Why Indoor Chemistry Matters *Workshop 5*: Excessive Heat and the Indoor Environment

April 23rd, 2025| 9:00AM – 4:30PM ET |Hybrid Workshop

School of Nursing and Health Studies - University of Miami

Event Registration| Event Page

WORKSHOP OBJECTIVES

- Illuminate the experiences of workers exposed to heat and indoor chemicals.
- Explore the current landscape of interdisciplinary community-engaged research to address heat and indoor chemical pollution issues.
- Identify opportunities for future investments to build research capacity and a scientific evidence base to inform action.

PUBLIC AGENDA

09:00am – 09:20am	**Welcome, Introductions, and Opening Remarks** **Charles Ferguson, The National Academies of Sciences, Engineering, and Medicine (NASEM)** **Roxana Chicas, Emory University and National Academy of Medicine (NAM), American Academy of Nursing Fellow** **Guillermo Prado, University of Miami**
09:20am – 10:00am	**Session 01: Keynotes** **Ellison Carter, Colorado State University** *Breathing Room: Navigating Thermal and Chemical Risks Indoors* **Jill Johnston, University of Southern California** *It's Getting Hot in Here: Perceptions of Indoor Heat in Vulnerable Urban Communities* ***Moderator: Charles Ferguson***
10:00am – 10:15am	Break
10:15am – 11:45am	**Session 02: Workers Exposed to Heat and Indoor Chemicals**

Natasha Solle, University of Miami
Heat Exposure in the Fire Service: The Impact of Occupational Heat Stress on Firefighter Health

Delphine Farmer, Colorado State University
How Heat and Chemistry Work Together to Enhance Indoor Air Pollution

Gerardo Reyes Chávez w/ Giselle Ramirez**, Coalition of Immokalee Workers (CIW)**
How Farmworkers Created the Fair Food Program and Built-in Protections from Heat and Other Hazards, Part 1

Moderator: Apurva Dave

11:45am – 12:45pm Lunch

12:45pm– 02:15pm **Session 03: Interdisciplinary, Community-Engaged Research**

Gillian Gawne-Mittelstaedt, Tribal Heathy Homes Network
Extreme Heat and Indoor Environments: Risk Factors within Tribal, Rural, Cold-Climate and Overburdened Communities

Robbie Parks, Columbia University
Heat Exposure and Temperature Equity (HEATE): Characterizing Indoor Heat Stress and Health Impacts in Housing in New York City

Gerardo Reyes Chávez w/ Giselle Ramirez**, Coalition of Immokalee Workers**
How Farmworkers Created the Fair Food Program and Built-in Protections from Heat and Other Hazards, Part 2

Moderator: Roxana Chicas

02:15pm – 02:30pm Break

02:30pm – 04:00pm **Session 04: Future Investments in Research**

Robin Dodson, Silent Spring Institute
Targeted Broad Thinking: Addressing Cumulative Exposures in Vulnerable Populations

Paula Olsiewski, Johns Hopkins University
Research to Policy to Practice - What's Needed?

Hudson Santos, University of Miami
Securing Funding for Climate/Environmental and Health Initiatives

Pratim Biswas, University of Miami
Indoor Air Quality: From Earth to Outer Space Abodes

Moderator: Apurva Dave

04:00pm – 04:30pm **Closing remarks & adjourn**

Biographies

Pratim Biswas, Dean of Engineering/U of Miami, Member NAE

Pratim Biswas I Dean, College of Engineering and Professor, Department of Chemical, Environmental and Materials Engineering, Joint Faculty: Atmospheric Sciences, University of Miami, USA. He received his PhD from the California Institute of Technology, MS from the University of California, Los Angeles, and his BTech from IIT Bombay. Prof Biswas is the Dean of the University of Miami College of Engineering. Prior to joining the University of Miami, he was the Lucy and Stanley Lopata Professor and Chair of the Department of Energy, Environmental and Chemical Engineering at Washington University in St. Louis. He also served as the Assistant Vice Chancellor for International Programs, and as the Director of the McDonnell Academy Global Energy and Environmental Partnership (MAGEEP). He is a pioneer in the application of aerosol science and engineering to multiple areas, such as energy and environmental nanotechnology, solar energy, air pollution control, and medicine. He has more than 470 refereed journal publications, with his 65 PhD graduates. He is a Fellow of several national and international organizations, including the American Association for the Advancement of Science (AAAS), International Aerosol Research Assembly (IARA) and American Association for Aerosol Research (AAAR). He has won several teaching and research awards, including the 2018 Fuchs Award, the premier international aerosol science award; the 2016 Harry White Award by the International Society for Electrostatic Precipitation; the 2015 Cecil Award by the American Institute of Chemical Engineers; the 2013 David Sinclair Award by the American Association for Aerosol Research; the Distinguished Faculty Award by Washington University in 2012; and the Distinguished Alumni Award by IIT Bombay in 2011. For his outstanding contributions in aerosol science and technology, he was elected to the US National Academy of Engineering in 2019.

Ellison Carter, Associate Professor, Civil and Environmental Engineering, Colorado State University

Ellison Carter is an Associate Professor of Civil and Environmental Engineering at Colorado State University, where her research integrates human-centered design and interdisciplinary approaches to address personal exposure risks associated with indoor air quality, worker health, and environmental hazards. Her scholarly contributions bridge engineering, public health, and environmental science, emphasizing innovative methods to assess and mitigate indoor air pollution. Dr. Carter has conducted extensive field studies employing novel sensor technologies to characterize indoor air pollutants, particularly in underserved and complex environments. She was a contributing author to the 2022 consensus study, Why Indoor Chemistry

Matters, published by the National Academies of Sciences, Engineering, and Medicine, which emphasized the influence of chemical processes on indoor environmental quality. As a JPB Environmental Health Fellow with the Harvard T.H. Chan School of Public Health, Dr. Carter focused on environmental exposures in indoor environments, pursuing pilot-scale research and professional development to address public health. Her work prioritizes interdisciplinary collaboration and innovative, user-centered approaches to improve environmental health through actionable policy and practical interventions.

Roxana Chicas, Assistant Professor, Emory University Nell Hodgson Woodruff School of Nursing

Roxana Chicas is currently an Assistant Professor, Tenure Track at Emory University Nell Hodgson School of Nursing. Her research focus is on occupational and environmental health disparities, investigating the physiological effects of heat exposures among farmworkers through community-engaged research, particularly their impact on kidney function. In collaboration with the Farmworker Association of Florida, she has led two intervention studies using real-time biomonitoring equipment among farm workers. Dr. Chicas' work is shaping the future of climate and occupational health science, two pressing fields of scientific inquiry. Her methodologies are unique and effective due to direct partnership with farmworker communities, who are now bearing the brunt of life-threatening and dehumanizing extreme heat health effects which more communities will face as climate change worsens. Dr. Chicas' research is creating solutions that are sustainable and grounded in the realities of labor. Her intervention studies are providing relief to workers, collecting critical health data, and informing prevention and intervention practices in the U.S. and globally. As a bilingual, bicultural nurse scientist, she is committed to conducting research that informs policy to advance environmental justice. Dr. Chicas earned her FAAN credential in 2023 when she was inducted into AAN and she is a member of the AAN Expert Panel on Environmental & Public Health.

Gerardo Reyes Chávez, Organizer/Farmworker, Coalition of Immokalee Workers (CIW)

Gerado Reyes Chávez is a key leader of the Coalition of Immokalee Workers (CIW), mobilizing communities across the world to advocate for the rights of exploited workers. Through CIW's Fair Food Program (FFP), Mr. Reyes Chávez has facilitated unique partnerships among farmers, farmworkers, and retail food companies to ensure humane wages and working conditions for the workers on participating farms. Mr. Reyes Chávez is a farmworker and has worked in the fields since age 11, first as a peasant farmer in Mexico and then in the fields of Florida picking oranges, tomatoes, blueberries, and watermelon. A CIW member since 1999, he has worked with consumer allies

to organize national actions in the Campaign for Fair Food. As part of implementing the FFP, Mr. Reyes Chávez conducts workers' rights education with thousands of farmworkers on participating farms. Mr. Reyes Chávez has spoken extensively about the Fair Food Program at events such as Harvard Law School's Labor and Worklife Program Convening on Farm Labor Challenges, the Interfaith Council on Corporate Responsibility's Multi-stakeholder Roundtable on Ethical Recruitment, and TEDMED 2018's "How Farmworkers are Leading a 21st Century Human Rights Revolution." Mr. Reyes Chávez is a 2018 Aspen Institute Ricardo Salinas Scholar. The Aspen Institute's Economic Opportunities Program and Food & Society Program have invited him to present on panels, including "I Am Not a Tractor: A Book Talk and Discussion on Worker-Driven Social Responsibility" and "Job Quality in the Fields: Improving Farm Work in the US." Additionally, Mr. Reyes Chávez has been featured in numerous publications and documentaries, most recently in The Washington Post and Food Inc., 2.

Robin Dodson, Associate Director of Research Operations, Silent Spring Institute

Robin Dodson is an exposure scientist at Silent Spring Institute and an adjunct assistant professor at Boston University School of Public Health. Her research focuses on three main areas: development of novel exposure measurements for epidemiological and community-based studies, analysis of environmental exposure data with particular emphasis on semivolatile organic compounds (SVOCs), and interventions aimed at reducing chemical exposures. Dr. Dodson investigates environmental exposures of chemicals linked to a range of health outcomes, including asthma, altered neurological and reproductive development, and breast cancer. Her current research focuses on exposure to consumer product chemicals such as phthalates and flame retardant chemicals and has been used to identify exposure sources and implement effective exposure reduction strategies in homes. Dr. Dodson serves as the chair of the Massachusetts Toxics Use Reduction Institute's science advisory board. Dr. Dodson completed her doctorate in environmental health and masters in environmental science and risk management at Harvard T.H. Chan School of Public Health.

Delphine Farmer, Professor, Colorado State University

Delphine Farmer, PhD is a Professor in the Department of Chemistry at Colorado State University. Her research focuses on understanding the air we breathe both indoors and out, and how the chemistry of air impacts human health, ecosystems, and even climate. Her recent work has focused on wildfire smoke, starting with aircraft projects flying in large wildfire plumes, and more recently looking at how smoke interacts with building surfaces. Dr. Farmer grew up in Canada, and received her BSc in Chemistry from McGill University in Montreal. She earned her Master's in Environmental Science, Policy and Management and her PhD in Chemistry, both from the University of California at Berkeley before holding a NOAA Climate and Global Change Postdoctoral Fellowship at the University of Colorado Boulder. She is a recipient of the American Geophysical Union's Ascent Award and is the 2025 CSU College of Natural Sciences Professor Laureate.

Jill Johnston, Associate Professor, Wen School of Population and Public Health, University of California Irvine

Jill Johnston, PhD is an Associate Professor in Environmental and Occupational Health in the Wen School of Population and Public Health at University of California, Irvine. Dr. Johnston conducts community-driven epidemiology and exposure assessment to address multiple exposures to harmful contaminants that affect community health, including in Hispanic, Black and Asian Pacific Islander communities and among the working poor. She has two decades of experience inside and outside of academia in community organizing, popular education pedagogy, nurturing diverse partnership and translating environmental health research in community settings. Dr. Johnston leads multiple urban and rural studies in Southern California to examine environmental burdens and extreme heat in urban neighborhoods using quantitative and qualitative community-engaged methods. She directs the Community Engagement Core for the new CLIMA Center with a focus on how the most vulnerable communities of Southern California are being impacted by wildfire smoke and extreme heat. Dr. Johnston serves on multiple advisory boards, including for the South Coast Air Quality Management District (SCAQMD), LA Department of Public Health and CA Department of Toxic Substance Control. She served as Commissions for the Climate Emergency Mobilization Office for the City of Los Angeles. Dr. Johnston received her PhD in environmental sciences and engineering from the University of North Carolina at Chapel Hill, where she studied hazardous waste sites and industrial animal production.

Gillian Mittelstaedt, Director, Tribal Healthy Homes Network/Partnership for Air Matters

Gillian Mittelstaedt, DrPH, MPA, is an Indoor Air Quality and Public Health professional who leads the Tribal Healthy Homes Network, an EPA-funded program of the Tulalip Tribes that addresses indoor air hazards through Tribal training, research, and design of culturally tailored interventions. Dr. Mittelstaedt also directs the Partnership for Air Matters, providing low-cost indoor air toolkits to engage and empower environmental justice communities. Dr. Mittelstaedt recently co-chaired EPA's Clean Air Act 50th Anniversary Report and advised the White House on indoor air quality and infectious disease transmission. She co-chairs the National Safe and Healthy Housing Coalition and is past chair of the Washington Asthma Initiative and the Washington Leadership Council for the American Lung Association.

Paula J. Olsiewski, Contributing Scholar, Johns Hopkins Center for Health Security

Paula Olsiewski is a Contributing Scholar at the Johns Hopkins Center for Health Security. She is a pioneering leader in policy and scientific research programs in the microbiology and chemistry of indoor environments. Dr. Olsiewski leads the Center's work on indoor air quality policy to mitigate airborne disease and global catastrophic biological risks. During her 2 decades at the Alfred P. Sloan Foundation, she led innovative and multidisciplinary programs that inspired, accelerated, and produced lasting impact. Her expertise in partnering with academic, governmental, and for-profit stakeholders fostered innovation and built research capacity through the creation of diverse stakeholder networks. Her accomplishments include the creation and direction of the microbiology of the built environment, chemistry of indoor environments, and biosecurity programs. Dr. Olsiewski is recognized as a leading expert in biosecurity and is a member of the Council on Foreign Relations. She was Chair of the US EPA Homeland Security Research Subcommittee and was a member of the EPA Board of Scientific Counselors Executive Committee 2014-2022. She is a member of the Academy of Fellows of the International Society for Indoor Air Quality and Climate and Fellow of the AAAS in chemistry. Dr. Olsiewski received a PhD in biological chemistry at MIT and received a BS in chemistry, cum laude, from Yale University.

Robbie Parks, Assistant Professor, Columbia University

Robbie Parks is an environmental epidemiologist and physicist who has diverse experience in large-scale multi-disciplinary quantitative research focused on climate change, public health and equity. Robbie is a tenure-track Assistant Professor of Environmental Health Sciences at Columbia University's Mailman School of Public Health and an NIH NIEHS K99/R00 Fellow. He teaches the graduate course Atmospheric and Climate Science for Public Health at Columbia University. He is also the Lead Instructor of the Columbia University SHARP Course Bayesian Modeling for Environmental Health. Robbie supervises several post-doctoral fellows, PhD students, and Master's students. He was a Columbia University Earth Institute/Climate School Post-doctoral Fellow from 2019 to 2022 with Prof. Marianthi-Anna Kioumourtzoglou, completed my PhD at the School of Public Health at Imperial College London with Profs. Majid Ezzati and Ralf Toumi in 2019, and graduated with a BA/MA (Oxon) in Physics from Keble College, University of Oxford.

Guillermo (Willy) Prado, Interim Executive Vice President for Academic Affairs and Provost, University of Miami

Guillermo (Willy) Prado is the University of Miami's interim provost and executive vice president for academic affairs and professor of Nursing and Health Studies, Public Health Sciences, and Psychology at the University of Miami. He is a pioneer in the development and dissemination of behavioral interventions for the prevention of substance use and promotion of positive mental health in Hispanic families. Prado is a member of the National Academy of Medicine and is the recipient of numerous awards, including the Lifetime Achievement Award from the National Hispanic Science Network and the Community, Culture, and Prevention Science Award from the Society for Prevention Research. His research has been featured in multiple media outlets including the Miami Herald, NBC, Univision, and CNN en Español. He has also been invited to serve as a witness to the U.S. House Select Committee on Economic Disparities and Fairness in Growth to speak about prevention science.

Natasha Solle, University of Miami

Natasha Schaefer Solle is a Research Associate Professor in the Department of Medicine and Public Health Sciences at University of Miami Miller School of Medicine and Sylvester Comprehensive Cancer Center (SCCC). She serves as the co-Deputy Director of the Firefighter Cancer Initiative (FCI), a multi-faceted project funded by the state of Florida to study firefighters' exposure to carcinogens, examine their cancer risk, and develop methods of education about prevention and early detection, leading the firefighter cancer prevention, education and survivorship program. Schaefer Solle's research interests focus on occupational cancer risks and improving cancer screening in underserved communities. She has extensive experience in qualitative research methodology and community-based participatory research (CBPR). Most of her work has involved engaging minority populations in Florida to help circumvent barriers to care and increase cancer screening practices. The focus of her research is very well aligned with her leadership role at Sylvester Comprehensive Cancer Center as the Assistant Director of the Behavioral and Community-based Research Shared Resource (BCSR), where she is responsible for overseeing research services used to facilitate biobehavioral and population research, reflective of catchment area need for Cancer Center investigators.

Hudson Santos, Dean, University of Miami School of Nursing and Health Studies

Hudson P. Santos Jr., PhD, RN, FABMR, FAAN, is the dean of the University of Miami School of Nursing and Health Studies. He is also a tenured professor and the inaugural Dolores J. Chambreau, RN Endowed Chair in Nursing. As one of the three most NIH-funded nurse scientists in the United States, Dr. Santos has secured over $50 million in research funding. Among his current funded projects, he is the Principal Investigator for Miami cohort of the NIH Environmental Influences on Child Health Outcomes (ECHO) program. Dean Santos is the immediate past-president of the International Society of Nurses in Genetics (ISONG), chair-elect of the Council for the Advancement of Nursing Science National Advisory Council, a Fellow of the American Academy of Nursing, and Academy of Behavioral Medicine Research. He completed his postdoctoral fellowship at Duke University School of Nursing and was a visiting scholar at the University of British Columbia at Vancouver and UNC-CH. Santos holds a PhD in Nursing Science from the University of São Paulo and a Bachelor of Science in Nursing from the State University of Paraiba in his native Brazil.