



YOUR HEALTH & THE ENVIRONMENT

News from the University of Rochester Environmental Health Science Center

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David Rich, Sc.D., MPH and other center members receives \$2.49 million from NIEHS

Rich, Miller, Thurston, Stevens and Others to Study Air Quality and Low Birth Weight in China

New research will seek to understand the biological mechanisms by which exposure to air pollution during pregnancy may lead to lower birth weight in newborns, placing them at greater risk for chronic conditions such as coronary heart disease and hypertension later in life. The research will be conducted in Beijing by an international team of researchers.

The new \$2.49 million National Institute of Environmental Health Sciences–funded study will be led by center member David Rich, Sc.D., MPH, Associate Professor of Public Health Sciences, and Jim Zhang, Ph.D. (Duke University). Center members Richard K. Miller and Sally W. Thurston, as well as Timothy Stevens from the University of Rochester will work together with Drs. Rich, Zhang, and others on the study.

The study builds upon research conducted by the team during the Beijing Summer Olympics in 2008. That study looked at birth weights of children of mothers whose late-term pregnancy coincided with the Chinese government's extraordinary efforts to reduce air pollution during the Games. They found that these newborns were, on average, 23 grams heavier than those born during the periods immediately before and after the games when the air pollution levels were much higher.

Air pollution is a significant global public health risk and is estimated to contribute to 3.2 million premature deaths per year. According to the World Health Organization, 9 out of every 10 people across the globe, including 100 million Americans, breathe unhealthy air.

Susiarjo Presents at NIEHS Core Centers Meeting

Martha Susiarjo, Ph.D gave a “Young Investigator” presentation at the June 2017 NIEHS Core Centers meeting at Emory University. Her presentation was entitled “Endocrine-Disrupting Chemicals Exposure Perturbs Epigenetic Regulation of Tryptophan-Catabolizing Enzymes and Is Associated With Adverse Pregnancy Outcomes in Mice.”

For more information see:
<https://factor.niehs.nih.gov/2017/7/science-highlights/centers/index.htm>



Martha Susiarjo, PhD

December 2017 CAB Meeting

Hopke was the guest presenter for the December 2017 Community Advisory Board Meeting held at the Monroe County EcoPark on December 5th.

His talk, "Air Quality in Rochester Over the Past 15 Years: Trends and Current Status" focused on community exposure to wood smoke in Rochester and the complexity of PM_{2.5}. Hopke will continue to work with faculty at the University of Rochester Medical Center to explore the impact of air quality in our area and myocardial infarction.

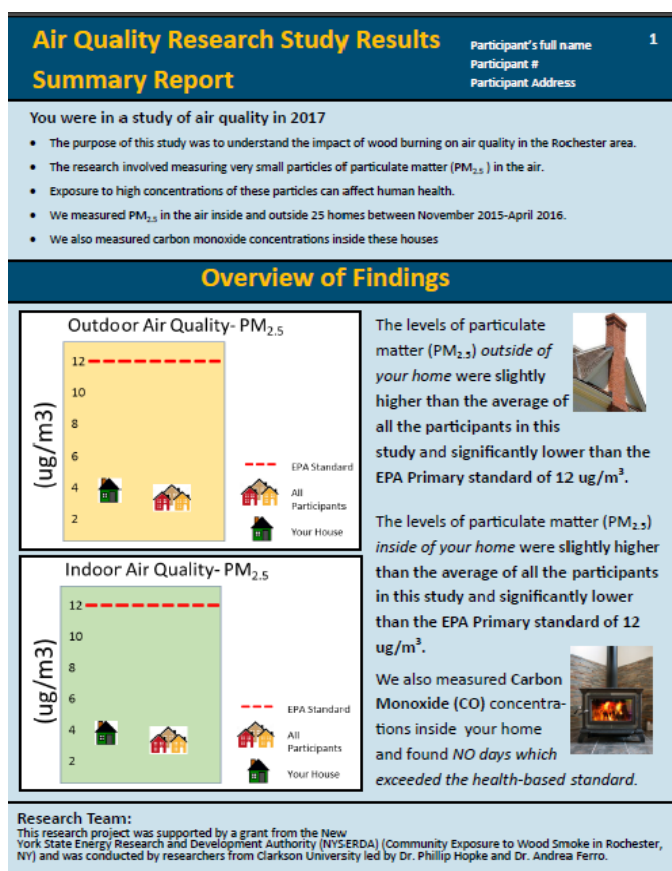


Philip Hopke, PhD joined the EHSC in 2017

Welcoming New Center Member

Philip Hopke, PhD is an Adjunct Professor in the Department of Public Health Sciences. Hopke joined the University of Rochester this year after retiring from Clarkson University, where he was Bayard D. Clarkson Distinguished Professor Emeritus. Hopke began his post-doctoral research at MIT and went on to become Assistant Professor at the State University College at Fredonia, NY and then moved through the ranks at the University of Illinois at Urbana-Champaign. Hopke then joined Clarkson University where he was faculty in the Departments of Chemical Engineering and Chemistry and served as the Directors of the Center for Air Resources Engineering and Science (CARES) and the Institute for a sustainable Environment (ISE). Hopke's research interests are primarily related to particles in the air including how they form, how to sample and analyze them; what their composition is; and where they come from. He is currently working on a study in conjunction with Clarkson University on community exposure to wood smoke in Rochester, NY. This study measures PM_{2.5} levels inside and outside of homes who have wood burning stoves using a low-cost air quality sensor. This grant is funded by the New York State Energy Research and Development Authority (NYSERDA).

Hopke has a wide range of other research interests and experience, including long term monitoring of ultrafine particles in Rochester, trends in air pollutant concentrations, impact of policy actions, and the human health impacts of air quality trends. His group has been building land use regression models to provide more accurate exposure assessments for PM_{2.5} across Monroe County in support of a variety of health effects studies. He is part of the Great Lakes Fish Monitoring and Surveillance Program supported by the Great Lakes National Program Office of the Environmental Protection Agency to measure legacy and emerging bioaccumulative toxic substances in Great Lakes top predator species.



Hopke continued...

The GLFMSP is a collaboration of Clarkson University, SUNY-Oswego and SUNY-Fredonia. Hopke has extensive collaborations with air quality researchers in many developing countries where he assists in data analysis and interpretation to help provide critical information to the responsible managers in areas that require significant improvements in air quality.

Of his move to Rochester, Hopke says, "I hope to be able to contribute my experience in atmospheric chemistry and aerosol science to interesting health issues in Rochester and around the world." Hopke looks forward to connecting with other Center researchers and community members to build on his longstanding work in Rochester.

Local Air Quality and Wood Smoke: Report-back Pilot Project

COEC Director Katrina Korfmacher, PhD is trying to improve the ways scientists communicate data results to their study participants. Korfmacher and Cait Fallon, MA have been working the past 6 months to develop a streamlined, accessible way to report back data from studies of local air quality during the winter wood burning season.

This "report back" pilot project builds on a study by new Center member Philip Hopke, PhD and Andrea Ferro, PhD (Clarkson University), "Community Exposure to Wood Smoke in Rochester, NY." This project was funded by the New York State Energy Research Development Authority (NYSERDA). Using low-cost Speck particulate matter sensors, Hopke and Ferro monitored 25 homes in neighborhoods with noticeable wood smoke during the 2016-2017 heating season. Each location had one indoor Speck sensor and one outdoor Speck sensor that measured PM_{2.5} every minute from November to March. Carbon monoxide (CO) was also measured inside each home.

Hopke and Ferro's study produced reports for each study participant at the end of the study. However, the complexity of the science made it difficult for some participants to understand their results. Korfmacher and Hopke applied for an IHSFC seed grant to support development of a template that would allow for quick, user-friendly communication of future results of similar studies. COEC staff worked closely with Hopke's team to determine the important information for these study participants and the best format to relay that information. They established a Report Back Advisory Committee including researchers, staff, and community members to inform and learn from the process of developing participant-appropriate reports. Two rounds of pilot testing with diverse community members will inform the final report-back template, which will be completed in December 2017.

Welcome 1st Year Toxicology Training Program Students



Back row from left: Connor McGuire, Tim Anderson, Tyler Bell. Front row from left: Mackenzie Palmer, Janine Cubello, Jakob Gunderson, Ashley Peppriell.

Contact Us

For questions or comments on this newsletter, send an email to:

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