

## **Mary E. Davis, Associate Professor and Chair**

Department of Urban and Environmental Policy and Planning, Tufts University

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### **Education**

#### **Harvard School of Public Health**

*Post-Doctoral Research Fellow*

*Environmental Health*

Boston, Massachusetts

October 2003 – August 2004

#### **University of Florida**

*Ph.D. Economics*

Gainesville, Florida

Graduation, August 2003

#### **University of Miami**

*B.A. Economics and International Studies*

*Minors: Spanish and French*

Coral Gables, Florida

Graduation, May 1998

### **Academic Positions**

#### **Tufts University**

*Urban and Environmental Policy & Planning*

*Department Chair*

*Associate Professor*

*Assistant Professor*

Medford, Massachusetts

July 2016 – Present

September 2012 – Present

August 2008 – August 2012

#### **Boston University**

*Visiting Fellow*

Boston, Massachusetts

Fall 2014

#### **Harvard School of Public Health**

*Visiting Scientist, Environmental Health*

Boston, Massachusetts

September 2004 – August 2014

#### **Woods Hole Oceanographic Institution**

*Senior Research Fellow, Marine Policy Center*

Woods Hole, Massachusetts

August 2010 – July 2011

#### **University of Maine**

*Assistant Professor, School of Economics*

Orono, Maine

August 2006 – August 2008

#### **University of Massachusetts Boston**

*Environmental Earth and Ocean Sciences*

*Assistant Professor*

Boston, Massachusetts

September 2004 – August 2006

### **Other Positions**

- Project Panel Chair, **National Academy of Sciences**, Transportation Research Board, “Evaluating the Impact of Aviation Noise on Learning – Case Studies” (2013-Present)
- Board Member, Northeast Fishing Safety Advisory Board, **Northeast Center for Agricultural and Occupational Health** (2012-2014)
- Project Panel Chair, **National Academy of Sciences**, Transportation Research Board, “Evaluating the Impact of Aviation Noise on Learning” (2009-2013)
- Project Panel Member, **National Academy of Sciences**, Transportation Research Board, “Quantifying Contribution to Local Air Quality Impacts from Airport-Related Emissions” (2007-2012)

### Peer-Reviewed Journal Publications

- Davis ME.** “Pay Matters: The Piece Rate and Health in the Developing World.” Accepted at *Annals of Global Health*, May 2016.
- Davis, ME.** “Bringing Imagination Back to the Classroom: A Model for Creative Arts in Economics,” *International Review for Economics Education* Vol. 19:1-12 (2015).
- Davis, ME** and A Rappaport. “Air Quality in Developing World Disaster and Conflict Zones – The Case of Post-Earthquake Haiti,” *Science of the Total Environment* Vol. 496:22-25 (2014).
- Hart JE, Garshick E, Smith TJ, **Davis ME**, and F Laden. “Ischemic Heart Disease Mortality and Vehicle Exhaust in Trucking Industry Workers,” *Occupational and Environmental Medicine* Vol. 70: 523-528 (2013).
- Smith TJ, **Davis ME**, Hart JE, Blicharz A, Laden F, and E Garshick. “Potential Air Toxics Hot Spots in Truck Terminals and Cabs.” Health Effects Institute (2012).
- E Garshick, Laden F, Hart JE, **Davis ME**, Eisen EA, Smith TJ. “Lung Cancer and Elemental Carbon Exposure in Trucking Industry Workers,” *Environmental Health Perspectives*, Vol. 120(9): 1301-1306 (2012).
- Davis ME.** “Recessions and Health: The Impact of Economic Trends on Air Pollution in California,” *American Journal of Public Health*, Vol. 102(10): 1951-1956 (2012).
- Davis ME.** “Structural Equation Models in Occupational Health: An Application to Exposure Modeling,” *Occupational and Environmental Medicine*, Vol. 69:184-190 (2012).
- Davis ME.** “Occupational Safety and Regulatory Compliance in US Commercial Fishing,” *Archives of Environmental and Occupational Health*, Vol. 66(4): 209-216 (2011).
- Zhu, Y, Smith, TJ, **Davis, ME**, Levy, JI, Herrick, R, and H Jiang. “Comparing Gravimetric and Real-Time Sampling of PM<sub>2.5</sub> Concentrations Inside of Truck Cabins,” *Journal of Occupational and Environmental Hygiene*, Vol. 8(11):662-672 (2011).
- Davis ME.** “Perceptions of Occupational Risk by US Commercial Fishermen,” *Marine Policy*, Vol. 36:28-33 (2012).
- Davis ME**, Hart JE, Laden F, Garshick E, and TJ Smith. “A Retrospective Assessment of Occupational Exposure to Elemental Carbon in the US Trucking Industry,” *Environmental Health Perspectives*, Vol. 119(7):997-1002 (2011).
- Davis ME**, Laden F, Hart JE, Garshick E, and TJ Smith. “Economic Activity and Ambient Air Pollution Trends,” *Environmental Health Perspectives*, Vol. 118(5):614-619 (2010).
- Davis ME.** “Economic Assessment of Children’s Health and the Environment in Maine,” *Maine Policy Review*, Vol. 19(1):36-45 (2010).
- Davis ME**, Laden F, Hart JE, Garshick E, Blicharz AP, and TJ Smith. “Predicting Changes in PM Exposure over Time using Structural Equation Modeling Techniques,” *Journal of Occupational and Environmental Hygiene*, Vol. 6(7):396-403 (2009).
- Garshick E, Laden F, Hart JE, Rosner B, **Davis ME**, Eisen EA, and TJ Smith. “Lung Cancer and Vehicle Exhaust in Trucking Industry Workers,” *Environmental Health Perspectives*, Vol. 116(10):1327-1332 (2008).
- Davis ME**, Smith TJ, Laden F, Hart JE, Reaser, P, and E Garshick. “Driver Exposure to Combustion Particles in the US Trucking Industry,” *Journal of Occupational and Environmental Hygiene*, Vol. 4(11): 848-854 (2007).
- Davis ME**, Blicharz AP, Hart JE, Laden F, Garshick E and TJ Smith. “Occupational Exposure to Volatile Organic Compounds and Aldehydes in the US Trucking Industry,” *Environmental Science and Technology*, Vol. 41(20):7152-7158 (2007).
- Laden F, Hart JE, Smith TJ, **Davis ME**, and E Garshick. “Cause Specific Mortality in the Unionized US Trucking Industry,” *Environmental Health Perspectives*, Vol. 115(8):1192-1196 (2007).
- Davis ME.** “U.S. Environmental Politics: A Study of State Toxic Metal Water Quality Standards,” *Journal of Environmental Policy and Planning*, Vol. 9(2):143-163 (2007).

- Garcia R, Hart JE, **Davis ME**, Reaser P, Natkin J, Laden F, Garshick E, and TJ Smith. “Effects of Wind on Background Particle Concentrations at Truck Freight Terminals,” *Journal of Occupational and Environmental Hygiene*, Vol. 4:36-38 (2007).
- Smith TJ, **Davis ME**, Reaser P, Hart JE, Laden F, Heff A, and E Garshick. “Overview of Particulate Exposures in the US Trucking Industry,” *Journal of Environmental Monitoring*, Vol. 8(7):711-720 (2006).
- Davis ME**, Smith TJ, Laden F, Hart JE, Ryan L, and E Garshick. “Modeling Particle Exposure in U.S. Trucking Terminals,” *Environmental Science and Technology*, Vol. 40(13):4226-4232 (2006).
- Bowen B, Frankic A, and **ME Davis**. “Coastal Impacts, Marine Resources and Human Health,” *Oceanography*, Vol. 19(2):28-37 (2006).
- Davis ME**. “Environmental Politics in the US: A Study of State Sulfur Dioxide Standards,” *Journal of Environmental Assessment Policy and Management*, Vol. 7(3):331-354 (2005).

### **Other Publications**

- Davis ME**. “Occupational Safety and Health in Haiti’s Apparel Sector: Fourth Year Follow-up.” Report to the International Labor Organization and Better Work, Geneva, Switzerland, October 2015.
- Davis ME**. “Occupational Safety and Health in Haiti’s Apparel Sector: Third Year Follow-up.” Report to the International Labor Organization and Better Work, Geneva, Switzerland, October 2013.
- Davis ME**. “Occupational Safety and Health in Haiti’s Apparel Sector: Second Year Follow-up.” Report to the International Labor Organization and Better Work, Geneva, Switzerland, August 2012.
- Davis ME**. “Fishing Vessel Safety and Fisheries Management: A Survey of Fishing Vessel Safety and Risk Taking Behaviors.” Report to the NOAA Cooperative Institute for the North Atlantic Region (CINAR) and The Fishing Partnership, August 2012.
- Backus A, and **ME Davis**. “Occupational Safety in the Maine Commercial Fishing Industry: Status Report and Policy Recommendations.” Report to the Maine Commercial Fishing Safety Council and US Coast Guard District 1 for work under Sea Grant project, July 2011.
- Davis ME**. “Case Study on Occupational Safety and Health in Haiti’s Apparel Sector.” Report to the International Labor Organization and Better Work, Geneva, Switzerland, March 2011.
- Davis ME**. “An Economic Cost Assessment of Environmentally-Related Childhood Diseases in Maine.” University of Maine, School of Economics Staff Paper 579, published online February 2009. Report was subjected to peer-review.
- Davis ME**. “The Economic Burden of Childhood Exposure to Secondhand Smoke in Maine,” University of Maine, School of Economics Staff Paper 570, published online October 2007. Report was subjected to peer-review.
- Davis ME**. “The Politics of the Environment: An Analysis of State Regulations and Special Interest Behavior,” Doctoral Dissertation, Department of Economics, University of Florida, August 2003.

### **Publications Under Review**

- Davis ME**. “The Impact of Piece Rate Pay on Worker Perceptions of Occupational Hazards.” Submitted to *Safety Science*, May 2016.
- With Walker ED et al. “The Characterization of Polycyclic Aromatic Hydrocarbons in Northeastern U.S. Trucking Terminals.” Submitted to *Occupational and Environmental Medicine*, July 2016.
- With Walker ED et al. “Characterization of Sound Levels in a Community near Major Transportation Networks.” Submitted to *Environmental Research*, June 2016.

### **Research Grants Awarded**

International Labor Organization	Brown (PI)	4/1/13-3/30/16
ILO-IFC Better Work Program Impact Assessment		
Role: Co-PI (Total grant: \$164,709)		

Northeast Sea Grant College Consortium                      Hoagland (PI)                      2/1/12-1/31/14  
Decision-Support for the Economic Analysis of Trade-offs in Coastal and Marine Spatial Planning  
(CMSP) for the US Northeast Region  
Role: Co-PI (Total grant: \$300,052)

NOAA Northeast Fisheries Science Center                      Davis/Jin (Co-PI)                      8/1/11-7/31/12  
Fishing Vessel Safety and Fisheries Management  
Role: Co-PI (Total contract: \$60,000)

International Labor Organization                      Brown (PI)                      5/1/11-6/30/12  
ILO-IFC Better Work Program Impact Assessment  
Role: Co-PI (Total grant: \$78,385)

International Labor Organization                      Brown (PI)                      7/1/09-3/31/11  
ILO-IFC Better Work Program Impact Assessment  
Role: Consultant (Total grant: \$163,131)

R01 NIH/NIEHS                      Laden (PI)                      7/1/08-6/30/12  
Biomarkers of Exposure and Effect in a Traffic Exposed Population  
Role: Co-Investigator (Total grant: ~\$1,750,000)

NOAA Sea Grant                      Davis (PI)                      2/1/08-4/31/12  
Safety and Compliance in the Maine Commercial Fishing Industry  
Role: Principal Investigator (Total grant: \$212,130)

Alliance for a Clean and Healthy Maine                      Davis (PI)                      10/1/08-2/1/09  
An Economic Cost Assessment of Environment-Related Childhood Diseases in Maine  
Role: Principal Investigator (Total contract: \$13,000)

### **Internal Research Awards**

Tufts Summer Faculty Fellowship, Awarded June 2015  
Occupational Roots of Chronic Kidney Disease in Central America: A Study of Policy Interventions  
Total award: \$7,000

Tufts Innovates Award, Awarded February 2015  
Imagination Economics: Innovations in Creative Learning  
Total award: \$19,500

Tufts Provost Open Access Funds, Awarded 2011, 2012, and 2015  
Publications in *Environmental Health Perspectives*, *American Journal of Public Health*, and *International Review for Economics Education*

Tufts Faculty Research Award, Awarded October 2012  
Air Pollution Monitoring in the Developing World: A Case Study in Haiti  
Total award: \$5,000

Tufts Summer Faculty Fellowship, Awarded June 2010  
The Relationship between Economic Trends and Air Pollution over Time  
Total award: \$7,000

Tufts Faculty Research Award, Awarded October 2008  
Safety and Compliance in the Commercial Fishing Industry  
Total award: \$3,000

### Invited Presentations

Environmental Studies Program, **Tufts University**, Medford, MA 3/12/15  
Department of Economics, **University of Florida**, Gainesville, FL 11/1/14  
School of Public Health, **Boston University**, Boston, MA 9/26/14  
Department of Economics, **University of Maine**, Orono, ME 10/3/14  
Department of Environmental Health, **Drexel University**, Philadelphia, PA 5/13/14  
CDC/National Institute for Occupational Safety and Health, Morgantown, WV, 8/19/13  
Tufts University Ex-College, Taste of Tufts, **Tufts University**, Medford, MA 3/1/13  
Tufts Institute for the Environment, **Tufts University**, Medford, MA, 3/7/12  
Department of Environmental and Occupational Health, **Drexel University**, Philadelphia, PA, 11/15/11  
Department of Environmental and Occupational Health, **George Washington University**, D.C., 11/14/11  
Department of Urban and Environmental Policy and Planning, **Tufts University**, Medford, MA, 9/21/11  
Environment and Natural Resources Committee, **Maine State Legislature**, Augusta, ME, 3/29/11  
Department of Urban and Environmental Policy and Planning, **Tufts University**, Medford, MA, 2/9/11  
School of Economics, **University of Maine**, Orono, ME, 12/10/10, 2/6/09, 3/23/07, 3/29/06  
**National Marine Fisheries Service**, Woods Hole, MA, 11/3/10  
Department of Environmental and Occupational Health, **Emory University**, Atlanta, GA, 2/26/10  
Board of Environmental Protection, **Maine State Legislature**, Augusta, ME, 12/17/09  
Department of Civil and Environmental Engineering, **Tufts University**, 12/1/09  
International Conference on Soils, Sediments, Water, and Energy, **University of Massachusetts**, 10/19/09  
**Centre for Research in Environmental Epidemiology (CREAL)**, Barcelona, Spain, 5/13/09  
Department of Environmental Health, **Harvard School of Public Health**, Boston, MA, 4/28/09  
Health and Human Services Subcommittee, **Maine State Legislature**, Augusta, ME, 3/25/09, 1/22/08  
Department of Urban Environmental Policy and Planning, **Tufts University**, Medford, MA, 1/28/08  
**Maine Sea Grant** Symposium, Orono, ME, 4/28/08  
John Bapst High School (Keynote Graduation Speaker), Bangor, ME, 6/9/08  
Department of Applied Medical Sciences, **University of Southern Maine**, 5/10/07

### References in Popular Press

TuftsNow, "Learning Economics Through Poetry," by Marjorie Howard, 5/8/15  
TuftsNow, "Hard to Breathe," by Gail Bambrick, 4/22/14  
Tufts Daily, "Taste of Tufts: Davis merges economics, environmental health to assess work hazards," by Hannah Fingerhut, 3/4/13.  
Tufts Magazine, "Diesel Fume Dangers", by David Levin, Winter 2013  
TuftsNow, "Lethal Exhaust," by Gail Bambrick, 10/19/12  
TuftsNow, "New Model Could Help Fill Data Gap in Predicting Historical Air Pollution Exposure," by Alexander Reid, 9/12/12  
TuftsNow, "Do Bad Times Promote Good Health," by Gail Bambrick, 12/19/11  
Portland Press Herald, "The Killer Catch: Groundfishing in Atlantic the Deadliest by Far," by Beth Quimby, 9/17/10  
Bangor Daily News, "A New Approach to Fighting Maine's Invisible Enemy," guest column by **Mary Davis** and Sharon Tisher, 4/29/10  
Commercial Fisheries News, "ME Study Looks at Safety Equipment, Training," by Ann Backus, March 2010 issue  
Portland Press Herald, "Study: Contaminant-Caused Diseases Costly," by John Richardson, 2/6/09  
Bangor Daily News, "Children's Illnesses from Pollution Cost Mainers \$380 Million," by Meg Haskell, 2/6/09  
Maine Public Broadcasting Network, "Research Finds High Costs of Environmentally-Related Diseases," by Tom Porter, 2/6/09  
Live TV interview on WABI-TV Channel 5 (CBS/CW affiliate in Bangor, Maine), 2/6/09

TV interview with WFVX Channel 7 (ABC/Fox affiliate in Bangor, Maine), 2/6/09  
UMaine Today Magazine, "Safety in Numbers" (cover story), by Tom Weber, May 2008 issue  
Live radio interview with Maine in the Morning FM Radio 103.9 George Hale and Ric Tyler, 10/26/07  
Bangor Daily News, "Secondhand smoke costs Mainers plenty, study finds," by Meg Haskell, 10/24/07  
Boston Globe, "Efforts to outlaw smoking shift from public to private spaces," by Jodie Huang, 10/21/07  
Portland Press Herald, "No-smoking efforts hit cars, residences," by Jodie Huang, 10/21/07  
Maine Public Radio, "Smoking in Cars Bill Set for Legislative Debate," by Murray Carpenter, 10/21/07

## **Teaching Experience**

### *Tufts University*

Spring 2016: Economics for Policy and Planning, UEP 251  
Active Transportation for Public Health (module), UEP 294  
Advanced Quantitative Methods (module), UEP 294  
Spring 2015: Economics for Policy and Planning, UEP 251  
Spring 2014: Economics for Policy and Planning, UEP 251  
Public Health and the Built Environment, UEP 294  
Spring 2013: Economics for Policy and Planning, UEP 251 (grad)  
Integrative Seminar, Master of Public Policy (UEP 289)  
Fall 2012: Environmental Health for Policy and Planning, UEP 294-16 (grad)  
Spring 2012: Economics for Planning and Policy Analysis, UEP 251 (grad)  
Fall 2011: Environmental Health for Policy and Planning, UEP 294-16 (grad)  
Spring 2010: Quantitative Reasoning for Policy and Planning, UEP 254 (grad)  
Fall 2009: Economics for Planning and Policy Analysis, UEP 251 (grad)  
Intermediate Quantitative Reasoning, UEP 258 (grad)  
Spring 2009: Quantitative Reasoning for Policy and Planning, UEP 254 (grad)  
Fall 2008: Economics for Planning and Policy Analysis, UEP 251 (grad)  
Summer session 2008, 2009, 2010: UEP Math Refresher Course

### *University of Maine*

Spring 2008: Senior Seminar, REP 489 (undergrad)  
Spring 2008: Advanced Resource Economics, REP 571 (grad)  
Fall 2006: Advanced Resource Economics, REP 571 (grad)

### *University of Massachusetts Boston*

Spring 2006: Risk Analysis and Environmental Health, ECOS 697 (grad)  
Fall 2005: Introduction to Applied Statistics, ECOS 601 (grad)  
Spring 2005: Introduction to Oceanography, E&GS 226 (undergrad)

### *University of Florida*

Summer 2003: Managerial Economics, ECP 3703 (undergrad)  
Summer 2002: Managerial Economics, ECP 3703 (undergrad)  
Teaching Assistant 1999-2003: Managerial Economics (MBA)