

NAME OF SPECIALTY SECTION

Inhalation and Respiratory

ANNUAL REPORT: 2014-2015

May 1, 2014 to April 30, 2015

I. Officers/Committees:

Officers	2014-2015	2015-2016
President:	Urmila P Kodavanti	Jacob McDonald
Vice President:	Jacob McDonald	Flemming Cassee
Vice President-Elect:	Flemming Cassee	Jon Hotchkiss
Secretary/Treasurer:	Annemoon van Erp	Laura Van Winkle
Past President	M Ian Gilmour	Urmila P Kodavanti
Councilors:	Amy Lambert	Daniel Conklin
	Kenneth Sexton	Patti Zeidler-Erdely
	Mehdi Hazari	Mehdi Hazari
	Matthew Reed	Matthew Reed
PDA Representative:	Cara L Sherwood	Jonathan Henry Shannahan
GSLC Representative:	Desinia Miller	Michelle Hernandez

Technical Program Committee: Harry Salem, Chair

Program Committee, Jacob McDonald

Awards Committee, Flemming Cassee

II. Activities:

2015 SOT Annual Meeting Reception was held in San Diego, California (pictures from event below)

Dr. Kodavanti called the meeting to order at 6:00 PM On March 23, 2014

Business Meeting Speaker: Urmila Kodavanti, President

Meeting Minutes: (see Attachment I)







Awards:

We received 8 applications for Paper of the Year, 2 for Young Investigator award, 15 for the Student award of which 9 also applied to the Mary Amdur award, and 5 applications for the Best Post-Doctoral Abstract award. This year, we decided to assign two Mary Amdur awards based on the fact that the endowment fund allowed us to spend more money on awards.

The career awardee this year was awarded to Debra Laskin,

Debra Laskin, PhD

Distinguished Professor and Roy A Bowers Endowed Chair

Chair of the Department of Pharmacology and Toxicology. She received this after Terry Gordon praised her for her achievements. Debra got off to a rocky start with a BA in Psychology - although on the positive side, it was from NYU. Then the Debra garnered a MA in Biopsychology City University of New York and the American Museum of Natural History, New York, NY – at least now ‘Bio’ got into her research interest. This MSc was followed by a PhD in Pharmacology and Toxicology from the Medical College of Virginia, Virginia Commonwealth University, Richmond, VA. Debra then did postdoctoral work in immunology and carcinogenesis at the Wistar Institute of Anatomy and Biology, University of Pennsylvania, Philadelphia, PA.

The Awardee has spent a long and distinguished career investigating nonspecific immunity and inflammation and is known for research on the role of activated macrophages and inflammatory mediators in the pathophysiology of xenobiotic-induced liver and lung injury.

The Awardee is quite broad in her interests and belongs to more societies than Roger McClellan belongs to SOT's specialty sections: SOT, Society of Leukocyte Biology, AACR, ATS, American Association of Immunologists, American Association of Pharmacology and Experimental Therapeutics, American Physiological Society, American Society of Investigative Pathology.

The Awardee has been a faculty member at Rutgers for over 23 years and is the Chair of the Dept of Pharm and Tox, a Distinguished Professor, and holds the Roy Bowers Endowed Chair in the School of Pharmacy.

Paper of the Year: Linda Sargent, Project Leader, Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH), Morgantown, WV.

Linda Sargent, D.W. Porter, L.M. Staska, A.F. Hubbs, D.T. Lowry, L.A. Battelli, K.J. Siegrist, M.L. Kashon, R.R. Mercer, A.K. Bauer, B.T. Chen, J.L. Salisbury, D.G. Frazer, W. McKinney, M. Andrew, S. Tsuruoka, M. Endo, K.L. Fluharty, V. Castranova, and S.H. Reynolds. Promotion of lung adenocarcinoma following inhalation exposure to multi-walled carbon nanotubes. Particle and Fibre Toxicology 11:3,2014.

Comment: Excellent comprehensive toxicological profile. Used realistic concentrations in air for exposure to animals for prolonged exposure durations in which the authors also discriminated between the possibility of multi-walled carbon nanotubes (MWCNT) being a tumor promotor or a carcinogen itself. The data presented in this study did not indicate that inhaled this type of MWCNT material act as a complete carcinogen. The results, however, clearly demonstrated strong tumor promotion as well as tumor progression in the lung using a hybrid mouse model that has intermediate sensitivity to lung cancer.

Young Investigator: Yin Chen, School of Pharmacy, University of Arizona, Tucson, AZ Tucson, Arizona

Comment: Elegant lung on a chip work and he developed 2 antibodies and holds a patent for developing assessment of the mucin genes. Seems to move the field forward with state-of-the-art innovative research funded by NIH and has excellent publications

Mary Amdur Award: Nr1. Mary Francis Department of Pharmacology and Toxicology, Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey

Mary Francis, M Mandal, C. Sun, H Choi, JD Laskin, DL Laskin.

Tracking Inflammatory Macrophage Accumulation in the Lung during Ozone-induced Lung Injury in Mice.

Comment: Perfectly fine proposal from a researcher who seems to be unusually independent for a trainee at a relatively early stage in her career. She has independently worked on designing and

carrying out her studies, and analyzing her data, and has generated important new mechanistic findings in pulmonary toxicology.

Nr2. Pamella B. Tijerina

Environmental Medicine, NYU, Tuxedo, NY

Prenatal and postnatal exposure to concentrated ambient particulate matter alters of the developing immune system of mice. Tijerina, Pamella B.; Blum, Jason L.; Hoffman, Carol; Park, Sung Hyun; Grunig, Gabriele; Chen, Lung-Chi; Zelikoff, Judith T.

Comment: A unique design using particulate matter exposures to mice with analysis for both prenatal AND postnatal immune system effects. This particular study required a great deal of independent work, organization and problem solving ability. Pamella excelled in each one of these areas. It seems that she quickly became proficient at new techniques and pulled her own weight on the project even when that meant staying late.

Student Award: Alessandro Venosa Who is in the 5th year of the Graduate Program in Toxicology, Rutgers University and Robert Wood Johnson Medical School, Piscataway, NJ

Regulation of Macrophage Activity by Histone Deacetylases during Nitrogen Mustard-Induced Lung Injury.

Alessandro Venosa, James Gow, Ian Berman, Rama Malaviya, Hakan Yaren, Halil Yaman, Andrew Gow, Jeffrey Laskin and Debra Laskin.

Comment: He has been the principal driver of his research project, designing and carrying out experiments, analyzing data, and putting it together for presentation. He keeps up to date on relevant literature, presenting journal clubs and applying what he reads to his research. He is also actively involved in student training and mentoring and is viewed as a key member of our research/training team.

Best Post-Doctoral Abstract: Jaime Mirowsky

Curriculum in Toxicology, University of North Carolina School of Medicine, Chapel Hill, NC

Expression of pro-inflammatory and oxidative stress mediators induced by nitrogen dioxide and ozone in primary human bronchial epithelial cells

Jaime Mirowsky, Kelly E. Duncan, Shaun D. McCullough, Lisa Dailey, David Morgan, Robert B. Devlin

Comment: The results from this work are important because NO₂, although ubiquitous in the ambient environment and in occupational and indoor settings, is vastly understudied compared to O₃. In addition Jamie Mirowsky is also the Principle Investigator of a controlled human exposure study in which healthy subjects are exposed to ozone and filtered air, and each subject will undergo a research bronchoscopy for the collection of lung epithelial cells following each exposure.

CE Courses/ Sessions:

For the annual meeting in 2016 IRSS was requested to endorse one CE Advanced, one Regional Interest, and one Round Table session, all of which were promoted. As usual, more submissions were received for Symposia and Workshops: 4 and 8, respectively. The topics were very diverse though a few proposals had considerable overlap. The Society of Toxicology Scientific Program Committee met and discussed the 129 proposals for the 2016 Society of Toxicology Annual meeting 13-17 March 2016 in New Orleans. From these, IRSS had endorsed a total of 5 tentatively accepted Sessions for the 2016 Annual Meeting. The 5 proposals have to be revised according the instructions of the Program Committee and resubmitted by August 12. We look forward to seeing these 5 being included in the final program for the SOT Annual Meeting, March 13-17, 2016, located in New Orleans, LA.

Endowment Fund Details:

Roger McClellan reminisced about the first years of inhalation toxicology with Don Gardner, Harry Salem, and Günter Oberdörster. He gave a short history of Dr. Gardner's career, which started in immunology and included work at the EPA in Cincinnati and RTP, Northrop, and consulting. He founded Inhalation toxicology in 1988 and served as its Editor-in-Chief for 25 years. In his memory, Roger McClellan, Rudi Jaeger, Fred Miller, and Judy Grahame established the Endowment Fund to further education in inhalation toxicology. With contributions from the Gardner Family, SOT members, and SOT matching, the fund already has more than \$50,000. A description will be devised in the coming months and an Award established. Susan Gardner gave an emotional tribute to her father, remembering him as a Don Quixote character, someone who was both serious and funny at the same time and an inspiration to her and her siblings as well as many people in the field.

Treasurer's and Endowment Report:

Annemoon van Erp, Secretary / Treasurer, informed the members that the IRSS account on January 1, 2015 was \$11,088, which was \$5,404 more than the funds on January 1, 2014 (at \$5,684), in large part due to the new sponsors, DSI, Emka Tech, and Vitrocell, who contributed \$2,550 combined. Thus, the IRSS was pleased to offer its members a full reception again. The Mary Amdur Endowment Fund continued to do well and grew from \$61,048 on June 30, 2013 to a total of \$75,233 on June 30, 2014. Dr. van Erp thanked the members who contributed to the fund; all member contributions were matched by SOT. She also thanked the sponsors again.

Technical Committee Report:

Harry Salem, Technical Committee Chair, reported on the technical meeting that took place on Monday morning at 6:30 am. Turn-out was good with 27 people attending. There were two speakers, Robert Kristovich from the US Army Edgewood Chemical Biological Center, who spoke on new approaches for explosives testing of the VX nerve agent, and John Whalan from US EPA, who reported on a committee that will be developing new OECD guidelines for nanomaterials testing. Dan Costa asked if there were plans to develop a white paper on nanomaterials inhalation testing.

Trainee Activity Report:

Desinia Miller, Student Representative, said she had been part of a webinar in the fall on how to present a paper or poster at the SOT meeting. She was also a member of a task force to draw more students to become members of specialty sections. Urmila Kodavanti mentioned that Cara Sherwood, Postdoctoral Representative, had upgraded the IRSS website and asked members to submit ideas for more website content.

Contributions to SOT website:

Jonathan Henry Shannahan and Michelle Hernandez have added their Job Descriptions, which were approved by Jake McDonald, to the website. Pictures from SOT 2015 have also been added and Flemming Cassee's name has been removed as the contact from the awards tab.

Other Specialty Section 2015-2016 Activities:

-Officer's conference calls have taken place in April and July with the next one tentatively scheduled for the middle of October.

-The IRSS Officer's business meeting was held on Sunday March, 22nd, 2015 at Il Fornaio-Coronado on Coronado Island, CA. (Meeting minutes Attachment II)

-IRSS members are currently working on a team to help two small writing teams that work on the update and the development of a new statement, regarding the Tox Topic, "Airway Epithelial Toxicity of the Flavoring Agent 2,3 Pentanedione".

Attachment I

Minutes from IRSS Meeting
Society of Toxicology Annual Meeting, San Diego CA
March 23, 2014
6:00-7:30 pm

The meeting was called to order at 6:30 pm.

Welcome and opening comments: Urmila Kodavanti, President, welcomed the IRSS members. She thanked the sponsors, DSI, Emka Tech, and Vitrocell for their contributions. She introduced a special feature on the newly established Endowment Fund to honor Don Gardner, editor of Inhalation Toxicology, who passed away last fall. Speakers were Roger McClellan, one of the founders of the fund, and Dr. Gardner's daughter Susan Gardner of Woods Hole Oceanographic Institute.

Don Gardner Endowment Fund: Roger McClellan reminisced about the first years of inhalation toxicology with Don Gardner, Harry Salem, and Günter Oberdörster. He gave a short history of Dr. Gardner's career, which started in immunology and included work at the EPA in Cincinnati and RTP, Northrop, and consulting. He founded Inhalation toxicology in 1988 and served as its Editor-in-Chief for 25 years. In his memory, Roger McClellan, Rudi Jaeger, Fred Miller, and Judy Grahame established the Endowment Fund to further education in inhalation toxicology. With contributions from the Gardner Family, SOT members, and SOT matching, the fund already has more than \$50,000. A description will be devised in the coming months and an Award established. Susan Gardner gave an emotional tribute to her father, remembering him as a Don Quixote character, someone who was both serious and funny at the same time and an inspiration to her and her siblings as well as many people in the field.

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Program report: Jake McDonald, Vice President, reported that seven sessions had been accepted this year (4 symposia, 1 workshop, 2 roundtables). He encouraged people to submit session ideas for SOT 2016 to the Vice-President Elect, Flemming Cassee. He reminded everyone that proposals need to be reviewed by the IRSS to obtain feedback and sponsorship before submission to SOT. Deadline for submission to IRSS is April 15, and to SOT April 30, 2015.

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Awards: Flemming Cassee, Vice President Elect, presented the following awards:

The *Student Award* went to Alessandro Venosa from Rutgers University, for his abstract: "Regulation of Macrophage Activity by Histone Deacetylases during Nitrogen Mustard-Induced Lung Injury."

The *Mary Amdur Award*, which is supported by the Mary Amdur Endowment Fund, is awarded to the student who submits an abstract that best addresses the environmental health issues that were the focus of Dr. Amdur's research. Due to the growth of the fund, there were two winners this year: Mary Francis from Rutgers University, for her abstract: "Tracking Inflammatory Macrophage Accumulation in the Lung during Ozone-induced Lung Injury in Mice," and Pamella Tijerina from New York University, for her abstract: "Prenatal and Postnatal Exposure to Concentrated Ambient Particulate Matter Alters the Developing Immune System of Mice."

The *Postdoctoral Award* went to Jamie Mirowsky from the University of North Carolina for her abstract: "Expression of Pro-Inflammatory and Oxidative Stress Mediators Induced by Nitrogen Dioxide and Ozone in Primary Human Bronchial Epithelial Cells."

The *IRSS Paper of the Year Award*, which is given to the best paper in the area of respiratory / inhalation toxicology (published in the previous calendar year) was awarded to Linda Sargent of the CDC. Full citation: L.M. Sargent, D.W. Porter, L.M. Staska, A.F. Hubbs, D.T. Lowry, L.A. Battelli, K.J. Siegrist, M.L. Kashon, R.R. Mercer, A.K. Bauer, B.T. Chen, J.L. Salisbury, D.G. Frazer, W. McKinney, M. Andrew, S. Tsuruoka, M. Endo, K.L. Fluharty, V. Castranova, and S.H. Reynolds. Promotion of lung adenocarcinoma following inhalation exposure to multi-walled carbon nanotubes. *Particle and Fibre Toxicology* 11:3, 2014.

Next, Dr. McDonald introduced the *IRSS Young Investigator Award*, which is given to a scientist with less than 15 years experience since obtaining their highest degree, who has made significant contributions to the field of inhalation and respiratory toxicology. The winner of the 2015 Young Investigator Award was Yin Chen of the University of Arizona.

Finally, Dr. McDonald gave the floor to Terry Gordon, who introduced the *IRSS Career Achievement Award* which was presented to Debra Laskin and gave the top ten reasons for why Dr. Laskin deserved to win the award. In her acceptance speech, Dr. Laskin expressed her gratitude for her supportive scientist family, including her father Sid and two brothers, one of whom (Jeffrey) is a close collaborator.

Introduction of Incoming Officers: Urmila Kodavanti introduced the incoming officers:

Vice President-Elect:	Jon Hotchkiss
Secretary / Treasurer:	Laura Van Winkle
Councilors:	Dan Conklin
	Patti Erdely
Postdoctoral Representative:	Jonathan Shannahan
	Student Representative: Michelle Hernandez

Acknowledgment of Outgoing Officers: Jake McDonald thanked the outgoing officers for their services to the IRSS. He presented plaques of appreciation to "the two nicest and fiercest women he had worked with":

Urmila Kodavanti – President
Annemoon van Erp – Secretary / Treasurer

In addition, there were certificates of appreciation for:

Amy Lambert – Councilor
Ken Sexton – Councilor
Cara Sherwood – Postdoctoral Representative
Desinia Miller – Student Representative.

New Business: Dr. McDonald, now the IRSS President, opened the floor for any new business or comments from the membership. No topics were brought forward.

The meeting adjourned at 7:30 pm.

Attachment II

Minutes – IRSS officers meeting, Sunday March 22, 2015, San Diego, CA, 6:00 pm

Present: Flemming Cassee, Dan Conklin, Patti Erdely, Ian Gilmour, Michelle Hernandez, Jon Hotchkiss, Desinia Johnson, Urmila Kodavanti, Jake McDonald, Matt Reed, Harry Salem, Jonathan Shannahan, Cara Sherwood, Annemoon van Erp, Laura Van Winkle

Welcome: Urmila welcomed everyone and introduced the new officers. She thanked Harry Salem for his continued work on the Technical Committee and organizing of the Monday morning technical meeting at 6:30 am.

Logistics: Annemoon noted that the agenda for the reception on Monday should show the sponsor logo's. These need to be added still and copied. Also, the logos can be projected on the screen (but no screen has been organized). Something to do for next year. Jonathan offered to take pictures.

Awards: Urmila mentioned that the Awards process needs to be discussed. (1) The evaluation of applications could be more streamlined and standardized in terms of how they are scored. It needs to be more clear how the rating or ranking is done. (2) The submission deadline to Raul Suarez should be checked because it was changed from last year, which put a lot of extra time pressure on the officers. (3) The evaluation should include more people without conflicts, for example past officers to help out. Flemming and Jon will discuss this offline.

Mary Amdur Award: There is more money in the fund now, so we're giving two awards this year. There have been discussions with the endowment committee (Terry Gordon, Rudi Jaeger, Dan Costa) about how to proceed. There are some ideas for new awards that need to be pursued further, as the fund keeps growing.

Don Gardner endowment fund: This fund is now established in honor of Don Gardner who passed away in the fall of 2014. Roger McClellan, Fred Miller, Judy Graham, and Rudi Jaeger were the initiators. This will be an extra award next year for teaching and education in inhalation toxicology. A description needs to be created and posted on the IRSS site.

SOT program: 7 proposals were accepted. Flemming will be chairing the proposal evaluation for 2016. This should be mentioned during the reception and people should be encouraged to resubmit proposals that were not accepted for 2015. Flemming can ask past presidents to help with session proposal evaluation.

Newsletter: This year we had only 2 newsletters, the one in November did not happen. Harry Salem agreed to continue to create the newsletter. There should be a short newsletter directly following SOT with (a) call for proposals with deadline of April 15 (IRSS) and April 30 (SOT), and (b) list of awardees. Award deadline will be in November. Jake will take care of this.

Finances: After last year's trouble with the budget, we're now in good shape. Annemoon said that the officers should start thinking of what to do with the extra money. It could be done as extra awards, or giving larger awards.

Website: Urmila mentioned the work done by Clara Sherwood to revamp the site. The officers need to provide new content in the coming year. Officer duties for postdoc and graduate student representatives need to be added, new officer bios, etc. Webinars could be added to the task list. Urmila mentioned that SOT has matching funds for some activities, such as webinars. We also discussed the possibility of a student newsletter. More students are enrolling and we need to engage them somehow. Would also be nice to add a history of the IRSS. One of the previous posters has a timeline.

Technical Committee: Harry explained the history, i.e. it started with an issue at EPA of comparing inhalation and instillation. Usually one or two speakers are invited for the technical meeting. This year

the focus is on the OECD guidelines and how they can be made more specific for nanomaterials. The Committee can decide on a white paper any time something important comes up. Usually Harry initiates this and asks for help in writing it. Urmila asked if Harry wanted to step down as chair. He agreed to keep doing it whoever, unless someone else comes forward who would like to take over. The IRSS needs to do a better job of advertising the meeting however.

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