

## BIOGRAPHICAL SKETCH

<b>NAME</b> Helen H. Suh	<b>POSITION TITLE</b> Associate Professor of Environmental Chemistry
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### **EDUCATION/TRAINING;**

INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
Massachusetts Institute of Technology, Cambridge	S.B.	1985	Biology
Harvard University, School of Public Health, Boston	M.S.	1990	Environmental
Harvard University, School of Public Health, Boston	Sc.D.	1993	Environmental

### **Positions and Honors.**

- 1994 Legislative Assistant, Honorable Jim Bates (D-CA), U.S. House of Representatives, Washington, DC
- 1987 – 1988 Environmental Policy Analyst, Jellinek, Schwartz, Connolly, & Freshman, Inc., Washington, DC
- 1990 Switzer Foundation Environmental Fellow, Switzer Foundation
- 1992, 1993 National Research Service Award, Public Health Service, Department of Health and Human Services
- 1993 – 1997 Research Associate / Exposure Assessment Manager, Department of Environmental Health, Harvard School of Public Health (HSPH), Boston, MA
- 1994, 1995 CIAR Post-Doctoral Fellow, Center for Indoor Air Research
- 1994 – 1997 Instructor, Department of Environmental Health, Harvard School of Public Health, Boston, MA
- 1997 – 2002 Assistant Professor, Department of Environmental Health, Harvard School of Public Health, Boston, MA
- 2003 – Associate Professor of Environmental Chemistry, Department of Environmental Health, Harvard School of Public Health, Boston, MA

### **Selected peer-reviewed publications (in chronological order).**

- Suh HH**, Allen GA, Aurian-Blajen, B, Koutrakis P (1994). Field method intercomparison for the characterization of acid aerosols and gases. *Atmos. Environ.* 28, 2981.
- Suh HH**, Koutrakis P, Allen GA, Burton RM (1995). Spatial variation in outdoor acidic sulfate and ammonia concentrations within metropolitan Philadelphia. *JAWMA* 45, 442.
- Burton RM, **Suh HH**, Koutrakis P (1996). Characterization of outdoor particle concentrations within metropolitan Philadelphia. *Environ. Sci. Technol.* 30, 400.
- Wilson WE, **Suh HH** (1997). Fine and coarse particles: concentration relationships relevant to epidemiologic studies. *JAWMA* 47, 1238-1249.
- Bahador, T, Suh H, Koutrakis P. (1999). Issues in human particulate exposure assessment: relationship between outdoor, indoor, and personal exposures. *Human and Ecological Risk Assess.* 5(3):459-470.
- Chang LT, Sarnat J, Wolfson JM, Rojas-Bracho L, **Suh HH**, Koutrakis P. (1999). Development of a personal multi-pollutant exposure sampler for particulate matter and criteria gases. *Pollution Atmospherique – Numero Special 40 Anniversaire De L’Appa*, 31-39,
- Abt E, **Suh HH**, Allen, G., Koutrakis P. (2000). Characterization of indoor particle sources: a study conducted in the metropolitan Boston area. *Environ Health Perspect.* 108:(1)35-44.
- Abt E, **Suh HH**, Catalano P, Koutrakis P. (2000). The relative contribution of outdoor and indoor particle sources to indoor concentrations. *Environ Sci & Technol.* 34:3579-3587.

- Chang L, Koutrakis P, Catalano P, Suh H. (2000). Hourly personal exposures to fine particles and gaseous pollutants - results from Baltimore, Maryland. *JAWMA*. 50:1223-1235.
- Long C, Suh H, Koutrakis P. (2000). Characterization of indoor particle sources using continuous mass and size monitors. *JAWMA*. 50:1236-1250.
- Rojas-Bracho L, **Suh HH**, Koutrakis P. (2000). Relationship among personal, indoor, and outdoor fine and coarse particle concentrations for individuals with COPD. *J Expo Analysis Environ Epidemiol*. 10:294-306.
- Sarnat J, Koutrakis P, Suh H. (2000). Assessing the relationship between personal particulate and gaseous exposures of senior citizens living in Baltimore, MD. *JAWMA*. 50:1184-1198.
- Suh H, Bahadori T, Vallarino J, Spengler J. (2000). Criteria air pollutants and toxic air pollutants. *Environ Health Perspect*. 108:625-633.
- Chang LT, **Suh HH**, Wolfson JM, Misra K, Allen GA, Catalano PJ, Koutrakis P. (2001). Laboratory and field evaluation of measurement methods for one-hour exposures to O<sub>3</sub>, PM<sub>2.5</sub>, and CO. *JAWMA*. 51:10:1414-1422
- Long C, Suh H, Catalano P, Koutrakis P. (2001). Using time- and size-resolved particulate data to quantify indoor penetration and deposition behavior. *Environ Sci & Technol*. 35:2089-2099.
- Long C, Suh H, Kobzik L, Catalano P, Ning Y, Koutrakis P. (2001). A pilot investigation of the relative toxicity of indoor and outdoor fine particles: in vitro effects of endotoxin and other particulate properties. *Environ Health Perspect*. 109:1019-1026.
- Sarnat JA, Schwartz J, Catalano PJ, **Suh HH**. (2001). Gaseous pollutants in particulate matter epidemiology: confounders or surrogates? *Environ Health Perspect*. 109:10:1053-1061.
- Sarnat JA, Schwartz J, **Suh HH**. (2001). Ambient gaseous concentrations as surrogates of exposure to fine particle components. *Epidemiology*. 12:4:69-.
- Schwartz J, Suh H, Verrier M, Zanobetti A, Litonjua A, Syring M, Nearing B, Verrier R, Stone P, MacCallum G, Speizer FE, Gold DR. (2001). Fine combustion particles and heart rate variability in an elderly panel. *Epidemiology*. 12:4:333-
- Wheeler AJ, **Suh HH**, Zanobetti A, Gold DR, Schwartz J. (2001). Effects of ambient air pollution on the heart rate variability (HRV) of two sensitive cohorts in Atlanta, GA. *Epidemiology*. 12 4:498-
- Janssen NAH, Schwartz J, Zanobetti A, **Suh HH**. (2002). Air conditioning and percentage of PM<sub>10</sub> emissions from different combustion sources as modifiers of the effect of ambient PM<sub>10</sub> on hospital admissions for cardiovascular disease. *Environ Health Perspect*. 110(1):43-49.
- Rojas-Brancho J, **Suh HH**, Oyola P, Koutrakis P. (2002). Measurements of children's exposure to particles and nitrogen dioxide in Santiago, Chile. *The Sci of Total Environ*. 287:249-264.
- Saldiva PHN, Clarke RW, Coull BA, Stearns RC, Lawrence J, Krishna Murthy GG, Diaz E, Koutrakis P, Suh H, Tsuda A, Godleski JG. (2002). Lung inflammation induced by ambient air particles is related to particle composition. *Am J Respiratory and Critical Care Med*. 165:1610-17.
- Sarnat JA, Long CM, Koutrakis P, Coull BA, Schwartz J, **Suh HH**. (2002). Using sulfur as a tracer of outdoor fine particulate matter. *Environ Sci Technol*. 36:5303-14.
- Rojas-Brancho L, **Suh HH**, Catalano PJ, Koutrakis P. (2004). Personal exposures to particles and their relationships with personal activities for chronic obstructive pulmonary disease patients living in Boston. *JAWMA*. 54:207-217.