

# ***Airport Impacts 101***

For Policy Leaders, Students, and Concerned Citizens

## Perspectives on Environmental Health Aviation Air and Noise Pollution



Saturday, November 5th 2016, 8:30 AM to 4 PM

Location: Partners Healthcare, Assembly Square, Somerville, MA

**Next to Orange Line Station**

**Main Sponsor: AIR, Inc**

Local Sponsor: Somerville Transportation Equity Partnership (STEP)

Host City: Somerville, MA

Other Sponsors: MassPort CAC, Town of Milton, Clean Water Action, Green Roots (Chelsea), Friends of Belle Isle Marsh, Neighbors United for a Better East Boston, East Boston Greenway

Contact: Celeste Myers, [celeste.myers@gmail.com](mailto:celeste.myers@gmail.com)

# Airport Impacts 101

For Policy Leaders, Students, and Concerned Citizens



Saturday, November 5th 2016, 8:30 AM to 4 PM  
Partners Healthcare, Assembly Square, Somerville, MA

---

**8:30 AM** : Registration and Light Breakfast

**9:00 AM** : **Logan Airport Health Study  
Emerging Environmental Concerns**

Wig Zamore, for Air Inc. and STEP  
Mayor Joseph Curtatone, City of Somerville  
Kathleen Brown, Advanced Analytics

**10:00 AM** : **Aviation Noise Impacts  
Community Metrics, Annoyance and Mapping**

Sanford Fidell, Fidell Associates, post BB&N  
Erica Walker, Harvard School of Public Health  
Dr. Audrey Smargiassi, University of Montreal

**12:00 PM** : Lunch

**1:00 PM** : **Aviation Air Pollution  
Global, Regional and Local**

Dr. Philip Wolfe, Massachusetts Institute of Technology  
Dr. Rick Miake-Lye, Aerodyne Research Inc.  
Dr. Neelakshi Hudda, Tufts University

**2:30 PM** : **Aviation Health Endpoints Today**

Dr. Jon Levy, Boston University School of Public Health  
Dr. Anna Hansell, Imperial College, London

**Wrap up Discussion and Next Steps**

**4:00 PM** : Post Event Refreshments

Special Thanks to Partners Healthcare as event facility provider

# Airport Impacts 101

For Policy Leaders, Students, and Concerned Citizens

## Speaker Bios



**Kathleen Brown** is a Senior Scientist in the Advanced Analytics division of Environmental Health & Engineering in Needham, MA. Dr. Brown's work focuses on exposure assessment, indoor air quality and public health. She has conducted personal exposure studies as well as indoor and outdoor air pollution studies. On behalf of Air Inc. of Jeffries Point, East Boston, Dr. Brown led the EH&E review of the MA DPH Logan Health Study. When initiated by an act of the MA Legislature in 2000, the Logan Health Study was a groundbreaking effort. It was finished in 2014, following some delays due to funding gaps, surrounded by a growing wave of new research into the environmental health impacts of aviation. Along with Dr. David MacIntosh (EH&E), Dr. Helen Suh (Tufts) and Wig Zamore, Kathleen came up with a short list of suggested next steps to recommend to the community and to MassPort. Kathleen will discuss the Logan Health Study, her review of it and suggested next steps.



**Sandy Fidell** is one of the world's experts in the field of transportation noise annoyance and community tolerance levels. Dr. Fidell began his transportation noise research and consulting work in the Los Angeles office of Bolt, Beranek, and Newman (BBN) in 1968. In 33 years at BBN, he directed theoretical, laboratory, and field research in many areas of psychoacoustics and environmental acoustics. He has continued his research, consulting, and expert witness work on community response to noise and acoustic signal detection after forming Fidell Associates in 2001. Dr. Fidell's career work lies at the epicenter of our evolving understanding of community noise annoyance. He has worked on airport noise controversies in Atlanta, Chicago, Denver, Los Angeles, Minneapolis, Phoenix, San Francisco, St. Louis, Seattle, Vancouver, and Washington, D.C., among others. Sandy will discuss the history of noise annoyance metrics, stressing the human effect side and understanding of community tolerance levels.



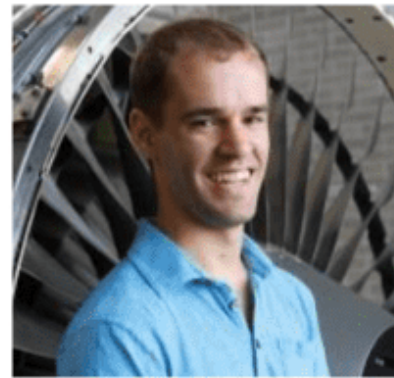
**Erica Walker** is an environmental epidemiology doctoral student who has been bicycling around Boston, measuring noise levels at over 400 sites in the city. She has found that the noisiest neighborhoods in daytime are East Boston and Dorchester's Savin Hill. Noisy upstairs neighbors and the pounding of their children's feet initially triggered the idea for Erica's research. She realized that many other urban residents are affected by noise and changed her life focus from arts and crafts to urban studies and environmental health. She completed a Master's thesis at Tufts on community noise in Somerville. Now at Harvard's TH Chan School of Public Health, Erica is especially interested in low frequency sound and infrasound vibrations. She recently published a paper in Environmental Research on short term noise exposure and cardiovascular and stress responses in healthy men. Erica will discuss her very personal approach to noise research and her findings to date.

# Airport Impacts 101

For Policy Leaders, Students, and Concerned Citizens



**Audrey Smargiassi** is an associate professor in the Department of Environmental and Occupational Health at the School of Public Health of the University of Montreal. Dr. Smargiassi has deep expertise on health risks and population impacts of environmental exposures such as air and noise pollution, and climate change. She has directed the development of varying approaches to estimate exposure of large populations (i.e. statistical, numerical, using GIS and satellite imagery), to heat, ozone and fine particles, and to environmental noise, across varying time periods and regions of Québec. She has directed studies to assess health risks related to co-exposures of transportation related air and noise pollution. She is currently directing multidisciplinary work aimed at assessing health impacts of varying transportation and land use scenarios. The aim of Audrey's research is to provide evidence for the mitigation of the health impacts of environmental exposures and to orient health protection programs. She will present this work with emphasis on aviation impacts.



**Philip J. Wolfe** is a young post-doctoral associate who has three MIT graduate degrees and specializes in building and using aviation related air and noise pollution models at global, regional and local scales. (But do not fear the MIT association as he is a calm and composed speaker.) Dr. Wolfe is a close associate of Steven Barrett who runs MIT's Aviation and Environment program. Some of Philip's papers have looked at the impacts of alternative fuels but most have focused on the connection between aviation noise and air pollution emissions, economic outcomes and policy implications. He has a nice publication on lead still remaining in some aviation fuel and hopefully, may include a slide about that. Philip will focus on some of his global, regional and local study findings, including societal costs and benefits at those various scales of time and space, critical considerations for policy leaders.



**Richard C. Miake-Lye** is a Senior Scientist, Lab Director and Vice President at Aerodyne Research Inc., based in Billerica MA, who works on understanding the environmental impact of airplanes. Dr. Miake-Lye focuses on the physical and chemical evolution of exhaust flowing from propulsion systems. He was lead author of the latest IPCC climate assessment chapter on aviation impacts. Aerodyne makes some of the most advanced air pollution instruments in the world and their measurement technology is being applied to characterizing particle and gaseous emissions from aircraft engines in order to understand the effects of the commercial aviation fleet, both existing and planned, on both the global atmosphere and as a contributor to regional air quality. (ARI often makes use of a multi-instrument mobile lab such as the one pictured to the left, on deployment near I93 in Somerville in 2008, with Tufts MS student Christine Ashe in the foreground.) Rick will discuss characteristics of airplane emissions, including particles and nitrogen oxides, at low and high thrust.

# Airport Impacts 101

For Policy Leaders, Students, and Concerned Citizens



**Neelakshi Hudda's** post-doctoral work at the University of Southern California on the full extent of elevated ultrafine particle concentrations in Los Angeles neighborhoods downwind of LAX caused an immediate sea change in the study of and health concerns for ultrafine particle concentrations near large airports. Dr. Hudda's LAX papers resulted in rapid new study of Pearson Airport in Toronto, Schiphol Airport in Amsterdam, and Logan Airport in Boston, among others. In Boston, Neelakshi was able to use several years of existing high quality air pollution data collected in Chelsea, Dorchester and Roxbury during Tufts University and community partner research into near roadway air pollution, cardiovascular biomarkers and other health indicators. She found a significant relationship between Logan aviation activities, wind direction and elevated neighborhood pollution levels. Neelakshi will discuss her own and others' work in this rapidly emerging field of environmental study related to aviation.



**Jon Levy** is one of the foremost environmental health risk analysts in the United States and a key advisor to EPA on the impact of the Clean Air Act on health, the economy, and the environment. Dr. Levy's research centers on air pollution exposure assessment and health risk assessment, with a focus on urban environments and equity. Major topics include evaluating spatial patterns of air pollution, developing methods to quantify health benefits associated with emissions controls, and developing methods for community-based cumulative risk assessment that includes both chemical and non-chemical stressors. He is a co-author of the paper, "Residential exposure to aircraft noise and hospital admissions for cardiovascular diseases" that appeared in the British Medical Journal in October 2013. When this important study of 89 US airports and noise exposures was released, Jon remarked, "Our study emphasizes that interventions that reduce noise exposures could reduce cardiovascular risks among people living near airports." Jon will discuss his US based research into aviation air and noise pollution, and associated health risks.



**Anna Hansell** is one of Europe's most experienced researchers in transportation related environmental noise and air pollution, and the associated health effects of both roadway and aviation exposures. She is assistant director of the Small Area Health Statistics Unit at Imperial College, London, where she oversees databases containing over 300 million patient records and works on local, national and international research. Dr. Hansell's areas of focus include all cause and cardiovascular mortality as well as environmental determinants of chronic respiratory disease. Her studies include research into the relationship and relative impacts of noise annoyance and noise levels on health outcomes. Anna and her co-investigators have worked hard to tease out the overlapping spatial patterns of urban air and noise pollution, and their distinct health effects, and on other important aspects of urban form such as road intersection density and access to green space. She is first author of the paper, "Aircraft noise and cardiovascular disease near London Heathrow Airport" which also appeared in BMJ in October 2013. Anna will present her Europe based research into aviation related air and noise pollution, and the associated health risks.