POSTER SESSION 1

Sunday, April 29, 4:15–5:45 PM

GLOBAL HEALTH AND ENERGY RESEARCH AT HEI

Contributions to Disease Burden from Major Sources of Air Pollution in China and India
Michael Brauer, Aaron Cohen, Katherine Walker, Richard T. Burnett, Joseph Frostad, Qiao Ma, Randall V. Martin, Shuxiao Wang, Chandra Venkataraman, and the HEI GBD MAPS Working Group

State of Global Air 2018
Katherine Walker, Michael Brauer, Hilary Polk, Annemoon van Erp, Kathryn Liziewski, and Aaron Cohen

Progress with HEI's Energy Research Program
Donna Vorhees, Anna Rosofsky (Presenter), Kathryn Liziewski, Dan Greenbaum, Robert O'Keefe, and Rashid Shaikh

HEALTH EFFECTS OF AIR POLLUTION

Susceptibility to Multiple Air Pollutants in Cardiovascular Disease
Jane E. Clougherty, Jamie L. Humphrey, Ellen J. Kinnee, Laura D. Kubzansky, Colleen E. Reid, and Leslie A. McClure

Air Pollution, Autism Spectrum Disorders, and Brain Imaging Amongst CHildren in Europe — the APACHE Project
Mònica Guxens (Walter A. Rosenblith New Investigator Award 2016)

Angiopoeitin-2 as a Biomarker for Gene–Environment Interactions in a Cardiovascular Disease Cohort
Jiangda Ou, Janet Huebner, Cavin Ward-Caviness, Robert B. Devlin, Lucas M. Neas, David Diaz-Sanchez, Wayne E. Cascio, Elizabeth R. Hauser, and William E. Kraus

Impact of Exposure to Air Pollution on Asthma: A Multi-Exposure Assessment
Marie Pedersen (Walter A. Rosenblith New Investigator Award 2017), Zorana J. Andersen, Anne-Marie N. Andersen, Xavier Basagaña, Hans Bisgaard, Jørgen Brandt, Esben Budtz-Jørgensen, Klaus Bønnelykke, Leslie Stayner, Matthias Ketzel, Bert Brunekreef, and Steffen Loft

Prenatal Ambient Air Pollution Exposure: Association with Longitudinal Weight Growth Trajectories in Early Childhood*
Anna Rosofsky, M. Patricia Fabian, Stephanie Ettinger de Cuba, Megan Sandel, Sharon Coleman, Brent Coull, Jonathan Levy, and Antonella Zanobetti

Long-Term Coarse Particulate Matter Exposure and Asthma Among Children in Medicaid*
Joshua P. Keller (a 2018 Travel Award recipient), Corinne A. Keet, and Roger D. Peng

*Study not funded by HEI

Fine Particulate Matter Pollution and Human Mortality in Beijing, China: An Investigation of the Shape of the Concentration–Response Association*

Meilin Yan (a 2018 Travel Award recipient), Michelle Bell, Roger Peng, Ander Wilson, Qinghua Sun, Brooke Anderson, and Tiantian Li

IMPROVING ASSESSMENT OF EXPOSURE TO TRAFFIC-RELATED AIR POLLUTION

Scalable Multi-Pollutant Exposure Assessment Using Mobile Monitoring Platforms

Joshua S. Apte (Walter A. Rosenblith New Investigator Award 2017), Adam A. Szpiro, and Michael Brauer

Characterizing the Determinants of Vehicle Traffic Emissions Exposure: Measurement and Modeling of Land-Use, Traffic, Transformation, and Transport

H. Christopher Frey, Andrew Grieshop, Nagui Rouphail, Joe Guinness, Andrey Khlystov, John Bangs, and Daniel Rodriquez

Chemical and Physical Characterization of Non-Tailpipe and Tailpipe Emissions at 100 Locations Near Major Roads in the Greater Boston Area

Petros Koutrakis, Brent Coull, Marco Martins, Joy Lawrence, and Stephen Ferguson

Comparison of Regression and Dispersion Models of Near-Highway Ultrafine Particle Number Concentrations for Use in Health Studies*

Allison P. Patton, Chad Milando, Prashant Kumar, and John L. Durant

Gradients in Concentration and Composition of Fine Particulates in a Coastal City: Downtown Dominates a Large Area Emission Source in Port of Oakland CA*

Rishabh Shah (a 2018 Travel Award recipient), Ellis Robinson, Peishi Gu, and Albert Presto

NEW DATABASES AND EMERGING EXPOSURES TO AIR POLLUTION

Highlights from EPA's Wildland Fire Research*

Lisa Baxter and Beth Hassett-Sipple

The Tropospheric Ozone Assessment Report (TOAR): Presenting the World's Largest Database of Ozone Health Metrics from 9000 Monitoring Sites Worldwide*

Owen R. Cooper

Volatile Chemical Products Emerging as Largest Petrochemical Source of Urban Organic Emissions*

Brian C. McDonald, Joost A. de Gouw, Jessica B. Gilman, Shantanu H. Jathar, Ali Akherati, Christopher D. Cappa, Jose L. Jimenez, Julia Lee-Taylor, Patrick L. Hayes, Stuart A. McKeen, Yu Yan Cui, Si-Wan Kim, Drew R. Gentner, Gabriel Isaacman-VanWertz, Allen H. Goldstein, Robert A. Harley, Gregory J. Frost, James M. Roberts, Thomas B. Ryerson, and Michael Trainer

(Continued)

*Study not funded by HEI

HEALTH EFFECTS AT LOW AMBIENT CONCENTRATIONS

Identifying the Shape of the Association Between Long-Term Exposure to Low Levels of Ambient Air Pollution and the Risk of Mortality: An Extension of the Canadian Census Health and Environment Cohort Using Innovative Data Linkage and Exposure Methodology
(PI: Brauer)

Substudies:

MAPLE: Mortality–Air Pollution Associations in Low Exposure Environments
Michael Brauer, Jeffrey R. Brook, Paul Bissonnette, Richard T. Burnett, Tanya Christidis, Daniel L. Crouse, Anders Erickson, Perry Hystad, Chi Li, Lauren Pinault, Randall V. Martin, Michael Tjepkema, Aaron van Donkelaar, Crystal Weagle, and Scott Weichenthal

Exposure Estimation for MAPLE: Mortality–Air Pollution Associations in Low Exposure Environments
Randall V. Martin (Presenter), Paul Bissonnette, Jaqueline Burke, Robyn Latimer, Chi Li, William Russell, Graydon Snider, Emily Stone, Aaron van Donkelaar, Crystal Weagle, Perry Hystad, Jeffrey R. Brook, Alain Robichaud, Richard Menard, Scott Weichenthal, Richard T. Burnett, Daniel L. Crouse, Anders Erickson, Lauren Pinault, Michael Tjepkema, and Michael Brauer

Evaluation of a Method to Indirectly Adjust for Unmeasured Covariates in Large Administrative Data Cohort Analyses: An Analysis of Associations Between Fine Particulate Matter and Mortality in the 2001 Canadian Census Health and Environment Cohort (2001 CanCHEC)
Anders C. Erickson (Presenter), Michael Brauer, Lauren L. Pinault, Daniel L. Crouse, Scott Weichenthal, Randall V. Martin, Perry Hystad, Jeffrey R. Brook, Michael Tjepkema, and Richard T. Burnett

Mortality and Morbidity Effects of Long-Term Exposure to Low-Level PM$_{2.5}$, Black Carbon, NO$_2$ and O$_3$: An Analysis of European Cohorts
(PI: Brunekreef)

Substudies:

Mortality, Morbidity and Low-Level Air Pollution in a Pooled Cohort of 485,000 in Europe in the ELAPSE Project
Bert Brunekreef, Maciek Strak (Presenter), Jie Chen, Marjan Tewis, Kees de Hoogh, Sophia

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Rodopoulou, Evi Samoli, Klea Katsouyanni, and Gerard Hoek, on behalf of the ELAPSE Project Team

Mortality, Morbidity and Low-Level Air Pollution in a Population of 35 Million in Europe: Analysis of Administrative Cohorts in the ELAPSE Project
Bert Brunekreef, Danielle Vienneau (Presenter), Nicole Janssen, Massimo Stafoggia, Mariska Bauwelinck, Klea Katsouyanni, Evi Samoli, Sophia Rodopoulou, Maciek Strak, and Gerard Hoek, on behalf of the ELAPSE Project Team

Development of the Statistical Protocol for the Investigation of the Health Effects of Long- Term Exposure to Low Air Pollutant Concentrations in the ELAPSE Project
Bert Brunekreef, Klea Katsouyanni (Presenter), Evangelia Samoli, Gerard Hoek, Sophia Rodopoulou, and Maciek Strak, on behalf of the ELAPSE Project Statistical Group

Assessing Adverse Health Effects of Long-Term Exposure to Low Levels of Ambient Pollution
(PI: Dominici)

Substudies:

Sensitivity of the Association of Long-Term $PM_{2.5}$ and Mortality to Modeling Choices
Danielle Braun (Presenter), Marianthi-Anna Kioumourtzoglou (Presenter), Xiao Wu, Christine Choirat, Qian Di, and Francesca Dominici

An Ensemble Model-Based Approach for Spatially and Temporally Resolved NO_2 Exposures in the Continental United States
Qian Di (Presenter), Petros Koutrakis, Christine Choirat, Joel Schwartz, and Francesca Dominici

Nationwide Studies of Short- and Long-Term Effects of $PM_{2.5}$ and O_3 on Mortality
Francesca Dominici (Presenter), Qian Di, Yan Wang, Antonella Zanobetti, Lingzhen Dai, Yun Wang, Petros Koutrakis, Christine Choirat, and Joel Schwartz

Investigation of Confounding in Air Pollution Epidemiology Studies Using a Large Medicare Beneficiary Dataset*
Annette C. Rohr (Presenter), Ki-Do Eum, Fatemeh Karzemiparkouhi, Chit Vivian Pun, and Helen H. Suh

HEALTH EFFECTS OF TRAFFIC-RELATED AIR POLLUTION AND NOISE

Traffic-Related Air Pollution and Birth Weight: The Roles of Noise, Placental Function, Green Space, Physical Activity, and Socioeconomic Status (FRONTIER)
Payam Dadvand, Jordi Sunyer, Maria Dolores Gómez-Roig, Gustavo Arévalo, Xavier Basagaña, Maria Foraster, Michael Jerrett (Presenter), Jose Lao, Edurne Mazarico Gallego, Teresa Moreno, Tim Nawrot, Mark J. Nieuwenhuijsen, Xavier Querol, Joel Schwartz, and Cathryn Tonne

Intersections as Hot Spots: Assessing the Contribution of Localized Non-Tailpipe Emissions and Noise on the Association Between Traffic and Children's Health
Meredith Franklin, Scott Fruin, and Rob McConnell

Health Effects of Air Pollution Components, Noise, and Socioeconomic Status ("HERMES")
Ole Raaschou-Nielsen, Theis Lange, Matthias Ketzel, Ulla Hvidtfeldt, Henrik Brønnum-Hansen, Thomas Münzel, Ole Hertel, Jørgen Brandt, and Mette Sørensen

**Study not funded by HEI

IMPROVED SCIENCE FOR DECISIONS

Improvements in Air Quality and Health Outcomes Among California Medicaid Enrollees Due to Goods Movement Actions (Phase II Health Effects Study)
Ying-Ying Meng, Jason G. Su, Michael Jerrett, Xiao Chen, John Molitor, and Dahai Yue

Mainstreaming Health Effects Evaluation into Air Quality Management Planning in Latin America: The Case of the Aburrá Valley*
Juan J. Castillo, Juliana Klakamp, and Sergio Sanchez

A Proof-of-Concept Approach for Quantifying Multi-Pollutant Health Impacts Using the Open-Source BenMAP-CE Software Program*
Jason Sacks, Evan Coffman, Ana Rappold, Jim Anderton, Meredith Amend, Kirk Baker, and Neal Fann

OZONE AND PARTICULATE MATTER MECHANISMS

Multicenter Ozone Study in oldEr Subjects (MOSES), Part 2: Impacts of Personal and Ambient Concentrations of Ozone and Other Pollutants on Biomarkers of Cardiovascular and Pulmonary Function
David Q. Rich (Presenter), Mark Frampton, Sally W. Thurston, Kelly Thevenet-Morrison, Wojciech Zareba, John Balmes, Mehrdad Arjomandi, Peter Ganz, Philip Bromberg, Milan Hazucha, and Neil Alexis

The Role of Air Pollution on RNA Oxidative Stress, Characterization of Stress-Response Enzymes, and Applications Toward RNA-Based Biosensors
Lydia M. Contreras (Walter A. Rosenblith New Investigator Award 2014), Juan C. Gonzalez, and Kevin Baldridge

Sex Differences in Pulmonary Eicosanoid Metabolism in Response to Ozone Exposure
Kymberly M. Gowdy (Walter A. Rosenblith New Investigator Award 2015), Sky W. Reece, Brita J. Kilburg-Basnyat, Myles Hodge, Christine Psaltis, Michael Yaeger, Bin Luo, Michael Armstrong, Nichole Reisdorph, Espen E. Spangenburg, Johanna L. Hannan, Robert M. Tighe, and Saame Raza Shaikh

Thinking Outside of the Lungs: Systemic Stress Response as a Pathway and Modifier of Air Pollution Health Effects*
Mehdi S. Hazari (Presenter), Urmila P. Kodavanti, Aimen K. Farraj, and Ian Gilmour

*Study not funded by HEI