STATEMENT OF PURPOSE

Our surroundings and environmental exposures have major impacts on our health. Through research, I strive to minimize health detriments, especially among vulnerable populations.

EDUCATION

Doctor of Science, Harvard TH Chan School of Public Health, May 2018
Environmental Epidemiology, Department of Environmental Health
Committee: Joel Schwartz (Chair), Francine Laden, Brent Coull, Petros Koutrakis

Master of Science, ETH Zurich (Swiss Federal Institute of Technology), December 2012
Environmental Sciences: Human Health, Nutrition, and Environment

Honours Bachelor of Science, University of Toronto, June 2010
High distinction in Physiology and Music

CURRENT POSITION

School of Forestry and Environmental Studies, Yale University
Postdoctoral Associate, July 2018 – present

Environmental Health Disparities in an Aging Population
- Assessing environmental exposures with big spatiotemporal data repositories for epidemiologic research
- Developing methods to reproducibly and efficiently perform spatial data linkage and analysis on computing clusters
- Designing and performing epidemiologic studies to estimate mortality and morbidity disparities in elderly populations across the United States
- Estimating the causal effects of potential air pollution and other environmental policies on health disparities among sociodemographic subgroups
- Writing grants to investigate the intersection of environmental and immigrant health

PUBLICATIONS

Fong KC, Mehta NK, Bell ML. Disparities in Exposure to Surrounding Greenness Related to Proportion of the Population that were Immigrants to the United States. International Journal of Hygiene and Environmental Health 2020, 224: 113434.


Schwartz JD, Fong KC, Zanobetti A. A National Multi-City Analysis of the Causal Effect of Local Pollution, NO2, and PM2.5 on Mortality. Environmental Health Perspectives 2018, 126(8).


RESEARCH EXPERIENCE

Department of Environmental Health, Harvard TH Chan School of Public Health
Graduate Research Assistant, September 2013 – May 2018
Environmental Exposures during Pregnancy and Birth Weight (Dissertation Focus)
- Conceptualized, designed, and performed data linkage (> 1 mil. records) of mothers’ geographic information to air pollution predictions and environmental variables
- Applied quantile regression and showed that lighter newborns were more severely affected by particulate air pollution (PM2.5) than average-weight or heavier newborns
- Assessed nonlinearity using splines and effect modification by socioeconomic status in the relationship between residential greenness exposure and birth outcomes
- Evaluated the relative toxicity of different constituents of PM2.5 on birthweight

Optimism and Healthy Aging (Collaboration with Social and Behavioral Sciences Department)
- Processed large sets of epigenetic data to compute methylation age
- Performed mixed effects models to understand how optimism affects the aging process

Neighborhood Social Stressors (Collaboration with Boston University)
- Investigated how neighborhood income and racial polarization affects birth weight outcomes directly and indirectly through environmental exposures

World Health Organization, European Center for Environment and Health
Intern, February 2013 – May 2013
- Compiled, edited, and formatted review of air pollution and health effects
- Authored conference paper on the health and economic impacts of environmental noise

Verenum Engineering Bureau (Zurich, Switzerland)
Pratikant, April 2011 – February 2012
- Wrote report on the health effects of wood combustion aerosols for the Swiss government
Curriculum Vitae

Kelvin Fong, ScD

Department of Environmental Health, University of Washington (Seattle, WA)
Research Student, Summer 2009
• Investigated effect modification by single nucleotide polymorphisms on the relationship between air pollution exposure and heart left ventricular mass

Division of Critical Care Medicine, St. Michael’s Hospital (Toronto, Canada)
Summer Student, Summers 2007, 2008
• Assessed how novel mechanical ventilation strategies affect diaphragm force generation

Department of Chemistry, University of Toronto
Undergraduate Research Student, September 2007 – May 2008
• Researched sources of air pollutants in Toronto using back-trajectory modeling

TEACHING EXPERIENCE

School of Forestry and Environmental Studies, Yale University
Postdoctoral Associate, July 2018 – present
• Developing short course on modern tools for environmental exposure assessment
  o Scaling up Spatial Analyses: Using Google Earth Engine for Satellite Imagery Retrieval, Processing, and Analysis
• Participating in teaching workshops by the Poorvu Center for Teaching and Learning
  o Difficult Conversations in the Classroom (Race, Ethnicity, and Culture)
  o Writing Across the Disciplines

Harvard College and Harvard TH Chan School of Public Health
Teaching Fellow / Assistant, February 2016 – May 2017
• Led tutorials, labs, and graded student work in graduate and undergraduate classes
  o Analysis of Case-Control and Cohort Studies
  o Analytical Methods and Exposure Assessment
  o Advanced Regression for Environmental Epidemiology
  o Energy and Climate: Vision for the Future
  o Environmental and Occupational Epidemiology
• Revamped advanced regression course to use modern R packages and Rmarkdown
• Developed teaching content on reproducible research and data science online course
  o Principles, Statistical and Computational Tools for Reproducible Science
• Completed training by the Bok Center for Teaching and Learning
  o Active Approaches to Problem-Based Teaching
  o Teaching in General Education

ETH Zurich (Swiss Federal Institute of Technology)
Teaching Assistant, February 2011 – May 2011
• Edited course materials and graded student assignments and exams
  o Environmental Impacts, Threshold Levels and Health Effects
PRESENTATIONS


Fong KC. Google Earth Engine and Environmental Epidemiology. GIS-Day, Yale University, New Haven, CT, USA, 2018.

Fong KC. Surrounding Residential Greenness and Birthweight. Chinese University of Hong Kong, Hong Kong, China, 2018. (Invited Seminar)


**Fong KC, Lane KJ, Kloog I, Schwartz JD, Hart JE, Zanobetti A. The Effects of Neighborhood Social Stressors on Birth Weight.** International Society of Environmental Epidemiology, Sydney, Australia, 2017.


**Fong KC, Di Q, Kosheleva A, Kloog I, Schwartz JD. Contributions to Low Birth Weight by the Constituents of Air Pollution.** International Society of Environmental Epidemiology, Rome, Italy, 2016.

**Fong KC, Kosheleva A, Kloog I, Schwartz JD. Quantile Regression of Maternal Exposure to Particulate Air Pollution and Birth Weight.** International Society of Environmental Epidemiology, Rome, Italy, 2016.


**Fong KC, Nussbaumer T. Health Effects of Wood Combustion Aerosols.** 16th ETH Conference on Combustion Generated Nanoparticles, Zurich, Switzerland, 2012.

**Fong KC, Haitsma JJ, Zhang H, Slutsky AS. Lung Protective Ventilation Improves Diaphragm Force Generating Capacity.** Institute of Medical Sciences, University of Toronto, 2008.

**Fong KC, Murphy JG. Atmospheric Pollutants in Downtown Toronto.** Undergraduate Research Fair, University of Toronto, 2008.

**AWARDS AND HONORS**


**Benjamin Greeley Ferris, Jr Fellowship in Environmental Epidemiology**, Harvard TH Chan School of Public Health, 2015.


Dean’s List, University of Toronto, 2007-2010.

Dean’s List, University of Washington, 2009.

Killam Fellowship, Fulbright Canada, 2009.

Finalist, St. Michael’s Hospital Poster Competition, 2008.

Al Mercury Award, University of Toronto, 2008.

Walter and Mary Tuohy Award in Arts and Science, University of Toronto, 2008.

C.L. Burton Open Scholarship, University of Toronto, 2007

SKILLS

Computer  Statistical Modeling in R, Python, and SAS
           Geographic Analysis in R, Google Earth Engine, ArcGIS
           Linux, SLURM

Languages  English & Cantonese (fluent)
           German (advanced)
           French & Mandarin (basic)

SERVICE

Reviewer  Atmosphere (also board member):
           Epidemiology;
           Journal of Exposure Science and Environmental Epidemiology;
           International Journal of Hygiene and Environmental Health;
           International Journal of Environmental Research and Public Health;
           Urban Forestry & Urban Greening

Steering Committee International Society of Environmental Epidemiology (ISEE) -
                          Student and New Researcher Network,
                          Capacity Building and Education Committee