

# Inhalation and Respiratory Specialty Section

of the Society of Toxicology



Annual Meeting & ToxExpo  
VIRTUAL EVENT • MARCH 2021

Registration ▾

Program ▾

ePubs and App

Exhibits ▾

Supporters

Presenters ▾

Virtual Meeting Details ▾

## Welcome to the 2021 SOT Annual Meeting Website!

### Virtual Meeting Benefits

2021 SOT—more than just another Zoom meeting or webinar

## Business meeting

All slides will be available from

[www.toxicology.org/groups/ss/IRSS](http://www.toxicology.org/groups/ss/IRSS)

Wednesday March 17, 2021

4:30 pm till 6:30 pm EST



# Inhalation and Respiratory Specialty Section

## of the Society of Toxicology

### SOT Virtual 2021 Agenda

Wednesday March 17 after 4:30 pm till 6:30 pm EST

- Welcome (Irfan)
- Introduce the executive committee; election results (Irfan)
- Secretary / Treasurer's report (Mehdi)
- Presentation of Awards (Melanie)
- Presentation of Career Achievement Award (Judy)
- Education/Outreach Activities (Holger)
- SS-CCG activities (Marusia)
- Mentoring Activities (Colette or Judy or Amie)
- Sponsored Events and Other Business Activities (Matt)
- Closing (Irfan)



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Executive Committee 2020-2021

**President**



**Irfan Rahman**

**Vice President**



**Judy  
Zelikoff**

**VP-elect**



**Melanie  
Doyle-Eisele**

**Sec/Treas**



**Mehdi Saeed  
Hazari**

**Past President**



**Matt Campen**

**Sr Councilor**



**Amie Lund**

**Sr Councilor**



**Christopher  
Reilly**

**Jr Councilor**



**Holger  
Behrsing**

**Jr Councilor**



**Marusia  
Popovech**

**Post-doc**



**Colette Miller**

**Grad student**



**Elise  
Hickman**



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Incoming Executive Committee 2021-2022

**President**



Judy  
Zelikoff

**Vice President**



Melanie  
Doyle-Eisele

**VP-elect**



Kym  
Gowdy

**Sec/Treas**



Meghan  
Rebuli

**Past President**



Irfan  
Rahman

**Sr Councilor**



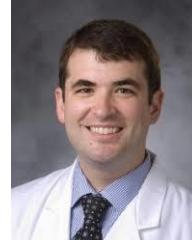
Holger  
Behrsing

**Sr Councilor**



Marusia  
Popovech

**Jr Councilor**



Robert  
Tighe

**Jr Councilor**



Natalie  
Johnson

**Post-doc**



Thivanka  
Muthumalage

**Grad student**



Michael  
Yaeger

# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

Executive Committee 2021-2022

## Executive Committee Election 2021-2022

Kymberly Gowdy, Ohio State Univ	VP-elect	
Meghan E. Reboli, PhD, UNC	Treasurer	
Johnson, Natalie M, Texas A&M	Councilor	
Robert M. Tighe, M.D. Duke Univ	Councilor	
Muthumalage, Thivanka University of Rochester	Postdoc Rep	
Michael Yaeger, Ohio State Univ	Student Rep	

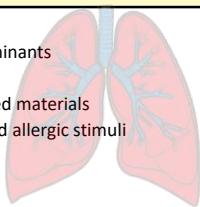
# INHALATION AND RESPIRATORY SPECIALTY SECTION

## Description

The Inhalation and Respiratory Specialty Section provides a focus for members of the Society of Toxicology dealing with the impact of airborne chemicals and particles on the body. The Section meets regularly at the SOT Annual Meeting to promote a better understanding of inhalation and respiratory tract toxicology, to recognize students and colleagues for notable contributions to research, and to address issues of importance to this field. IRSS sponsors webinars and other educational opportunities.

## Issues of Interest

- Indoor and outdoor air pollution
- Occupational exposure to airborne contaminants
- Therapeutic drug delivery by inhalation
- Deposition and pharmacokinetics of inhaled materials
- Interactions between inhaled materials and allergic stimuli
- Airway injury from systemic toxicants
- Systemic injury from airway exposure
- Biomarkers of exposure and disease



## Membership Benefits

- Network with inhalation and respiratory toxicologists from industry, government, and academia.
- Present your work in sponsored and selective specialty sessions.
- Mentoring junior members.

## Reception and Awards Meeting

**Wednesday, March 17, 2021**

**4:30 PM – 6:30 PM EDT**

**Virtual Meeting via Webex/Zoom**

*Please join us to honor our award winners and discuss member involvement.*

## Executive Committee 2020-2021/2022

President Irfan Rahman	Vice President Judy T. Zeilkoff	Vice President-Elect Melanie Doyle-Eisele	Secretary/Treasurer Medhi S. Hazari	Past President Matthew J. Campen
Councilor Holger P. Behrsing Kymberly Gowdy, PhD, Ohio State Univ	Councilor Amie K. Lund Meghan E. Rebuli, PhD, UNC	Councilor Marusia Popovich Johnson, Natalie M., PhD, Texas A&M	Councilor Christopher A. Reilly Postdoctoral Rep. I. Rezaeian, PhD, VP-elect	Grad. Student Rep. Eloisa
Treasurer Meghan E. Rebuli, PhD, UNC	Councilor Robert M. Tighe, PhD, Duke Univ	Councilor Thivanka Muthumalage, PhD, University of Rochester	Councilor Michael Yaeger, Ohio State Univ	Councilor Robert M. Tighe
Postdoctoral Rep. I. Rezaeian, PhD, VP-elect	Postdoctoral Rep. I. Rezaeian, PhD, VP-elect	Postdoctoral Rep. I. Rezaeian, PhD, VP-elect	Postdoctoral Rep. I. Rezaeian, PhD, VP-elect	Postdoctoral Rep. I. Rezaeian, PhD, VP-elect
Student Rep. Eloisa	Student Rep. Eloisa	Student Rep. Eloisa	Student Rep. Eloisa	Student Rep. Eloisa

## Inhalation Toxicology Through the Ages

### 1700-1900: Industrial Revolution

Mining and combustion of coal: increases from 2.7 million tons in 1700 to 250 million tons in 1900. Percival Pott (1775) notes increased incidence of cancer among chimney sweeps.

### 1863: Alkali Act Passed

Establishment of Britain's first pollution inspectorate following extensive property damage caused by emission of hydrogen chloride gas.

### 1880s: London's "Killer" Smog

Brought on by temperature inversions in January; deadly smog events in London begin to increase in duration and severity.

### 0-1000 CE

### 1306: Sea Coal Burn Ban

Blacksmiths exempt, compliance and enforcement prove difficult.

### 1480: Incas in the Bronze Age

Using core samples obtained from the Quelccaya ice cap in Peru, the Incas begin smelting bismuth in the late 1400s. Signs of air pollution swiftly rise once the Spanish conquer the Incas in 1533.

### 1556: Tobacco Arrives in Europe

Brought by French diplomat and scholar Jean Nicot. Nicotine is named after him.

### 1000-1700

### 1309: Glasgow Smog

Smog events result cause 1,000 deaths in "Auld Reekie" a town long known for its coal-fire smoke emissions. "Smog" is coined from 'smoke-fog' by Dr. Harold Antoine Des Voeux in a 1911 report about the incidents.

### 1915: Chemical Warfare is Reality

German chemist Fritz Haber developed chlorine and cyanide gases, which were used as blistering agents in WWI.

### 1928: U.S. PHS Monitors Air

Routine monitoring of air pollution in major eastern U.S. cities begins.

### 1700-1900

### 1941: St. Louis Post Wins Pulitzer

First Pulitzer Prize for environmental reporting awarded following the 1939 St. Louis smog episode that blocked sunlight for a week, resulting in the first smoke ordinance enacted by a U.S. city.

### 1942: The Holocaust

1.1 million European Jews and POWs were murdered using hydrogen cyanide gas (Zyklon B) in Nazi extermination camps.

### 1948: Donora, PA Smog

A weather inversion concentrated sulfuric acid, nitrogen dioxide and fluorine in a smog, killing 20 and sickening over 7,000.

### 1900-1920

### 1960

### 1960: SOT Established

To create a safer and healthier world by advancing the science and increasing the impact of toxicology.

### 1961: Vietnam War

U.S. spraying of herbicides results in TCDD exposure to Vietnamese citizens and deployed military personnel via widespread routes, including inhalation. Exposure linked to birth defects, cancer, diabetes, and Parkinson's Disease. Recent evidence suggests of health risks in the grandchildren of Veterans.

### 1968: Chernobyl

Nuclear reactor accident results in largest nuclear disaster in history. Those living within 30 km of the plant inhaled up to 1,000 mSv (adults) and 6,000 mSv (infants) of radioactive iodine, an isotope known to cause thyroid cancer.

### 1930s

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## Sponsored Events at SOT Virtual Meeting

- "From Inhaled Particles to Neurodegeneration and Toxicity: Evidence from Studies in Volunteers, Experimental Animals, and Cell-Based Systems" (3/16/2021 at 11:15 AM EST)
- "It Is Not Just Air: Exposure to Indoor Air Pollution, Diagnostic Tools, and Evaluation of Health Effects" (3/17/2021 at 11:30 AM EST)

### Workshops:

- "Standardization of In Vitro Inhalation Exposure for Regulatory Acceptance" (3/15/2021 at 11:15 AM EST)
- "Precision-Cut Lung Slices: A Versatile Tool for Pulmonary Toxicology" (3/16/2021 at 11:15 AM EST)
- "New Approaches for the Identification and Evaluation of Chemical Respiratory Sensitizers" (3/22/2021 at 11:15 AM EST)

### Continuing Education:

- "Establishing Confidence in Organ-on-a-Chip Systems for Toxicity Testing: Lung-on-a-Chip as an Example" (3/26/2021 at 11:00 AM EST)

## IRSS 2021 Award Winners



### Current & Future Challenges

#### COVID-19

#### Wildland Fires

#### Burn Pit Emissions

#### PFAS

#### E-Cigarettes

#### Climate Change



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Secretary/Treasurer's Report

**IRSS Membership** (as of Dec 2020): 351

**Finances** (as of Dec 2020)

- General Assets - \$12,966 (up \$4,675 compared to 2019)
- IRSS Business Meeting/Reception
  - Approved Funding from SOT council - \$ (Not available yet)
  - Estimated sponsorships/scholarships - \$ (SOT)
  - Estimated Expenses - \$(Not available yet)
- Donald Gardner Endowment - \$63,261 (down \$1,454)
- Mary Amdur Fund - \$110,102 (down \$411)



# Inhalation and Respiratory Specialty Section

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Thanks

Retreat: May 21, 2:30 PM – 4:00 PM  
Award Ceremony (Judith Zelikoff, PhD, VP)  
**Congratulations to the 2020 IRSS Award Winners!**



# Inhalation and Respiratory Specialty Section

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**Awards**  
**Several**  
**competitive**  
**applications**  
**received**

**Paper of the Year Award:**

**Postdoctoral Award:**

**Mary Amdur Student Award:**

**Student Award:**

**Career Achievement Award:**

**Donald E. Gardner Inhalation Toxicology Education Award:**

**Young Investigator Award:**



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Paper of the Year Award



**Samantha Snow, et. al.**

[www.nature.com/scientificreports](http://www.nature.com/scientificreports)

**SCIENTIFIC  
REPORTS**  
nature research



**OPEN**

**Offspring susceptibility  
to metabolic alterations due  
to maternal high-fat diet  
and the impact of inhaled ozone  
used as a stressor**

Samantha J. Snow<sup>1,4</sup>, Katarzyna Broniowska<sup>2</sup>, Edward D. Karoly<sup>2</sup>, Andres R. Henriquez<sup>3</sup>,  
Pamela M. Phillips<sup>1</sup>, Allen D. Ledbetter<sup>1</sup>, Mette C. Schladweiler<sup>1</sup>, Colette N. Miller<sup>3</sup>,  
Christopher J. Gordon<sup>1</sup> & Urmila P. Kodavanti<sup>1,✉</sup>



# Inhalation and Respiratory Specialty Section

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## Mary Amdur Student Award

**Eva Vitucci**

University of North Carolina, Chapel Hill

Mentor: *Shaun D. McCullough*



**Identifying the Molecular Mechanisms  
of Air Pollution-Induced  
Cardiovascular Disease**





# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## IRSS Student Award

**Carmen Lau**

Texas A&M University



Mentors: Natalie M. Johnson (School of Public Health) and Dr. Aline Rodrigues Hoffman (College of Veterinary Medicine)

**In utero ultrafine particulate matter exposure leads to enhanced murine neonatal RSV infection severity**



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## IRSS Postdoctoral Award

**Gagandeep Kaur**

University of Rochester

Mentor: Irfan Rahman



**Dysregulated ACE2 Activity and Cytokine  
Profile amongst Smokers Could Increase  
Susceptibility towards SARS-CoV2**



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology



## Donald E. Gardner Inhalation Toxicology Education Award

**Keith Rogers**

University of NC – Chapel Hill

**Goal:** To introduce the science of inhalation toxicology to underrepresented students at historically black colleges or universities by creating the “New Respiratory Toxicology Coach Series”

**Mentor:** Ilona Jaspers





# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Young Investigator Award

**Meghan Rebuli**

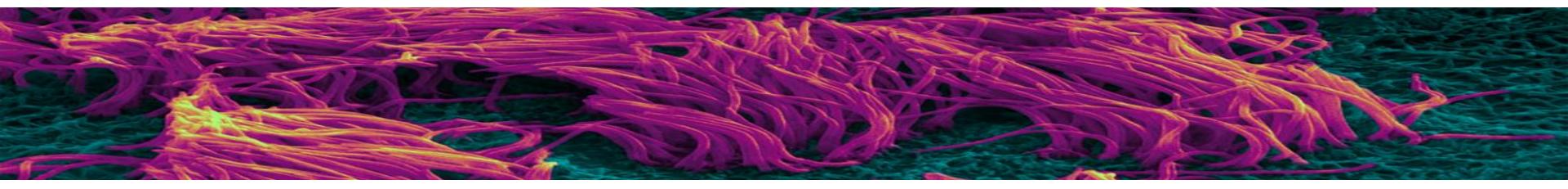
Assistant Professor

Center for Environmental Health & Susceptibility  
University of North Carolina – Chapel Hill



### **Research focus:**

Evaluating sex differences in respiratory  
toxicology





# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Career Achievement Award

**John Morris**  
Retired  
University of Connecticut



**John B. Morris, Ph.D.**  
Board of Trustees Distinguished Professor Emeritus  
University of Connecticut  
Society of Toxicology President 2016-2017

T: +1 (860) 402-1778  
E: [john.morris@uconn.edu](mailto:john.morris@uconn.edu)



# Awards: Winners

**Paper of the Year Award:** Samantha Snow, US EPA

**Postdoctoral Award:** Gagandeep Kaur, University of Rochester

**Mary Amdur Student Award:** Eva Vitucci

**Student Award:** Carmen Lau, Texas A&M University

**Career Achievement Award:** John Morris, University of Connecticut

**Donald E. Gardner Inhalation Toxicology Education Award:**  
Keith Rogers, University of North Carolina

**Young Investigator Award:** Meghan Reboli,  
University of North Carolina



SOT 2021 Program Webinars hosted by IRSS Members: Thank you to all  
<https://www.toxicology.org/events/am/AM2021/program-overview.asp>

**Symposia:**

**Sponsored Events at SOT Virtual Meeting 2021**

- “From Inhaled Particles to Neurodegeneration and Toxicity: Evidence from Studies in Volunteers, Experimental Animals, and Cell-Based Systems” (3/16/2021 at 11:15 AM EST)
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- “Establishing Confidence in Organ-on-a-Chip Systems for Toxicity Testing: Lung-on-a-Chip as an Example” (3/26/2021 at 11:00 AM EST)



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology



## Webinars

For nominations and suggestions-

Please contact:

**Holger P. Behrsing, Ph.D.**

Director – Respiratory Toxicology

Office: 301-963-4946

[hbehrsing@iivs.org](mailto:hbehrsing@iivs.org)



# Webinar Series 2020-2021

## “COVID-19: Impact of Inhalation Based Exposures on Respiratory System”

Wednesday, August 5, 2020 at 1:00 – 2:00 PM EDT.



**Gagandeep Kaur, Ph.D.**  
Postdoctoral Associate, University  
of Rochester Medical Center



**Robert Foronjy, M.D.**  
Chief, Pulmonary and Critical Care  
Medicine SUNY Downstate Medical Center

### Moderators:

- **Irfan Rahman, Ph.D.**, Professor, University of Rochester, Rochester, NY
- **Judith Zelikoff, Ph.D.**, Professor, New York University School of Medicine
- **Holger Behrsing, Ph.D.**, Principal Scientist & Head: Respiratory Toxicology Program, IIVS, Inc.



## Webinar Series 2020-2021

**“A respiratory look into COVID-19 pediatric health and adolescent health risks of behavior”**

Wednesday, November 18, 2020 at 2:00 – 3:00 PM EDT.



**Ilona Jaspers, Ph.D.**

Professor, Depts. of Pediatrics, Microbiology & Immunology, and Environmental Sciences and Engineering  
University of North Carolina at Chapel Hill



**Matthew McGraw, M.D.**

Assistant Professor - Department of Pediatrics, Pulmonology (SMD)  
University of Rochester Medical Center

### **Moderators:**

- **Irfan Rahman, Ph.D.**, Professor, University of Rochester, Rochester, NY
- **Judith Zelikoff, Ph.D.**, Professor, New York University School of Medicine
- **Holger Behrsing, Ph.D.**, Principal Scientist & Head: Respiratory Toxicology Program, IIVS, Inc.



## Webinar Series 2020-2021

### “Microplastics and pulmonary risk: Environmental prevalence, exposure and mechanisms of pulmonary action”

Tuesday, April 13th, 2021 at 2:00 – 3:00 PM EDT.



**James McGrath, Ph.D.**  
Professor of Biomedical Engineering  
University of Rochester



**Eliseo Castillo, Ph.D.**  
Assistant Professor, Department of Internal Medicine  
University of New Mexico Health Sciences Center

#### **Moderators:**

- **Irfan Rahman, Ph.D.**, Professor, University of Rochester, Rochester, NY
- **Judith Zelikoff, Ph.D.**, Professor, New York University School of Medicine
- **Holger Behrsing, Ph.D.**, Director & Head: Respiratory Toxicology Program, IIVS, Inc.



# Inhalation and Respiratory Specialty Section

## of the Society of Toxicology

### Member Highlights

#### Communication Activities –

**Marusia Popovech, PhD** (IRSS councilor) is now a member of Specialty Section-Collaboration and Communication Group (SS-CCG) on Ethical, Legal, Forensics, and Societal Issues for 2019-2021.

Congratulations to **Amie Lund, PhD** (our IRSS councilor) who is recognized as

- Lone Star Society of Toxicology (LSSOT) Regional Chapter- President (2020-2021)
- SOT Regional Chapter Communication and Collaboration Committee (RC4) - co-Chair (2020-2021)
- LSSOT - FUTURE Liaison (2020-2021)



# Inhalation and Respiratory Specialty Section

of the Society of Toxicology

## Specialty Section-Collaboration and Communication Group (SS-CCG)

Mission: Facilitate the exchange of ideas across  
Specialty Sections

Seeking Input:

- Co-sponsored events (webinars, etc.)
- Best Practices



# Inhalation and Respiratory Specialty Section

## of the Society of Toxicology

### Forthcoming Meetings

The 23<sup>rd</sup> Congress of the International Society for Aerosols in Medicine (ISAM) will be held in Boise, Idaho from 22<sup>nd</sup> to 26<sup>th</sup> May 2021.

<https://www.isam.org/website/2021%20Congress/congress>

The International Society for Aerosols in Medicine (ISAM)  
office@ISAM.org

Call for Proposals for the International Congress of Toxicology 2022 Scientific Program  
Maastricht, **September 18-22, 2022.**

The International Congress of Toxicology is a joined meeting of IUTOX and EUROTOX ([www.ict2022.com](http://www.ict2022.com)). The theme of the 2022 ICT "***Uniting in Toxicology***", reflects our desire to address topics dealing with different disciplines. Submit your scientific proposals via the [submission platform](#) making sure to include the organiser details, the recommended speakers, and a brief presentation for the proposal.

[https://www.eventclass.org/contxt\\_ict2022/welcome/index](https://www.eventclass.org/contxt_ict2022/welcome/index)

The 10th International Conference on Nanotoxicology (virtual program) is just around the corner. Registration is open, and the conference runs from **April 20-22**. The program is available online. There are **212** presentations consisting of, **7** Keynotes, **86** Abstract Oral Presentations, and **119** Poster Presentations with presenters from over **28** countries.

Further information on this conference can be found in the attached flyer link or at [10th International Conference on Nanotoxicology \(nanotox2021.org\)](http://10th International Conference on Nanotoxicology (nanotox2021.org))



# Inhalation and Respiratory Specialty Section

## of the Society of Toxicology

Dear members,

We would like to acknowledge and thank all of our Executive Committee and IRSS members for their contributions

**Awards Committee:**

Judith Zelikoff, PhD (Chair)  
[Judith.Zelikoff@nyulangone.org](mailto:Judith.Zelikoff@nyulangone.org)  
All EC members

**Education, Outreach, Endowment  
and Webinar Committee:**

Judith Zelikoff, PhD  
[Judith.Zelikoff@nyulangone.org](mailto:Judith.Zelikoff@nyulangone.org)  
Irfan Rahman, PhD  
[Irfan\\_Rahman@urmc.rochester.edu](mailto:Irfan_Rahman@urmc.rochester.edu)  
Mehdi Saeed Hazari, PhD  
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[mary.a.popovech@exxonmobil.com](mailto:mary.a.popovech@exxonmobil.com)  
Colette Miller, PhD (EPA)  
[Miller.Colette@epa.gov](mailto:Miller.Colette@epa.gov)  
Elise Hickman, PhD (UNC)  
[ehickman@email.unc.edu](mailto:ehickman@email.unc.edu)

**Program Committee:**

Judith Zelikoff, PhD (Chair)  
[Judith.Zelikoff@nyulangone.org](mailto:Judith.Zelikoff@nyulangone.org)  
Melanie Doyle-Eisele, PhD  
[mdoyle@lovelacebiomedical.org](mailto:mdoyle@lovelacebiomedical.org)  
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Irfan Rahman, PhD  
[Irfan\\_Rahman@urmc.rochester.edu](mailto:Irfan_Rahman@urmc.rochester.edu)  
Amie K. Lund, PhD  
[amie.lund@unt.edu](mailto:amie.lund@unt.edu)  
Christopher A. Reilly, PhD  
[Chris.Reilly@pharm.utah.edu](mailto:Chris.Reilly@pharm.utah.edu)

**Thank you for your involvement and commitment.  
Please be a part of our endeavors, and contact us for  
feedback and involvement!**



# Inhalation and Respiratory Specialty Section

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**All slides will be available from  
[www.toxicology.org/groups/ss/IRSS](http://www.toxicology.org/groups/ss/IRSS)  
Spring Newsletter soon!**

