

NAME OF SPECIALTY SECTION: Inhalation and Respiratory Specialty Section

ANNUAL REPORT: 2013-2014

June 30, 2014

I. Officers/Committees:

<u>Officers</u>	<u>2013-2014</u>	<u>2014-2015</u>
President:	M. Ian Gilmour	Urmila P Kodavanti
Vice President:	Urmila Kodavanti	Jacob McDonald
Vice President-Elect:	Jake McDonald	Flemming Cassee
Secretary/Treasurer:	Annemoon van Erp	Annemoon van Erp
Past President	Michael Kleinman	M Ian Gilmour
Councilors:	Mitchell Cohen	Amy Lambert
	Stephen Gavett	Kenneth Sexton
	Amy Lambert	Mehdi Hazari
	Kenneth Sexton	Matthew Reed
PDA Representative:	Samantha Snow	Cara L Sherwood
GSLC Representative:	Desinia Miller	Desinia Miller

Committees:

Technical Committee, Harry Salem, Chair

Program Committee, Urmila Kodavanti, Chair

Awards Committee, Jake McDonald, Chair

II. Activities:

(1) 2014 SOT Annual Meeting Reception was held in Phoenix, Arizona on March 24, 2014.

Approximately 100 people were in attendance.

Dr. Gilmour called the meeting to order at 6:40 pm.

Meeting Minutes: (see Attachment I)

Awards:

- Young Investigator: Timothy Nurkiewicz, West Virginia University
- Best Paper award: Chad Weldy, from the University of Washington. Full citation: Weldy CS, Liu Y, Chang YC, Medvedev IO, Fox JR, Larson TV, Chien WM, Chin MT. *In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice*. Part Fibre Toxicol. 2013 Nov 26;10(1):59.

- Mary Amdur Award: Mary Popovech, from New York University, for her abstract: “Acute and subchronic, in vivo, exposure to inhaled silver-nanoparticles results in alterations in gene expression, gene-specific promoter methylation, and inner and outer mitochondrial membrane integrity.”
- IRSS Student Award: Desinia Miller, from the University of North Carolina, for her abstract: “Metabolomic profiling and liver transcriptomic analysis provides mechanistic evidence of ozone (O₃)-induced systemic metabolic impairment.”
- Best Post-Doctoral Abstract: Melissa Badding, from the National Institute for Occupational Safety and Health, for her abstract: “Compounds collected from indium-tin oxide production induce inflammatory responses from cultured macrophages and bronchial epithelial cells.”
- Career Achievement Award: Juergen Pauluhn from Bayer Pharma AG.

2014 SOT Annual Meeting Courses/Sessions:

Continuing Education Courses:

- 1) Inhalation Studies: Challenges and Complexities (Sunday March 23, 2014, AM05):
Chairs: Gregory Baker and Willie McKinney
- 2) Innovations in Methodologies for Inhalation Exposures and Interpretations of *In Vivo* Toxicity (Sunday March 23, 2014, PM10). Chairs: Urmila Kodavanti and Juergen Pauluhn

Symposia Sessions:

- 1) Carbon Nanotubes Are Toxic in Experimental Models: What's Next, Who's Being Exposed, and Should We Be Concerned? (Monday March 24, 2014). Chairs: Aaron Erdely and James Antononi
- 2) Exploring the interface between Air Pollution and Metabolic Syndrome: The Bittersweet Dilemma. (March 26, 2014). Chairs: Urmila Kodavanti and James Wagner

Workshop sessions:

- 1) New Concerns and New Science Addressing Environmental Asbestos Exposures (Monday March 24, 2014). Chair Danielle Carlin and Ronald Hines.
- 2) The Doorway Between Exposure and Responses: How Biologically-Based Inhalation Dosimetry Models Enhance Human Health Risk Assessment (Tuesday, March 25, 2014)
Chairs: Jon Hotchkiss and John Morris.

- 3) Are Biofuels More or Less Toxic than Conventional Fuels and What Are the Implications for Human Exposure and Risk? (Thursday, March 27, 2014). Chairs: Annemoon van Erp and Michael Madden.
- 4) Role of Circulating Factors in Mediating Systemic Toxicity of Inhaled Substances (Thursday March 27, 2014) Chairs: Matthew Campen and Lung-Chi Chen.

Roundtable Session:

- 1) Hydraulic Fracturing: Are There Worker Health Issues? (Wednesday, March 26, 2014). Chairs: Debra Kaden and Ziad Naufal.

IRSS Technical Committee Presentation: (Wednesday, March 26, 2014):

Dr. Jan Moser presided. Dr **Jürgen Pauluhn, Bayer Pharma, Wuppertal, Germany**, gave a presentation on the OECD WPMN Expert Meeting on Toxicokinetics of Manufactured Nanomaterials held in Seoul, Korea, February 2014. The key Draft Conclusions and Open discussion points were presented. These included aspects what changes occur to the physicochemical properties of different nanoparticles throughout the lifecycle stages, either as a function of process and product engineering or as a function of incidental encounters with other substances and the environment. Testing strategies and protocols for biokinetics were critically discussed and whether animal models are suitable to reflect the human situation in relation to pleural translocation and retention. For nanomaterials that experience continual dissolution within biological media the question of modelling of dose and kinetics of dissolution of particulates was a major issue. The participants agreed that the presented aspects are important for testing, study design, dosimetry, translational toxicology and risk assessment. It was agreed that these novel aspects to inhalation testing need to be thoughtfully integrated into future testing strategies.

Endowment Fund Details: Treasurer's and Endowment Report: Annemoon van Erp, Secretary/Treasurer, announced that the current Inhalation & Respiratory SS account was \$5,684.00. This was \$1,192 less than the previous year due to high reception costs but no increase in income. Thus the 2014 reception was scaled back and sponsorship will be actively pursued for the 2015 meeting. Additionally, the Mary Amdur Endowment Fund was currently \$61,048, an increase of \$8,980.

Newsletters: Three newsletters were published in November 2013, March 2014, and April 2014.

Teleseminars: none

White Papers: none

Contributions to SOT website: A poster portraying IRSS activities was developed by Desinia Miller and displayed in the main hall of the meeting.

Other Specialty Section 2013-2014 Activities:

- Officers conference call November 6, 2013 (See Attachment II)
- The IRSS Officers business meeting was held on Sunday March 23, 2014, at 5 pm at a restaurant, Phoenix (Attachment II).
- IRSS Student Representative, Desinia Miller was also a representative at the SOT graduate student council and a part of the professional development committee, which had held a webinar for science writing.

Attachment I

Minutes from IRSS Meeting

Society of Toxicology Conference, Phoenix AZ

March 24, 2014

6:00-7:30 pm

The meeting was called to order at 6:35 pm.

Welcome and opening comments: Ian Gilmour, president of IRSS, welcomed the IRSS members. He mentioned that he had asked SOT whether the meeting could be held on Monday night and that he might poll IRSS members to ask whether they like the new time slot. He mentioned that the IRSS had been quite successful in getting sessions accepted by SOT for the 2014 meeting.

Treasurer's and Endowment Report: Annemoon van Erp, Secretary / Treasurer, announced that the IRSS account on January 1, 2014 was \$5,684, which was \$1,193 less than the funds on January 1, 2013 (at \$6,877). Even though membership has increased to 316 from 283 in the past year, the incoming funds did not cover the increasing costs of the reception. This is the reason that the reception this year was scaled back to "chips and dips" instead of appetizers. In contrast, the Mary Amdur Endowment Fund is doing very well: current funds are \$72,123, which is an increase of \$11,075 from last year. Dr. van Erp thanked the members who contributed to the fund; all contributions were matched by SOT. To alleviate the budgetary issues, the IRSS is currently looking into possible sponsorship of the reception (for more on that, please see the April 2014 Newsletter).

Program report: Urmila Kodavanti, Vice-President, mentioned the tremendous success this year regarding the number of session accepted for the SOT program. She listed the sessions (two symposia, four workshops, one roundtable, and two Continuing Education courses). She encouraged people to start thinking about session proposals for next year, and explained that they will be reviewed by the IRSS officers (led by Vice-President Elect, Jake McDonald) before submission to SOT. She kindly requested that members submit their proposal to Dr. McDonald (jmcdonal@lrri.org) by April 15, so the IRSS has time to provide feedback to improve proposals before the SOT deadline on April 30. The IRSS may also make recommendations about the session format (symposium versus workshop etc.) because spreading sessions across different formats has shown to be a more successful strategy.

Technical Committee report: Ian Gilmour stood in for Harry Salem, who unfortunately did not receive travel approval in time to attend the meeting this year. Dr. Gilmour explained that Dr. Salem develops newsletters and selects topics for the Technical Committee meeting. The Committee discusses topics relevant to inhalation toxicology and writes white papers as appropriate. This year, the meeting will be led by Jan Moser and will take place on Wednesday morning from 8-9:30 AM in Room 230. Juergen Pauluhn mentioned that he will discuss OECD guidelines for testing nanoparticles. All are welcome.

Trainee Activity Report: Desinia Miller said that she had been a representative at the graduate student council and had been part of the professional development committee, which had held a webinar for science writing. She had also prepared the IRSS poster and displayed it at the postdoc and graduate student mixer. She had spoken with other students to encourage them to submit session proposals and mentioned some topics that were suggested: 1) Redefining ROS involvement in cell signaling; 2) Gaps between epidemiological and experimental approaches in studying health effects of air pollution and potent solutions, and 3) The role of air pollution in thrombosis and clotting factors.

Contemporary Concepts in Toxicology: Elaina Kenyon introduced herself as the contact for the CCT committee, which is reaching out to all specialty sections to develop proposals for CCT meetings or

webinars. She explained that SOT provides \$25,000 seed money per meeting, and provides full logistical support so the specialty section can focus on the science. If there are proceeds above \$25K, then the SOT and specialty section will share the profits. Specialty sections, individuals, and collaborating groups of specialty sections can propose meeting topics, which should be about emerging science, somewhat controversial, and of global interest. The CCT committee will review pre-proposals to streamline the proposal submission, providing quick feedback about the viability of a topic. Preferably, the proposal should include balanced sectors of representation (government, academia, industry). A CCT member will mentor the person submitting the proposal. An example of a successful CCT meeting was the recently held FutureTox II meeting in North Carolina. More information is available at www.toxicology.org/ms/cctMeetings.asp.

Awards: Jake McDonald, Vice-President Elect, mentioned that there were many high quality nominations, and especially among the younger folks there were many deserving applications that competed for the honors. He presented the following awards:

The Student Award went to Desinia Miller, from the University of North Carolina, for her abstract: "Metabolomic profiling and liver transcriptomic analysis provides mechanistic evidence of ozone (O₃)-induced systemic metabolic impairment."

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. The winner of the 2014 Mary Amdur Award was Mary Popovech, from New York University, for her abstract: "Acute and subchronic, in vivo, exposure to inhaled silver-nanoparticles results in alterations in gene expression, gene-specific promoter methylation, and inner and outer mitochondrial membrane integrity."

The Postdoctoral Award went to Melissa Badding, from the National Institute for Occupational Safety and Health, for her abstract: "Compounds collected from indium-tin oxide production induce inflammatory responses from cultured macrophages and 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 Chad Weldy, from the University of Washington. Full citation: Weldy CS, Liu Y, Chang YC, Medvedev IO, Fox JR, Larson TV, Chien WM, Chin MT. *In utero and early life exposure to diesel exhaust air pollution increases adult susceptibility to heart failure in mice*. Part Fibre Toxicol. 2013 Nov 26;10(1):59.

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 2014 Young Investigator Award was Timothy Nurkiewicz of West Virginia University.

Finally, Dr. McDonald introduced the IRSS Career Achievement Award on behalf of Harry Salem, who had nominated the winner. He mentioned that this person truly understood inhalation toxicology at a very deep level and had been instrumental in developing the methodology. Dr. McDonald said that every time he had a brilliant new idea, it turned out that this person had already published it. He then introduced the winner, Juergen Pauluhn from Bayer Pharma AG. Dr. Pauluhn thanked the IRSS membership for the honor of the award.

Introduction of Incoming Officers: Ian Gilmour took the floor on behalf of Michael Kleinman, Past President, who could not be present, to introduce the incoming officers:

Vice President-Elect:	Flemming Cassee
Councilors:	Mehdi Hazari
	Matt Reed
Postdoctoral Representative:	Cara Sherwood

Student Representative: Desinia Miller (back by popular demand, but with a name change)

He then asked for a moment of silence to remember Paul Morrow, emeritus professor at the University of Rochester, who passed away in December 2013.

Acknowledgment of Outgoing Officers: Urmila Kodavanti thanked the outgoing officers for their services to the IRSS. They share all the work in reviewing session proposals and award nominations. She presented plaques of appreciation to:

Mitch Cohen – Councilor

Steve Gavett – Councilor

Samantha Snow – Postdoctoral Representative

Desinia Miller – Student Representative

Ian Gilmour – President

Dr. Kodavanti extended a special thank-you to Dr. Gilmour for his leadership and efforts to increase membership and improve the success rate of session proposals.

New Business: Dr. Kodavanti, now the IRSS president, opened the floor for any new business or comments from the membership. No topics were brought forward. She then announced that the IRSS would work on improving the website, and update the list of officer duties to clarify what each person's tasks are. She also asked members again to think about session proposals. Finally, she mentioned that the IRSS would prepare a newsletter that would list the deadlines.

The meeting adjourned at 7:30 pm.

Attachment II

IRSS Officers Conference Call Minutes

Meeting time: November 6, 2013; 4 - 5:30pm

In attendance: Mike Kleinman, Ian Gilmour, Urmila Kodavanti, Annemoon van Erp, Mitch Cohen, Ken Saxton, Steve Gavett

Absent: Jake McDonald (was in Germany at the time) and Amy Lambert

The following were the agenda items: (Discussion follows each point)

- 1) Items for the newsletter (incomplete draft attached) a) highlighting upcoming IRSS sponsored –cosponsored programs b) early planning for future proposals (2015); c) upcoming IRSS Awards and deadlines; 4) upcoming election ballot**

Highlighting IRSS sponsored programs in the newsletter was agreed by everyone.

About the future proposals, a number of things were considered based on the historical planning by the ITSS. Since we don't have a separate elected program committee, it was decided that we manage the program as it has been done in the past. That, incoming vice-president will be in charge of all aspects of the program (solicitation of proposals in advance, organizing reviews and prioritization by the IRSS Committee (without students and post doctoral representative) and working with the SOT liaison (David Rosse). Urmila Kodavanti was the program chair for the 2013-2014. It was decided that we explain this process in the newsletter and request early submission of proposal ideas and/or drafts to Jake McDonald (Incoming Vice-President/Program Chair) by Jan 15, 2014.

It was agreed that the newsletter should emphasize Awards and encourage submission of applications for Awards. The brief summaries of the Awards will be incorporated in the newsletter.

In addition it was also suggested that at the end of the newsletter major deadlines be listed.

- 2) Upcoming election: Nominations for the IRSS 2014-2015 committee (our past president Mike has already sent some suggestions) will need to be finalized!!**

The committee agreed that the nominating Committee for the upcoming ballot should include current President, current Vice-President, current Vice-President-Elect and 3 past presidents. Once the nominations are submitted, those be prioritized by the IRSS Committee (excluding a student and a post doctoral rep I believe). The past President then inquires with the nominated individuals (starting from the top) for their willingness to run for the office and contest in the IRSS election.

For the ballot, names of no more than 4 individuals for 2 councilors positions; 2 for the VP Elect; 2-3 for the student rep and 2-3 individuals for the post doctoral reps be submitted. The newsletter should mention the opportunity for self nominations, especially students and post doctoral representatives.

The plan for the officers meeting in Phoenix and the program for the specialty section meeting was discussed.

It was decided that we conduct a business meeting at one of the nearby restaurants. Three time slots were proposed with a strong preference for Sunday dinner after SOT activities are done.

These were the proposed options:

- Sunday, late breakfast

- Sunday Dinner (after 5:00-7:30pm-SOT activities)
- Monday early morning breakfast

3) The theme for the 2014 IRSS poster (to be prepared by our student representative with the help of the President and the VP)

Several suggestions were made for IRSS2014 poster to be displayed in general area.

It was suggested that we highlight 2014 program, perhaps obtain eye catching slide or two from symposia/workshop/CE presentations. Award winners can be highlighted. Position statement can be incorporated.

It was suggested that the student representative displays the poster during the student/post doc mixer activities and also during the specialty section reception. Since there are likely no display boards available at those locations, some thumb-tacs will help mounting on the wall. It was suggested that instead of small poster prints it will be nice to get a QR code for people to receive posters using their cell phones.

4) Technical committee- future presentation for 2015 meeting and potential web based educational resources for the IRSS

There was a unanimous vote on keeping the technical committee presentations going. Ian is checking with Dr. Salem for his next year's plan and also in case if he retires a potential follow-up plan. No discussion occurred on web based educational resources to be posted on IRSS website.

5) Best Practices for the SS (specialty Section Collaboration and Communication Group (SSCCG): Judy Zelikoff and Leigh Ann Burns are the IRSS Council contacts. IRSS need to appoint one member to provide the feedback to SSCCG.

The committee decided that the current/immediate Past President work with the SSCCG representatives to provide feedback on the unique aspects of IRSS organization and business.

Attachment III

Minutes – IRSS officers meeting, Sunday March 23, 2014, Phoenix AZ, 5:30 pm

Present: Steve Gavett, Ian Gilmour, Mehdi Hazari, Urmila Kodavanti, Jake McDonald, Desinia Miller, Matt Reed, Ken Sexton, Cara Sherwood, Samantha Snow, Annemoon van Erp

Welcome: Ian welcomed everyone and mentioned the items to discuss: SOT program, officers duties, and IRSS reception. He said that Harry Salem's meeting attendance was still not confirmed and that Jake McDonald may need to take over presentation of the Career Award to Juergen Pauluhn.

SOT program: Ian requested that the IRSS reception be held on Monday night. Previously it had been on Wednesday. There were still scheduling conflicts in the program, especially on Thursday morning. We discussed whether an IRSS member could be nominated for the Program Committee. We could check with Judy Zelikoff or someone else at SOT about the nomination process. Ian said that IRSS did very well in getting sessions accepted (9 of 11 sponsored), and that they were diverse in terms of session formats. It would again be good to try to spread out the formats for the 2015 program.

Session topics for 2015: Ian mentioned some session ideas that were rejected and could be resubmitted with the feedback provided. One such topic was alternative tobacco products. Urmila mentioned that Debra Laskin may propose a session on autophagy, linking inflammation and metabolomics, and Flemming Cassee a session on epidemiologic and toxicology approaches to multipollutant research. Ken Sexton asked if the EPA could present their multipollutant work. Jake asked Matt if he would consider a session on drug toxicity in the lung. Matt reed asked if he could see a list of symposia submitted during the last 3 to 4 years. Other possible topics were fungicide and pesticide issues (point of entry regulation), sensory irritants, and a roundtable on science / mechanisms / regulations.

Desinia mentioned TrpA1 receptors but Mehdi said he wasn't sure it could fill a whole symposium. Urmila wondered if it could be looked at from a different angle, e.g. high throughput related to inhalation. Cara mentioned that she is doing high throughput with nicotine and flavoring compounds. Ken mentioned indoor air quality issues around VOCs, molds, and bacteria: standards are needed for indoor testing. Cara mentioned airway physiology, fungi and asthma. Ken wondered if the alternative methods / in vitro SS could be a co-sponsor. Also, use of fish embryos for risk assessment and screening purposes. Jake wondered if there should be a CE course on integrating physiology, taking advantage of Juergen Pauluhn while he is still around. Maybe he can do a Webinar (which would receive support from SOT)? Mehdi said that there was one on cardiovascular toxicity last year. Perhaps one on cardiopulmonary issues? Ian mentioned the changes in the session sponsorships, with specialty sections being either primary or secondary sponsors. The group decided that proposals should be submitted to IRSS by April 15 to allow enough time for review before the SOT deadline of April 30.

Leadership roles: Urmila explained the VP role, which is to handle the review of awards during the first year (VP elect) and then organize the review of session proposals during the second year (as VP). The goal of the session proposal review is to improve and prioritize them so that a larger number gets accepted, hopefully. This year Jake is in charge. It may be useful to have a conference call to discuss them before the SOT deadline (i.e. April 30, 2014). She said that it would be useful to get out a newsletter soon after the SOT meeting. Everything has to go through the SOT liaison, Raul Suarez. This Fall, Flemming will be in charge of the Awards. The President (Urmila) will do the newsletters. The Past President (Ian) will do the career achievement award and recruit new IRSS officers. The postdoc representative (Cara) will help with the website, which is maintained by SOT but we can suggest changes and add documents. The Councilors help with the review of session proposals and awards.

Finances: We discussed seeking sponsorship for the reception. IRSS receives membership fees. It is unclear whether webinars and continuing education courses bring in money. Annemoon and Urmila will talk to SOT to find out the details. In addition, we can find out what other specialty sections are doing through the Communications group.

Agenda for Reception on Monday: Samantha offered to take pictures of the Awards, for the newsletter. Other topics are the new officers, and a report on the technical meeting. Maybe Jan Moser can say something? Jake asked about the role of the technical committee. Ian replied that it discusses issues pertinent to inhalation studies and writes white papers. It was mostly based on military research and usually about 10 people come to the meetings.

Follow up items:

- Newsletter soon after SOT with proposal deadline (April 15).
- Circulate list of symposia at previous conferences.
- Plan conference calls in April (review session proposals) and Fall (review awards, recruit new officers).
- Find out about sponsorship rules and income from courses and webinars.
- Plan a webinar by Juergen Pauluhn?