

## **ELSIE M. SUNDERLAND**

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## **MAJOR RESEARCH AREAS**

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I study how biogeochemical processes affect the fate, transport and food-web bioaccumulation of trace metals and organic chemicals in aquatic ecosystems. I develop and apply models at a variety of scales ranging from ecosystems to global applications to characterize how changes in climate and emissions affect human and ecological health, and the potential impacts of regulatory activities.

## **ACADEMIC APPOINTMENTS**

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### **Harvard University, Cambridge MA, USA**

- 2015-present Thomas D. Cabot Associate Professor of Environmental Science and Engineering, Harvard John A. Paulson School of Engineering and Applied Sciences
- 2014-2015 Associate Professor of Environmental Science and Engineering, Harvard School of Engineering and Applied Sciences & Department of Environmental Health, Harvard T.H. Chan School of Public Health
- 2010-2014 Mark and Catherine Winkler Assistant Professor of Aquatic Science, Department of Environmental Health, Harvard School of Public Health
- 2008-2010 Research Associate, Harvard School of Engineering and Applied Sciences & Harvard Center for Risk Analysis

## **PROFESSIONAL EXPERIENCE**

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### **U.S. Environmental Protection Agency, Washington DC, USA**

- 2003-2008 Worked in the following EPA HQ Offices: *Office of the Science Advisor; National Center for Environmental Research; National Center for Environmental Economics; Office of Science Policy*
- Positions and responsibilities included: Senior Staff, EPA Council for Regulatory Environmental Modeling. Led cross-Agency workgroup drafting guidance on the development, evaluation and application of environmental models used to inform regulatory decisions. Responded to National Research Council panel recommendations on the use of models at EPA.
- Developed policy recommendations for improvement of nearshore water quality in the Great Lakes as the representative for the International Air Quality Planning Board (IAQAB) of the International Joint Commission (IJC).
- Worked as one of the Agency's lead scientists developing federal regulations for atmospheric emissions of hazardous air pollutants from coal-fired utilities. Responsibilities included regular briefings of senior Agency officials, White House staff and environmental journalists; crafting of legal language for the Federal Register and Regulatory Impact Assessments.

### **McGill Center for Climate Change Research & Limnology Research Group, Montreal PQ, Canada**

- 1995-1997 Research Assistant in paleoecology laboratory and field technician studying eutrophication in coastal estuaries of Prince Edward Island, Canada.

### **Lunenburg Municipal Government, Bridgewater NS, Canada**

- 1994-1995 Assisted in the development of the first fully integrated-four waste stream management system in North America (large scale recycling and composting).

## PERSONAL

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*Citizenship:* dual, Canada and United States.

## EDUCATION

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- 2003      **Ph.D., Simon Fraser University, Burnaby BC, Canada**  
Environmental Toxicology, School of Resource & Environmental Management.
- 1997      **B.Sc., McGill University, Montreal PQ, Canada**  
Received with Great Distinction in Environmental Science.

## ACADEMIC & PROFESSIONAL HONORS

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- 2013      “Excellence in Reviewing Award” from journal *Biogeochemistry*
- 2012      Smith Family Foundation Award for Excellence in Biomedical Research
- 2010      U.S. EPA Level II Scientific & Technological Achievement (STAA) Award
- 2010      “Outstanding Reviewer” citation by Editorial Board of *Estuaries and Coasts*
- 2008      U.S. EPA Level I (highest level) Scientific & Technological Achievement (STAA) Award
- 2005      U.S. EPA National Honor Award, Gold Medal for Exceptional Service
- 2003      Dean’s Convocation Medal (top academic award), Simon Fraser University
- 2002      Society of Environmental Toxicology & Chemistry best student paper presentation award
- 2001      Department of Fisheries and Oceans Canada, Supplement to NSERC Scholarship
- 1998-2002      Natural Sciences and Engineering Research Council of Canada (NSERC), National Postgraduate Scholarships (PGS A and PGS B)
- 1999      Gulf of Maine Council on the Marine Environment Research Fellowship
- 1998      Mountain Equipment Co-op Environment Fund Award
- 1997-2001      Simon Fraser University Graduate Scholarships
- 1995      Royal Canadian Geographic Society Undergraduate Research Award
- 1993      McGill University, Greville Smith Scholarship (top-entrance scholarship)
- 1993      Canada Scholarship, Industry and Technology Canada

## TEACHING

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*Courses (lead instructor):*

- ES-6      Introduction to Environmental Science and Engineering, Undergraduate, Harvard School of Engineering and Applied Sciences, Spring 2016 (48 students)
- ES-298r      Mitigating Toxicity Through Materials Design, Graduate, Harvard School of Engineering and Applied Sciences, Fall 2015 (7 students)
- ES-161      Applied Environmental Toxicology, Undergraduate, Harvard School of Engineering and Applied Sciences, Spring 2015 (10 students), Fall 2016
- RDS-500      Risk Assessment, Graduate, Department of Environmental Health, Harvard School of Public Health, Spring 2011, Spring 2012, Spring 2013, Spring 2014 (16-21 students)
- ES-169      Seminar on Global Pollution Issues, Undergraduate, Harvard School of Engineering and Applied Sciences, Spring 2013 (5 students)
- ENVR E-215      Environmental Science, Graduate, Harvard Extension School, Fall 2011 (14 students).

*Other teaching activities:*

- 2009-2017 Faculty, Analyzing Risk: Science, Assessment, and Management; Center for Continuing Professional Education, Harvard School of Public Health. (~60 students each year).
- 2008 Developed curriculum and instructed training course on the use of models in environmental regulatory decision-making for U.S. EPA Region 1. (~50 staff members).
- 2004-2008 Led nation-wide seminar series (webinar) for ten U.S. EPA Regional Offices on the use of environmental models to inform environmental management decisions.
- 2000-2002 Teaching Assistant, School of Resource and Environmental Management, Simon Fraser University: 1) Applied Ecology and Sustainable Environments (undergraduate); 2) Simulation Modelling in Natural Resource Management (graduate); 3) Applied Environmental Toxicology and Management of Contaminants (graduate)

*Guest Lectures:*

- MIT Engineering Systems Division, Modeling and Assessment for Policy (ESD.864/12.844). “Use of models for environmental decision-making at the US EPA.” 2011, 2012, 2013, 2014.
- Harvard Energy and Environment Graduate Reading Seminar. “Lessons not learned: Hydroelectric flooding and the health of indigenous peoples.” 2014.
- Harvard Extension School, Environmental Management I (ENVR E-101), “Mercury in the environment: Human exposures and risks.” 2011.

**RESEARCH MENTORING** (*current position in italics*)**Postdoctoral Fellows**

- 2016-present Colin Thackray, primary mentor, SEAS
- 2016-present Miling Li, primary mentor, SEAS
- 2012-present Amina Schartup, primary mentor, HSPH/SEAS
- 2013-2016 Xianming Zhang, primary mentor, HSPH/SEAS
- 2014-2016 Helen Amos, primary mentor, HSPH/SEAS; *AAAS Fellow, Washington, DC*
- 2013-2015 Yanxu Zhang, co-mentor with D.J. Jacob, SEAS; *Consultant, Gradient, Seattle, WA*
- 2011-2014 Anne Soerensen, primary mentor, HSPH; *Postdoctoral Fellow, ITM, Stockholm University*
- 2011-2013 Asif Qureshi, primary mentor, HSPH; *Assistant Professor, IIT Hyderabad, India*
- 2011-2012 Jenny Fisher, co-mentor with D.J. Jacob, SEAS; *Lecturer, University of Wollongong, Australia*

**Doctoral Students**

- 2016- Rebecca Stern, SEAS, G1
- 2015- Charlotte Wagner, SEAS, G2
- 2014- Xindi Hu, HSPH; G3
- 2013- Clifton Dassuncao, HSPH; G4
- 2012- Ryan Calder, HSPH; G5
- 2011- Hannah Horowitz (co-supervised with D.J. Jacob), EPS; G6
- 2011-2016 Miling Li, HSPH; *Postdoctoral Fellow, Harvard*
- 2010-2015 Elizabeth Corbitt (co-supervised with D.J. Jacob), EPS; *Science Teacher, Louisiana*
- 2010-2014 Helen Amos (co-supervised with D.J. Jacob), EPS; *AAAS Fellow, Washington DC*

**Masters Students**

- 2016- Paheliya Aixilafu, HSPH
- 2014-2015 Amelia Valberg, HSPH; *Physical Scientist, US EPA Region 5*
- 2012-2014 Fangli Geng, HSPH

2012-2014 Xindi Hu, HSPH; *Doctoral candidate Harvard*  
 2011-2013 Clifton Dassuncao, HSPH; *Doctoral candidate Harvard*  
 2011-2013 Wei Nui, HSPH  
 2011-2012 Dev Saha, HSPH; *Medical student, University of Texas*  
 2012 Matthew Tumpney, HSPH; *Environmental Consultant, Gradient Inc.*

### **Undergraduates**

2016- Alicia Juang, Harvard College (Research Assistant)  
 2014- Jessica Ewald, Harvard College (S.B. Project Advisor & Research Assistant)  
 2015-2016 Harry Stone, Harvard College (S.B. Project Advisor & Research Assistant)  
 2015-2016 Jahred Liddie, Harvard College (Research Assistant ; Independent study advisor)  
 2015 (summer) Sam Krabbenhoft, University of Wisconsin (Research Assistant)  
 2014 (summer) Angela Jiang, Harvard College (Research Assistant)  
 2014 (summer) Kurt Bullard, Harvard College (Research Assistant)

### **Doctoral and Oral Examination Committees**

2016 Matthew Binington, University of Toronto, External Examiner  
 2016 Sabri Bromage, Department of Nutrition, HSPH  
 2016 Alberto Amadei, SEAS  
 2015 Andrea Weber, SEAS  
 2014 Yanina Barrera, SEAS  
 2013-2015 Eun-Joo Park, Environmental Health, HSPH  
 2015 Kathryn McKain, SEAS  
 2014 Yingjun Lui, SEAS  
 2011-2014 Yong-Mei Shen, Environmental Health, HSPH  
 2012 Ravinder Pannu, University of Saskatchewan, External Examiner  
 2012-2013 Iny Jhun, Environmental Health, HSPH  
 2011-2013 Matthieu Trudeau, Environmental Health, HSPH  
 2009 Adrienne Ethier, University of Ottawa, External Examiner

## **PROFESSIONAL ACTIVITIES**

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### **Professional Service: International**

2015-2017 Scientific Steering Committee, 13<sup>th</sup> International Conference on Mercury as a Global Pollutant, Providence, RI, 2017.  
 2015-2016 International Planning Committee, 18<sup>th</sup> International Conference on Heavy Metals in the Environment, Ghent, Belgium, 12-14 September 2016.  
 2013-2015 GEOS-Chem Model International Steering Committee (Co-chair: Hg & POPs working group).  
 2014-2015 Environmental Geochemistry Theme (06) co-convenor for Goldschmidt 2015, Prague, CZ.  
 2013-2015 Scientific Steering Committee, 12<sup>th</sup> International Conference on Mercury as a Global Pollutant, Jeju, Korea, June 14-19, 2015.  
 2013-2014 International Planning Committee (IPC), 17<sup>th</sup> International Conference on Heavy Metals in the Environment, Guiyang, China, September 22-26, 2014.  
 2011-2013 Planning Team, UNECE/LRTAP Hemispheric Transport of Air Pollutants (HTAP), Impacts on Health and Ecosystems  
 2011-2013 Scientific Steering Committee, 11<sup>th</sup> International Conference on Mercury as a Global Pollutant, Edinburgh, Scotland, 28 July – 2 August 2013

- 2009-2012 Steering Committee, Consortium on Mercury in the Marine Environment (C-MERC)
- 2011-2012 International Planning Committee, 16<sup>th</sup> International Conference on Heavy Metals in the Environment, Rome, Italy, 22-27 September 2012
- 2006-2011 Conference Co-Host and Technical Co-Chair for the 10<sup>th</sup> International Conference on Mercury as a Global Pollutant, Halifax, Nova Scotia, 24-29 July 2011
- 2009-2010 Chapter Lead Author for Task Force on Hemispheric Transport of Air Pollution 2010 Assessment Report
- 2008-2010 International Joint Commission Fish Consumption Priority Workgroup
- 2004-2006 Regional Planning Committee for the 8<sup>th</sup> International Conference on Mercury as a Global Pollutant, Madison, Wisconsin, 6-11 August 2006
- 2007-2008 Invited Panelist for International Joint Commission Nearshore Priority Expert Consultations

**Professional Service: National**

- 2009-present Science Council, Biodiversity Research Institute, Gorham, ME
- 2008-2009 Steering Committee: Mercury Science and Policy Conference for the Northeast and Great Lakes Region, Chicago, Illinois, 2009
- 2007-2008 Organizing Committee for the 6<sup>th</sup> National Water Quality Monitoring Conference, Atlantic City, New Jersey, May 18-22, 2008
- 2006-2007 Co-organizer of the Lake Ontario Contaminants Modeling and Monitoring Meeting, Grand Island, NY. March 27-28, 2007
- 2005-2006 Co-organizer of the International Joint Commission Collaborative Meeting on Mercury Modeling in Freshwater Environments, Niagara Falls, NY, 19-20 January 2006
- 2003-2008 Nation-wide modeling seminar series coordinator for U.S. EPA's Regional Offices
- 2007-2008 Great Lakes Observing System Modeling Subsystem Team Member
- 2003-2008 Co-organizer of Northwest Water Quality Modelers
- 2006-2008 U.S. EPA Region 1 Regional Science Council
- 2006-2008 Workgroup on U.S. EPA Guidance Document for Calculating National Bioaccumulation Factors
- 2006-2008 Workgroup on U.S. EPA Methylmercury Fish Tissue Residue Implementation Guidance
- 2003-2008 Lead Author and workgroup coordinator for U.S. EPA Guidance on Regulatory Environmental Modeling
- 2005 U.S. EPA Reconsideration of the Clean Air Mercury Rule Workgroup and Author
- 2004-2005 U.S. EPA Clean Air Mercury Rule Regulatory Impact Assessment Workgroup and Author
- 2003-2004 U.S. EPA Office of Water Mercury in Marine Life Workgroup

**University Service**

- 2016-2017 Standing Committee on the Concentration in Environmental Science and Public Policy
- 2016-2017 Committee on Higher Degrees, School of Engineering and Applied Sciences
- 2014-2016 Graduate Admissions and Scholarship, School of Engineering and Applied Sciences (Area Chair in 2015-2016)
- 2014-2015 Committee on Higher Degrees, School of Engineering and Applied Sciences
- 2010-2014 Curriculum Committee, Department of Environmental Health, Harvard School of Public Health

**Special Session Organizer**

- 2015 2015 Joint Assembly of the American Geophysical Union and Canadian Geophysical Union, Montreal, PQ, 3-7 May, 2015.

- 2013 11<sup>th</sup> International Conference on Mercury as Global Pollutant, Edinburgh, Scotland, 28 July – 2 August, 2013
- 2012 American Meteorological Society, First Conference on Atmospheric Biogeosciences, 29 May – 1 June, 2012
- 2010 Society of Environmental Toxicology & Chemistry, Annual Meeting, Portland OR, November 7-11, 2010
- 2009 American Geophysical Union, Fall Meeting, San Francisco CA, December 14-18, 2009
- 2009 9<sup>th</sup> International Conference on Hg as a Global Pollutant, Guiyang, China, June 7-12, 2009
- 2008 6<sup>th</sup> National Water Quality Monitoring Conference, Atlantic City, New Jersey, May 18-22, 2008
- 2006 8<sup>th</sup> International Conference on Hg as a Global Pollutant, Madison, WI, August 6-11, 2006

### University Affiliations and Professional Societies

- 2010-present Faculty Associate, Harvard University Center for the Environment (HUCE)
- 2009-present Member, Harvard Center for Risk Analysis (HCRA)
- 2007-present Member, American Geophysical Union (AGU)
- 2001-present Member, Society of Environmental Toxicology and Chemistry (SETAC)
- 2011-2014 Co-leader, Harvard Atmospheric Chemistry Modeling Group

### Peer Review

#### Peer-reviewer for >25 different journals:

Analytical Chemistry; Applied Geochemistry; Atmospheric Chemistry and Physics; Archives of Environmental and Occupational Health; Biogeochemistry; Chemical Reviews; Chemosphere; Ecology and Evolution; Environment International; Environmental Practice; Environmental Pollution; Environmental Research; Environmental Science & Technology; Environmental Toxicology & Chemistry; Estuaries and Coasts, Geochimica et Cosmochimica Acta; Geophysical Research Letters; Global Biogeochemical Cycles; Handbook of Environmental Chemistry; International Journal of Environmental and Analytical Chemistry; Journal of Geophysical Research-Biogeosciences; Marine Chemistry; Marine Environmental Research; Nature Geoscience; Nature Climate Change; Nature Microbiology; Proceedings of the National Academy of Science (PNAS); Progress in Oceanography; Science; Science Advances; Science of the Total Environment; Water, Air and Soil Pollution.

Guest Editor: *Environmental Research*, Volume 119, Pages 1-142 (November 2012): Mercury in Marine Ecosystems: Sources to Seafood Consumers

#### Grant Reviews:

- 2009-2016 Canadian Northern Contaminants Program Panel Reviewer
- 2012-2016 U.S. National Science Foundation, peer-reviewer
- 2013, 2016 U.S. National Science Foundation Panel Reviewer
- 2014 Netherlands Organization for Scientific Research
- 2014 Gulf of Mexico Research Initiative Panel Reviewer
- 2012 Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Program
- 2012 Agence Nationale de la Recherche (ANR), France
- 2010, 2015 Swiss National Science Foundation
- 2009 New Hampshire Sea Grant, Virginia Sea Grant
- 2008 Minnesota Sea Grant
- 2007 Natural Sciences and Engineering Research Council of Canada (NSERC) Strategic Grants Program

#### Review of International Assessment Reports:

- 2012 Canadian Assessment of Mercury in the Marine Environment, Environment Canada  
 2010 Arctic Monitoring and Assessment Report, Arctic Monitoring and Assessment Program  
 2009 UNEP Mercury Fate and Transport Partnership Assessment Report

#### Consulting

- 2013 Reviewer, Penobscot Bay scientific panel report on impacts of a chlor-alkali plant on estuarine water quality and mercury bioaccumulation.  
 2011 Nunatsiavut Government, Expert review of potential impacts of hydroelectric power development on the Lower Churchill River in Labrador, Canada on methylmercury dynamics and risks to Inuit health.  
 2011 Panelist for blueprint review of research and monitoring priorities for the Northern Contaminants Program, Indian and Northern Affairs Canada.

### **PUBLICATIONS (STUDENTS/POSTDOCS MENTORED ARE UNDERLINED)**

#### **JOURNALS (PEER REVIEWED)**

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##### *In Review/ Revision*

50. R.S.D. Calder, A.T. Schartup, M. Li, A.P. Valberg, P.H. Balcom, **E.M. Sunderland**. 2016. Future impacts of hydroelectric power expansion on methylmercury exposures of Canadian indigenous communities. In review.  
 49. M. Li, A.T. Schartup, A.P. Valberg, J. Ewald, D.P. Krabbenhoft, R. Yin, P. Balcom, **E.M. Sunderland**. 2016. Environmental origins of methylmercury accumulated in subarctic estuarine fish indicated by Hg stable isotopes. In review.

##### *Published/ Accepted:*

48. X. Zhang, R. Lohmann, C. Dassuncao, X.C. Hu, A. Weber, C.D. Vecitis, **E.M. Sunderland**. 2016. Source attribution of poly- and perfluoroalkyl substances (PFASs) in surface waters from Rhode Island and the New York metropolitan region. *Environmental Science & Technology Letters*. DOI: 10.1021/acs.estlett.6b00255.  
 47. X.C. Hu, D. Andrews, A.B. Lindstrom, T.A. Bruton, L.A. Schaider, P. Grandjean, R. Lohmann, C.C. Carignan, A. Blum, S.A. Balan, C. Higgins, **E.M. Sunderland**. 2016. Detection of poly- and perfluoroalkyl Substances (PFASs) in U.S. drinking water linked to industrial sites, military fire training areas and wastewater treatment plants. *Environmental Science & Technology Letters*. DOI: 10.1021/acs.estlett.6b00260.  
 46. M. Li, K. von Stackelberg, C. Rheinberger, J. K. Hammitt, D.P. Krabbenhoft, Y. Runsheng, **E.M. Sunderland**. 2016. Insights from mercury stable isotopes into factors affecting the internal body burden of methylmercury in frequent fish consumers. *Elementa*. 4(1): 000103.  
 45. C.Y. Chen, C.T. Driscoll, K.F. Lambert, R.P. Mason, **E.M. Sunderland**. 2016. Connecting mercury science to policy: from sources to seafood. *Reviews on Environmental Health*. 31(1) : 17-20.  
 44. A.L. Soerensen, D.J. Jacob, A.T. Schartup, J.A. Fisher, I Lehnerr, V.L. St. Louis, L-E. Heimberger, J. Sonke, D. P. Krabbenhoft, **E.M. Sunderland**. 2016. A mass budget for mercury and methylmercury in the Arctic Ocean. *Global Biogeochemical Cycles*. 30(4), 560-575.  
 43. R. Sun, D.G. Streets, H.M. Horowitz, H.M. Amos, G. Liu, V. Perrot, J-P Toutain, H. Hintelmann, **E.M. Sunderland**, J.E. Sonke. 2016. Historical (1850-2010) mercury stable isotope emissions from anthropogenic sources to the atmosphere. *Elementa*. 4(1): 000091.  
 42. Y. Zhang, D.J. Jacob, H.M. Horowitz, L. Chen H.M. Amos, D.P. Krabbenhoft, F. Slemr, M.S. Landis, V. St. Louis, **E.M. Sunderland**. 2016. Observed decrease in atmospheric mercury explained

- by global decline in anthropogenic emissions. *Proceedings of the National Academy of Sciences of the United States of America*. 113(3), 526-531.
41. A.T. Schartup, P.H. Balcom, A.L. Soerensen, K. Gosnell, R. Calder, R.P. Mason, **E.M. Sunderland**. 2015. Freshwater discharges drive high levels of methylmercury in Arctic marine biota. *Proceedings of the National Academy of Sciences of the United States of America*. 112(38): 11789-11794.
  40. Y. Zhang, D.J. Jacob, S. Dutkiewicz, H.M. Amos, M.S. Long, **E.M. Sunderland**. 2015. Biogeochemical drivers of the fate of riverine mercury discharged to the global and Arctic oceans. *Global Biogeochemical Cycles*. 29, 854-864.
  39. A.T. Schartup, U.C. Ndu, P.H. Balcom, R.P. Mason, **E.M. Sunderland**. 2015. Contrasting effects of marine and terrestrially derived dissolved organic matter on mercury speciation and bioavailability in seawater. *Environmental Science & Technology*. 49(10) : 5965-5972.
  38. H.M. Amos, J.E. Sonke, D. Obrist, N. Robins, N. Hagan, H.M. Horowitz, R.P. Mason, M. Witt, I. Hedgecock, E.S. Corbitt, **E.M. Sunderland**. 2015. Observational and modeling constraints on global anthropogenic enrichment of mercury. *Environmental Science & Technology*. 49(7) : 4036-4047.
  37. A.L. Soerensen, R.P. Mason, P. Balcom, D.J. Jacob, Y. Zhang, Y. Kuss, **E.M. Sunderland**. 2014. Elemental mercury concentrations and fluxes in the tropical atmosphere and ocean. *Environmental Science and Technology*. 48(19) : 11312-11319.
  36. H.M. Horowitz, D.J. Jacob, H.M. Amos, D.G. Streets, **E.M. Sunderland**. 2014. Historical mercury releases from commercial products: Global environmental implications. *Environmental Science and Technology*. 48(17) : 10242-10250.
  35. M.B. Trudeau, **E.M. Sunderland**, D.L. Jindrich, J.T. Dennerlein. 2014. A data-driven design evaluation tool for handheld device soft keyboards. *PLoS ONE*. DOI: 10.1371/journal.pone.0107070.
  34. H.M. Amos, D.J. Jacob, D. Kocman, H.M. Horowitz, Y. Zhang, S. Dutkiewicz, M. Horvat, E.S. Corbitt, D.P. Krabbenhoft, **E.M. Sunderland**. 2014. Global biogeochemical implications of mercury discharges from rivers and sediment burial. *Environmental Science and Technology*, 48(16) : 9514-9522.
  33. M. Li, L.S. Sherman, J.D. Blum, P. Grandjean, B. Mikkelsen, P. Weihe, **E.M. Sunderland\***, J.P. Shine\*. 2014. Assessing sources of human methylmercury exposure using mercury stable isotopes. *Environmental Science and Technology*. 48(15) : 8800-8806. \*Co-senior authors.
  32. J.A. Fisher, D.J. Jacob, A.L. Soerensen, H.M. Amos, E.S. Corbitt, D.G. Streets, Q. Wang, R.M. Yantosca, **E.M. Sunderland**. 2013. Factors driving mercury variability in the Arctic atmosphere and ocean over the past 30-years. *Global Biogeochemical Cycles*. 27(4) : 1226-1235.
  31. N. Pirrone, W. Aas, S. Cinnirella, R. Ebinghaus, I. M. Hedgecock, J. Pacyna, F. Sprovieri, **E.M. Sunderland**. 2013. Toward the next generation of air quality monitoring: Mercury. *Atmospheric Environment*. 80: 599-612.
  30. A.L. Soerensen, R.P. Mason, P.H. Balcom, **E.M. Sunderland**. 2013. Drivers of surface ocean mercury concentrations and air-sea exchange in the West Atlantic Ocean. *Environmental Science and Technology*. 47(14), 7757-7765.
  29. H.M. Amos, D.J. Jacob, D.G. Streets, **E.M. Sunderland**. 2013. Legacy impacts of all-time anthropogenic emissions on the global mercury cycle. *Global Biogeochemical Cycles*. 27, 410-421.
  28. **E.M. Sunderland** and N.E. Selin. 2013. Future trends in environmental mercury concentrations: Implications for prevention strategies. *Environmental Health*. 12:2, doi:10.1186/1476-069X-12-2.
  27. A.L. Soerensen, D.J. Jacob, D. Streets, M. Witt, R. Ebinghaus, R.P. Mason, M. Andersson, **E.M. Sunderland**. 2012. Multi-decadal decline of mercury in the North Atlantic atmosphere explained by changing subsurface seawater concentrations. *Geophysical Research Letters*. 39, L21810.
  26. R. Harris, C. Pollman, C., Landing, W., Axelrad, D., Morey, S.L., Dukhovskoy, D., Evans, D., D.



- Rumbold, D. Adams, **E.M. Sunderland**. 2012. Mercury in the Gulf of Mexico: Sources to receptors. *Environmental Research*, 119, 42-52.
25. C.T. Driscoll, C.Y. Chen, C.R. Hammerschmidt, R.P. Mason, C.C. Gilmour, **E.M. Sunderland**, B. Greenfield, K. Buckman, C.H. Lamborg, 2012. Nutrient supply and mercury dynamics in marine ecosystems: A conceptual model. *Environmental Research*, 119, 118-131.
  24. R.P. Mason, W.F. Fitzgerald, C. Lamborg, C. Hammerschmidt, A. Choi, A.L. Soerensen, **E.M. Sunderland**. 2012. Mercury biogeochemical cycling in the ocean and policy implications. *Environmental Research*. 119, 101-117.
  23. **E.M. Sunderland**, N. Burgess, A. Amirbahman, G. Harding, E. Kamai, M. Karagas, S. Jones, J. Dalziel, X. Shi, C.Y. Chen. 2012. Mercury sources and fate in the Gulf of Maine. *Environmental Research*. 119, 27-41.
  22. J.A. Fisher, D.J. Jacob, A.L. Soerensen, H.M. Amos, A. Steffen, **E.M. Sunderland**. 2012. Riverine source of Arctic Ocean mercury inferred from atmospheric observations. *Nature Geoscience*, 5: 499-504.
  21. E. Oken, A. Choi, M. Karagas, R. Schoeny, K. Marien, C. Rheinberger, **E. Sunderland**, S. Korrick. 2012. Which fish should I eat? Challenges to developing clear, unified fish consumption advice. *Environmental Health Perspectives*. 120: 790-798.
  20. H. M. Amos, D. J. Jacob, C. D. Holmes, J. A. Fisher, Q. Wang, R. M Yantosca, E. S. Corbitt, E. Galarneau, A. P. Rutter, M. S. Gustin, A. Steffen, J. J. Schauer, J. A. Graydon, V. L. St. Louis, R. W. Talbot, E. S. Edgerton, **E. M. Sunderland**. 2012. Gas-particle partitioning of atmospheric Hg(II) and its effect on global mercury deposition. *Atmospheric Chemistry and Physics*, 12, 591-603.
  19. D.G. Streets, M.K. Devane, Z. Lu, T.C. Bond., **E.M. Sunderland**, D.J. Jacob. 2011. All-time releases of mercury to the atmosphere from human activities. *Environmental Science and Technology*, 45(24), 10485-10491.
  18. E.S. Corbitt, D.J. Jacob, C.D. Holmes, D.G. Streets, **E.M. Sunderland**. 2011. Global source-receptor relationships for mercury deposition under present-day and 2050 emissions scenarios. *Environmental Science & Technology*, 45(24), 10477-10484.
  17. K.R. Mahaffey, **E.M. Sunderland**, H.M. Chan, A.L. Choi, P. Grandjean, K. Marien, E. Oken, M. Sakamoto, R. Schoeny, P. Weihe, C.-H. Yan, A. Yasutake. 2011. Balancing benefits of n-3 polyunsaturated fatty acids and the risk of methylmercury exposure from fish consumption. *Nutrition Reviews*. 69(9): 493-508.
  16. A.L. Soerensen, **E.M. Sunderland**, C.D. Holmes, D.J. Jacob, B. Yantosca, S.A. Strode, H. Skov, J. Christensen, R.P. Mason. 2010. An improved global simulation of mercury air-sea exchange: High concentrations in the North Atlantic. *Environmental Science & Technology*. 44(22): 8574-8580.
  15. **E.M. Sunderland**, J. Dalziel, A. Heyes, B.A. Branfireun, D.P. Krabbenhoft, F.A.P.C. Gobas. 2010. Response of a macrotidal estuary to changes in anthropogenic mercury loading between 1850 and 2000. *Environmental Science & Technology*. 44(5): 1698-1704.
  14. N.V. Smith-Downey, **E.M. Sunderland**, D.J. Jacob. 2010. Anthropogenic impacts on global storage and emissions of mercury from terrestrial soils: Insights from a new global model. *Journal of Geophysical Research - Biogeosciences*. 115, G03008.
  13. N.E. Selin, **E.M. Sunderland**, C.D. Knightes, and R.P. Mason. 2010. Sources of mercury exposure for U.S. seafood consumers: Implications for policy. *Environmental Health Perspectives*. 118(1): 137-143.
  12. **E.M. Sunderland**, D.P. Krabbenhoft, J.M. Moreau, S. Strode, W.M. Landing. 2009. Mercury sources, distribution and bioavailability in the North Pacific Ocean: Insights from data and models. *Global Biogeochemical Cycles*. 23, GB2010.
  11. C.D. Knightes, **E.M. Sunderland**, M. Craig Barber, J.J. Johnston, R.B. Ambrose Jr. 2009. Application of ecosystem scale fate and bioaccumulation models to predict fish mercury response times to changes

- in atmospheric deposition. *Environmental Toxicology and Chemistry*. 29(4): 881-893.
10. **E.M. Sunderland**, M. Cohen, N.E. Selin, G.L. Chmura. 2008. Reconciling models and measurements to assess trends in atmospheric mercury deposition. *Environmental Pollution*. 156, 526-535.
  9. N.E. Selin, D.J. Jacob, R.M. Yantosca, L. Jaegle, S. Strode, **E.M. Sunderland**. 2008. Land-ocean-atmosphere cycling in a global 3-D model for atmospheric mercury: pre-industrial and present-day biogeochemical budgets, and anthropogenic enhancement factors for deposition. *Global Biogeochemical Cycles*. Vol. 22, GB2011.
  8. **E.M. Sunderland** and R.P. Mason. 2007. Human impacts on open ocean mercury concentrations. *Global Biogeochemical Cycles*. Vol. 21, GB4022.
  7. **E.M. Sunderland**. 2007. Mercury exposure from domestic and imported estuarine and marine fish and shellfish in U.S. seafood markets. *Environmental Health Perspectives*. 115: 235-242.
  6. **E.M. Sunderland**, F.A.P.C. Gobas, A. Heyes, B. Branfireun. 2006. Environmental controls on the speciation and distribution of mercury in coastal sediments. *Marine Chemistry*. 102: 111-123.
  5. Heyes, R.P. Mason, E-H. Kim, and **E. Sunderland**. 2006. Mercury methylation in estuaries. *Marine Chemistry*. 102: 134-147.
  4. **E.M. Sunderland**, F.A.P.C. Gobas, A. Heyes, B. Branfireun, A. Bayer, R. Cranston, and M. Parsons. 2004. Speciation and bioavailability of mercury in well-mixed estuarine sediments. *Marine Chemistry*. 90: 91-105.
  3. G.L. Chmura, L.L. Helmer, C.B. Beecher, and **E.M. Sunderland**. 2001. Historical rates of salt marsh accretion in the outer Bay of Fundy. *Canadian Journal of Earth Sciences*. 31: 1081-1092.
  2. **E.M. Sunderland** and G.L. Chmura. 2000. An inventory of historical mercury emissions in Maritime Canada: Implications for present and future contamination. *The Science of the Total Environment*. 256(1): 39-57.
  1. **E.M. Sunderland** and G.L. Chmura. 2000. The history of mercury emissions from fuel combustion in Maritime Canada. *Environmental Pollution*. 110(2): 297-306.

## EDITORIAL

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4. **E.M. Sunderland**, A.T Schartup. 2016. Methylation on ice (News and Views). *Nature Microbiology*. In press.
3. **E.M. Sunderland**, C.T. Driscoll, Jr., J.K. Hammitt, P. Grandjean, J.S. Evans, J.D. Blum, C.Y. Chen, D.C. Evers, D.A. Jaffe, R.P. Mason, S. Goho, W. Jacobs. 2016. Benefits of regulating hazardous air pollutants from coal and oil-fired utilities in the United States (Perspective). *Environmental Science & Technology*. 50, 2117-2120.
2. D.P. Krabbenhoft, **E.M. Sunderland**. 2013. Global change and mercury (Commentary). *Science*. 341 (6153), 1457-1458.
1. C.Y. Chen, C.T. Driscoll, K.F. Lambert, R.P. Mason, L.R. Rardin, N. Serrell, **E.M. Sunderland**. Marine mercury fate: From sources to seafood consumers (Editorial). *Environmental Research*, 119, 1-2.

## BOOK CHAPTERS & REPORTS

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12. **E.M. Sunderland**, J.G. Wiener, M.E. Brigham. 2014. Why is mercury in fish a concern? Chapter 2 in USGS Circular, The Quality of Our Nation's Waters: Mercury in the Nation's Streams – Levels, Trends, and Implications. Circular 1395. D.A. Wentz, M.E. Brigham, M.A. Lutz, D.P. Krabbenhoft (Eds.). 100 pp. Available: <http://pubs.usgs.gov/circ/1395/>.

11. **E.M. Sunderland** and M. Tumpney. 2013. “Mercury in Foods.” In: M. Rose, A. Fernandes. Persistent Organic Pollutants and Toxic Metals in Foods. Woodhead Publishing Series in Food Science, Technology and Nutrition No. 247. FERA, UK, pp. 392-413. ISBN-13: 978 0 85709 245 8.
10. Chen, C.Y., C.T. Driscoll, K.F. Lambert, R.P. Mason, L. Rardin, C.V. Schmitt, N.S. Serrell, and **E.M. Sunderland**. 2012. Sources to Seafood: Mercury Pollution in the Marine Environment. Hanover, NH: Toxic Metals Superfund Research Program, Dartmouth College.
9. A. Qureshi, M. MacLeod, **E. Sunderland**, and Hungerbühler, K. 2012. “Exchange of mercury between the oceans and atmosphere.” In: G. Liu, Y. Cai, N. O'Driscoll. Environmental Chemistry and Toxicology of Mercury. John Wiley & Sons, Inc. Hoboken, New Jersey, USA, pp. 389-422. ISBN 978-0-470-57872-8.
8. International Joint Commission (**Workgroup contributor**), 2011. Risks and Benefits of Fish Consumption. Great Lakes Water Quality Agreement 2009-2011 Priority Cycle Report. International Joint Commission, Windsor, Ontario. ISBN: 978-1-927336-0308.
7. Hedgecock, N. Pirrone, A. Dastoor, L. Levin, C-J. Lin, R.P. Mason, **E. Sunderland**, O. Travnikov. 2010. Chapter 6: Summary. In: Hemispheric Transport of Air Pollution 2010, Part B: Mercury. N. Pirrone and T. Keating (Eds.) Air Pollution Studies No. 18. United Nations Economic Commission for Europe. United Nations, New York and Geneva.
6. **E.M. Sunderland**, E. Corbitt, D. Cossa, D. Evers, H. Friedli, D. Krabbenhoft, L. Levin, N. Pirrone, G. Rice. 2010. Impacts of Intercontinental Mercury Pollution on Human and Ecological Health. In: Hemispheric Transport of Air Pollution 2010, Part B: Mercury. N. Pirrone and T. Keating (Eds.) Air Pollution Studies No. 18. United Nations Economic Commission for Europe. United Nations, New York and Geneva.
5. **E.M. Sunderland**, C.D. Knightes, K. von Stackelberg, and N. Stiber. 2010. “Environmental Fate and Bioaccumulation Modeling at EPA: Application to Environmental Decision Making.” In: G. Hanrahan (Ed.), Modelling of Pollutants in Complex Environmental Systems, Vol. II, ILM, UK, pp. 3-42.
4. U.S. EPA. 2009. *Final EPA Guidance on the Development, Evaluation and Application of Environmental Models*. (Principal authors: N. Gaber, P. Pascual, N. Stiber, **E. Sunderland**). EPA/100/K-09/003, EPA Council for Regulatory Environmental Modeling, Washington D.C, March 2009.
3. International Joint Commission. 2006. **Contributing author** to chapter: Development of a Multi-compartment Mercury Model for Lake Ontario: Tracking Mercury from Sources, Deposition and Dispersion to Fish and Accumulation in Humans. In: *Priorities 2003-2005. Priorities and Progress Under the Great Lakes Water Quality Agreement*. Chapter 2: 37-69.
2. U.S. EPA. 2005. **Lead author** for chapter: “*Ecosystem Scale Modeling for Mercury Benefits Assessment*.” Chapter 3, Regulatory Impact Analysis of the Clean Air Mercury Rule, Final Report. EPA-452/R-05-003, Office of Air Quality Planning and Standards, Research Triangle Park, NC.
1. EPA Council for Regulatory Environmental Modeling. 2003. *Interim EPA Guidance for the Development, Evaluation and Application of Regulatory Environmental Models*. (Principal authors: P. Pascual, N. Stiber, **E. Sunderland**). Washington DC.

## INVITED PRESENTATIONS

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- 2016 Gordon Research Conference: Organic Geochemistry, Holderness School, NH, July 28.
- 2016 NOAA Geophysical Fluid Dynamics Laboratory (GFDL) Seminar Series, Princeton, NJ, April 28.
- 2016 Nunatsiavut Government press conference on risks to Inuit health of Muskrat Falls development, St. John's NL, April 18.
- 2016 Center for Public Leadership, Belfer Center, Harvard Kennedy School, Cambridge MA, Panelist on Women and Climate Change, March 29.

- 2015 Transatlantic Science Week 2015 speaker, Boston, MA, November 5.
- 2015 Faculty Forum, Harvard Alumni Association, October 23.
- 2015 Arctic Circle Assembly 2015 plenary talk, Reykavik, Iceland, October 17.
- 2015 ScienceWriters2015.org, Cambridge, MA, October 12.
- 2015 Metals research core seminar, Harvard NIEHS Center, Harvard School of Public Health, October 1.
- 2015 Faculty Forum, Harvard Alumni Association, May 29.
- 2015 Environmental Geology & Geochemistry Seminar, Princeton University, May 14.
- 2015 Goldschmidt2015 invited talk, Prague, CZ, August 17.
- 2014 Goldschmidt2014 keynote talk, Sacramento, CA, June 8.
- 2014 Environmental Science and Engineering Seminar Series, Harvard School of Engineering and Applied Sciences, March 14.
- 2014 Harvard University Center for the Environment discussion lead, Cambridge, MA, January 28.
- 2014 Department of Chemistry Seminar Series, University of British Columbia, Vancouver, BC, Canada, January 21.
- 2013 11<sup>th</sup> International Conference on Mercury as a Global Pollutant Plenary Speaker, Edinburgh, Scotland. (presented for medical reasons by D.P. Krabbenhoft), August 1.
- 2013 Graduate School of Oceanography Seminar Series, University of Rhode Island, RI, April 26.
- 2012 Dartmouth College Superfund Program Seminar Series, Hanover, NH, October 16.
- 2012 16<sup>th</sup> International Conference on Heavy Metals in the Environment (ICHMET) Plenary Speaker, Rome, Italy, September 24.
- 2012 Mercury Science in the Great Lakes Workshop, Invited participant and speaker, Chicago, IL. May 30-31.
- 2012 School of Marine and Atmospheric Sciences Seminar Series, Stony Brook University, NY, February 3.
- 2011 Gulf of Mexico Alliance Mercury Meeting, Gulf Breeze, FL, October 18.
- 2011 Interdisciplinary Seminar Series, Lafayette College, PA, September 26.
- 2011 Superfund Research Program Seminar Series, Harvard School of Public Health, Boston, MA, March 7.
- 2010 Gordon Research Conference – Environmental Sciences: Water, Holderness, NH. June 20-25.
- 2010 U.S. EPA Meeting on Global Mercury Emissions and U.S. Exposures, Washington, DC. January 14.
- 2009 Northeast and Great Lakes Region Mercury Science & Policy Conference, Chicago, IL. November 18.
- 2009 10<sup>th</sup> National Forum on Contaminants in Fish, Portland, OR, November 2-5.
- 2009 9<sup>th</sup> International Conference on Mercury as a Global Pollutant, Guiyang, China. Invited presentation at session hosted by the National Institute for Minamata Disease (NIMD). June 7-12.
- 2009 UNECE/CLRTAP Task Force on Hemispheric Transport of Air Pollution, St. Petersburg, Russia, April 1-3.
- 2008 International Air Quality Advisory Board, Washington DC. April 15.
- 2008 Gulf of Mexico Mercury Workshop, Gulfport MS, December 2-4.
- 2008 5<sup>th</sup> Annual Northwest Water Quality Modelers Meeting, Hood River OR, May 2-3
- 2008 International Joint Commission Nearshore Priority Expert Consultation Part II, Dearborn MI, March 12-13.

- 2008 Joint ASLO and AGU Ocean Sciences Meeting, Orlando, FL. March 2-7.
- 2007 New England Tribal Council, Boston MA, December 11.
- 2007 US EPA Region 1 Science Council Seminar Series, August 29.
- 2007 New England Interstate Water Pollution Control Commission Fish Consumption Workgroup, Lowell MA, April 3.
- 2007 Lake Ontario Contaminant Monitoring, Modeling and Research Workshop, Grand Island NY, March 27-28.
- 2007 Harvard Center for Risk Analysis Seminar Series, Harvard School of Public Health, Boston MA, March 5.
- 2007 US EPA's Mercury Coordination Workgroup, Washington DC, February 28.
- 2006 Dartmouth Toxic Metals Research Program and Sea Grant Sponsored Workshop, Durham NH, November 15-16.
- 2006 Marine Science Program Seminar Series, University of Connecticut, Groton CT, October 13.
- 2006 NOAA Great Lakes Environmental Research Laboratory Seminar Series, Ann Arbor MI, September 14.
- 2006 USGS/US EPA Roundtable on Mercury in the Environment, Washington DC, April 13.
- 2006 US EPA Region 1 Regional Science Council Seminar Series, Boston MA, March 1.
- 2006 University of British Columbia, School of Occupational and Environmental Hygiene Seminar Series, Vancouver BC, Canada, February 3.
- 2005 US Army Corps of Engineers Committee on Water Quality, San Francisco CA, August 30.
- 2005 Shared Air Summit sponsored by the Premier of Ontario, Toronto ON, Canada, June 20.
- 2005 Biennial Meeting of the International Joint Commission, Two invited talks. Kingston ON, Canada. Two Invited talks. June 9-11.
- 2005 NOAA- US EPA Scientist-to-Scientist Meeting on Multi-Media Aspects of Environmental Pollution in Coastal and Marine Environments. Laurel MD, June 2.
- 2005 Ontario Ministry of the Environment (Toronto and Dorset locations), ON, Canada. Two invited seminars: April 20&22.
- 2005 US EPA's Scientific Advisory Board, Panel on Regulatory Environmental Modeling, Washington DC, February 7-9.
- 2005 International Air Quality Advisory Board of the International Joint Commission, Vancouver, BC, January 26.
- 2004 Department of Fisheries and Oceans Canada, Bedford Institute of Oceanography, Halifax, Nova Scotia, Canada. Two invited seminar: January 13&15.
- 2004 USGS/US EPA Mercury Roundtable on Tools for Modeling Fish Bioaccumulation and Potential Health Effects, Washington, DC, June 4.
- 2004 Woodrow Wilson International Center for Scholars, Washington DC, June 20.
- 2003 US EPA Mercury in Marine Life Workgroup, Office of Water. Washington DC, July 10.
- 2003 4<sup>th</sup> International Conference on Air Quality: Mercury, Trace Elements and Particulate Matter, Arlington, VA, September 22-24.

## **SELECTED MEDIA COVERAGE**

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- 2016 "Unsafe levels of toxic chemicals found in drinking water for six million Americans"  
<http://news.harvard.edu/gazette/story/2016/08/unsafe-levels-of-toxic-chemicals-found-in-drinking-water-of-33-states/> Featured on CNN, CBS, Washington Post, Business Insider.
- 2016 "Manmade mercury emissions decline 30 percent from 1990-2010"

- <https://www.seas.harvard.edu/news/2016/01/manmade-mercury-emissions-decline-30-percent-from-1990-2010> Featured on: Yahoo News, Voice of America, Business Insider, The Australian, The Telegraph, Courier Mail, The Japan Times
- 2016 Arctic Deeply, “Curbing Mercury in Arctic Diets” Hannah Hoag:  
<https://www.newsdeeply.com/arctic/articles/2016/01/12/elsie-sunderland-curbing-mercury-in-arctic-diets/>
- 2015 “Poison in the Arctic and the cost of clean energy”  
<https://www.seas.harvard.edu/news/2015/09/poison-in-arctic-and-cost-of-clean-energy>  
Featured on: CTV News, The Canadian Press, IFL Science, The Conversation.
- 2014 Science Magazine News: “More than twice as much mercury in the environment as thought.” E. Stokstad. <http://news.sciencemag.org/environment/2014/09/more-twice-much-mercury-environment-thought>.
- 2013 “Harvard Researchers warn of legacy mercury in the environment.”  
<https://www.seas.harvard.edu/news/2013/07/harvard-researchers-warn-of-legacy-mercury-in-environment> Featured on redOrbit, ScienceDaily, Phys.org, Medical News Today.
- 2013 BioMedCentral: “Counting the costs of mercury pollution.”  
<http://www.biomedcentral.com/presscenter/pressreleases/20130107>
- 2012 “Toxic mercury, accumulating in the Arctic, springs from a hidden source”  
<https://www.seas.harvard.edu/news/2012/05/toxic-mercury-accumulating-arctic-springs-hidden-source> Featured in Huffington Post, Scientific American.
- 2009 New York Times: “Study shows link between air pollution, contaminated seafood.” N. Straub:  
<http://www.nytimes.com/gwire/2009/05/01/01greenwire-study-shows-link-between-air-pollution-contami-19116.html>
- 2009 Nature News: “Ocean mercury on the increase: Rise may affect neurotoxin levels in fish.” N. Lubick:  
<http://www.nature.com/news/2009/090331/full/news.2009.218.html>.

## RESEARCH SUPPORT

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- 2016-2017 The Gelfond Fund, Stony Brook University, “A pilot analysis of nutritional modifiers of methylmercury uptake.” PI.
- 2016-2018 The Nippon Foundation – Nereus Program, University of British Columbia Canada, “Development of a global modeling framework for contaminant impacts on marine fisheries.” PI.
- 2016-2018 Harvard President’s Climate Solutions Fund, “Global methane releases from hydroelectric power expansion and mitigation strategies for future development.” PI.
- 2015-2017 U.S. Environmental Protection Agency, “Integrated Modeling Approaches to Support Systems-Based Ecological Risk Assessment.” Co-I (PI: Katherine von Stackelberg)
- 2015-2016 Harvard National Institute for Environmental Health Research Center Grant: “Drinking water exposures to per and poly fluorinated alkylated substances (PFASs) in the Nurses Health Study Cohort” Co-PI with Francine Laden (HSPH).
- 2013-2018 NIH and NSF Oceans and Human Health Program, “Immunotoxicity in Humans with Lifetime Exposure to Ocean Pollutants.” Co-I (PI: Philippe Grandjean)
- 2013-2016 National Science Foundation, Chemical Oceanography: “Collaborative Research: Methylmercury Interactions with Marine Plankton.” Co-PI with Robert Mason (U.Conn.) and Nick Fisher (SUNY, Stony Brook).
- 2013-2016 Smith Family Foundation: “Sources, Trends and Effects of Immunotoxic Perfluorinated Compounds.” PI.

- 2013 Gift to Harvard Office of Sponsored Research. “Immunotoxicity Risks Associated with Exposures to Perfluoroalkyl Substances (PFASs) in Marine Seafood.” PI.
- 2013 Electric Power Research Institute, “Global 3-D Biogeochemical Modeling of the Impacts of Legacy and Riverine Mercury on Past and Future Atmospheric Deposition.” PI.
- 2012-2017 Nunatsiavut Government: “Methylmercury and Lake Melville.” PI.
- 2012-2016 National Science Foundation, Arctic Sciences: “Collaborative Research: Evaluating the Competing Impacts of Global Emissions Reductions and Climate Change on the Distribution and Retention of Selected POPs in the Arctic Ocean.” Co-PI with Rainer Lohmann (URI) and Noelle Selin (MIT).
- 2012-2014 Electric Power Research Institute. “A Survey of High End Fish Consumers in the United States and Resulting Mercury Exposures.” PI.
- 2011-2013 U.S. Environmental Protection Agency. “Global Mercury Emissions and U.S. Population Exposures.” PI.
- 2011-2015 National Science Foundation, Chemical Oceanography: “Collaborative Research: Interwoven Biogeochemical Cycles and Biotransformations of Mercury and Selenium in the Upper Ocean. Co-PI with Carl Lamborg (WHOI) and William Fitzgerald (U.Conn.).
- 2011-2013 Harvard National Institute for Environmental Health Research Center Grant: “Predicting Cholera Outbreaks Using Global Climate Data.” Co-PI with C.O. Buckee (Harvard).
- 2011-2012 Harvard School of Engineering and Applied Sciences Funding for Environment, Energy and Sustainability Research: “Global Source of Environmental Mercury from Disposal of Commercial Mercury Products.” Co-PI with D.J. Jacob (Harvard).
- 2011-2012 Harvard School of Engineering and Applied Sciences Funding for Environment, Energy and Sustainability Research: “Water Reuse for Irrigation in Rural Australia.” Co-PI with J. Briscoe (Harvard).
- 2011-2012 Electric Power Research Institute. “Pilot Investigation of the Impacts of Past, Present and Future Atmospheric Mercury Deposition on Distribution and Bioavailability of Oceanic Mercury.” PI.
- 2010-2014 National Science Foundation, Arctic Sciences: “Collaborative Research: Impacts of Recent Climate and Emissions Changes on Mercury Bioaccumulation in Arctic Marine Food-webs” Co-PI with D.J. Jacob (Harvard).
- 2010-2014 National Science Foundation, Atmospheric Chemistry Division: “Collaborative Research: Global 3-D Modeling of Atmospheric Mercury and its Coupling to the Ocean and Land: Impacts of Past and Future Anthropogenic Emissions.” Co-PI with D.J. Jacob (Harvard).
- 2010-2011 Florida Department of Environmental Protection. “Pilot Analysis of Gulf of Mexico State Residents’ Methylmercury Exposures from Commercial and Locally Caught Fish.” PI.