

## Curriculum Vitae

### Personal Information

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### Education

- *Postdoctoral Researcher*: Department of Mathematics and Statistics, Queen's University, 1999-2001.
- *Ph.D.*: Department of Mathematics and Statistics, Queen's University, 1996-1999.
- *M.Sc.*: Department of Mathematics and Statistics, Queen's University, 1995-1996.
- *B.Sc.*: Department of Mathematics Education, Seoul National University, Republic of Korea, 1978-1982.

### Current Position

- Research Scientist (<https://profils-profiles.science.gc.ca/en/profile/hwashin-hyun-shin>)  
Air Health Science Division, Health Canada, 2006-Present.
- Adjunct Associate Professor (<https://www.queensu.ca/mathstat/people/faculty/profiles/hwashin>)  
Department of Mathematics and Statistics, Queen's University, 2017-Present.

### Research Project & Funding (Principal Investigator)

1. Air Health Trend Indicator (AHTI) Project: On-going \$300K/Y funded under the CESI of Environment and Climate Change Canada, 20016-Present.
2. Autism in children in Ontario project: 70K/Y for 3 years, 2019-2022, funded under the Addressing Air Pollution Horizontal Initiative (AAPHI) Program of Health Canada.
3. Air Quality Health Index (AQHI) project: 85K/Y for 3 years, 2019-2022, funded under the AAPHI.
4. Air Quality Health Index (AQHI) project: 5K for 1 year, 2018-2019, funded by Water and Air Quality Bureau (WAQB) of Health Canada.
5. PM Component Project: \$60K/Y for 3 years, 2016-2019, funded under the Clean Air Regulatory Agenda (CARA) Program of Health Canada.
6. 3-Pollutant Model Project: \$60K/Y for 3 years, 2016-2019, funded under the CARA Program.
7. Ozone Risk Project: \$68K/Y for 2 years, 2014-2016, funded under the CARA Program.
8. Ozone Risk Project: \$35K/Y for 1 year, 2014-2015, funded under the Canadian Environmental Sustainability Indicators (CESI) program of Environment and Climate Change Canada (ECCC).
9. Oil Refinery Closure Project: \$60K/Y for 2 years, for 2013-2015, funded under the CARA program.
10. Air Health Indicator (AHI) Project: \$300K/Y for 5 years, 2010-2015 funded under the CESI of ECCC.

### Contributions

1. Canada government web report, 2017, 2014, & 2011:  
Canadian Environmental Sustainability Indicators. *Air Health Indicator Updates*.  
(<http://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=CB7B92BA-1>).
2. National Academies of Sciences Committee, 2015-2017:  
"Assessing Toxicologic Risks to Human Subjects Used in Controlled Exposure Studies of Environmental Pollutants".
3. External advisor of the Research Support Center for Korean Children's Environmental Health, 2017-2021:  
Department of Occupational and Environmental Medicine, School of Medicine, Ewha Womans University, Seoul, Korea.
4. Outdoor Air Pollution Committee of Global Burden Disease (GBD), 2011-2016.
5. CCHO climate change and health intradepartmental committee, 2013-2015.

### Supervising and training

- Post-doctoral fellow (Natural Sciences and Engineering Research Council of Canada)
  - W. Burr, Queen's Univ (2013-2016).
- Ph.D in Statistics
  - D. Riegert, Queen's Univ (2016-present)
  - K. Rai, Univ of Toronto (2018- present)
  - G. Huang, Univ of Toronto (2018-2019)
- Master degree in Statistics
  - Y. Gao, Queen's University (2013-2014)

### Selected peer-reviewed publications since 2014 (\*corresponding author)

2020	<b>HH Shin*</b> , RP Parajuli, A Maquiling and Marc Smith-Doiron. Temporal Trends in Associations between Ozone and Circulatory Mortality in Age and Sex in Canada for 1984-2012. <i>Science of the Total Environment</i> 2020 1;724:137944. doi: 10.1016/j.scitotenv.2020.137944.
2020	Stieb DM*, Zheng C, Salama D, Berjawl R, Emode M, Hocking R, Lyrette N, Matz C, Lavigne E, <b>Shin HH</b> . Systematic review and meta-analysis of case-crossover and time-series studies of short term outdoor nitrogen dioxide exposure and ischemic heart disease morbidity. <i>Environmental Health</i> . 1;19(1):47.
2019	H Chun, C Leung, SW Wen, J McDonald, <b>HH Shin*</b> . Maternal Exposure to Air Pollution and Risk of Autism in Children: A Systematic Review and Meta-analysis. <i>Environmental Pollution</i> . 016/j.envpol.2019.113307
2018	Burr WS, Dales R, Liu L, Stieb D, Smith-Doiron M, Jovic B, Kauri LM, <b>Shin HH*</b> . The Oakville Oil Refinery Closure and Its Influence on Local Hospitalizations: A Natural Experiment on Sulfur Dioxide. <i>International Journal of Environmental Research and Public Health</i> . 2018; 15(9):2029.
2018	Wesley Burr*, <b>Hwashin Shin</b> , Glen Takahara. <i>Synthetically Lagged Models</i> . <i>Statistics and Probability Letters</i> . 2018; 144, 37-43 <a href="https://doi.org/10.1016/j.spl.2018.07.008">https://doi.org/10.1016/j.spl.2018.07.008</a> .
2018	<b>Shin HH*</b> , Burr WS, Stieb D, Haque L, Kalayci H, Jovic B, Smith-Doiron. Air Health Trend Indicator: Association between Short-Term Exposure to Ground Ozone and Circulatory Hospitalizations in Canada for 17 Years, 1996–2012. <i>International Journal of Environmental Research and Public Health</i> . 15(8):1566.
2017	Hiatt R*, et al., <b>Shin HH</b> . <i>Controlled Human Inhalation-Exposure Studies at EPA</i> . National Academies of Sciences, Engineering, and Medicine. The National Academies Press. doi: 10.17226/24618.
2017	Cohen AJ*, Brauer M, Burnett R, et al., <b>Shin HH</b> , et al. <i>Estimates and 25-year trends of the global burden of disease attributable to ambient air pollution: an analysis of data from the Global Burden of Diseases Study 2015</i> . <i>Lancet</i> . 2017; 389(10082):1907-1918.
2016	Wang H* et al., <b>Shin HH</b> , GBD 2015 Child Mortality Collaborators. <i>Global, regional, national, and selected subnational levels of stillbirths, neonatal, infant, and under-5 mortality, 1980-2015: a systematic analysis for the Global Burden of Disease Study 2015</i> . <i>Lancet</i> . 2016;388(10053):1725-1774
2016	Wang H* et al., <b>Shin HH</b> , GBD 2015 HIV Collaborators. <i>Estimates of global, regional, and national incidence, prevalence, and mortality of HIV, 1980-2015: the Global Burden of Disease Study 2015</i> . <i>Lancet HIV</i> . 2016;3(8):e361-87
2016	Wesley Burr, Glen Takahara, <b>Hwashin Shin*</b> . <i>Bias Correction in Estimation of Public Health Risk Attributable to Short-term Air Pollution Exposure</i> . <i>Environmetrics</i> . Vol26 (4), 298-311. /10.1002/env.2337.
2015	<b>Shin HH</b> , Cohen AJ, Pope CA 3rd, et al., Rick Burnett*. <i>Meta-Analysis Methods to Estimate the Shape and Uncertainty in the Association between Long-term Exposure to Ambient Fine Particulate Matter and Cause-Specific Mortality over the Global Concentration Range</i> , <i>Risk Analysis</i> . doi: 10.1111/risa.12421.
2015	<b>Hwashin H. Shin</b> , Paul Jones, Robert D. Brook, Robert Bard, Karen Oliver, Ron Williams*. <i>Associations between personal exposures to VOCs and alterations in cardiovascular physiology: Detroit Exposure and Aerosol Research Study (DEARS)</i> . <i>Atmospheric Environment</i> , Vol 104, 246-255.
2014	<b>Hwashin H. Shin</b> , Neal Fann*, Rick Burnett, Aaron Cohen and Bryan Hubbell. <i>Outdoor fine particles and nonfatal strokes: systematic review and meta-analysis</i> . <i>Epidemiology</i> , 25(6):835-42.
2014	<b>Shin HH*</b> , Cakmak S, Brion O, Villeneuve P, Turner MC, Goldberg MS, Jerrett M, Chen H, Crouse D, Peters P, Pope CA 3rd, Burnett RT. <i>Indirect Adjustment for Multiple Missing Variables Applicable to Environmental Epidemiology</i> <i>Environmental research</i> , 134:482-7. doi: 10.1016/j.envres.2014.05.016.