# CURRICULUM VITAE

February 2016

**CYNTHIA C. GILMOUR**

Senior Scientist

Smithsonian Environmental Research Center email: gilmourc@si.edu

P.O. Box 28 Office phone: 443-482-2498

Edgewater, Maryland 21037 Fax: 443-482-2380

**Education**

1985 Ph.D., University of Maryland, Marine, Estuarine and Environmental Sciences

1980 B.A., Cornell University, Biochemistry

**Professional Experience**

2004-current Senior Scientist, Smithsonian Environmental Research Center

2003-2004 Associate Director, The Academy of Natural Sciences, Estuarine Research Center.

2002-2004 Curator, The Academy of Natural Sciences, Estuarine Research Center.

1996-2001 Associate Curator, ANSERC.

1997-present Participating Faculty, Marine, Estuarine, and Environmental Sciences Program, University of Maryland, College Park, MD.

1990-1996 Assistant Curator, ANSERC.

1988-1990 Patrick Scholar, ANSERC.

1988-1993 Associate of the Division of Applied Sciences, Harvard University, Cambridge, MA.

1985-1987 Postdoctoral Research Fellow, Interdisciplinary Programs in Health, Harvard University School of Public Health, Boston, MA.

1986-1990 Adjunct Assistant Professor, Marine Sciences Research Center, State University of New York, Stony Brook, NY.

1980-1985 Graduate Research and Teaching Assistant, University of Maryland, Department of Chemistry and Chesapeake Biological Laboratory.

**Research Interests**

Mercury biogeochemistry; mechanisms and control of microbial mercury methylation from the molecular to ecosystem levels.

Microbial ecology of estuarine, lacustrine and wetland systems; response to stressors.

Sulfate-reducing bacteria and sulfur biogeochemistry

**Professional Societies**

American Chemical Society (Geochemistry and Environmental Chemistry Divisions), American Geophysical Union, American Society for Microbiology (Microbial Ecology), American Society of Limnology and Oceanography, Estuarine Research Federation/AERS, Society for Environmental Toxicology and Chemistry.

**Policy and Research Review:**

Chesapeake Bay Program, Scientific and Technical Advisory Committee, At-large appointee, 2006-2011; Toxics Subcommittee 1995-2005; 2014-present.

Advisory Committee, CALFED San Francisco Bay Mercury Study, 1999-2002, 2015-16.

EPA Science Advisory Board, Member, Ecological Processes and Effects Committee 1999-2005.

SETAC Mercury Monitoring and Assessment Workshop. Sept. 2003.

Development of the “Mercury Strategy for the Bay-Delta Ecosystem: A Unifying Framework for Science, Management, and Ecological Restoration” for CALFED, 2001-2003. With J. Wiener and D. Krabbenhoft.

Maryland Sea Grant Scientific Advisory Committee, 1991-1993; 2001- 2006.

Peer Reviewer, EPA Draft Mercury Research Strategy, 1999.

EPA Science Advisory Board, Consultant to:

 Review of ORD’s 2000 Research Strategy for Mercury

Ecological Processes and Effects Committee, Blackstone River Initiative. March, 1998.

Review of EPA’s Mercury Report to Congress, 1997.

**Postdoctoral Scientists**

Grace Schwartz, 2015-current. Ph.D. Duke

Eugenio Santillan 2014-current. Ph.D. U. Texas

Andrew Graham 2010-2012. PhD. Johns Hopkins

Carl Mitchell 2008-2010. Ph.D. U. Toronto

Sonja Fajgervold 2007-2008. Ph.D. U. Maryland

Andrew Heyes 1995-2000. Ph.D McGill

**Students, Student Committees and Teaching:**

Doctoral committee, James Sanders, U. Maryland Baltimore County, Civil and Environ. Engr., Upal Ghosh advisor. Ph.D. expected 2017.

Master’s committee, Sarah Downey, U. Maryland, MEES, Andrew Heyes, advisor. MS. 2010.

Doctoral committee, Terill Hollweg, U. Connecticut, Marine Sciences, Robert Mason, advisor. PhD 2010.

Doctoral committee, Marvourneen Dolor, U. Maryland, MEES, G. Helz Advisor, PhD 2009.

Co-advisor, Liz Kerin, U. Maryland, MEES, M. Suzuki, advisor. MS. Aug. 2007.

Doctoral committee, Carrie Miller, U. Maryland, MEES, Robert Mason, advisor. Ph.D. 2006.

Master’s committee, J.R. Flanders, UC Santa Cruz. Russ Flegal, advisor. MS spring 2004.

Master’s committee, Michael Rearick, U. Maryland, MEES, Robert Mason, advisor. MS Spring 2004.

Co-Advisor, Janina Benoit, U. Maryland, MEES, Robert Mason, advisor. Ph.D. May 2000. “Sulfide Controls on Mercury Methylation by Sulfate-Reducing Bacteria.”

Doctoral committee; Jennifer Jay, Mass. Inst. Technology, Ph.D. 1999. Profs. Harry Hemond and Francois Morel, advisors.

Master's committee, Michael Ewell, University of Maryland, Center for Marine Biotechnology, M.S. 1995. Prof. R. Wiener, advisor.

Doctoral committee, Frederic Chanania, George Mason University, 1993.

Assoc. Prof. Robert Jonas, advisor.

Doctoral committee, Elizabeth A. Henry, Harvard University, Ph.D. 1992.

 Prof. Ralph Mitchell, advisor.

Master's committee, Maureen Leavitt, Univ. Mass. Boston, M.S. 1988.

Asst. Prof. Michael P. Shiaris, advisor.

Plus >25 undergraduate interns.

**Grants and Contracts:**

Current Support:

Ghosh, U, D. Elias, and C.C. Gilmour. Development Of In-Situ Mercury Remediation Approaches Based On Methylmercury Bioavailability. NIH/NIEHS. Superfund Hazardous Substances\_Basic Research and Education. 8/2014-7/2018. $214,000 to SERC.

Gilmour, C.C. Studies of microbial Hg methylation under the mercury focus area at UT Battelle. FY 2015. $30,000.

Jordan, T. W. Brogan, C. C. Gilmour, D. Muller. Evaluating the performance of Regenerative Stormwater Conveyances in urban versus rural watersheds. Chesapeake Bay Trust. $400k. 2015-2019.

Gilmour, C.C. Mercury remediation research for Berry’s Creek NJ. Dow Chemical (through Exponent). $206,543 spent in FY 2015

Gilmour, C.C. Maryland Dept. Environ. 2015-2016 Chloride & Sulfate Project Cabin John Watershed. 1/2015-3/2016. $14,961.

Heyes, A and C.C. Gilmour. Assessment of Mercury Cycling in a Coupled Estuarine/Terrestrial Ecosystem, and Development of a Long-term Ecosystem-Level Mercury Monitoring Site at the Smithsonian Environmental Research Center. Maryland Dept. of Natural Resources. MD FY 2015. $49,900 to SERC (7th year)

Ogburn, M, C.C. Gilmour, E.G Johnson and A. Hines. Nursery Habitat Contributions to the Chesapeake Blue Crab Spawning Stock NOAA/Saltonstall Kennedy. 5/2014- 4/2016. $323,341.

Ghosh, U, and C.C. Gilmour. Actively shaken *in-situ* passive sampler platform for methylmercury and organics. DoD Strategic Environmental Research And Development Program (SERDP) 10/2014- 9/2015. $50k to SERC.

Gilmour, C.C. Maryland Dept. of Environment Baltimore Harbor Sediment and Water Column Project- Trace Metal Analytical Support; development of sediment thresholds for Lead and Zinc: Acute Bioassay Testing. Subaward from UMCES. 6/2014-3/2015. $16,000.

Gilmour, C.C. Maryland Dept. Environ. 2014-2015 Chloride & Sulfate Project Jones Falls Watershed. 1/2014-3/2015. $22,717.

Prior Support @ Smithsonian (2006-2014)

Heyes, A and C.C. Gilmour. Assessment of Mercury Cycling in a Coupled Estuarine/Terrestrial Ecosystem, and Development of a Long-term Ecosystem-Level Mercury Monitoring Site at the Smithsonian Environmental Research Center. Maryland Dept of Natural Resources. MD FY 2006-2014. $49,900 per year.

Gilmour, C.C. Technical Support For Geochemical, Genetic, and Community Controls On Mercury Methylation. Oak Ridge National Lab. 2007-2014. $225,000.

Gilmour, C.C. Berry's Creek Activated Carbon Remediation Study. 2010-2014. $730k to SERC.

Gilmour, C.C. Mercury Experiment to Assess Atmospheric Loadings in Canada and the U.S. EPA IAT. $288,000. 2008-2013.

Heyes, A and C.C. Gilmour METAALICUS Part II: The Fate of Mercury In Watersheds and the Response of Lake 658 to Decreased Mercury Load. NSF Ecosystems. $820,000. 2008-2013.

Gilmour, C.C. and A. Graham. Assessment of Mercury Complexation in FGD Water Treatment Systems. Electric Power Research Institute. 11/11- 6/13. $149,355.

Gilmour, C.C., G.G.Riedel, A. Maizel and A. Graham. Hg and MeHg Mitigation Strategies in James M. Gavin Electric Power Plant FGD Leachate Ponds. Electric Power Research Institute. 11/11- 6/13. $127,729.

Osman, R., A.H. Hines, T.E. Jordan, J.P. Megonigal, Gilmour, C.C., and P.J. Neale. Smithsonian’s Global Change Research Facilities for Large-Scale Ecological Forecasting. NSF Academic Infrastructure. 10/2010 – 9/2013. $1,695,000.

Menzie, C, E. Henry, C. Gilmour and U. Gosh. Evaluating the efficacy of a low-impact delivery system for in-situ treatment of sediments contaminated with methylmercury and other hydrophobic chemicals. U.S. Dept. of Defense ESTCP. $245,000 to SERC. 2008-2012.

Gilmour, C.C. ACME Project Data and Literature Synthesis. Florida Dept. Environ. Protection. 8/2008 – 12/2012. $125,833.

Gilmour, C.C. Assessment of Hg and Se Removal Mechanisms in Anaerobic FGD Water Treatment Systems. Electric Power Research Institute. $101,629. 1/1/2010-12/2011.

Gilmour, C.C. and U, Ghosh. Phase II. South River Amendment Studies: Impacts of Activated Carbon Amendment on Methylmercury Production. Dupont through Exponent. $90,100. 5/11-3/12.

Harris, R. and C.C. Gilmour. Effects of Climate Change on Mercury Cycling and Bioaccumulation in the Great Lakes Region. EPA Great Lakes Atmospheric Deposition Program. $39,698 to SERC. 11/20/2009-1/2012.

Gilmour, C.C. Maryland Dept. of Environment Baltimore Harbor Sediment and Water Column Project- Trace Metal Analytical Support; development of sediment thresholds for Lead and Zinc. 2007-2010. $30k.

Gilmour, C.C. Penobscot River Mercury Study - Studies on Mercury Methylation. Environ/Mallinkrodt/US District Court District of Maine. $913,000. 2009-3/2012.

Gilmour, C.C. METAALICUS 2008: Methylmercury Production and Accumulation in L658 Sediments. Electric Power Research Institute. 5/2008-3/2009. $16,870.

Menzie, C, E. Henry, C. Gilmour and U. Gosh. Evaluating the efficacy of SediMite in treating mercury contamination at DuPont Superfund sites. Dupont/Exponent. Fall 2008- 2009. Funded. $35k to SERC.

Menzie, C, E. Henry, C. Gilmour and U. Gosh. Evaluating the efficacy of SediMite in treating mercury contamination at Rohm and Haas Superfund sites. R&H/Exponent. Fall 2008- 2009. Funded. $25k to SERC.

Gilmour, C.C. “Microbial Metal Bioavailability from Coal-Utilization By-Products.” Frontier GeoSciences/DOE. $130,000. 2007-2009.

Heyes, A and C.C. Gilmour. Assessment of Mercury Cycling in a Coupled Estuarine/Terrestrial Ecosystem, and Development of a Long-term Ecosystem-Level Mercury Monitoring Site at the Smithsonian Environmental Research Center. Maryland Dept of Natural Resources. $99,980 to SERC. Feb. 2006- Jan. 2007.

Gilmour, C.C., W. Orem, R. Harris, E. Roden, and S. Roy. “Supporting Research for South Florida Mercury Accumulation. $179,000 ($43,000 to SERC). Jan 2006-May 2007.

Gilmour, C.C., A. Heyes, E. Roden and R.P. Mason. METAALICUS: A Whole-watershed, Stable Isotope Study of the Mechanisms of Net Microbial Methylmercury Production. NSF Ecosystems. $780,560. 2004-2007.

Mason, R.P. and C.C. Gilmour. Investigating the Importance of the Coastal Zone as a Source of Methylmercury to the Ocean. NSF Chemical Oceanography. $524,055. 2004-2007.

Gilmour, C.C. and E. Roden. Aquatic Cycling of Mercury in the Everglades: Linking Everglades Restoration, Land and Air Management. Florida Dept. Environ. Protection. $389,000 with $339,000 to Gilmour, 2003-2006.

Gilmour, C. Effects of Changing Fly-Ash Pond Chemistry on Methylmercury Production. Electric Power Research Institute. $59,411. Nov 2005-March 2006.

Gilmour, C.C. Seed Funding for a Coastal Mercury Network. Smithsonian Marine Science Network, Research Pilot Project, $20,000. November 2004 – September 2006.

Mason, R.P. and C.C. Gilmour. Understanding and Modeling Methylmercury Production in Maryland reservoirs. Maryland DNR. $160,000, with $80,000 to ANSERC. 2003-2005.