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
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)
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
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
<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>University/Institution</th>
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<tbody>
<tr>
<td>Kymberly Gowdy</td>
<td>VP-elect</td>
<td>Ohio State Univ</td>
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<tr>
<td>Meghan E. Rebuli</td>
<td>Treasurer</td>
<td>PhD, UNC</td>
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<td>Johnson, Natalie M</td>
<td>Councilor</td>
<td>Texas A&amp;M</td>
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<tr>
<td>Robert M. Tighe</td>
<td>Councilor</td>
<td>M.D. Duke Univ</td>
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<td>Muthumalage, Thivanka</td>
<td>Postdoc Rep</td>
<td>University of Rochester</td>
</tr>
<tr>
<td>Michael Yaeger</td>
<td>Student Rep</td>
<td>Ohio State Univ</td>
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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. ISS 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 selected specialty sessions.
- Mentoring junior members.

Inhalation Toxicology Through the Ages

- 1700-1900: Industrial Revolution
  - Mixing and combustion of coal increases from 2.7 million tons in 1700 to 250 million tons in 1900. Personal Pol I (1776) notes increased incidence of cancer among chimney sweeps.
  - 1861: Act Passed
    - Establishment of the British’s first pollution inspection following extensive property damages caused by emissions of hydrogen chloride gas.
- 1890s: London’s “Killer” Smog
  - Brought on by temperature inversions in January, deadly smog events in London begin to increase in duration and severity.
- 1930: Hawk’s Neutral Incident
  - Roundup of African-American workers died between 1927-1930 of acute silicosis while digging a hydroelectric tunnel for Union Carbide.
- 1935: The Dust Bowl
  - Cloudburst of dust from years of drought cause thousands of deaths due to particle exposure and starvation in the Great Plains.
- 1950: Smoking & Lung Cancer
  - Dr. Richard Doll and Dr. Bradford Hill publish first paper linking smoking and lung cancer.
- 1952: London Great Smog
  - Caused or contributed to as many as 12,000 deaths. Continued smog events results in the 1956 Clean Air Act by British Parliament.
- 1954: Mary Amour
  - Presents her work on low dose health effects of inhaled sulfuric acid and sulfur dioxide to several publics. Today, the Mary Amour Endowment supports student awards.
- 1971: U.S. EPA Established
  - In addition to establishing the EPA, the 1970 Amendments of the Clean Air Act; first adopted in 1963, authorized for the regulation of industrial and mobile sources of air pollutants. In 1971, EPA names 4-iodantitrochloroate polynitrobenzene leading to the list in the mid-1970s.
- 1973: Leaded Gasoline Phase Out
  - Following longstanding suspicion of the neurotoxic effects of lead, increased lead in children and the introduction of catalytic converter results in the EPA to require a gradual reduction in gasoline lead content. Within 20 years, the number of children with elevated lead levels dropped by 98%.
- 1993: Harvard Six Cities Study
  - Groundbreaking study found a strong link between air pollution and mortality rate, prompting improved U.S. regulations on fine particulate matter.
- 1995: Tokyo Subway Sarin Gas
  - Members of religious group Aum Shinrikyo released sarin gas in Tokyo subways, killing 12 and injuring 5,000.
- 1999: Libby, MT Asbestos
  - The EPA warns that anyone living in this northwest Montana town for six months any time before January 1995 was most likely exposed to harmful levels of asbestos.
- 2015: Beijing Air Pollution
  - A striking difference in air quality is observed after Beijing achieves clear blue skies in time for a military parade. Laos 15 at 24 hours later. Beijing AQI shoots from 17 to 160.
- 2016 & 2018: New Delhi Air Pollution
  - PM2.5 reached up to 500 ppm in November 2016, leading to poor visibility, increased morbidity from respiratory diseases, and grounding of flights.
- 2019: EVAI Outbreak
  - Outbreak of e-cigarettes, or vaping, associated lung injury primarily associated with delta THC products.

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

- Councilor Holger P. Beierling, PhD
- Councilor Annette Conti, PhD
- Councilor Alexandra Popp-Schneider, PhD
- Chair: Peter K. Pasti

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’s 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

1. Carmen Hesley, MSc
2. Daniel A. Kippen, PhD
3. A. Raina Lukan, PhD
4. David G. Marzilli, PhD
5. Juan L. Paniagua, PhD
6. Matthew Darken, PhD
7. Sarah D. Dealy, PhD
8. Douglas M. Hermsmeyer, PhD
9. John W. D. Hargreaves, PhD
10. Jessica L. Houghton, PhD
11. Peter A. Kreyling, PhD
12. Richard D. Martin, PhD
13. John M. Martin, PhD
14. Paul A. Portier, PhD
15. James E. Rasmussen, PhD
16. John M. Sanders, PhD
17. Mark A. Williams, PhD
18. Stephen A. Wragg, PhD
19. Elizabeth W. Wu, PhD
20. John J. Yom-Tov, PhD
21. Huixia Zhu, PhD

0-1000 CE
- 1306: Sea Coal Burn Ban
  - Backwards smell, compliance and enforcement prove difficult.
- 1400: Incas in the Bronze Age
  - Using cores samples obtained from the Chauchilla necropolis in Peru, the Incas begin smelting bismuth in the late 1400s. Signs of air pollution vastly rise once the Spanish conquer the Incas in 1533.
- 1586: Tobacco Arrives in Europe
  - Brought by French diplomat and scholar Jean Nicot. Nicotine is named after him.
- 1609: Glasgow Smog
  - Smog events result cause 1,000 deaths in “Auld Reekie” a town long known for its coal-fueled smoke emissions. Smog is coined from “smoke fog” by Dr. Harold Antoine Des Voisins in 1911 report about five incidents.
- 1915: Chemical Warfare a Reality
  - German chemist Fritz Haber developed chlorine and cyanide gases, which were used as blistering agents in WWI.
- 1928: U.S. Philips Monitors Air
  - Routine monitoring of air pollution in major urban U.S. cities begins.
- 1941: St. Louis Post Woes Pulitzer
  - First Pulitzer Prize for environmental reporting awarded following the 1938 St. Louis smog episode that blanketed daylight for a week, resulting in the state smoke ordinance enacted by a U.S. city.
- 1942: The Holocaust
  - 1.1 million European Jews and Poles were murdered using hydrogen cyanide gas (Azkoning) in Nazi extermination camps.
- 1944: Donora, PA Smog
  - A weather inversion concentrated sulfuric acid, nitrogen dioxide and furfuryl smog, killing 20 and sickening over 7,000.
- 1960: Soviet Union
  - To create a safer and healthier world by advancing the science and increasing the impact of toxicology.
- 1961: Vietnam War
  - U.S. surveying of herbicide results in TCE exposure to Vietnamese civilians and deployed military personnel via widespread routes, including inhalation. Exposure linked to birth defects, cancer, diabetes, and Parkinson’s Disease. Recent evidence suggests health risks to the grandchildren of Veterans.
- 1982: SOT’s “IRR” Established
  - By James Stevens (President) and Don Gardner (Vice President).
- 1986: Bhopal Disaster
  - Approximately 40 metric tons of methyl isocyanate from a Union Carbide pesticide plant killed thousands.
- 1986: Chernobyl
  - Nuclear reactor accident results in largest nuclear disaster in history. Those living within 30 km of the plant inhaled up to 1,000 mGy (mrem) of radioactive iodine, an isotope known to cause thyroid cancer.
- 2001: World Trade Center Attacks
  - 9/11 Terrorist attacks result in the deaths of almost 3,000, releasing large amounts of dust containing fiberglass, asbestos, metals, and VOCs into the air. As of 2013, 32,000 cases of respiratory/ digestive diseases and 5,000 cancers, resulting in over 700 and 600 deaths, respectively, have been reported in first responders.
- 2008: Kingston Coal Ash Spill
  - In the largest coal ash spill in the U.S. 1.1 billion gallons of coal ash-story was released into the Emory River. Nearly 40 deaths and 250 cases of disease have been linked to the remediation effort and failure to provide PPE to employees.

2010s +
- 2020s:
  - Current & Future Challenges
    - COVID-19
      - Wildland Fires
      - Burn Pit Emissions
      - PFAS
      - E-Cigarettes
      - Climate Change
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)
Retreat: May 21, 2:30 PM – 4:00 PM
Award Ceremony (Judith Zelikoff, PhD, VP)
Congratulations to the 2020 IRSS Award Winners!

Thanks
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:
Paper of the Year Award

Samantha Snow, et. al.

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

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
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
Dysregulated ACE2 Activity and Cytokine Profile amongst Smokers Could Increase Susceptibility towards SARS-CoV2
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
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
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
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 Rebuli, University of North Carolina
Symposia:

Sponsored Events at SOT Virtual Meeting 2021

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Webinars

For nominations and suggestions-

Please contact:

Holger P. Behrsing, Ph.D.
Director – Respiratory Toxicology
Office: 301-963-4946
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.
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)
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
Forthcoming Meetings

The 23rd Congress of the International Society for Aerosols in Medicine (ISAM) will be held in Boise, Idaho from 22nd to 26th May 2021.
https://www.isam.org/website/2021%20Congress/congress

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

Call for Proposals for the International Congress of Toxicology 2022 Scientific Program

The International Congress of Toxicology is a joined meeting of IUTOX and EUROTOX (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

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)
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
All EC members

Education, Outreach, Endowment and Webinar Committee:
Judith Zelikoff, PhD
Judith.Zelikoff@nyulangone.org
Irfan Rahman, PhD
Irfan_Rahman@urmc.rochester.edu
Mehdi Saeed Hazari, PhD
Hazari.Mehdi@epa.gov
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Colette Miller, PhD (EPA)
Miller.Colette@epa.gov
Elise Hickman, PhD (UNC)
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Program Committee:
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amie.lund@unt.edu
Christopher A. Reilly, PhD
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!
All slides will be available from
www.toxicology.org/groups/ss/IRSS
Spring Newsletter soon!