
Reducing Outdoor Contaminants in Indoor Spaces

2016 August 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 IAQ, environmental health, energy efficiency, green buildings, and fossil fuels. Sign up [here](#) for upcoming compendiums, ROCIS event updates and briefs.

ROCIS is also conducting an air quality initiative involving low cost monitoring and interventions. The next cohort of the Low Cost Monitoring Project is from September 8 - 30, 2016. The October cohort starts October 5. [Learn more here](#). *We are seeking participants for both cohorts.*

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- ✓ Dec. 5-8, 2016. [NIEHS Environmental Health Science FEST](#). Research Triangle Park, NC. [RSVP](#).
- ✓ May 17-20, 2017. [CitSci2017](#). Saint Paul, MN. International conference on citizen science.
- ✓ Mar. 19-11, 2017. [HPC/ACI National Home Performance Conference](#). Nashville, TN.
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- ✓ [EPA Awards \\$4.5 Million to Advance Air Monitoring Technology](#). Aug. 9, 2016.

ENVIRONMENTAL JUSTICE

- ✓ [California Seeks Input on Environmental Improvement Projects](#). Aug. 9, 2016.
- ✓ [Explore EPA's Annual AirTrends Report 2016 Using a New Interactive Web Application](#). Aug 25, 2016.
- ✓ [U.S. EPA and Imperial Valley Communities Tackle Childhood Asthma](#). Aug 10, 2016.
- ✓ [Building Equity, Inclusiveness for Low-income Communities is Key in Climate Resilience Planning](#). Aug. 16, 2016.

CLIMATE CHANGE

- ✓ [As Temperatures Climb, the Elderly, Frail, and Poor Are Put at Risk](#). Aug. 8, 2016.

RESOURCES

IEQ

- ✓ [Healthy Buildings America and Europe 2015](#) programs and [proceedings](#), and videos.
- ✓ [Energy & Environmental Building Alliance \(EEBA\) 2015](#).

ENVIRONMENTAL HEALTH

- ✓ [Every Breath We Take: The Lifelong Impact of Air Pollution](#).
- ✓ [The Exposome: Understanding the Effect of the Environment on Our Health](#).
- ✓ Federal Integrated Pest Management (IPM) Guidance. [HUD Public Housing](#) information and tools.

CLIMATE CHANGE

- ✓ [Avoiding Scylla and Charybdis: Sustainably Improving Indoor Environmental Quality](#).

FOSSIL FUELS

- ✓ [Still in the Pits: Update On Oil And Gas Wastewater Disposal In California](#).

GREEN AND HEALTHY BUILDINGS

- ✓ Non Energy Benefits of Energy Efficiency webinars.
- ✓ [2016 Better Buildings Summit Presentations](#). DOE, 2016.

ENVIRONMENTAL JUSTICE

- ✓ [Forum: How Do We Create Healthy Neighborhoods For All?](#) Jun. 17, 2016.

FUNDING OPPORTUNITIES

- ✓ [Garfield Pittsburgh Home Makeovers: Face-lifts Funded by Facade Grants](#). Pittsburgh, PA.
- ✓ [Ventilation and Indoor Environmental Quality \(IEQ\), Health, & Human Performance in Buildings](#).
- ✓ [DOE's BlocPower Works to Retrofit Underserved Communities](#).
- ✓ [DOE Office of Energy Efficiency and Renewable Energy](#).
- ✓ [EPA Offers up to \\$80,000 to Communities to Develop Air Sensor Data Best Practices](#).
- ✓ [Fannie Mae Offers Cheaper Option to Fund Solar, Efficiency](#).

RESEARCH AND DEMONSTRATION

IEQ

- ✓ [Airborne Particulate Matter in Two Multi-Family Green Buildings](#). Patton et al. 2016 (free).
- ✓ Indoor Air journal, **2016 articles**: IEQ, ventilation, filtration, and health topics, e.g.:
 - [Teaching indoor environmental quality](#). Nazaroff.
 - [Cleaning practices and cleaning products in nurseries and schools: to what extent can they impact indoor air quality?](#) Wei et al.
 - [Indoor air quality in Portuguese schools: levels and sources of pollutants](#). Madureira et al.
 - [Classroom ventilation & indoor air quality -- results from the FRESH intervention study](#). Rosbach et al.

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RESEARCH AND DEMONSTRATION IEQ continued

- [Do classroom ventilation rates in CA elementary schools influence standardized test scores?](#) Results from a prospective study. Mendel et al.
- [Chemical characterization of indoor and outdoor fine particulate matter in an occupied apartment in Rome, Italy.](#) Perrino et al.
- [Thermal & health outcomes of energy retrofits of homes of older adults.](#) Ahrentzen et al.
- [Thermal sensation models: a systematic comparison.](#) Koelblen et al.
- [Quantification of the fungal fraction released from various preloaded fibrous filters during a simulated ventilation restart.](#) Morisseau et al.
- [Measurements of dermal uptake of nicotine directly from air and clothing.](#) Bekö et al.
- [From air to clothing: characterizing the accumulation of semi-volatile organic compounds to fabrics in indoor environments.](#) Saini et al.
- [Do time-averaged, whole-building, volatile organic compound \(VOC\) emissions depend on the air exchange rate? A statistical analysis of trends for 46 VOCs in U.S. offices.](#) Rackes and Waring.
- ✓ [AFFSET-MOSS Study.](#) Barcelona Institute for Global Studies.
- ✓ [Central Air Filter Test Database.](#) Stephens et al. Illinois Institute of Technology. Jul. 2016.
- ✓ [Home Air Project Analyzes Indoor Climate Impacts and Adaptation On Elderly.](#)

ENVIRONMENTAL HEALTH

- ✓ [Differential Toxicity of an Organic PM2.5 Extract to Human Lung Cells Cultured in Three Dimensions \(3D\) and Monolayers.](#) Ferraz et al. 2016.
- ✓ [AIRGENE-Environment Interaction on Attention Deficit and Hyperactivity Disorders and Autism Spectrum Disorder in General Population Birth Cohorts.](#) Barcelona IGS.
- ✓ [Air Pollution, Growing Brain & Cognitive Disorder in Children. PROYECTO INMA.](#) Barcelona IGS.

ASTHMA

- ✓ [Innate Immunity and Asthma Risk in Amish and Hutterite Farm Children.](#) Stein et al., 2016.

AIR QUALITY

- ✓ [Urban Particulate Matter Pollution: A Tale of Five Cities.](#) Pandis et al., 2016.
- ✓ [Atmospheric Evolution and Chemical Aging of Organic Particulate Matter.](#) Pandis and Donahue, 2016.

ENERGY EFFICIENCY

- ✓ [NYSERDA Home Performance with ENERGY STAR Realization Rate Study.](#)

SENSORS

- ✓ [Air Quality Sensor Performance Evaluation Center \(AQ-SPEC\).](#) Aug. 2016.

ABSTRACTS for the above items

EVENTS – REGIONAL AUDIENCE

Sep. 10, 2016. [Frick Environmental Center, Public Opening.](#) The building is designed to be the greenest in the world, meeting the Living Building Standard. The 15,500 square foot building will be net zero electricity and include roof rainwater collection, healthy materials, and on-site geothermal wells. Pittsburgh, PA.

Sep. 11, 2016. [Green Fest Philly.](#) Learn about living sustainably while having fun! This event includes clothes swaps, local green wares, great food, live music, live demonstrations, kid-friendly activities, bike valet, and more. Philadelphia, PA.

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EVENTS – REGIONAL AUDIENCE continued

Sep. 12, 2016. [Roundtable Discussion with Jack Anderson](#), CEO Healthy Housing Solutions (3 - 4:30). Explore the potential successes, opportunities, and obstacles as well as the collective vision to move healthy home collaboration forward in the Pittsburgh community. At [6 PM Anderson's presentation](#) will show a practical approach with a live demonstration of the Healthy Home Checkup tool by Healthy Housing Solutions. This is part of the Healthy Home Evaluator training that will be launched this fall in Pittsburgh. RSVP by Sep. 8 to 4elizabethedelstein@gmail.com. Pittsburgh, PA.

Sep. 14, 2016. [Resilient Pittsburgh's Resilience Fair](#). Get an update on the City's Resilience Strategy, visit speakers and groups that showcase citywide resilience initiatives, and share thoughts. Pittsburgh, PA.

Sep. 15 and beyond, webinars and meetings. [Residential Energy Efficiency Webinars](#). Penn Energy Codes. The Sep. 15 webinar will focus on PSD's recent energy code field study of 171 residential new construction sites to evaluate the **effectiveness of energy code implementation in eastern Pennsylvania**. Builders/contractors and code officials will discuss the best approaches to improve the comfort, durability, operational costs, and energy efficiency of new homes.

Sep. 24, 2016. [Philly Free Streets](#). Inaugural car free day. Philadelphia, PA.

Sep. 26, 2016. [People Habitat: Eight Ways to Think About Greener, Healthier Cities](#). Kaid Benfield, author, attorney, and innovator from NRDC, USGBC, and Smart Growth America, speaks on smart, green land development. Pittsburgh, PA.

Oct. 6, 2016. [Creating Healthy Communities](#). A one-day summit addressing how our environment impacts public health. Speakers will discuss the scientific, medical, political and community-based approaches to creating healthier communities across the country. Local experts will highlight multiple health topics as they relate to our homes, schools and communities. The conference will educate and encourage attendees champions positive impact on the health of our region. Pittsburgh, PA.

Oct. 18-19, 2016. [P4: People, Planet, Place and Performance](#). The City of Pittsburgh and The Heinz Endowments are spearheading a major effort to forge a new model of urban growth and development that is innovative, inclusive, and sustainable. Pittsburgh, PA.

EVENTS – NATIONAL AUDIENCE

Aug. 30, 2016 webinar. [Petroleum Vapor Intrusion: Fundamentals of Screening, Investigation, and Management](#). A review of the IITRC guidance document, which provides a comprehensive methodology for screening, investigating, and managing potential PVI sites. The document is intended to promote the efficient use of resources and increase confidence in decision making.

Sep. 1, 2016 webinar. [California Environmental Improvement Project Workshop](#). CARB is seeking public input on its [policy](#) to use enforcement penalties to improve [community health, air quality, environmental compliance, green jobs, and public awareness](#) in disadvantaged communities. Recent legislation has raised the available funding to 50% of the penalty amount (AB 1071). The revised policy will be presented this fall.

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EVENTS – NATIONAL AUDIENCE continued

Sep. 4-9, 2016. [Eurosensors 2016](#). The latest results on, among other things, micro and nanosystems, packaging interface and system integration, emerging sensor technologies and sensor applications. Budapest, Hungary.

Sep. 7-29, 2016. [Indoor Air Quality & Energy Webinar Series](#). Maine IAQ Council.

Sep. 8-9, 2016. [2016 Transportation and Communities Summit](#). Portland State University, Portland, OR.

Sep. 13, 2016. [Built Green Conference 2016](#). Bothell, WA.

Sep. 13-15, 2016. [Living Product Expo: Crafting the Future of Materials](#). Pittsburgh, PA.

Sep. 14-16, 2016. [8th International Conference on Children's Health and the Environment](#). Barcelona, Spain.

Sep. 21-25, 2016. [Annual North American Passive House Conference](#). Philadelphia, PA.

Sep. 21-22, 2016. [4th Annual International Conference on Sustainable Development](#). A unique opportunity for stakeholders from government, academia, the UN, international agencies, NGOs, and grassroots organizers to come together to share practical solutions towards the achievement of more sustainable and inclusive societies. New York, NY.

Sep. 22 and beyond, webinars. [Gaining Buy-In to Provide Optimal HVAC](#). EPA. Previous webinars are also available online.

Sep. 27-29, 2016. [EEBA Excellence in Building Conference & Expo](#). Energy & Environmental Building Alliance. Presentations from building science experts, designers, and builders that represent the cutting edge of residential and multifamily design and construction. Frisco, TX.

Oct. 3-4, 2016. [National Association of Realtors Green Designation Training](#). Burbank, CA.

Oct. 5-7, 2016. [GreenBuild 2016](#). USGBC. Los Angeles, CA.

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

Oct. 12 and beyond, quarterly webinar. [Federal Committee on IAQ, Conference Call](#). Agency updates and special presentations. Previous webinars and presentations are also available.

Oct. 13-14, 2016. [ASSESS \(Air Sensors Everywhere -- Small Sensor\) Symposium 2016](#). The inaugural symposium on small air pollution sensors that brings together sensor developers, users, engineers, and advocates. The main objective of this meeting is to discern and disseminate some of the successes – and failures – of small sensor use in our communities. York, UK.

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EVENTS – NATIONAL AUDIENCE continued

Oct. 20-21, 2016. [Healthy Buildings Summit 2016](#). This event will focus on building science issues that affect IEQ, mold, and disaster restoration. The intersection of weatherization and IEQ will be examined as well as assessment, protocol and response action development. Seven Springs (Champion), PA.

Oct. 25-27, 2016. [Green the Church: Global Leadership Summit](#). Baltimore, MD.

Oct. 29 - Nov. 2, 2016. [American Public Health Association Annual Meeting & Exposition](#). Denver, CO.

Oct. 30 - Nov. 1, 2016. [IEEE Sensors 2016](#). A forum for international research scientists, engineers, and practitioners to present their latest findings, ideas, and applications in the areas of sensors and sensing technology. Topics of interest include chemical and gas sensors and IAQ. Orlando, FL.

Dec. 5-8, 2016. [NIEHS Environmental Health Science FEST](#). Research Triangle Park, NC. [RSVP](#).

May 17-20, 2017. [CitSci2017](#). International conference on citizen science. Saint Paul, MN.

Mar. 19-11, 2017. [HPC/ACI National Home Performance Conference](#). Nashville, TN.

Dec. 5-7, 2017. [2017 National Brownfields Training Conference](#). Pittsburgh, PA.

REGIONAL NEWS

ENVIRONMENTAL HEALTH

[Northgate Asthma Initiative for In-Home Assistance](#). ACHD is providing asthma education and IEQ improving products to qualifying families in the Northgate School District (municipalities of Bellevue and Avalon). Households with asthmatic children may be eligible to receive an in-home health and safety assessment, education on reducing asthma triggers, and a healthy home toolkit of supplies to improve home IEQ. Aug. 2016.

[Woodland Hills Schools and Five Communities Become Part of Live Well Allegheny](#). The Woodland Hills School District along with the Boroughs of East Pittsburgh, Edgewood, North Braddock, Rankin, and Swissvale joined 31 communities in the program. The Woodland Hills School District has begun several healthy living initiatives, e.g., healthy food, yoga, smoking prevention, and the **asthma partnership** with Allegheny General Hospital, PA Lung Association, and Duquesne University. Aug. 20, 2016.

SUSTAINABILITY

[Open Streets PGH Car-free Summer Events Reduce Air Pollution 400%](#). Bike Pittsburgh worked with environmental experts to gauge pollutant levels in the air and monitor the effects that such an emission-free event can have on regional air quality. Air pollutants dropped by 400% on each of the Open Streets Sundays. “When people ask how I measure success, it’s ‘people outside smiling’”. Jun. 2016.

[Penn Ave. Traffic Prompts Citizen Study](#). Bloomfield Livable Streets – an independent community organization advocating for infrastructural enhancements in Pittsburgh, PA – guided a group of volunteers to gather data on traffic counts for cars and bikes and car speeds. Jun. 2016.

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REGIONAL NEWS SUSTAINABILITY continued

[Pittsburgh 2030 District Leads the Country in Green Innovation](#). The project's goal is to hit 50% reductions in energy and water usage by 2030. Thirteen other cities also work every day to hit that same goal. The Pittsburgh 2030 District leads these cities in terms of scale and size. Aug. 18, 2016.

[Green Energy Funds Award \\$160K to Winning Ideas](#). The West Penn Sustainable Energy Fund awards included Philadelphia's Energy Conservation Agency, which helped lower energy bills for poor customers by about 35% across nearly 60 homes. The agency will use the prize money to **strengthen ties with doctors** to, among other things, begin a referral system that allows physicians to direct patients with asthma and other health problems to energy audits. Aug. 16, 2016.

SENSORS

[Pennsylvania Clean Air Council is Developing Low-cost Air Monitors](#). Philadelphia residents will use the monitors at nearby polluting facilities to hold polluters accountable and empower the affected residents to advocate for solutions. This project is currently in the testing phase, and a pilot program is running in Chinatown to measure PM. Next, custom monitors will be **used throughout Pennsylvania**, especially around natural gas infrastructure and fracking sites. Aug. 2016.

FOSSIL FUELS

[News and Studies on Fracking and Other Air Quality Issues in SWPA](#). The SWPA Environmental Health Project has released a **report on expert opinions for setback distances from fracking sites**. Eight-nine per cent of the participants agreed that the minimum safe distance is 1/4 mile, and that additional protections are needed for vulnerable groups. The project has also responded to an ATDSR report on **PM emissions from a compressor station** in Susquehanna County, where EPA and WHO standards for PM2.5 were exceeded. Aug. 2016.

[Former Gov. Rendell Would Revisit Drilling Rules, but Still Supports Fracking](#). If Mr. Rendell had known what he knows now, he said he would have put a moratorium on new drilling in the state forest earlier than October 2010 and he would have moved faster to enact the regulations he credits with stopping problems. Aug. 9, 2016.

[Why Are Pennsylvania's Oil & Gas Emissions Going Up?](#) Aug. 22, 2016. A PA DEP [new report](#) reveals that harmful emissions from oil and gas development are increasing; VOC emissions have increased by 25% over last year. This is bad news for Pennsylvania families who have been repeatedly told by industry trade groups that pollution is under control.

OTHER NEWS

IEQ

[California Man Claims Smoke from Medical Pot Aggravates Medical Condition](#). The 61-year-old man spent three days at NorthBay Medical Center; he claims his neighbor's use of medical marijuana released smoke which aggravated his vascular disease. Aug. 24, 2016.

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OTHER NEWS IAQ continued

[Modern Metro Station Designs For Protection Against Harmful Pollutants](#). EU-funded researchers measured PM2.5 and its components in four Barcelona underground metro stations. They concluded that the adoption of a specific station design would significantly reduce the exposure of underground metro travellers to harmful air pollutants. May 2016 issue, Research EU.

[Bay Area Doctors Report Uptick in Patients Due to Monterey Wildfire](#). The smoke from the Soberanes Fire in Monterey County is drifting northward and has created a blanket of haze over San Jose and the greater South Bay, and urban smog levels were also elevated. Doctors reported an increase in the number of patients complaining of irritated eyes and airways, and warn the public to seek shelter in their homes and to close car windows. Jul. 26, 2016.

ENVIRONMENTAL HEALTH

[Many State Medicaid Programs Fall Short in Home Intervention Coverage for Asthma Care](#). The American Lung Association (ALA) released results of its [Asthma Care Coverage Project](#). Out of twenty-three states surveyed, only four covered home visits and cost effective interventions without barriers. Three states had coverage but with barriers, another six states had some coverage but barriers were not necessarily always present, and ten states had no coverage for home visits ([see map](#)). Aug. 18, 2016.

[GHHI Cities Win HUD Lead Remediation and Prevention Grants](#). Locations include Jackson, MS (\$1.2 million); **Allegheny County, PA (\$3.4 million)**; Lansing, MI (\$2.3 million); Rhode Island (\$3.4 million); and Maine (\$3.4 million). The funding will be used to remove lead paint hazards in affected homes and help protect children from lead poisoning. Aug. 22, 2016.

[Farmers Use Information Technology Tool for Integrated Pest Management](#). Participating farmers set up pheromone traps for various pests and monitor the number collected over time. Using the [PestWatch tool](#), users view their data an interactive map. Trap locations are currently spread from Minnesota to New York, with about **40 collection sites in Pennsylvania**. Aug. 15, 2016.

[Growing Up On An Amish Farm Protects Children Against Asthma by Reprogramming Immune Cells](#). By probing the differences between two farming communities, an interdisciplinary team of researchers found that substances in the house dust from Amish, but not Hutterite, homes is associated with changes to immune cells that appear to protect children from developing asthma. Aug. 3, 2016.

[Leading Experts Call for Eliminating or Reducing Brain Toxins](#). More than two dozen leading scientists, medical experts, and children's health advocates called for eliminating or reducing chemical exposures that affect growth and development of the brain. The "[The TENDR Consensus Statement](#)," (EHP, July 1) July 1) focused on toxic chemicals linked to neurodevelopmental disorders, such as autism, attention deficit hyperactivity disorder, and intellectual disability. A [2009 study](#) that found for every \$1 spent to reduce exposures to lead, society would benefit by \$17–\$221. Aug. 2016.

[New Tool for Economic Analyses in Environmental Health Research](#). NIEHS has developed a tool to help environmental health researchers include economic analyses in their studies. The [Environmental Health Economic Analysis Annotated Bibliography](#) is a searchable list of 70+ scientific papers, reports, and reviews on environmental health topics, all of which include some form of economic analysis. Aug. 2016.

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OTHER NEWS ENVIRONMENTAL HEALTH continued

[The Economic Costs of Environmental Health Impacts Need to be Considered](#). L. Trassande discussed direct and indirect costs of environmental pollution, EJ issues, and market inefficiency due to lack of information on the buyer's part. In 2008, the U.S. spent \$76.6 B on diseases of environmental origin in children (about 3.5 % of U.S. health care costs), and the developing world spent about \$1 T per year on the health costs of childhood lead exposure (about 1.2 % of GDP). Aug. 2016.

ENERGY EFFICIENCY AND GREEN BUILDINGS

[SAHF Announces Partnership with EPA's ENERGY STAR Program](#). The Stewards of Affordable Housing for the Future will work with EPA to improve energy efficiency in multifamily affordable housing and fight climate change through strategic energy management. The partnership will further [SAHF's Big Reach initiative](#), in which SAHF and its eleven members have committed to reducing energy and water consumption across their portfolios 20% by 2020. SAHF is also working with the [DOE Better Buildings Challenge](#). Aug. 17, 2016.

[Passive House Apartment Project Combines Old and New in Seattle](#). Plans call for an old house and new 4-story building in Capitol Hill to be connected by a solar rooftop array and to reach net zero energy status. It could be the first market rate multifamily Passive House in Seattle. Aug. 10, 2016.

[Duct Leakage, Lighting, and Insulation Fail to Meet Energy Code in Many Homes](#). A field study of the effectiveness of energy code implementation in 171 eastern Pennsylvania found 40-50% noncompliance in these code areas. Compliance could save new homeowners about \$3 M per year. Aug. 23, 2016.

FOSSIL FUELS

[Watchdog Groups Settle First-Ever Prop 65 Lawsuit to Clean Up Polluting Oil and Gas Wastewater Pits](#). The single largest operator of unlined oil and gas wastewater pits in California must stop discharging toxic chemicals into groundwater at two of its facilities east of Bakersfield. The firm must also make significant upgrades at the two facilities and pay \$200,000 in penalties. Jul. 28, 2016.

[Some Food Crops Raised in California Are Being Irrigated Using Wastewater Drawn Out of Oil Wells](#). The wastewater is treated before use, but no comprehensive and independent analysis has been conducted to assess the safety of the wastewater. Some researchers have found dangerous chemicals, including methylene chloride, an industrial solvent classified as a potential carcinogen. Aug. 19, 2016.

[Obama Administration Sued to Protect Climate, Public Lands from Drilling and Fracking](#). WildEarth Guardians and Physicians for Social Responsibility today filed a landmark federal lawsuit to defend our climate, our health, and American public lands from widespread oil and gas leasing, drilling, and fracking. Aug. 25, 2016.

[Addressing Climate Change and Unleashing Innovation with Cleaner Trucks](#). EPA finalized the second phase of greenhouse gas emissions and fuel efficiency standards for medium and heavy duty vehicles for model years 2018 and beyond. The standards will promote a new generation of cleaner and more fuel efficient trucks, which means much less CO2 emissions, while saving 2 billion barrels of oil and \$170 billion in fuel costs. The additional cost of a new truck will be recouped within 2-4 years. Aug. 16, 2016.

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OTHER NEWS FOSSIL FUELS continued

[California Releases Final Plan to Transform Freight System](#). State agencies released the Sustainable Freight Action Plan, a blueprint for transforming the state's multi-billion dollar freight transport system into one that is environmentally cleaner, more efficient, and more economically competitive. A new addition to the plan is a discussion of **toxic hot spots**. Jul. 29, 2016.

[California Awards \\$390 Million in Cap and Trade Grants to Expand Transit, Reduce Emissions and Create Jobs](#). CalSTA announced 14 recipients for the 2016 Transit and Intercity Capital Program (TIRCP) grants. The group of projects focuses on reducing harmful greenhouse gas emissions while advancing the state's public transportation system. Aug. 16, 2016.

SENSORS

[EPA Awards \\$4.5 Million to Advance Air Monitoring Technology](#). Six research organizations will develop and use low-cost air pollution sensor technology, while engaging communities to learn about their local air quality, especially in EJ and high pollutant areas. The grantees will also study the accuracy of data produced by sensors and sensor networks. [Projects](#) are located in [Pittsburgh, PA \(CMU\)](#), Los Angeles, Chicago, Denver, Yakima, WA, and Hawaii. Aug. 9, 2016.

ENVIRONMENTAL JUSTICE

[As Temperatures Climb, the Elderly, Frail, and Poor Are Put at Risk](#). The [Harlem Heat Project](#) is building and using air sensors to measure temperature and humidity in NY City low-income apartments. Common issues are lack of AC, costs to run AC, [air pollution from open windows](#), and medical issues of vulnerable persons. [Preliminary results](#) confirm extreme indoor temperatures that do not subside at night. Aug. 8, 2016.

[California Seeks Input on Environmental Improvement Projects](#). The California Air Resources Board (CARB) has a [Supplemental Environmental Project \(SEP\) Policy](#) that allows community-based projects to be funded from a portion of the enforcement penalties. These projects can improve public health, reduce pollution, increase environmental compliance, and bring public awareness to neighborhoods most burdened by environmental harm. Aug. 9, 2016.

[Explore EPA's Annual AirTrends Report 2016 Using a New Interactive Web Application](#). Look at time trends in air pollutant levels, the number of days with unhealthy air, and changes in population, vehicle miles traveled, energy use, and gross domestic product. Aug 25, 2016.

[U.S. EPA and Imperial Valley Communities Tackle Childhood Asthma](#). The Imperial Valley Child Asthma Program (IVCAP) has been providing individualized home visits for low-income families for over a decade. IVCAP's home visits include several hours of bilingual counseling by two community health workers on home asthma triggers and medication use. Among the 106 families they served in the past year, only one child has needed to go to the hospital. EPA's Pacific Southwest Regional Office is working together with local, regional, and national organizations to **help identify funding opportunities for organizations that provide in-home asthma services**. Aug 10, 2016.

Reducing Outdoor Contaminants in Indoor Spaces

OTHER NEWS ENVIRONMENTAL JUSTICE continued

[Building Equity, inclusiveness for Low-income Communities is Key in Climate Resilience Planning](#). Over the years, the [Kresge Foundation](#) has worked in conjunction with the EPA by matching funds so that communities receive the financial assistance needed to create healthier, climate-resilient, and more environmentally-friendly neighborhoods. Aug. 16, 2016.

CLIMATE CHANGE

[As Temperatures Climb, the Elderly, Frail, and Poor Are Put at Risk](#). The [Harlem Heat Project](#) is building and using air sensors to measure temperature and humidity in NY City low-income apartments. Common issues are lack of AC, costs to run AC, [air pollution from open windows](#), and medical issues of vulnerable persons. [Preliminary results](#) confirm extreme indoor temperatures that do not subside at night. Aug. 8, 2016.

RESOURCES

IEQ

[Healthy Buildings America and Europe 2015](#) programs and [proceedings](#), and videos. Topics include IAQ, ventilation, filtration, thermal comfort, and climate change adaptation.

[Energy & Environmental Building Alliance \(EEBA\) 2015](#). Presentations from building science experts, designers and builders that represent the cutting edge of residential and multifamily construction. Topics include IAQ, air leakage reduction, thermal comfort, resilience, low energy homes, and R&D. [Previous conferences](#) are also available.

ENVIRONMENTAL HEALTH

[Every Breath We Take: The Lifelong Impact of Air Pollution](#). Royal Colleges of Physicians and of Pediatric and Child Health, England, 2016. The report starkly conveys the dangerous impact air pollution is currently having on the UK health. Also highlighted is the often overlooked section of our environment - that of indoor space. Sets of actions and research needs are laid out.

[The Exposome: Understanding the Effect of the Environment on Our Health](#). To understand the level of impact of multiple environmental hazards, the [HELIX project](#) has built an early life [exposome](#), which includes 3 domains: internal biological factors and external environmental stressors and pollutants both general and specific. Researchers created exposure measures for outdoor exposures for a total of 28,000 mother-child pairs from Spain, Norway, Greece, Lithuania, England and France (see R&D section below). Aug. 1, 2016.

Federal Integrated Pest Management (IPM) Guidance. [HUD Public Housing](#) information and tools. [GSA Federal Buildings](#), IPM mandate and service contracts.

Reducing Outdoor Contaminants in Indoor Spaces

RESOURCES continued

CLIMATE CHANGE

[Avoiding Scylla and Charybdis: Sustainably Improving Indoor Environmental Quality](#). William Nazaroff, UC Berkeley lectures. Apr. 15, 2015.

FOSSIL FUELS

[Still in the Pits: Update On Oil And Gas Wastewater Disposal In California](#). Clean Water Action and Clean Water Fund. Mar. 2016.

GREEN AND HEALTHY BUILDINGS

Non Energy Benefits of Energy Efficiency webinars. Ruth Ann Norton and Brendan Brown, GHFI, 2016. Part One: [Defining the Health Benefits of Energy Efficiency in Multifamily Housing](#). Health and economic benefits such as increased jobs and reduced impacts from asthma, moisture, mold, thermal stress, lead, fire safety, economic instability, mental health, etc. are summarized. An ongoing case study on cost-benefits is presented. [Part Two: Communication Strategies & Partnership Development for Healthy & Energy Efficient Multifamily Housing](#).

[2016 Better Buildings Summit Presentations](#). Program and searchable list of presentations on energy efficiency, IAQ, health, green jobs, etc. Note the [Health and Home Performance session](#). DOE, 2016.

ENVIRONMENTAL JUSTICE

[Forum: How Do We Create Healthy Neighborhoods For All?](#) Discussion of needs and opportunities to improve child health in Pittsburgh, PA, by leaders representing public health, health care, nutrition, and real estate sectors. Live Well Allegheny, Jun. 17, 2016.

FUNDING OPPORTUNITIES

[Garfield Pittsburgh Home Makeovers: Face-lifts Funded by Facade Grants](#). Eligible improvements for 50% of cost include replacement of deteriorated or inefficient windows, removing or repairing awnings, porch replacements and upgrades, gutter and downspout repair/replacement, lighting, etc. Residential and commercial façade program, [Urban Redevelopment Authority \(URA\)](#), Pittsburgh, PA.

[Ventilation and Health, and Human Performance in New and Retrofit Buildings](#). The California Energy Commission is searching for research projects that will significantly advance science and inform regulations, the development of standards and practices, and/or energy policy. Up to \$1 M is available for Group 5 tasks (IEQ). Due Oct. 3, 2016.

[DOE's BlocPower Works to Retrofit Underserved Communities](#). The BlocPower initiative uses funding, audits, financial analysis, and retrofits to enhance the energy efficiency and non-energy benefits of buildings in low-income communities, **especially small businesses, houses of worship, and low-income housing in underserved communities**. The initiative is revolutionizing how energy upgrades are financed by approaching lenders and investors with **large projects composed of bundles of smaller projects**. Investing can also be done directly online.

Reducing Outdoor Contaminants in Indoor Spaces

FUNDING OPPORTUNITIES continued

[DOE Office of Energy Efficiency and Renewable Energy](#). Various items, including Next Generation of Building Efficiency Packages, Building America program, and Sensors and Controls.

[EPA Offers up to \\$80,000 to Communities to Develop Air Sensor Data Best Practices](#). This new challenge encourages communities to install hundreds of air quality sensors and manage the resulting data. EPA is offering two communities up to \$40,000 each to work with their residents to crowd source air quality data and share it with the public online. Application Deadline: Oct. 28, 2016.

[Fannie Mae Offers Cheaper Option to Fund Solar, Efficiency](#). The HomeStyle Energy Program is a mortgage option that allows borrowers to finance energy efficiency and clean energy upgrades equal to up to 15% of the as-completed appraised value of the home. The financing can be used for new projects or to take higher-interest unsecured loans or PACE loans and refinance them or roll them into a potentially lower-cost mortgage.

RESEARCH AND DEMONSTRATION

IEQ

[Airborne Particulate Matter in Two Multi-Family Green Buildings: Concentrations and Effect of Ventilation and Occupant Behavior](#). Patton et al. 2016 (free).

Indoor Air journal, **2016 articles**: IEQ, ventilation, filtration, and health topics, e.g.:

- [Teaching indoor environmental quality](#). Nazaroff.
- [Cleaning practices and cleaning products in nurseries and schools: to what extent can they impact indoor air quality?](#) Wei et al.
- [Indoor air quality in Portuguese schools: levels and sources of pollutants](#). Madureira et al.
- [Classroom ventilation & indoor air quality -- results from the FRESH intervention study](#). Rosbach et al.
- [Do classroom ventilation rates in CA elementary schools influence standardized test scores?](#) Results from a prospective study. Mendel et al.
- [Chemical characterization of indoor and outdoor fine particulate matter in an occupied apartment in Rome, Italy](#). Perrino et al.
- [Thermal & health outcomes of energy efficiency retrofits of homes of older adults](#). Ahrentzen et al.
- [Thermal sensation models: a systematic comparison](#). Koelblen et al.
- [Quantification of the fungal fraction released from various preloaded fibrous filters during a simulated ventilation restart](#). Morisseau et al.
- [Measurements of dermal uptake of nicotine directly from air and clothing](#). Bekö et al.
- [From air to clothing: characterizing the accumulation of semi-volatile organic compounds to fabrics in indoor environments](#). Saini et al.
- [Do time-averaged, whole-building, effective volatile organic compound \(VOC\) emissions depend on the air exchange rate? A statistical analysis of trends for 46 VOCs in U.S. offices](#). Rackes and Waring.

[AFFSET-MOSS Study](#). Ongoing, Barcelona Institute for Global Studies (IGS). This pilot study uses mosses for the first time to monitor IAQ and develop the methods and necessary logistics. Samples were analyzed for indoor and outdoor toxicants (PAH and metals) deposited in the mosses. Passive NO₂ measurements were also taken. Barcelona Institute for Global Studies.

Reducing Outdoor Contaminants in Indoor Spaces

RESEARCH AND DEMONSTRATION IEQ continued

[Central Air Filter Test Database](#). Stephens et al., 2016, Illinois Institute of Technology. This HVAC filter testing project is building a database of size-resolved single-pass particle removal efficiencies for a large number of commercially available filters for use in residential and light-commercial buildings. Jul. 2016.

[Home Air Project Analyzes Indoor Climate Impacts and Adaptation On Elderly](#). This EPA-funded project at Arizona State University aims to understand current and future health risks of an older population to air quality and extreme heat and how these risks are influenced by [building construction/management, human behavior, and risks of AC and power failures](#). [Preliminary modeling results](#) show that a Houston apartment during an AC failure could experience dangerous temperatures by the 2nd day of a heat wave, and even higher temperatures under 2050 climate conditions. Human adaptation will also be studied. Aug. 2016.

ENVIRONMENTAL HEALTH

[Differential Toxicity of an Organic PM2.5 Extract to Human Lung Cells Cultured in Three Dimensions \(3D\) and Monolayers](#). Ferraz et al. 2016.

[AIRGENE-Environment Interaction on Attention Deficit and Hyperactivity Disorders and Autism Spectrum Disorder in General Population Birth Cohorts](#). Barcelona IGS. The objective is to identify environmental exposures at the beginning of life, genetic variants and the interaction of genes and environmental influences associated with ADHD and ASD in the general population.

[Air Pollution, Growing Brain and Cognitive Disorder in Children \(APGAR\). PROYECTO INMA](#). Ongoing, Barcelona IGS. The objectives of the APGAR project are to determine 1) the impact of urban air pollution on the structures and functions of the growing brain in children from the general population, 2) to what extent these structural and functional changes are associated with cognitive performance in children. The APGAR project is a longitudinal study conducted in 400 school-age children from the general population, recruited between 2012 and 2013, in different schools in Barcelona, Spain.

ASTHMA

[Innate Immunity and Asthma Risk in Amish and Hutterite Farm Children](#). Stein et al., 2016.

AIR QUALITY

[Urban Particulate Matter Pollution: A Tale of Five Cities](#). Pandis et al., 2016.

[Atmospheric Evolution and Chemical Aging of Organic Particulate Matter](#). Pandis and Donahue, 2016.

ENERGY EFFICIENCY

[NYSERDA Home Performance with ENERGY STAR Realization Rate Study](#). This study identified the underlying causes for over-estimation of contractor-reported energy savings in the NYSERDA Home Performance with ENERGY STAR program for the years of 2007 to 2011. The potential impact on savings prediction accuracy was assessed by calibrating the energy model to actual energy usage.

RESEARCH AND DEMONSTRATION continued

SENSORS

[Air Quality Sensor Performance Evaluation Center \(AQ-SPEC\)](#). South Coast Air Quality Management District, Aug. 2016. The Center aims to establish performance standards by which sensors are evaluated. Field test results for several low cost PM and gaseous pollutant sensors are available now. Lab testing is in progress.

That's it for the August Compendium!

Please send us event information, news, resources, research results for upcoming compendiums. Visit the [ROCIS website](#) for current and past compendiums, as well as the ROCIS white papers, archives from past events, and upcoming webinars.

Cheers,
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