

NAME OF SPECIALTY SECTION: Inhalation and Respiratory

ANNUAL REPORT: 2018-2019

May 1, 2018 to April 30, 2019

I. Officers/Committees:

<u>Officers</u>	<u>2017-2018</u>	<u>2018-2019</u>
President:	Jon A Hotchkiss	Debra L. Laskin
Vice President:	Debra L. Laskin	Matthew L. Campen
Vice President-Elect:	Matthew J. Campen	Irfan Rahman
Secretary/Treasurer:	Melanie Doyle-Eisele	Melanie Doyle-Eisele
Past President	Flemming R Cassee	Jon Hotchkiss
Councilors:	Judith T. Zeilkoff	Judith T. Zeilkoff
	Ilona Jaspers	Ilona Jaspers
	Andrea De Vizcaya-Ruiz	Kimberly Gowdy
	Irfan Rahman	Alex Perrow Carl
PDA Representative:	Donald Scott Anderson	Sarah Carratt
GSLC Representative:	Tamara L. Young	Elizabeth Corteselli

II. Activities:

2019 SOT Annual Meeting Reception was held in Baltimore, MD on March 12, 2019.

Approximately 150-175 people were in attendance.

Dr. Laskin called the meeting to order and the presentation is attached (see Attachment I).

Awards:

Graduate Student Award – Kelly Hanson, University of Rochester

Mary Amdur Student Award – Jacklyn Kelty, University of California, Davis

Postdoctoral Award – Colette N. Miller, U.S. Environmental Protection Agency

Donald E Gardner Award – Andres Henriquez, U.S. Environmental Protection Agency

Young Investigator Award – Petra Haberzettl, University of Louisville

Career award- Terry Gordon, New York University School of Medicine

Paper of the Year: Lee H, Zhang D, Laskin DL and Jin Y. Functional Evidence of Pulmonary Extracellular Vesicles in Infectious and Noninfectious Lung Inflammation. *J. Immunol.* 2018; 201:1500-1509.

2019 SOT Annual Meeting Courses/Sessions:

Workshops:

- Tuesday, March 12 – 8:00 AM – 10:45am,
“Strategies to Mitigate the Health Impacts of Air Pollutants in Susceptible Populations”
Chairs: Haiyan Tong and Howard Kipen
- Tuesday, March 12 – 11:00am – 12:20pm,
“Science at the Nexus of Wildfire Smoke and Public Health”
Chairs: M. Ian Gilmour and Ann Brown
- Wednesday, March 13 – 1:30pm – 4:15pm,
“Air Pollution-Induced Cardiovascular Toxicity: Endothelial Progenitor Cells as Critical Mediators”
Chairs: Petra Haberzettl and Christian Heiss

Symposia:

- Monday, March 11 - 1:45 - 4:30 PM,
“Immune-Epithelial Cell Crosstalk in Lung Toxicology and Disease”
Chairs: Alessandro Venosa and Andrew Gow
- Tuesday, March 13 - 8:00 – 10:45 AM,
“Not Your Father’s ED: Expanding the Definition and Understanding of Endothelial Dysfunction Due to Inhaled Toxicants”
Chairs: Daniel Conklin and Matthew Campen

Endowment Fund Details:

Donald E Gardner Fund

Assets at beginning (March 31, 2018)	\$62,795
Expenditure: 1 award	\$2,000
Assets at Dec 2018	\$63,240

Mary Amdur Fund

Assets at beginning (March 31, 2018)	\$98,662
Expenditure: 1 award	\$500
Assets at Dec. 2018	\$99,403

Newsletters: February 2019

IRSS Webinars:

June 2018. Microengineered Systems to Emulate Human Lung Pathophysiology
Chair: K.H. Benam, University of Colorado

October 2018. Novel Applications for a Noninvasive Sampling Method of the Nasal Mucosa in Inhalation Toxicology
Chairs: M. Reguli and I. Jaspers

E-Journal Club:

White Papers:

Contributions to SOT website:

Other Specialty Section 2018-2019 Activities:

_____ Officer teleconferences

Attachment I – Business Presentation



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Business Meeting

Tuesday March 12, 2019
6:00 pm





Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Agenda

- Welcome (Debbie)
- Introduce the executive committee; election results (Debbie)
- Secretary / treasurer's report (Melanie)
- Presentation of Awards (Irfan)
- Career Achievement Award (Judy)
- Education/Outreach Activities (Irfan)
- Mentoring activities (Kym and Sarah)
- Sponsored events and other business activities (Mat)
- Raffles/Prizes (Sarah and Elizabeth)
- Closing (Debbie)



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Attention Trainees!!





Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Executive Committee 2018-2019

President



Debbie Laskin

Vice President



Matt Campen

VP-elect



Irfan Rahman

Sec/Treas



**Melanie
Doyle-Eisele**

Past Pres



Jon Hotchkiss

Sr Councilor



**Ilona
Jaspers**

Sr Councilor



**Judy
Zelikoff**

Jr Councilor



**Kym
Gowdy**

Jr Councilor



Alex Carll

Post-doc



Sarah Carratt

Grad student



**Elizabeth
Corteselli**

Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Incoming Executive Committee

President



Matt Campen

Vice President



Irfan Rahman

VP-elect



Judy Zelikoff

Sec/Treas



Mehdi Hazari

Past Pres



Debbie Laskin

Sr Councilor



Kym Gowdy

Sr Councilor



Alex Carll

Jr Councilor



Chris Reilly

Jr Councilor



Amy Lund

Post-doc



Greg Smith

Grad student



Elizabeth Corteselli



Secretary/Treasurer's Report

IRSS Membership (as of Feb 2019): 301

Finances (as of Dec 2018)

- General Assets - \$8,017 (down \$973 compared to 2017)
- IRSS Business Meeting/Reception
 - Approved Funding from SOT council - \$1,350
 - Estimated sponsorships/scholarships - \$1,100
 - Estimated Expenses - \$10,335
- Donald Gardner Endowment - \$63,240 (\downarrow ~\$2500)
- Mary Amdur Fund - \$99,403 860 (\downarrow ~\$450)



Inhalation and Respiratory Specialty Section

of the Society of Toxicology



Awards



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Paper of the Year Award



Heedoo Lee
Yang Jin
Boston University

Debra Laskin
Rutgers University



Functional Evidence of Pulmonary Extracellular Vesicles in Infectious and Noninfectious Lung Inflammation

Heedoo Lee, Duo Zhang, Debra L. Laskin and Yang Jin

J Immunol 2018; 201:1500-1509; Prepublished online 11
July 2018;
doi: 10.4049/jimmunol.1800264
<http://www.jimmunol.org/content/201/5/1500>



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Mary Amdur Student Award

Jacklyn (Skye) Kelty

University of California, Davis



Mentor: Laura Van Winkle

**Preservation of xenobiotic
metabolizing capacity in airway cells
in vitro: A species comparative
approach using cells from mice,
monkeys and humans**





Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Skye Kelty

- **Research focus:** Air pollution, mixture toxicology, biological model development, and community-based participatory research
- **Rationale:** Existing carcinogenicity data relies on animal models with differences in xenobiotic metabolism, *in vitro* models should reflect these species differences as well
- **Scientific Contribution:** Development of *in vitro* species comparative approaches to xenobiotic metabolism to understand human lung toxicity and risk. Characterization of the lung-compartment of an *in vitro* lung-liver crosstalk system relative to fresh airway source tissue.
- **Significance:** Airway xenobiotic metabolic capacity is preserved *in vitro* in a species, preparation, and airway site-specific manner. Further work to augment *in vitro* methods to model human diversity in progress.



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

IRSS Student Award

Kelly Hanson

University of Rochester



Mentor: Jack Finkelstein

Apoptosis resistance of fibroblasts precedes progressive scarring in pulmonary fibrosis and is partially mediated by Toll-like receptor 4 activation



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Kelly M. Hanson

- **Thesis project:** Exploring contribution of pro-survival TLR4 signalling in fibroblast apoptosis resistance and dysfunctional wound healing in pulmonary fibrosis (PF)
- **Results:** TLR4 KO mice developed less severe radiation-induced PF than WT mice. Fibroblast apoptosis resistance preceded fibrosis and was reduced in TLR4 KO mice.
- **Significance:** Identified new cellular mechanisms of PF pathogenesis, which may become important targets for future prevention and mitigation strategies



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

IRSS Postdoctoral Award

Colette N. Miller

US EPA

Mentors: Janice Dye, Mehdi Hazari, and
Urmila Kodavanti



**Peri-implantation ozone exposure induces
sexually dimorphic placental-fetal-brain axis
abnormalities**



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Colette N. Miller

- **Introduction:** The effect of inhaled air pollutants on fetal development is relatively poorly understood. The placenta is a critical organ that regulates fetal growth; the influence of exposure to air pollutants on its function has not been well described.
- **Rationale:** We previously shown that peri-implantation exposure to ozone reduces fetal growth, however, the severity of this effect is sex-specific. While the reduction in fetal weight may be attributable to reduced blood availability, this is unlikely to explain the sexual dimorphism of the effect. We hypothesized that the answer may exist in the placenta.
- **Scientific Contribution:** Our work is filling the gap in causal evidence of the association of gestational exposure to ozone and intrauterine growth restriction and highlights the role of the placenta in mediating this adverse pregnancy outcome.
- **Summary and Significance:** In our model, the male placenta was more metabolically active and utilized energy at the expense of fetal growth, which was supported by the impaired metabolic status and adiposity observed in males from ozone-exposed dams. Alternatively, the female placenta upregulated nutrient sparing pathways which may have protected the metabolic state of the fetus.



Inhalation and Respiratory Specialty Section

of the Society of Toxicology



Donald E. Gardner Inhalation Toxicology Education Award

Andres Henriquez

ORISE Post-doctoral trainee
US EPA

Goal: to gain specialized training in novel/emerging methodologies

Mentor: *Mat Campen, University of New Mexico*





Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Andres Henriquez

My Research Field:

- The role of neuroendocrine stress pathways (SAM and HPA axes) in mediating homeostatic metabolic and immunological effects of air pollutants and how host conditions impair this response

Rationale:

- Identifying circulating mediators that produce peripheral effects of inhaled air pollutants is critical for potential preventive/interventional strategies and understanding mechanisms of injury
- Dr. Campen's laboratory has developed state-of-the-art *in vitro* approaches to identify causal circulating factors. This award will give me the opportunity to learn these novel approaches
- We have banked serum samples from *in vivo* studies to be tested using Dr. Campen's approach

Scientific Contribution/Significance (to be achieved): Identify the origin and the role of circulating factors, including stress hormones in mediating vascular and peripheral effects of air pollutants of injury

Inhalation and Respiratory Specialty Section

of the Society of Toxicology



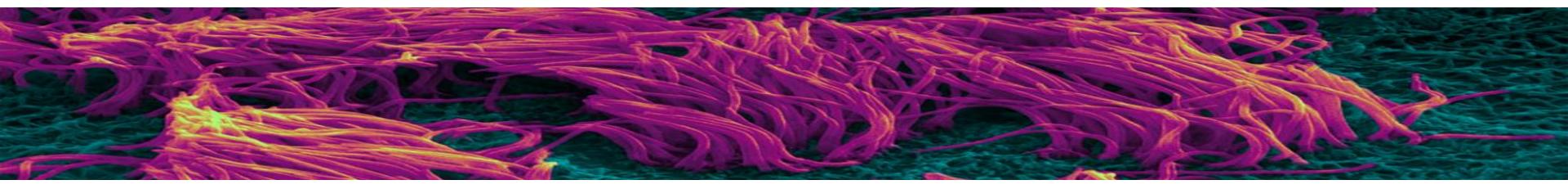
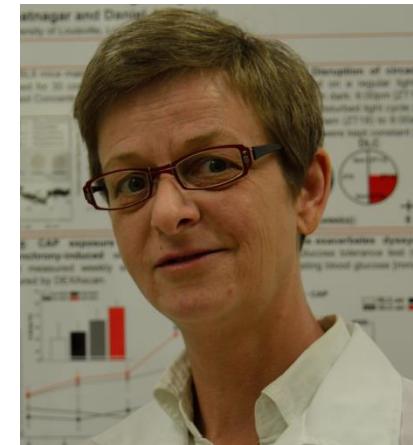
Young Investigator Award

Petra Haberzettl

Assistant Professor
University of Louisville

Research focus:

Vascular and cardiometabolic effects of
environmental air pollution



Inhalation and Respiratory Specialty Section

of the Society of Toxicology

In a nutshell:

Petra Haberzettl

- Assistant Professor in the Diabetes and Obesity Center within the newly formed Envirome Institute at the University of Louisville lead by Dr. Bhatnagar
- 2003-2006: Doctorate, IUF at the Heinrich-Heine University Düsseldorf (Germany)
- 2006-2011: Postdoctoral fellow, University of Louisville
- 2011-present: Assistant Professor, University of Louisville
- My current research projects examine how fine particulate ($PM_{2.5}$) air pollution exposure affect vascular circadian rhythm & endothelial progenitor cell (EPC) metabolism to better understand the mechanisms that contribute to vascular and cardiometabolic injury due to $PM_{2.5}$ inhalation.
- If you want to know more about my research visit:
<https://louisville.edu/doc/haberzettl-lab>





Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Career Achievement Award

Terry Gordon

Professor

New York University School of Medicine



- “Great guy”
- “Straight-shooter”
- “Always willing to help & lend an ear”
- “Committed & accomplished inhalation scientist over several decades”
- “Leader in the field who is usually “there” before anyone else”
- My good friend



Inhalation and Respiratory Specialty Section

of the Society of Toxicology



MENTORING ACTIVITIES

New this Year at SOT meeting: **“Chat with an Expert”**

- Organized by our graduate student and postdoc reps
 - IRSS members from academia, industry, government (14 mentors)
 - Interested trainees matched with IRSS members for one-on-one and small group informal chats (19 mentees)
-
- **Future plans:**
 - Career development webinars (interviewing skills, personal branding, applying for government jobs, etc)
 - Mentoring breakfast at SOT-2020
 - Contact IRSS Councilor Kym Gowdy with your ideas and suggestions



Inhalation and Respiratory Specialty Section

of the Society of Toxicology



Education and Outreach Activities

Webinars

- Microengineered Systems to Emulate Human Lung Pathophysiology; K. Benam, Univ Colorado, June 2018
- Novel Applications for a Noninvasive Sampling Method of the Nasal Mucosa in Inhalation Toxicology; M. Reguli and I. Jaspers, Oct 2018

Activities Planned for 2019

- Webinars
- Journal clubs
- Podcasts



Sponsored Events: SOT 2019

Immune-Epithelial Cell Crosstalk in Lung Toxicology and Disease
(symposium); Mon, 1:45pm - 4:30 pm

Not Your Father's ED: Expanding the Definition and Understanding of Endothelial Dysfunction Due to Inhaled Toxicants (symposium);
Tues, 8:00am - 10:45am

Strategies to Mitigate the Health Impacts of Air Pollutants in Susceptible Populations (workshop); Tues, 8:00am - 10:45am

Science at the Nexus of Wildfire Smoke and Public Health
(info-session); Tues, 11:00am - 12:20pm

Air Pollution-Induced Cardiovascular Toxicity: Endothelial Progenitor Cells as Critical Mediators (workshop); Wednesday,
1:30pm - 4:15pm

Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Support the IRSS

- **Encourage your colleagues to join**
- **Contribute to the newsletter**
Contact: Kym Gowdy
- **Become a member of the Committee**
- **Serve on an IRSS subcommittee**
- **Support the IRSS business meeting**
- **Submit a proposal for SOT 2020**



**Inhalation and Respiratory
Specialty Section**
of the Society of Toxicology

Newsletter – February 2019
President's Message

It's hard to believe that the SOT 2019 annual meeting is less than one month away, and most of our members are still on open page. The IRSS has been very busy during the past year updating our website, reviewing executive committee responsibilities and finances, and planning a number of activities for the 2019 SOT meeting. Two highly successful programs were run and plans are to continue these during the coming year. We received a number of outstanding proposals for symposia and workshops for the 2019 SOT meeting. If you are a committee member, had a proposal or ranking, please, we are quite pleased that four were accepted. Keep in mind it's not too early to be thinking about submissions for SOT 2020.

Another highlight for IRSS members is our reception and business meeting, which will be held on Tuesday night. In addition to meeting friends and colleagues, the meeting is an opportunity for networking and for the executive committee to present the awards, led by VP-elect Irfan Rahman was quite difficult, as there were so many outstanding candidates especially for the trainee awards. The IRSS is十分自豪地宣布，我们有四名杰出的博士后研究员被选为优秀研究员。我们将表彰一位杰出的出版物，一位杰出的青年研究员，和一位杰出的教员。如果您的提案没有被选中，我们鼓励您继续申请。

Finally, I would like to encourage you to become more active in the IRSS. If you are interested in our awards or our postdoctoral awards, the SOT meeting, come to the mixer, submit proposals for SOT 2020 and apply for our awards! Looking forward to seeing you in Baltimore!

Debbie Laskin
President, IRSS



SOT ANNUAL MEETING
March 10-14, 2019
Baltimore, MD

Questions/Comments from membership?

Thanks to our sponsor: VITROCELL Systems GmbH



Inhalation and Respiratory Specialty Section

of the Society of Toxicology



RAFFLE TIME

