering at the event. I always get the easier job – she would also order supplies, arrange registration for all the troops, schedule volunteers and put together all of the lab manuals for each Girl Scout that contains the experiments they would be performing during the day. Hands-on experimental protocols are designed to be performed by a group of 10 -12 girls in 30 minutes. From the beginning, experiments have been led by Cadette or Senior Girl Scouts with the assistance of volunteers, including troop 'moms' and 'dads' and area scientists. All participating Girl Scouts rotate through 4 to 5 experiments depending on their age group and the theme their troop has selected. Experiments are designed to be age-appropriate for Girl Scouts in Grades 2 – 3 and 4 – 6. In 2009, an additional session was added to allow the Teen Girl Scouts to learn some more complex science issues and to meet some area scientists to discuss careers in science.

What started as a two sessions on a Saturday in early January has now become six sessions over two weekends in November, due in large part to the efforts of the Girl Scout leader in charge and the support of the National Capital Area Chapter of the Society of Toxicology. The event has gone from reaching out to ~200 Girl Scouts a year to over 400. Through the years, we have partnered with local businesses (MDBio, ToxServices) and academic institutions (Towson University). We have hands-on experiments that address concepts of chemistry, microbiology, genetics and toxicology. We have had discussions related to what goes into your personal hygiene products, why DNA is unique to each of us and how forensic science can help to solve a crime.

At this point the Cadette and Senior Girl Scouts running the experiments are the same 4<sup>th</sup> graders that were having them explained to them 5 years ago. Looking back through the years, it has been a pleasure to see these girls not only learn the scientific concepts well enough to teach them to the new Brownie and Junior Girl Scouts, but to watch them take on more and more responsibility for the event itself. The Cadettes assist in the set-up and breakdown of the experiments, and are responsible for cleaning up the local church where the event is held, free of charge. Through my involvement in this event, I have been privileged to watch those young giggly 10-yr old girls turn into responsible young ladies – that still giggle, but do so while teaching or setting up for the next group of girls. This event also led to my volunteer work in education outreach, including outreach activities modeled after the Girl Scout Science Day, either associated with the Society of Toxicology Annual meeting and as part of the USA Science & Engineering Festival.

In 2006, doing education outreach was not something I even thought about. But after participating in the Girl Scout Science Day for the past 5 years, I enjoy every opportunity I have to encourage kids to have fun with science, to ask questions about how things work and to work together to solve scientific problems. The Society of Toxicology Education Committee

has ways to help support these types of opportunities, and for K-12 in particular we are putting together a website of ideas, experiments and how-tos to get you started in the new year. Please don't hesitate to contact us with any questions or advice. The impact these events have on the kids involved is worth the effort.

*Experimental protocols available upon request.*

*Maureen Gwinn*

*SOT K-12 Subcommittee Chair*

[Gwinn.maureen@epamail.epa.gov](mailto:Gwinn.maureen@epamail.epa.gov)

### **TRAVEL AWARDS TO ATTEND SOT MEETING IN SAN ANTONIO**

The NCAC-SOT offers full-time graduate students and post-doctoral fellows an opportunity to compete for the Bern Schwetz Student Travel Award (a cash award for travel support to the annual SOT meeting). NCAC-SOT student or post-doctoral members who are interested in submitting an application, please consult the NCAC-SOT website

(<http://www.toxicology.org/isot/rc/ncac/awards.asp>) and/or contact Dr. Rosemary Schuh at [rschu003@umaryland.edu](mailto:rschu003@umaryland.edu) for more information. The deadline is **January 31, 2013!**

### **DON'T FORGET TO REGISTER EARLY FOR THE SOT ANNUAL MEETING!!!**

You can register online and receive the "early bird" rate by January 25, 2013 at:

<http://www.toxicology.org/AI/MEET/AM2013/registration.asp>

### **2013 SPRING SYMPOSIUM**

NCAC-SOT is in the process of planning the annual spring symposium, entitled "Mechanisms of Cell Injury and Cell Death - Implications for Improving Risk Assessment". It will be held in May 2013. In addition to finalizing the date and lining up speakers, we are exploring alternative locations. If you have suggestions, please pass them on to Bruce Fowler at [Bruce.Fowler@icfi.com](mailto:Bruce.Fowler@icfi.com).

## NCAC-SOT Treasurer's Report – December 17, 2012

by  
Chris Sheth, Treasurer

### Account activity since last report (Dated July 06, 2012 in July 2012 Newsletter)

**April 30, 2012 (Closing balance) \$16,459.97**

<b>Debits</b>				
	2012 Annual SOT Meeting	Reception	\$3,726.00	
	Spring Meeting May 14, 2012 "Systems Toxicology"	Expenses	\$1,867.37	
		Speaker Travel	\$2,126.16	
		Awards	\$400.00	
	Fairfax County Science Fair	Award	\$50.00	
	Fall Meeting Sept. 26, 2012 "NexGen Initiative for Risk Assessment"	Expenses	\$3,499.42	
		Speaker Travel	\$2,561.83	
		Student Lunch with Experts	\$527.29	
	<b>Total Debits</b>		<b>\$14,758.07</b>	
<b>Credits</b>				
	Dues (renewals and new members)	05/31/12 thru 10/31/12	\$1,055.00	
	Registrations (2012 year)	Spring Meeting	\$1,515.00	
		Fall Meeting	\$1,350.00	
	Donations	From: SOT-HQ For: Keynote Speaker travel to Fall Meeting	\$1,200.00	
	Refund	From: Marriott For: credit for overpayment at Annual SOT Meeting Reception	\$835.00	
	Misc. Credits		\$565.00	
	<b>Total Credits</b>		<b>\$6,520.00</b>	

**November 30, 2012\* (Closing balance) \$8,416.99**

\*Most recent bank statement in our possession.

## MEETING ANNOUNCEMENT

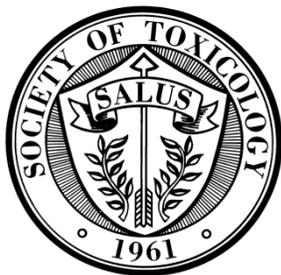
### **The Heterogeneity of Environmental Health Data: Fostering Integration to Advance Discovery**

January 10-11, 2013  
Keck Center, Room 100  
500 Fifth Street NW  
Washington D.C

<http://nas-sites.org/emergingscience/meetings/data-meeting/>

- [Agenda \(draft\)](#)
- [On-site Registration](#)
- Webcast Registration: This meeting will be webcast. More information to be provided soon.

Research in biomedical sciences has undergone a dramatic transformation in the past two decades. Science is increasingly data-intensive, computational, interdisciplinary, and collaborative. This trend toward “Big Data” is pervasive throughout science and imposing new challenges for biomedical research along three dimensions, sometimes referred to as the three V’s: volume, velocity and variety. Only through the coordination of all three dimensions will the full potential of Big Data be realized. Whereas significant progress has been made in the development of digital technologies, community-wide principles and resource management for some large and rapidly expanding data types such as genomic sequences, integration of existing heterogeneous data sets (the variety component of the three V’s) has lagged. This lag presents particular challenges for environmental health sciences, which is uniquely and inherently cross-disciplinary. This meeting aims to foster discussion about the need for enhanced data integration in environmental health sciences, evaluate the lessons that can be learned from integrative initiatives in other scientific domains, and strategize about how the community can take major steps toward improving data coordination and access to advance understanding about environmental effects on human health.



# National Capital Area

## MEMBERSHIP APPLICATION

Name: \_\_\_\_\_  
Affiliation: \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_  
City: \_\_\_\_\_  
State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Area Code: \_\_\_\_\_ Phone: \_\_\_\_\_ FAX: \_\_\_\_\_  
E-mail: \_\_\_\_\_  
Membership Type \_\_\_\_\_ Full Member (\$25) \_\_\_\_\_ Student (\$10)

Please check the most appropriate responses:

SOT Member	Highest Degree Attained		Type of Affiliation
_____ Yes	_____ A.S.	_____ M.P.H.	_____ Academia
_____ No	_____ B.A.	_____ M.S.	_____ Consulting
	_____ B.S.	_____ M.A.	_____ Contract Lab
	_____ D.V.M.	_____ Ph.D.	_____ Government
	_____ D.V.M./Ph.D.	_____ Sc.D.	_____ Industry- Chemical/Petroleum
	_____ M.D.	_____ V.M.D.	_____ Industry- Pharmaceutical
	_____ M.D./Ph.D.	_____ V.M.D./Ph.D.	_____ Industry- Other
			_____ Other- _____

**Please complete the information above and send with a check, money order or credit card (payable to National Capital Area Chapter SOT, no POs) to the address below. The NCAC SOT will review your application, and you will be notified within 30 days. Those not accepted will receive a full refund. Current RC members: please do not use this form since your renewal dues are billed annually through SOT.**

Payment Type: Money Order \_\_\_\_\_ Check \_\_\_\_\_ Credit Card \_\_\_\_\_  
Credit Card # \_\_\_\_\_ Exp date \_\_\_\_\_  
Name on Card \_\_\_\_\_

Signature \_\_\_\_\_

Send to:  
Christopher Sheth, Treasurer  
NCAC-SOT  
[Sheth.Christopher@epa.gov](mailto:Sheth.Christopher@epa.gov)

11102 Lund Place  
Kensington, MD 20895