

## **2016 January Compendium of Events, News, Resources, Funding Opportunities, and R&D Results for ROCIS Stakeholders**

The themes for this edition of Tom Phillips' Compendium include, but are not limited to, asthma, indoor PM, air cleaning, sensors, and citizen science. Click [here](#) to sign up for this monthly compendium, ROCIS event updates and briefs, and to learn more about the ROCIS stakeholder air quality initiative involving low cost monitoring and interventions.

*In this compendium ...*

### **EVENTS – REGIONAL AUDIENCE**

- ✓ January and beyond: [Various Green Building and Healthy Materials seminars and webinars](#)
- ✓ Jan. 19, 2016 RSVP. [4th Urban Transition Cities Movement \(UTCM\) Workshop](#) on Jan. 22, 2016.
- ✓ Feb. 9-10, 2016. [2016 ACI New York Regional Home Performance Conference](#).
- ✓ Feb. 23, 2016. [Pittsburgh as a Resilient City: Briefing](#).
- ✓ Ending Feb. 26, 2016. [“In the Air: Visualizing What We Breathe.”](#)
- ✓ Feb. 26, 2016. [ROCIS Stakeholder Meeting](#).

### **EVENTS – NATIONAL AUDIENCE**

- ✓ Jan. 19, 2016. [Beyond the Light Touch: Next Steps for Improving Energy Efficiency in Multi-Family Affordable Housing](#).
- ✓ Jan. 19, 2016. Symposium proposals due, [ISES 2016 Annual Meeting](#)
- ✓ Jan. 19, 2016. [Wrench Ready Payback for Commercial HVAC Electric Motors and Belt-Driven Equipment](#).
- ✓ Jan. 21, 2016. [1\) Update on Strategies to Reduce Near-Roadway Air Pollution Exposure, and 2\) Update on Sustainable Freight Activities](#). CARB Board Meeting, webcast and presentations.
- ✓ January, and beyond, 2016. [Collaborative for High Performance Schools \(CHPS\)](#).
- ✓ Feb. 1, 2015, Abstracts due [Indoor Air 2016](#). Ghent Belgium.
- ✓ Feb. 3, 2016 webinar: [CDC 6|18 Initiative: Accelerating Evidence into Action](#).
- ✓ Feb. 9-10, 2016. [2016 ACI New York Regional Home Performance Conference](#).
- ✓ Feb. 10-11, 2016. [Workshop on the Health Risks of Indoor Exposure to Particulate Matter, Institute of Medicine](#).
- ✓ Feb. 18-19, 2016. [Net Positive Energy + Water Conference](#). San Diego, CA.
- ✓ Feb. 22 - Apr. 3, 2016. [ASHRAE 62.2 Ventilation for Single-Family Dwellings: Online Course](#).
- ✓ Feb. 25-26, 2016. [4th International Workshop of COST Action TD1105 on Innovations and Challenges for Air Quality Control Sensors](#). Vienna, Austria.
- ✓ Mar. 7, 2016, Abstracts due. [ASHRAE IAQ 2016. Defining IAQ: Policy, Standards and Best Practices](#). Sept. 12-14, 2016, Alexandria, VA.
- ✓ Mar. 31 - Apr 1, 2016. [Green Schools Conference & Expo](#). Pittsburgh, PA.
- ✓ Apr. 4-7, 2016. [2016 Affordable Comfort Home Performance Conference](#). Austin, TX.
- ✓ Apr. 4, 2016. Applications due. [Existing Building \(EBIE\) Awards](#).
- ✓ Apr. 6, 2016. [National Healthy Schools Day](#).
- ✓ May 2-6, 2015. [Functional Materials for Environmental Sensors and Energy Systems \(E-MRS\) Spring Meeting 2016](#). Lille, France.
- ✓ Jul. 3-8, 2016. [Indoor Air 2016](#). Ghent, Belgium.
- ✓ Oct. 9-13, 2016. [International Society of Exposure Science \(ISES\) 2016: Interdisciplinary Approaches for Health and the Environment](#). Utrecht, Netherlands.
- ✓ Feb. 23-25, 2017. [CitiSci2016](#). Raleigh, NC.

## REGIONAL NEWS

- ✓ [GASP Testifies at School Board for Clean and Safe School Buses](#). Dec. 15, 2015.
- ✓ [IAQ Pilot Study, Energy Efficiency Upgrade Challenges, and, Disclosure Legislation Info Shared](#). Jan. 4, 2016.
- ✓ [Unique Commuter Survey Reveals Complexity of the 2015 Pittsburgh Commuter](#). Jan. 14, 2016.
- ✓ [UPMC inks deal with Utah firm to calculate health costs](#). Jan. 11, 2016.
- ✓ [Health studies elsewhere show the harm of fracking](#). Dec. 22, 2015.
- ✓ [Gas drilling prompts fight against health department accreditation](#). Nov. 4, 2015.
- ✓ [New office buildings for start-ups planned in Pittsburgh](#). Dec. 29, 2015.
- ✓ [January is National Radon Action Month – Free Test Kits in Pennsylvania](#). Jan. 12, 2016.

## OTHER NEWS

### HEALTH

- ✓ [Fracking industry wells associated with premature birth](#). Oct. 8, 2015.
- ✓ [Childhood Asthma Rates Level Off, But Racial and Regional Disparities Remain](#). Dec. 30, 2015.
- ✓ [Gut bacteria could predict asthma in kids](#). Sept. 30, 2015.

### GREEN BUILDINGS

- ✓ [BPI's Larry Zarker interview on healthy, energy efficient homes](#). Dec. 14, 2015
- ✓ [Groups call for including schools in California's AB32 climate change plans](#). Nov. 17, 2015.

### SENSORS AND MONITORING

- ✓ [NCAR to develop wildland fire prediction system for Colorado](#). Dec. 9, 2015.

## RESOURCES

### IEQ

- ✓ [Overheating in Homes - The Big Picture](#).
- ✓ [NIH Clinical trial of air cleaners to improve indoor air quality and COPD health](#) (in progress).
- ✓ [Control of Legionella bacteria in the PWGSC real property portfolio](#).

### HEALTH

- ✓ [Asthma Community Network](#).
- ✓ [Asthma Home Intervention: Pay for Success \(PFS\) / Social Impact Bond \(SIB\) project](#).
- ✓ [UBC Webinars on Environmental Health](#).

### GREEN BUILDING

- ✓ [Assessing the True Value of Deep Energy Retrofits](#).

### COMMUNITY DEVELOPMENT AND URBAN PLANNING

- ✓ [Smart Cities: Auckland and Christchurch are global winners](#). Oct. 20, 2015.

### AIR QUALITY AND HEALTH MONITORING

- ✓ [AQAST 10 Conference, Jan. 2016](#).
- ✓ [Cohan Research Group, Rice University](#).
- ✓ [Air Quality, Social Stress, and Health Research](#).

### SENSORS

- ✓ [EUNetAir Newsletter](#), Dec. 2015.
- ✓ [SENSIndoor Newsletter](#), Dec. 2015.
- ✓ [EPA Sensor R&D Update](#). Oct. 2015.
- ✓ [Future of sensor networks](#). 2014.
- ✓ [Cambridge University AQ sensor R&D](#).
- ✓ [Summary of low cost AQ sensor features](#). ISES 2015 Sensor Fair.

## FUNDING OPPORTUNITIES

- ✓ [The West Penn Power Sustainable Energy Fund](#): Due Jan. 21, 2016
- ✓ [CalEPA: \\$1 Million to Support Vulnerable Communities](#). Due Jan. 22, 2016.
- ✓ [HUD: Innovation in Affordable Housing Student Design and Planning Competition](#). Due Feb. 8, 2016.
- ✓ [EPA: Environmental Justice Collaborative Problem-Solving Grants](#). Due Feb. 12, 2016.
- ✓ [Keystone Energy Efficiency Alliance: Energy Efficiency Award for K-12 Schools in PA](#). Due Mar. 4, 2016.

## RESEARCH AND DEMONSTRATION

### IEQ

- ✓ Tunno, et al., 2015. [Indoor air sampling for fine particulate matter and black carbon in industrial communities in Pittsburgh](#).
- ✓ Sbihi et al. Sept. 2015. [Perinatal Exposure to Traffic-Related Air Pollution and Atopy at 1 Year of Age in a Multi-Center Canadian Birth Cohort Study](#). Indoor exposure is modeled.
- ✓ Ji and Zhao, 2015. [Estimating Mortality Derived from Indoor Exposure to Particles of Outdoor Origin](#).
- ✓ U. of Texas-Austin, Recent Air Cleaner Studies:
  - Aldred et al., 2015. [Benefit-cost analysis of commercially available activated carbon filters for indoor ozone removal in single-family homes](#).
  - Aldred, et al. 2014. [Benefit-Cost Analysis of Reduced Ventilation in a University Laboratory Building](#).
  - [News article](#), May 2015.
  - Aldred, 2015. [The Nexus of Energy and Health: A Systems Analysis of Costs and Benefits of Ozone Control by Activated Carbon Filtration in Buildings](#). PhD Dissertation.
- ✓ Teixeira et al. (eds.), 2015. [GERIA - Geriatric study in Portugal on Health Effects of Air Quality in Elderly Care Centers](#). Instituto de Saúde Pública da Universidade do Porto, Portugal.
- ✓ Wheeler, et al., 2013. [Predictors of indoor BTEX concentrations in Canadian residences](#).

### HEALTH

- ✓ Sbihi et al. Sept. 2015. [Perinatal Exposure to Traffic-Related Air Pollution and Atopy at 1 Year of Age in a Multi-Center Canadian Birth Cohort Study](#).
- ✓ [Environmental Health Perspectives, Advance Publications](#).

### LAND USE

- ✓ Lovasi et al. 2016 in press. [Urban Tree Canopy and Asthma, Wheeze, Rhinitis, and Allergic Sensitization to Tree Pollen in a New York City Birth Cohort](#).

### SENSORS

- ✓ Kumar et al. 2015. [The rise of low-cost sensing for managing air pollution in cities](#).

## ABSTRACTS AND LINKS (for the above items)

### EVENTS – REGIONAL AUDIENCE

**January and beyond:** [Various Green Building and Healthy Materials seminars and webinars](#), hosted by the Green Building Association of Pittsburgh (GBA) and others.

**Jan. 19, 2016 RSVP.** [4th Urban Transition Cities Movement \(UTCM\) Workshop](#) on **Jan. 22**. The Environmental Justice Community Alert Matrix initiative is offering FREE trainings to residents on the topics of Energy, Air Quality, & Water. Participants may also qualify for a FREE Home IAQ Assessment.

## **EVENTS – REGIONAL AUDIENCE Continued**

**Feb. 9-10, 2016.** [2016 ACI New York Regional Home Performance Conference](#). Saratoga Springs, NY. IAQ, HVAC, energy efficiency, diagnostics, standards, and business tools are on the program.

**Feb. 23, 2016.** [Pittsburgh as a Resilient City: Briefing](#). Grant Ervin, Pittsburgh’s chief resilience officer, and Jordan Fischbach, co-director of RAND’s Water and Climate Resilience Center, will discuss how the topic of resiliency is changing city planning conversations in Pittsburgh and around the world. Last year, Pittsburgh was selected for the [100 Resilient Cities](#) network, a Rockefeller Foundation program.

**Ending Feb. 26, 2016.** [“In the Air: Visualizing What We Breathe.”](#) The exhibit at Pittsburgh Filmmakers in North Oakland attempts to raise our consciousness about the progress we have yet to make.

**Feb. 26, 2016.** [ROCIS Stakeholder Meeting](#), Insights from & Implications of the ROCIS Low-Cost Monitoring Project, 10:00 - 2:30 PM.

## **EVENTS – NATIONAL AUDIENCE**

**Jan. 19, 2016.** [Beyond the Light Touch: Next Steps for Improving Energy Efficiency in Multi-Family Affordable Housing](#). EPA webinar and podcast. By focusing on facilitating and incentivizing action by building owners, a growing number of states and organizations have found ways to reduce household energy cost burdens and provide multiple benefits that go beyond those achieved by standard efficiency improvements.

**Jan. 19, 2016.** Symposium proposals due, [ISES 2016 Annual Meeting](#) (see below). Abstracts due Mar. 13.

**Jan. 19, 2016.** [Wrench Ready Payback for Commercial HVAC Electric Motors and Belt-Driven Equipment](#). An exploration of commercial HVAC equipment, common upgrade opportunities, a retrofit process overview and calculating payback will be discussed.

**Jan. 21, 2016.** [1\) Update on Strategies to Reduce Near-Roadway Air Pollution Exposure, and 2\) Update on Sustainable Freight Activities](#). CARB Board Meeting, webcast and presentations.

**January, and beyond, 2016.** [Collaborative for High Performance Schools \(CHPS\)](#). Webinars on best practices for inspecting school facilities and operations.

**Feb. 3, 2016 webinar:** [CDC 6|18 Initiative: Accelerating Evidence into Action](#). This new initiative addresses six major public health problems such as asthma, and 18 available interventions.

**Feb. 9-10, 2016.** [2016 ACI New York Regional Home Performance Conference](#). Saratoga Springs, NY. Topics include IAQ, HVAC, resiliency, commissioning, air sealing, net zero homes, and business tools.

**Feb. 10-11, 2016.** [Workshop on the Health Risks of Indoor Exposure to Particulate Matter, Institute of Medicine](#). Washington, DC. National experts at this workshop will address the ailments most affected by particulate matter and the exposure types of greatest concern, exposure modifiers, vulnerable populations, exposure assessment, risk management, and gaps in the science. (Webcast registration required).

## **EVENTS – NATIONAL AUDIENCE Continued**

**Feb. 18-19, 2016.** [Net Positive Energy + Water Conference](#). San Diego, CA. The meeting will take an inside look at the bold projects that have achieved dramatic energy performance by integrating smart design and innovative renewable on-site energy generation

**Feb. 22 - Apr. 3, 2016.** [ASHRAE 62.2 Ventilation for Single-Family Dwellings: Online Course](#). This comprehensive, hands-on training course for professionals will teach you best practices for calculating ventilation requirements, optimizing equipment selection, and understanding where the standards are headed.

**Feb. 25-26, 2016.** [4th International Workshop of COST Action TD1105 on Innovations and Challenges for Air Quality Control Sensors](#). Vienna, Austria. [Additional workshops](#) on air sensors are also planned by the EUNetAir program for 2016.

**Mar. 7, 2016, Abstracts due.** [ASHRAE IAQ 2016. Defining IAQ: Policy, Standards and Best Practices](#). Sept. 12-14, 2016, Alexandria, VA. The program will include internationally acclaimed keynote speakers, original peer reviewed papers, the latest in IEQ control, plus workshops and panel discussion. The conference will guide the participants about what works and what really doesn't work when tackling major improvements in IAQ.

**Mar. 31 - Apr. 1, 2016.** [Green Schools Conference & Expo](#). Pittsburgh, PA. Green cleaning, purchasing, and teaching, plus energy efficiency, are on the program. A Student Summit will be included to educate, empower, and inspire middle and high school students as our next generation of leaders.

**Apr. 4-7, 2016.** [2016 Affordable Comfort Home Performance Conference](#). Austin, TX. One of the premier conferences on energy efficiency in existing and new homes, for practitioners, researchers, and policy experts. Health and safety topics will also be addressed, including outdoor pollutant intrusion. [Travel scholarships](#) are available for 75 contractors.

**Apr. 4, 2016.** Applications due. [Existing Building \(EBIE\) Awards](#). The national juried competition recognizes improved environmental performance in existing buildings among building operators, facilities managers, owners, engineers, retro-commissioning agents and other professionals. Focus areas include energy, water, operations, materials use, lighting, portfolio-wide improvements, and tenant engagement.

**Apr. 6, 2016.** [National Healthy Schools Day](#). Whether you are at the beginning stages of investigating school environments or have an established Indoor Air/Environmental Quality program, you are invited to host a local activity that educates others and celebrates your school's successes.

**May 2-6, 2015.** [Functional Materials for Environmental Sensors and Energy Systems \(E-MRS\) Spring Meeting 2016](#). Lille, France. Current R&D and various pollutant sensing technologies will be addressed, and a special issue will be produced for a scientific journal.

**Jul. 3-8, 2016.** [Indoor Air 2016](#). Ghent, Belgium. The premier international scientific conference on IEQ. Short courses and social media discussions will be included.

## **EVENTS – NATIONAL AUDIENCE Continued**

**Oct. 9-13, 2016.** [International Society of Exposure Science \(ISES\) 2016: Interdisciplinary Approaches for Health and the Environment](#). Utrecht, Netherlands. This multidisciplinary meeting includes topics such as pollutant exposure, dose, and health risk assessment, policy, emerging chemicals, and science education.

**Feb. 23-25, 2017.** [CitiSci2016](#). Raleigh, NC. The second international conference on citizen science.

## **REGIONAL NEWS**

[GASP Testifies at School Board for Clean and Safe School Buses](#). Dec. 15, 2015. Pittsburgh schools are negotiating new contracts with bus companies. Over 200 citizens supported the need for a contract requiring that diesel particle filters on all school buses and the training of bus drivers to comply with the state anti-idling law.

[IAQ Pilot Study, Energy Efficiency Upgrade Challenges, and, Disclosure Legislation Info Shared](#). Jan. 4, 2016. At the December meeting of the [2030 Pittsburgh](#) partners, Melissa Bilec from the University of Pittsburgh discussed the Pittsburgh 2030 District Indoor Air Quality (IAQ) pilot study, the outdoor PM levels in Pittsburgh, and the energy trade-offs to consider when evaluating IAQ.

[Unique Commuter Survey Reveals Complexity of the 2015 Pittsburgh Commuter](#). Jan. 14, 2016. GBA, GASP, and other partners investigated how people heading to Downtown or Oakland get to work or school and back. They will use this new dataset to better understand what planning needs to be put in place to improve our commutes while reducing our environmental impact.

[UPMC inks deal with Utah firm to calculate health costs](#). Jan. 11, 2016. Hospital giant UPMC is partnering with a Utah company to calculate the exact cost of providing health care services, with the aim to reduce unnecessary variation in how care is provided and improve how well a patient recovers.

[Health studies elsewhere show the harm of fracking](#). Dec. 22, 2015. A reader asks why Pennsylvania does not have a moratorium on fracking and why the fracking industry does not support independent health impact studies.

[Gas drilling prompts fight against health department accreditation](#). Nov. 4, 2015. A grass-roots coalition says it will try to block the national accreditation sought by the Allegheny County Health Department because the department has failed to protect public health by opposing shale gas development in county parks.

[New office buildings for start-ups planned in Pittsburgh](#). Dec. 29, 2015. E.V. Bischoff, a Columbus developer wants to turn an old-style office building on its head, starting in Pittsburgh.

[January is National Radon Action Month – Free Test Kits in Pennsylvania](#). Jan. 12, 2016. Exposure to radon is a preventable health risk and testing radon levels in your home can help prevent unnecessary exposure. If a high radon level is detected in your home, you can take steps to fix the problem to protect yourself and your family. [More information](#) is available from EPA.

## OTHER NEWS

### HEALTH

[Fracking industry wells associated with premature birth](#). Oct. 8, 2015. Expectant mothers living near active natural gas fracking wells in Pennsylvania are at an increased risk of giving birth prematurely and for having high-risk pregnancies, new research at Johns Hopkins U suggests.

[Childhood Asthma Rates Level Off, But Racial and Regional Disparities Remain](#). Dec. 30, 2015. Part of the complexity stems from variations in rates of asthma based on age, income, region, race, and ethnicity, the study found. For low-income children in particular, it is possible that environmental risk factors like tobacco exposure, poor housing and poor indoor air quality, and indoor dust mite and cockroach exposure may make asthma more likely.

[Gut bacteria could predict asthma in kids](#). Sept. 30, 2015. Researchers found differences in stool bacteria and bacterial byproducts in the urine of 3-month-old infants who went on to develop asthma. Mice studies produced consistent results. The study has potential implications for identifying and treating children with asthma.

### GREEN BUILDINGS

[BPI's Larry Zarker interview on healthy, energy efficient homes](#). Dec. 14, 2015. Zarker discusses how Building Performance Institute standards and certified contractors can increase comfort, health, durability, and safety for homeowners across the nation. Health insurance reimbursement is also discussed.

[Groups call for including schools in California's AB32 climate change plans](#). Nov. 17, 2015. The [California State PTA](#) and the [American Academy of Pediatrics](#) issued calls to action this year recognizing childrens' special vulnerabilities to climate change, such as heat-related illness, air pollution, and asthma. Yet, CARB proposed [Three Year Investment Plan](#) to allocate the \$1 billion cap-and-trade program's Greenhouse Gas Reduction Fund does little to support the development of sustainable schools.

### SENSORS AND MONITORING

[NCAR to develop wildland fire prediction system for Colorado](#). Dec. 9, 2015. Developed in response to legislation, the agreement creates an innovative research and development partnership to generate real-time, 18-hour forecasts of active wildfires in the state.

## RESOURCES

### IEQ

[Overheating in Homes - The Big Picture](#). Zero Carbon Hub. UK researchers investigate why overheating in homes happens and how local and national government can help the housing sector prevent the issue getting worse. Some housing providers are already screening for homes with known risk factors for overheating. [The report and additional resources](#) are available online. The final report to the Committee on Climate Change is due Spring 2016.

[NIH Clinical trial of air cleaners to improve indoor air quality and COPD health](#) (in progress). In order to bridge the gap from epidemiologic evidence to research that can inform clinical practice, JHU will conduct a multi-year, randomized controlled trial to test whether targeted reductions of indoor pollutant concentrations in homes of nonsmokers and former smokers with COPD will improve respiratory health and quality of life. Each group will receive either HEPA and carbon filter air cleaners, or sham air cleaners.

## **RESOURCES (IEQ) Continued**

[Control of Legionella bacteria in the PWGSC real property portfolio](#). Public Works and Government Services Canada, 2015. Policies, practices, and updates on Legionella cases and prevention in Canada.

### HEALTH

[Asthma Community Network](#). Podcasts and webinars on best practices for asthma treatment and prevention. Topics include IEQ, weatherization, medical reimbursement, social impact bonds, and community engagement. Training programs for community health workers are listed for various states.

[Asthma Home Intervention: Pay for Success \(PFS\) / Social Impact Bond \(SIB\) project](#). GHHI and Calvert Foundation selected 5 healthcare organizations and 5 service providers across the country to participate in a project that assesses the feasibility of replicating an asthma-related PFS / SIB project. The funding team will provide technical assistance to document the feasibility of moving each project to the transaction phase.

[UBC Webinars on Environmental Health](#). University of British Columbia, School of Population and Public Health. Research webinars on current topics such as environmental health, IEQ, outdoor AQ, wildfires, land use, and transportation.

### GREEN BUILDING

[Assessing the True Value of Deep Energy Retrofits](#). Real estate investors generally neglect the value of whole building design and construction beyond energy cost savings. This results in undervaluation of deep retrofit opportunities that leads to (unintended) underinvestment in efficient buildings, leaving millions of dollars on the table, neglecting investor due diligence, and increasing carbon emissions in the atmosphere. A [full report and an investor practice guide](#) for various types of buildings are available from the Rocky Mountain Institute.

### COMMUNITY DEVELOPMENT AND URBAN PLANNING

[Smart Cities: Auckland and Christchurch are global winners](#). Oct. 20, 2015. [The Sensing City](#) project in Christchurch, NZ will use sensors installed around Christchurch to collect real-time information on a range of variables, including pedestrian and vehicle traffic flow, water and air pollution, to improve how the city functions. Current projects include a study of air pollution and respiratory health, and cycleway development.

### AIR QUALITY AND HEALTH MONITORING

[AQA 10 Conference, Jan. 2016](#). Presentations included air quality modeling, wildfires, climate change, satellite sensing, health and social co-benefits, and citizen science such as the [St. Louis Ozone Garden](#).

[Cohan Research Group, Rice University](#). Air quality research and educational outreach such as curriculum for Grade 5, inquiry-based learning with air pollution measurement, and overviews of air quality and climate change.

[Air Quality, Social Stress, and Health Research](#). Dr. Jane E. Clougherty, U. of Pittsburg. Publications and presentations.

## **RESOURCES Continued**

### **SENSORS**

[EUNetAir Newsletter](#), Dec. 2015. Air sensor R&D news from Europe: meeting summaries, project updates, and publication listings. The EUNetAir program has been extended until Nov. 2016.

[SENSIndoor Newsletter](#), Dec. 2015. EU project information and highlights. [SENSIndoor](#) involves several research groups working to develop novel nanotechnology based intelligent sensor systems for selective monitoring of VOCs for demand-controlled ventilation in indoor environments.

[EPA Sensor R&D Update](#), Oct. 2015. Summary of air and water sensor projects. EPA added several cities to the air sensor project in 2015, including Philadelphia.

[Future of sensor networks](#). T. Dye, 2014. National Ambient Air Monitoring Conference, Atlanta, GA. Presentation addresses examples of urban sensor networks, sensor testing, citizen science, and R&D needs.

[Cambridge University AQ sensor R&D](#). Research areas include sensors for urban networks, smart cities, personal monitoring, and mobile monitoring. [AQMesh](#) project and video. [Seminar](#) by Ron Jones, Feb. 2, 2016.

[Summary of low cost AQ sensor features](#). ISES 2015 Sensor Fair.

### **FUNDING OPPORTUNITIES**

[The West Penn Power Sustainable Energy Fund](#): Financing programs are focused on innovative energy efficiency and conservation technologies, renewable and clean energy and public outreach and education. Due Jan. 21, 2016

[CalEPA: \\$1 Million to Support Vulnerable Communities](#). Due Jan. 22, 2016.

[HUD: Innovation in Affordable Housing Student Design and Planning Competition](#). Due Feb. 8, 2016.

[EPA: Environmental Justice Collaborative Problem-Solving Grants](#). Due Feb. 12, 2016.

[Keystone Energy Efficiency Alliance: Energy Efficiency Award for K-12 Schools in PA](#). Due Mar. 4, 2016.

### **RESEARCH AND DEMONSTRATION**

#### **IEQ**

[Indoor air sampling for fine particulate matter and black carbon in industrial communities in Pittsburgh](#). Tunno, et al., 2015.

[Perinatal Exposure to Traffic-Related Air Pollution and Atopy at 1 Year of Age in a Multi-Center Canadian Birth Cohort Study](#). Sbihi et al. Sept. 2015. Indoor exposure is modeled.

## **RESEARCH AND DEMONSTRATION (IEQ) Continued**

[Estimating Mortality Derived from Indoor Exposure to Particles of Outdoor Origin](#). Ji and Zhao, 2015.

U. of Texas-Austin, Recent Air Cleaner Studies:

[Benefit-cost analysis of commercially available activated carbon filters for indoor ozone removal in single-family homes](#). Aldred et al., 2015.

[Benefit-Cost Analysis of Reduced Ventilation in a University Laboratory Building](#). Aldred, et al. 2014.

[News article](#), May 2015.

[The Nexus of Energy and Health: A Systems Analysis of Costs and Benefits of Ozone Control by Activated Carbon Filtration in Buildings](#). Aldred, 2015. PhD Dissertation.

[GERIA - Geriatric study in Portugal on Health Effects of Air Quality in Elderly Care Centers](#). Teixeira et al. (eds.), 2015. Instituto de Saúde Pública da Universidade do Porto, Portugal.

[Predictors of indoor BTEX concentrations in Canadian residences](#). Wheeler, et al., 2013.

## HEALTH

[Perinatal Exposure to Traffic-Related Air Pollution and Atopy at 1 Year of Age in a Multi-Center Canadian Birth Cohort Study](#). Sbihi et al. Sept. 2015.

[Environmental Health Perspectives, Advance Publications](#). Several new exposure and health studies on traffic pollution, outdoor PM, lead, pesticides, phthalates, ozone, heat, noise, land use, etc.

## LAND USE

[Urban Tree Canopy and Asthma, Wheeze, Rhinitis, and Allergic Sensitization to Tree Pollen in a New York City Birth Cohort](#). Lovasi et al. 2016 in press.

## SENSORS

[The rise of low-cost sensing for managing air pollution in cities](#). Kumar et al. 2015.

## ***That's it for the January Compendium!***

Please send us event information, news, resources, research results for next month's compendium. Visit the [ROCIS website](#) for current and past compendiums, as well as the ROCIS white papers, archives from meetings and webinars, and information on the upcoming ROCIS Stakeholder Meeting, scheduled for February 26, 2016.

Cheers,  
Tom

Thomas J. Phillips, Healthy Building Research  
ROCIS Technical Lead (Commercial & Multifamily Buildings, Schools)  
(California Air Resources Board - Ret.)  
835 A St., Davis, CA 95616  
530-756-6605 (office); 530-220-4854 (mobile)  
[tjp835@sbcglobal.net](mailto:tjp835@sbcglobal.net)