Katherine Haines Freeman

Department of Geosciences

Department of Chemistry khf4@psu.edu

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Pennsylvania State University cell: (814)-574-3451

University Park, PA 16802

**Education**

Ph.D. 1991 Department of Geology, Indiana University, Bloomington, IN USA

M.S. 1989 Department of Geology, Indiana University, Bloomington, IN USA

B.A. 1984 *Cum laude*, Geology and Classical Civilization, Wellesley College, Wellesley, MA USA

**Research Interests**

I develop methods to analyze stable isotope ratios of fossil biomolecules and other organic compounds and I use molecular and intramolecular isotopes to study past climate, biogeochemistry, and astrobiology.

**Professional Appointments**

*Current*

2022-present Member, OSIRIS-REx Mission Sample Return Science Team

2022-present co-Director, International Geobiology Course (Agouron Inst., Simons Foundation)

2018-present Director, NASA Astrobiology Center for Isotopologue Research (ACIR)

2016-present Evan Pugh University Professor, Pennsylvania State University

2013-presentCo-Editor*, Annual Review of Earth and Planetary Sciences*

*Past*

2019-2020 Moore Distinguished Scholar, Caltech (for 2019-2020 sabbatical)

2015-2016 Distinguished Professor of Geosciences, Pennsylvania State University

2014-2016 Chair, Organic Geochemistry Division, Geochemical Society

2011 Crosby Lecturer, Dept. of Earth, Atmospheric and Planetary Sciences, MIT

2011 Visiting Faculty, Dept. of Biology and Geology & Geophysics, University of Utah

2010 Visiting Scientist, National Museum of Natural History, Smithsonian Institution

2004-2009 Associate Head for Graduate Programs and Research, Department of Geosciences,

Pennsylvania State University

2003-2007 Director, Penn State Biogeochemistry Research Initiative in Education, NSF-IGERT graduate student training program

2002 Guest Investigator, Woods Hole Oceanographic Institution (sabbatical visitor)

1999-2002 Associate Director, Penn State Biogeochemistry Research Initiative in Education, NSF-IGERT graduate student training program

1991-2015 Assistant, Associate and Professor of Geosciences, Pennsylvania State University

1991 Postdoctoral Associate, Skidaway Institute of Oceanography, Savannah, GA; Advisor: S.G. Wakeham

* 1. Graduate Research Assistant, Dept of Geology, Indiana University; Advisor: J. M. Hayes

1. Associate Instructor, Geologic Field Station, Indiana University
   1. Visiting Investigator, Carnegie Institution of Washington, Geophysical Laboratory; Advisor: Thomas C. Hoering

**Honors and Awards**

2022 Honorary Doctorate of Science, The University of Chicago

2022 Alumna Science Center Legacy Wall Honoree, Wellesley College

2021 The Day Medal, The Geological Society of America

2020 The Nemmers Prize in Earth Sciences, Northwestern University

2019 Richard Owen Alumni Award, Department of Earth and Atmospheric Sciences, Indiana University, Bloomington, IN

2017 William S. and Carelyn Y. Reeburgh Lecture, American Geophysical Union

2017 The Alfred Treibs Award, The Geochemical Society

2013 Fellow, American Geophysical Union

2013 Elected Member, the U.S. National Academy of Sciences

2012 Cozzarelli Prize, the U.S. National Academy of Sciences

2012 Heinz Lowenstam Science Innovation Award, European Association of Geochemistry

2011 Fellow, Geochemical Society and European Association of Geochemistry

2011 Fellow, American Academy of Microbiology

2010-2011 Fellow, John Simon Guggenheim Memorial Foundation

2007 Fellow, Geological Society of America

2001-2014 Fellow, Canadian Institute for Advanced Research, Earth System Evolution Program

1999 James Lee Wilson Medal in Sedimentology, SEPM, the Society for Sedimentary Geology

1997 The Peter Schenck Award, European Association of Organic Geochemists

1987 NASA Graduate Student Researchers Program Fellowship

1984 The Patricia Roberts Harris Fellowship

1983 The Sarah F. Langer Award, Wellesley College

*At The Pennsylvania State University*

2013 The Wilson Award for Excellence in Research, College of Earth and Mineral Sciences

2008 Faculty Mentoring Award, College of Earth and Mineral Sciences

2004 The Wilson Award for Excellence in Teaching, College of Earth and Mineral Sciences

2002 Graduate Faculty Teaching Award, the Graduate School

**PUBLICATIONS**

Orcid: <https://orcid.org/0000-0002-3350-7671>

Google Scholar page: <https://scholar.google.com/citations?hl=en&user=5dTdzREAAAAJ>

Google Scholar Metrics:

Total citations: 19,696

H-Index: 69

Web of Science (ISI) Metrics:

Total citations: 13,244

H-Index: 57

**EDUCATION, TEACHING AND RESEARCH TRAINING**

**Supervision of Graduate Student Research**

***Former Students***

*As major advisor:*

Richard Pancost Ph.D. (Geosciences) 1998 Professor, University of Bristol

Lee Colarusso M.S. (Geosciences) 1998 MFG Sheppard Miller

Francis Cooper M.S. (Geosciences) 1995 Software engineer, Geosoft

Robert Dias Ph.D. (Geosciences) 2000 U.S.G.S., Denver (retired)

Melinda Foland M.S. (Geosciences) 2001 Engineer, ThermoFisher

Kenneth McRowe M.S. (Geosciences) 2003 Consulting hydrologist

Nicolai Pendentchouk Ph.D. (Geosciences) 2004 RCUK Fellow, Univ. of East Anglia

Jennifer Eigenbrode Ph.D. (Geosciences) 2004 Scientist, NASA Goddard

Courtney Turich Ph.D. (Geosciences) 2006 Schlumberger, Paris France

Kristine Nielson M.S. (Geosciences) 2006 Staff, University of Adelaide

James Moran Ph.D. (Geosciences) 2007 Scientist, Pacific Northwest Natl. Lab Katja Meyer Ph.D. (Geosciences) 2008 Asst. Professor, Willamette College

Aaron Diefendorf Ph.D. (Geosciences) 2010 Associate Professor, U. Cincinnati

Heidi Albrecht Ph.D. (Geosciences) 2011 Shell Oil

Katherine Dawson Ph.D. (Geosciences) 2011 Asst. Professor, Rutgers

Clayton Magill Ph.D. (Geosciences) 2013 Lecturer, Hariott-Watt

Heather Graham Ph.D. (Geosciences) 2014 Research Scientist, NASA

Angela Chung M.S. (Geosciences) 2015 PhD student, Univ. Pittsburgh

Christine Doman M.S. (Geosciences) 2015 Analytical Chemist, Sports Medicine Research

Elizabeth Denis Ph.D. (Geosciences) 2016 Staff Scientist, PNNL

Laurence Bird Ph.D. (Geosciences) 2016 USGS, Reston

Allison Karp Ph.D. (Geosciences) 2020 Postdoc, Yale and Brown

Shelby Lyons Ph.D. (Geosciences 2020 ExxonMobil

Allison Fox Ph.D. (Geosciences) 2020 Planetary Scientist, NASA Goddard

Troy Ferland Ph.D. (Geosciences) 2021 Postdoc, Environmental Protection Agency

*As co-advisor or research supervisor:*

Timothy Filley Ph.D. (Geosciences) 1997 Professor, Purdue University

Daniel McKinney Ph.D. (Fuel Sciences) 1998 Shell Oil

Mark Pagani Ph.D. (Geosciences) 1998 deceased; former: Professor, Yale University

Mark Strynar Ph.D. (Soil Science) 2002 Researcher, U.S. EPA

Jamie Fulton Ph.D. (Geosciences) 2010 Asst. Professor, Baylor University

Christopher Junium Ph.D. (Geosciences) 2010 Assoc. Professor, Syracuse University

Kevin Mueller Ph.D. (Ecology) 2011 Asst. Professor, Cleveland State University

Adriana Russo M.S. (Geosciences) 2019 Ph.D. student, UC Riverside

***Current students***

Esther Munoz Ph.D. (Geosciences) 2019-present; co-advised with C. House

Emma Hartke M.S. (Geosciences 2020-present

Youki Sato Ph.D. (Geosciences) 2020-present

Paul Volante M.S. (Geosciences) 2021-present

Eric Hasegawa Ph.D. (Geosciences) 2021-present; co-advised with M. Lloyd

Juliana Drozd Ph.D. (Geosciences) 2022-present; co-advised with C. House

#### Supervision of Postdoctoral Scholars

Hiroshi Naraoka, 2/96-12/96 (supported by Japanese Government); Tokyo University

Yongsong Huang 1/97-12/99(supported by grants to Freeman and Arthur); Brown University

Andy Zimmerman 7/00-02 (supported by IGERT-BRIE; Brantley Freeman); Univ. Florida

Gary Icopini 7/00-01 (supported by IGERT-BRIE; Brantley, Freeman)

Francesca (Smith) McInerney 8/02-2006 (supported by NSF, Smithsonian Inst.), Univ, New Queensland

Pratigya Polissar 1/05-2008 (supported by Freeman via CIFAR awards to Freeman, D. Rowley, U. Chicago, S. Willett, ETH), LDEO, Columbia University; UC Santa Cruz

Anna Henderson 2010-2012 (supported by CIFAR; Freeman and S. Cowling); Planning Director Climate and Energy, State of Minnesota

Sara Lincoln 2013-2018 (supported by C-IMAGE award to Freeman); USGS

Allie Baczynski 2014-present (supported by NASA award to Freeman) currently: Assistant Research Professor

Gabriella Weiss 2019-present (supported by NASA award to Freeman); NASA GSFC

Hao Xie 2021-present (supported by the Agouron Institute)

Ophélie McIntosh 2023-present (supported by OSIRIS REX / NASA)

**Visiting Scholars**

Michael Joachimski 5/97-7/97 (supported by German Government)

Larissa Dsikowitzky 5/00-6/00 (supported by German Government)

Ros Rickaby 12/00 (supported by Harvard University)

Thomas Kuhn 1-2/01; 9-11/01; 2/02; 11/02 (supported by German Government)

Lidia Katarzyna Trocha 2011-2013 (supported by Freeman and D. Eissenstat)

Rosemary Bush 2011 visiting student from Northwestern University

Allie Baczynski 2011 visiting student from Northwestern University

Kendra Chritz 2011-2012 visiting student from University of Utah

Abigail Rooney 2012 visiting student from Trinity College, Dublin, Ireland

Sarah Enders 2012 visiting student from University of California at Davis

Ross Williams 2013 visiting student from MIT

Thomas Elliott Arnold 2014 visiting student from University of Florida

**Supervision of Undergraduate Research**

*One-semester projects*

Ryabtseva, M.A., 1992, A study of Oil Spills

Sunderland, T., 1993, Biological Effects of Oil Spills in the Marine Environment

Hosterman, J., 1993, Transport and Microbial Degredation of Halogenated Organic Compounds in the Subsurface

Bogle, C, 1994, Humic Substances: Structure, Transformations and Interactions with Contaminants

Cuno, C., 1994, Detoxification and Removal of BTEX Compounds from Unsat-urated Zones and Groundwater Sources

Voght, E., 1995, Legislation, Assessment and Remediation of Sites Contaminated with Petroleum Hydrocarbons

Darcy, J., 1996, The Origins of life at Hydrothermal Vents (J. Kastings, advisor)

Harvey, M., 1996, Acid Rain and Its Effects on Aquatic Ecosystems

*Senior and Honors Theses (Two-semester projects)*

Follweiler, D., 1994, Compound-Specific Isotope Analyses of Plants and Sediments from Mud Lake, Florida. Honors Thesis in Chemistry

Laukonen, K., 1997, Century-Long Sediment Record of Golf Course Herbicide Applications, Green Lake, Fayetteville, N.Y. Honors Thesis in Geosciences

Sandomenico, T., 1997, Caffeine and Other Organic Tracers of Sewage in Soils and Groundwaters Associated with the Living Filter Project, State College, PA. Senior Thesis in Geo-Environmental Engineering

Moreland, M., 1999, Isotopic Records of Ecosystem Shifts in Tropical Lakes. Senior Thesis in Geosciences

Potisk, S. (2004). Isotopic analyses of microbial RNA monomers. Senior Thesis in Geosciences

Beausang, D.H. (2005) Spatial associations between climate and leaf wax n-alkanes from C3 and C4 grasses. Honors thesis in Geography.

Thornburg, J. (2006) The Younger Dryas transition observed in lacustrine sediments from Castor Lake, Washington. Senior Thesis in Geosciences

Galligan, K. (2009) Carbon and hydrogen isotopic compositions of plants past and present.

Sayles, Masoud (2010) Carbon sequestration in forest soils and the effects of tree species on soil organic matter.

Tavalavage, Annie (2012) Lipid biomarkers in sedge specimens.

Pederson, Eric (2013) Organic carbon in Eocene soils.

Gagnon, Cathy (2019-2020) Paleoclimate and ecology during Neolithic Settlements, Croatia

Rosland, Iman (2019-2020) Sediment and paleoclimate records of Olduva Gorge, Tanzania

Williams, Hollin (2023-2024) Isotopic studies of coral specimens

*Other undergraduate student supervision, including summer students*

D. Beausang (2003, 2004), S. Harman (2003), S. Potisk (2003), A. Kleinhesselink (2004), D. Zemirah (2004); J. Thornburg (2004-2005); K. Galligan (2004-2005; 2007-2008); N. Patel (2009); N. Rivera (2009); P. Crooks (2009); J. Harris (2010); E. Pederson (2013); A. Tamalavage (2013); Robert Smith (2014); Jamie Vornlocher (2016); Safiya Alphius (2016); Rebecca Miller (2017); Ellen Polites (2016); Tori LaBirt (2017-2018); Cathy Gagnon (2019), Mila Matney (2021); Samuel Cohen (2021), Zoe Zenker (2023)

**Technical Staff Supervised & Supported**

Denny Walizer, Senior Research Assistant 1991-2023

Margaret Ricci, Senior Research Assistant 1996-2002

Robert Burfield Research Assistant 1997-1998

Gabriel Montemurro, Research Assistant 1997-1999

Tracy Michelle Henniger, Research Assistant 2001-2004

Pratigya Polissar, part-time technician 2002-2005

Chris Lernihan, Research Assistant 2002-2006

Nevin Whitman, Laboratory Assistant Summer 2007

Laurie Eccles, Laboratory Assistant 2010-2013

Heike Betz, Laboratory Manager 2018-present

Kate Meyers, Laboratory Assistant 2020

**Courses Taught (all at Penn State University)**

### *Semester Course # Title Enrollment*

Spring 1992 Geosc 454 Geology of Oil and Gas (80%) 24

Geosc 497 Marine Biogeochemistry (33%) 6

Fall 1992 Geosc 419 Organic Geochemistry (50%) 10

Spring 1993 Geosc 454 Geology of Oil and Gas 15

Earth 002 Gaia--The Earth System 60

Geosc 597a Hydrosciences Colloquium 2

Fall 1993 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 15

Spring 1994 Geosc 454 Geology of Oil and Gas (10%) 13

Geosc 497c Marine Biogeochemistry (33%) 9

Earth 002 Gaia-The Earth System 97

Fall 1994 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 28

Geosc 597i Organic Matter and Earth History 8

Spring 1995 Geosc 494 Geology of Oil and Gas (5%) 14

Geosc 597 Field Biogeochemistry 10

Earth 002 Gaia-The Earth System 117

Fall 1995 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 21

Spring 1996 Earth 002 Gaia-The Earth System 95

Geosc 597d Origin and Early Evolution of Life (33%) 15

Fall 1996 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 21

Geosc 597d Hydrosciences Colloquium

Spring 1997 Earth 002 Gaia- The Earth System 108

Geosc 497i Field Techniques in Environmental Geochemistry (20%) 9

Fall 1997 Geosc 497i Field Techniques in Environmental Geochemistry (20%) 12

Spring 1998 Geosc 597d Molecular Indicators of Geologic Processes 5

Fall 1998 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 25

Geosc 497i Field Techniques in Environmental Geochemistry (20%) 13

Spring 1999 Earth 100 Environment Earth 175

Geosc 502 Evolution of the Biosphere (5%) 20

Geosc 504 Advanced Geochemistry (10%) 5

Fall 1999 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 23

Geosc 413 Field Techniques in Environmental Geochemistry (20%) 12

Geosc 4/597a Astrobiology (10%) 8

Spring 2000 Geosc 597c Microbial Biogeochemistry 6

Geosc 597a Biogeochemical Analysis (7 %) 5

Fall 2000 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 23

Geosc 413 Field Techniques in Environmental Geochemistry (20 %) 15

Geosc 597a Biogeochemical Analyses (1 lecture & lab) 11

Geosc 597f Issues in Geosciences (5 %) 18

Geosc 597c Astrobiology Seminar (1 lecture) 4

Spring 2001 Geosc 597a Microbial Biogeochemistry (50%) 9

Earth 002 Gaia – The Earth System 190

Fall 2002 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 8

Geosc 597c Methane Biogeochemistry (25%) 13

Spring 2003 Earth 002 Gaia—The Earth System 140

Geosc 597a Microbial Biogeochemistry (50%) 5

Fall 2003 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 12

Geosc 597 Biogeochemical Analyses (2.5 weeks) 5

Spring 2004 Earth 002 Gaia—The Earth System 100

Geosc 597x Stable isotopes in Terrestrial Ecosystems 8

Fall 2004 Geosc 519 Stable Isotope Geochemistry 8

Geosc 597 Biogeochemical Analyses (20%) 5

Spring 2005 Geosc 597 Microbial Biogeochemistry (25%) 6

Fall 2005 Geosc 419 Organic Geochemistry of Natural Waters and Sediments 8

Geosc 500 Issues in Geosciences (20%) 22

Spring 2006 Geosc 597A Molecular Isotope Systems 6

Fall 2006 Geosc 518 Stable Isotope Geochemistry 10

Geosc 500 Issues in Geosciences (10%) 19

Spring 2007 Earth 002 Gaia—The Earth System 90

Fall 2007 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 11

Fall 2008 Geosc 518 Stable Isotope Geochemistry 18

Geosc 500 Issues in Geosciences (50%) 25

Fall 2009 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 15

Geosc 500 Issues in Geosciences (50%) 20

Spring 2010 Geosc 518 Stable Isotope Geochemistry 8

Geosc 597 Isoscapes Seminar 7

Fall 2011 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 20

Abio 590 Astrobiology seminar (10%) 8

Spring 2012 Geosc 518 Stable Isotope Geochemistry 12

Earth 002 Gaia—The Earth System 125

Fall 2012 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 24

Geosc 587 Preparing for an Academic Career in the Geosciences (50%) 8

Geosc 597E Topics in Biogeochemistry (50%) 16

Geosc 597C Petroleum Geosystems (10 %) 16

Spring 2013 Geosc 518 Stable Isotope Geochemistry 17

Geosc 597 B Words to Live by: Writing Science 12

Fall 2013 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 19

Geosc 597 E Topics in Biogeochemistry (50%) 5

Spring 2014 Geosc 518 Stable Isotope Geochemistry 5

Geosc 597E Words to Live by: Writing Science 10

Fall 2014 Geosc 587 Preparing for an Academic Career in the Geosciences (50%) 12

Geosc 597J Advanced Biomarkers and Biosignatures 10

Spring 2015 Geosc 518 Stable Isotope Geochemistry 17

Geosc 597E Words to Live by: Writing Science 14

Fall 2015 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 18

Geosc 597 Ocean Acidification: Past, Present, and Future 12

Spring 2016 Geosc 597 Words to Live By: Writing Science 17

Geosc 518 Stable Isotope Geochemistry 18

Fall 2016 Geosc 419 Organic Geochemistry of Natural Waters & Sediments 20

Geosc 587 Preparing for an Academic Career in the Geosciences (50%) 8

Geosc 597 Future of Paleoceanography (25%, seminar) 12

Geosc 597 Petroleum Geosystems (10%) 5

Spring 2017 Geosc 518 Stable Isotope Geochemistry 15

Fall 2017 Geosc 419 Organic Geochemistry of Natural Waters and Sediments 18

Spring 2018 Geosc 518 Stable Isotope Geochemistry 10

Geosc 597 Words to Live By: Writing Science 9

Fall 2018 Geosc 419 Organic Geochemistry of Natural Waters and Sediments 14

Geosc 587 Preparing for an Academic Career in the Geosciences (33%) 12

Spring 2019 Geosc 597 Words to Live By: Writing Science 12

Fall 2020 Geosc 419 Organic Geochemistry of Natural Waters and Sediments (Zoom) 15

Spring 2021 Geosc 518A Foundations of Stable Isotope Geochemistry (Zoom; 50%) 18

Geosc 598 Words to Live By: Writing Science (Zoom) 18

Fall 2021 Geosc 419 Organic Geochemistry of Natural Waters and Sediments 15

Geosc 587 Preparing for an Academic Career in the Geosciences 12

Spring 2022 Geosc 518A Foundations of Stable Isotope Geochemistry (50%) 12

Geosc 502 Words to Live By: Writing Science 12

Fall 2022 Geosc 518B Isotope Biogeochemistry (50%) 5

Spring 2023 Geosc 518A Foundations of Stable Isotope Geochemistry 8

Geosc 501 Words to Live By: Writing Science (Zoom) 12

Fall 2023 Geosc 419 Organic Geochemistry of Natural Waters and Sediments 16

Geosc 587 Preparing for an Academic Career in the Geosciences 10

Other Teaching & Curricular Activities

PI, Co-Director, and Instructor, International Geobiology Course at Penn State, 2022-present

Associate Head for Graduate Programs and Research, Department of Geosciences, 2004-2010.

Stable Isotope Ecology (Biology 581), University of Utah, Salt Lake City UT, (instructor); 1999-2000, 2002- 2014, 2016- 2019, 2021, 2022

Faculty Mentor, Climate Science REU (NSF) program (2015-present)

Faculty Member, Climate Science Ph.D. (Dual-Title) program (2018-present)

Dual-Title Ph.D. program in Biogeochemistry (lead author on proposal; with Chris House); program approved Spring 2008.

Professor-in-charge, Geobiology B.S. degree program, Department of Geosciences, 2004-2005

Director, IGERT Biogeochemistry Research Initiative in Education (BRIE), 2003-2007 (Associate director, 1999-2003)

**Participation in Seminars and Workshops**

Gordon Research Conference on Organic Geochemistry, Plymouth, N.H., 13-17, August 1990 (invited speaker)

Workshop on Interfacing a Gas Chromatograph to an Isotope-Ratio Mass Spectrometer, Department of Chemistry, University of Bristol, England, 23-24 September, 1991 (co-organized workshop; wrote report summarizing workshop for Finnigan MAT)

Symposium on Compound Specific Isotope Analyses in Organic and Petroleum Geochemistry, American Chemical Society National Meeting, San Francisco, 5-10 April 1992 (session chair)

Gordon Research Conference on Organic Geochemistry, Plymouth, N.H. 10-14 August, 1992 (invited speaker)

International Association of Geochemistry and Cosmochemistry, 3rd International Symposium on Geochemistry of the Earth Surface 1-4 August 1993 (invited keynote speaker)

IAGC-SEPM Field Trip, Paleosols, Paleoclimate and Paleoatmospheric p-CO2: Paleosols in Central Pennsylvania, 5-6 August 1993 (participant)

SEPM 1993 Theme Meeting: Climate Eustasy and Life, 8-12 August 1993, University Park, PA (member of organizing committee and technical session convener)

Chesapeake-Region Association of Biogeochemists (CRABS), 1st Annual Meeting, 19-20 May, 1994, Chesapeake Biological Laboratory, Solomons, MD (co-organizer)

International Symposium on Biogeochemical Cycles and Global Change, Max-Planck-Gesellschaft, Max Planck Institute for Meteorology, Hamburg, Germany, January 16-18, 1995 (invited speaker)

Chesapeake-Region Association of Biogeochemists (CRABS), 2nd Annual Meeting, 27-28 May, 1995, Penn State University, University Park, PA (co-organizer)

American Chemical Society National Meeting: Isotopic and Molecular Biogeochemistry of Organic Matter In Ancient and Modern Environments, 20-24 August, 1995, Chicago, IL (symposium organizer; 37 papers)

Geological Society of America, Organic Geochemistry Division of the Geochemical Society Symposium: Variability of Isotope Compositions in Modern and Fossil Organic Matter, 5 November 1995 (symposium co-organizer; 26 papers)

Chesapeake-Region Association of Biogeochemists (CRABS), 3rd Annual Meeting, 24-25 May, 1996, University of Virginia, Charlottesville, VA (co-organizer; 25 papers; co-author on 3 papers)

Gordon Research Conference on Organic Geochemistry: Organic and Isotopic Records of Paleoclimate, Plymouth, NH, 11-16 August 1996 (session chair and discussion leader)

The 3rd Canadian Continuous-Flow Isotope Ration Mass-Spectrometry Workshop, National Hydrology Research Institute, Saskatoon, Saskatchewan, Canada, 9-11 September 1996 (keynote speaker)

Keynote Symposium: Linkages Among Dynamic Processes of Oceans, Continents and Atmospheres, Geological Society of America Annual Meeting, 28-31 October 1996 (invited speaker)

Gordon Research Conference on Chemical Oceanography, 10-15 August, 1997, Meriden, NH (invited speaker; co-authored with M. Pagani and M. Arthur)

6th International Conference on Paleoceanography, Discussion Panel: *Details of Tertiary global cooling: is CO2 still the major cause?* 23-28 August 1998, Lisbon, Portugal (invited panel member)

Union Session: Research Opportunities in the Solid Earth Sciences: A 10-Year Vision. Advisory session for NSF and NRC in developing a long-term vision for basic research in earth sciences. AGU national meeting, December 1998, San Francisco, CA (invited speaker)

Ocean Meeting, Biosphere 2, Oracle, AZ, July 1999 (invited participant)

Low-Temperature Geochemistry workshop, Boston, MA, June 1999 (invited participant and co-author)

Workshop on alkenone-based paleoceanographic indicators, Woods Hole Oceanographic Institution, October 1999 (invited participant and report co-author)

Molecular Biogeochemistry, technical session at the Goldschmidt Meeting, May, 2001 (session organizer)

Stable Isotope Geochemistry, a short course sponsored by the Mineralogical Society of America and the Geochemical Society, November, 2001 (invited speaker and author)

History of Atmospheric CO2 and its Effect on the Evolution of Plants, Animals and Ecosystems, a symposium sponsored by the David and Lucile Packard Foundation and the University of Utah, December, 2001, Snowbird, Utah (invited speaker)

Gordon Research Conference on Organic Geochemistry, Plymouth, NH, August 2002 (invited speaker)

ASTID working group for molecular and isotopic analyses of Martian regolith. University of Michigan, 10/2002 (invited speaker and workshop participant)

American Chemical Society, National Meeting, session honoring Geochemistry Division Medal recipient, J. M. Hayes, 3/2003 (invited speaker)

Weathering System Science Workshop, University of Deleware (NSF-EAR sponsored) 10/2005 (Breakout group Moderator and participant)

Archaeal Lipids, The Goldschmidt Conference, Moscow, ID, 5/2005 (Session organizer)

Workshop on *Proxy Development and Applications in Paleoceanography and Paleoclimatology*.  Sponsored by the U.S. National Science Foundation (ATM, EAR and OCE), 12/2005 (steering committee member and invited speaker).

Roundtable Discussion on Life in a Material World, annual meeting, Board on Earth Sciences and Resources, NRC (organizer and moderator)

AAAS Abelson Advancing Science Seminar: Microbes, Minerals and the Environment, October 26, 2006, Washington, DC (invited speaker)

Paul W. Gast Lecture, Geochemical Society, V.M. Goldschmidt Meeting, August, 2007 Cologne, Germany (invited speaker).

International Meeting on Organic Geochemistry, Stable Isotope Applications, Torquay, England, September 2007 (session chair)

Short Course: Stable Isotopes in Biogeochemistry, held in association with the International Meeting on Organic Geochemistry, Torquay, England, September 2007 (Organizer and speaker)

Workshop on Biosignatures in Ancient Rocks, Sudbury, Ontario, Canada, September 2007; sponsored by NASA Astrobiology, the Agouron Institute and the Canadian Institute for Advanced Research (invited speaker).

Workshop on Equable Climates, Harvard University Center for the Environment, Harvard University, Cambridge, MA, 4-5 April, 2008 (invited participant).

Scientific Steering Committee, Workshop entitled: Unknown Knowns and Known Unknowns: Chemical Oceanography in a Changing World, 22-24 February, 2009; Savannah GA

Scientific Steering Committee, ISOCOMPOUND: Advances in analyses and applications of compound specific stable isotopes in ecology, ecosystem- and earth sciences; funded by the ESF network MOLTER and NSF network BASIN, 1-5 June 2009, Potsdam, Germany

Participant, and invited speaker, planning meeting and workshop for program in Astrobiology, Canadian Institute for Advanced Research (CIFAR); Toronto; 2/09

Steering Committee member and co-organizer, NSF-sponsored workshop, Future Directions in Geobiology and Low-Temperature Geochemistry, Washington, D.C., August, 2010

Invited Participant, NSF-sponsored workshop, Conservation Paleobiology, Paleontological Research Institution in Ithaca, NY, June 3-5, 2011

Invited speaker, “Hydrogen isotopes as environmental recorders: from water to sedimentary biomarkers through biological systems,” Le Studium conference, Institute for Advanced Studies, Orleans, France, September 15-16, 2011.

Invited speaker, Environmental Contexts of Early Human Evolution, Lamont Climate Center, Lamont-Doherty Earth Observatory, April 18-19, 2012

Session Chair, Gordon Research Conference on Organic Geochemistry, Holderness, NH, August, 2012

Participant and invited speaker, Olduvai Coring Project, Stone Age Inst., Bloomington, IN Mar. 4-6, 2014

Session Chair, the V.M. Goldschmidt Conference on geochemistry, Sacramento, CA, June 2014

Keynote Speaker and Invited Panelist, Gordon Research Seminar, August 2-3, 2014

Session Chair, Gordon Research Conference on Organic Geochemistry, Holderness, NH, Aug. 3-8 2014

Invited speaker, ICDP Trans-Amazon Coring Project planning meeting, Manaus, Brazil, March 18, 2015

Invited speaker, Plant Wax Workshop, Ascona, Switzerland, 16-20 June, 2015

Invited keynote speaker, Marilyn Madness, a celebration of the career of Marilyn Fogel, The Carnegie Institute of Washington, Geophysical Lab, 23-25 October, 2016.

Speaker and participant, Olduvai Coring Project team meeting, The Stone Age Institute, Bloominton, IN, 17-20 October, 2016.

Invited participant and speaker, Workshop on early brain development, Templeton Foundation, Olduvai Gorge, Tanzania, 7-8 August, 2017.

Science committee and session chair, International Meeting of Organic Geochemistry, Florence, Italy, Sept 17-22, 2017.

Session discussion leader, Gordon Research Conference on Organic Geochemistry, Holderness, NH, July 29-Aug. 3 2018

Session organizer and co-chair, V.M. Goldschmidt Meeting 2018, Boston, MA, Aug 12-17.

Session organizer, AGU Fall meeting, Washington D.C., Dec. 10-14, 2018

Invited Keynote Speaker, Biogeosciences Centennial Symposium, AGU Fall meeting, Washington D.C., Dec. 10-14, 2018

Invited Speaker, ISOTOPES 2019 Raitenshaslach, Germany, 7-12 July, 2019

Invited Keynote Speaker, Biogeosciences Centennial Symposium, AGU Fall meeting, San Francisco, Dec. 2019

Organizer and chair, all-hands virtual meeting of the Astrobiology Center for Isotopologue Research, April, 2021

Session Chair, Gordon Research Conference on Organic Geochemistry, Holderness, NH, August, 2020 (postponed until 2022 due to COVID-19)

Session Chair, Gordon Research Conference on Geobiology, Oxnard, CA, February 2022 (organized session, but could not attend due to COVID-related rescheduling conflicts)

## Speaking Engagements (invited; does not include professional meetings)

School of Oceanography, University of Washington, May, 1991

Skidaway Institute of Oceanography, University System of Georgia, September, 1991

Department of Chemistry and Biochemistry and Department of Geology, University of Maryland, November, 1991

Petroleum and Natural Gas Engineering, Penn State, February,1992

Department of Geology, University of Pennsylvania, February,1992

Department Earth and Planetary Sciences, Harvard University, December,1992

Department of Geological Science, Northwestern University, September, 1993

Department of Earth, Atmospheric and Planetary Sciences, MIT 10/1993

Max Planck Institute for Marine Microbiology, Bremen, Germany, January, 1995

Finnigan MAT, Research and Development Division, Bremen, Germany, January, 1995

Department of Geological Sciences, Cornell University, May, 1995

Atlantic Richfield Oil Company (ARCO), Research Division, Plano, TX, October, 1995

Department of Geography, Penn State University, October,1995

Department of Geology, Lehigh University, January, 1995

Marine Science Program, University of North Carolina, Chapel Hill, February, 1996

Department of Geology & Geophysics, Yale University, February, 1997 (series on global change)

Department of Geology and Marine Geology & Geophysics Group, Graduate School of Oceanography, University of Rhode Island, March, 1997

Atlantic Richfield Oil Company (ARCO), Research Division, Plano, TX, May, 1997

Department of Geosciences, University of Minnesota, November, 1998

Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, April, 1999

Department of Geological Sciences, Indiana University, April, 1999

Department of Geological Sciences, The University of Chicago, May, 2000

Department of Geological Sciences, The University of Michigan, October, 2000 (Turner Lecture Series)

Department of Geology and Geophysices, University of Connecticut, November, 2000

Petroleum and Marine Division, Australia Geologic Survey Org., Canberra, Australia, October, 2000

Canadian Institute for Advanced Research, Earth System Evolution; Montreal, November, 2000

Canadian Institute for Advanced Research, Earth System Evolution; Toronto, 11/02

Department of Earth and Planetary Sciences, University of Tennesee, Knoxville, 2003 (Klepser Lecturer)

Department of Geological Sciences, University of South Carolina, 2003

College of Marine Sciences, the University of South Florida, St. Petersburg, FL, March, 2005

School of Earth and Atmospheric Sciences, The Georgia Institute of Technology, Atlanta, GA., 11/ 2005

Geophysical Laboratory, Carnegie Institute of Washington, Washington, D.C., January, 2006

Department of Geology, Portland State University, Portland, OR, May, 2006

Department of Marine Sciences, Rutgers University, March, 2007

College of Science, University of Arizona, Tucson, January, 2008

Microbial Science Institute, Harvard University, Cambridge MA, April, 2008

Department of Geology, Yale University (Biogeochemistry seminar), February, 2010

Department of Marine Sciences, University of North Carolina, April, 2010

Department of Geology, University of Cincinnati, April, 2010

National Museum of Natural History, Smithsonian Institution, 11/9/2010

Department of Biology, University of Utah, 2/8/2011

Department of Earth, Atmospheric and Planetary Science, MIT, March, 2011

Craig Venter Institute, San Diego, CA, Paleobiology during the Genomics Era, 5/12/2011

Department of Earth, Atmospheric and Planetary Science, MIT, March, 2011 (Crosby Lecture)

Department of Geology, Wellesley College, Wellesley, MA, 10/18/2011

Lamont-Doherty Earth Observatory, Columbia University, Lamont, NY, 2/19/2012

Origins Lecture, Department of Geology, McMaster University, Toronto, Canada, 3/12/2012

School of Earth and Atmospheric Sciences, Georgia Institute of Technology, 2/28/2013

Department of Plant Pathology, Penn State University, 2/25/2013

Monsanto, research division, St. Louis, MO, 5/29/2013

Krumbein Lecture, University of Chicago, 1/16/2014

Department of Geoscience, Penn State University, 1/28/14

Department of Geography, Penn State University, 2/21/14

Hewett Club Speaker, Environmental Dynamics and GeoEcology (EDGE) Institute and Department of Earth Sciences Seminar, University of California, Riverside, April 1-2 2014

School of Earth and Space Exploration, and Department of Chemistry, Arizona State University, November 5-7, 2014

Department of Geology, University of Adelaide, Dec. 4, 2014

Department of Geology, Rutgers University, 6 May 2015

Department of Geology, University of Washington, Seattle, WA, 28 May 2015

Phillips Lecture, College of Liberal Arts and Sciences, The University of Illinois, 12 November 2015

Department of Earth Science, Rice University, Houston, TX, 7 April 2016

Earth System Evolution workshop, Harvard University, Boston, MA 22 May, 2016

Climate and Data workshop, The Pennsylvania State University, 23 May, 2016

O.T. Hayward Distinguished Lecture, Department of Geosciences, Baylor University; Jan. 25-28, 2017

Dept. of Earth, Atmospheric, and Planetary Sciences, Purdue Univ., West Lafayette, IN, 23-24 Feb., 2017

Department of Geology and Geophysics, University of Wyoming, April 6-7, 2017

Geology Section (15) lunch talk, National Academy of Sciences, National Meeting, April 30-May 2, 2017

Geochemistry Forum, Department of Geosciences, The Pennsylvania State University, 9/7/2018

Dept. of Earth and Environmental Science, Franklin and Marshall College, Lancaster, PA, 9/28/18

Dept. of Chemistry, The Pennsylvania State University, University Park, PA 2/21/2019

Space Telescope Science Institute, The Johns Hopkins University, Baltimore, MD, 4/3/2019

Dept. of Earth and Atmospheric Sciences, Indiana University, Bloomington, IN 10/22/2019

Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, Amsterdam, Netherlands, 10/31/2019; (cancelled due to death in my family)

Division of Geological and Planetary Sciences, California Institute of Technology, 1/27/2020

Department of Earth and Planetary Sciences, UC Riverside, 1/28/2020

Department of Chemistry, Pomona College, Claremont, CA, 2/18/2020

Keynote Speaker, Ions@work 2020; Mass Spectrometry Core, Texas A&M University, 2/21/2020

Dept. of Earth and Environmental Sciences, Lehigh University, virtual seminar, 9/25/2020

Guest Speaker, Simons Foundation (origins group), 9/10/2021

Distinguished Lecture Series (DLS), Dept. of Geology & Geophysics, University of Utah, 10/8/2020

Department of Earth, Atmospheric, and Planetary Sciences (EAPS), MIT, 4/14/2021

Keynote Speaker, NESSC Day, NIOZ (Royal Netherlands Institute of Oceanography), 4/26, 2021

Keynote Speaker, graduate student symposium, Dept. Earth and Environ. Sci. Syracuse Univ., 4/9/2022

Department speaker, Dept of Geophysical Sciences, The University of Chicago, 6/3/2022

Nemmers Prize talk, Dept of Earth and Planetary Sciences, Northwestern University, 6/7/2022

ThermoScientific workshop on Orbitrap Mass Spectrometry and isotopologue analyses, associated with Fall AGU meeting, 12/12/2024

Invited Speaker, Geobiology Gordon Research Conference, January 2024

**SERVICE TO THE UNIVERSITY, PUBLIC AND PROFESSION**

**Service to the Pennsylvania State University**

**Service to the Department of Geosciences**

1991-1998 Member, Undergraduate Program Committee

1993-1995 Member, Graduate Program Committee, Candidacy Panel

1994-1996 Alternate Representative to Dept. Executive Committee

1994 Member, Faculty Search Committee for Geochemical Record of Global Change

1995-1999 Chair, Global Change and Earth History Curriculum Committee

1996 Member, Staff Functioning Evaluation Committee

1997 Member, Search Committee for Environmental Geochemistry faculty position

1997 Member, Advisory Search Committee for Head of Geosciences Department

1997-1999 Member, Department Promotion & Tenure Committee

1997 Member, Ad Hoc Committee to evaluate appointment of S. Lvov to faculty

1997-2000 Member, Admissions Committee for graduate program in geosciences

1998 Member, Department Executive Committee

1998-1999 Member, Search Committee for Geofluids/Astrobiology faculty position

1999-2000 Member, Search Committee for C-cycle faculty position in Meteorology

1999-2001 Member, Graduate Program Committee

2000 Judge, Graduate Student Colloquium

2000-2001 Member, Search Committee for Ice and Climate faculty position in Geosciences

2000-2004 Ombudsperson, Graduate Program in Geosciences

2000-2001 Member, Promotion and Tenure Committee

2003-2004 Chair, Task Force to develop B.S. Curriculum in Geobiology

2003 Member, Search Committee for Astrobiology faculty position

2003-2004 Member, Department Executive Committee (Diversity Representative)

2004-2010 Associate Head of Graduate Programs and Research

2004-2010 Member, Department Executive Committee (as Associate Head)

2004-2007 Member, multiple *ad hoc* search committees for staff positions (Geoscience & EESI)

2008-2009 Member, Search Committee for Carbon Sequestration faculty position (Geosc & EME)

2009 Member, search committee for faculty position in Sedimentary Geology

2009, 2010 Participant, Shake, Rattle and Rocks (departmental outreach activity)

2011-2012 Member, Promotion and Tenure Committee

2011-2013 Member, Nominations Committee

2012 Instructor, summer course for high school science teachers, NASA Space Grant

2012 Member, Graduate Admissions Committee

2012-2014 Member, search committee for faculty position in Hydrogeology

2013-2014 Member, strategic planning committee

2014-2017 Graduate Program Candidacy Exams Rover

2014-present Faculty advisor, Department Colloquium Committee

2014-2015 Ad-hoc faculty committee to address sexual harassment during geology field experiences

2016 Chair, ad-hoc postdoc applications evaluation committee

2016-2018 Member, Promotion and Tenure Committee

2018-2023 Member, honors committee, Department of Geosciences

2017-2018 Elected member, Geosciences Executive Committee

2020 Ad-hoc committee to introduce DEI criteria in tenure and promotion

2020-2023t Graduate Program Qualifying Exam Rover

2022-2023 Member, Tenure and Promotion committee

2022-2023 Member, faculty search committee (planetary sciences)

2022-present Chair, Geosciences Graduate Programs admissions committee

2023-present Chair, Research Support staff position search committee

**Service to the College of Earth and Mineral Sciences (EMS)**

* 1. Member, Facilities Committee
  2. EMS Representative at Faculty Meetings of the College of Agricultural Sciences

2002-2003 Chair, Environment Committee and ad hoc task force on Diversity

2003-2004 Member, College Diversity Council

2004 Member, Earth and Environmental Systems Inst. (EESI) Strategic Planning Committee

2005 Member, EESI *ad hoc* committee on future faculty hires in Earth Science and Ecology

2007 Member, Search Committee for the Associate Dean for Diversity in EMS

2012 Member, *ad-hoc* committee on EMS college communication (SWAE)

2013-2018 Member, EMS Faculty Advisory Committee

2012-2018 EMS Faculty Ombudsman

2016-2017 Chair, *ad-hoc* committee to evaluate the status of women faculty in EMS

2016-2017 Member, search committee for faculty position in Earth Science and Ecology

2017-2018 Chair, search committee for Department Head of Geosciences

2023-present Member, search committee for Department Head of Geosciences

**Service to the University**

1992-present Member, Marine Sciences Minor Committee

2000-2004 Chair, Marine Sciences Minor Committee

1. Mentor, NSF-sponsored “Ms. Wiz” program for elementary school girls

1994-1996 Advisor, Women in Science and Engineering Research Internship Program

1995, 1996 Faculty Judge, Graduate Student Research Exposition

1999 Member, *Ad-Hoc* Committee on Recruitment of Women Scientists at Penn State

2002-2005 Member, Selection Committee, Faculty Scholar Medal in the Physical Sciences

2005 Chair, Selection Committee, Faculty Scholar Medal in the Physical Sciences

2008 Chair, *Ad Hoc* Task Force, Water and Energy in a Changing World

2008 Member, Search Committee, Director of Water Resources Research Center, PSIEE

2010-2016 Advisor, light-element stable isotope facility, Environmental Sustainability Laboratory

2016-2017 Member, search committee for Assist. VP Research

2017 Member, search committee for Dean of the College of Earth and Mineral Sciences

2020-2021 Member, Faculty Scholar (physical sciences) selection committee

**Service to the Profession and the Public**

**Service to Business and Industry**

1992 Consultant on analytical methods in environmental research for Nittany Geosciences, a hydroscience firm in State College, PA

1993-1995 Reviewer, geochemistry textbooks (3 total) for John Wiley & Sons, Inc

1995-1999 Consultant on organic and isotope geochemistry of oil-field brines, ARCO, Plano, TX

1. Instructor, 2-day short course on reservoirs, seals and source rocks in rift basins, Japan National Oil Corporation, Technology Research Center, Chiba, Japan

2000 Consultant on molecular isotopic analyses of petroleum products; Stanford University

2013-present Research collaborations (on-going) with ThermoFisher Scientific on isotope methods

# Service to U.S. Government Agencies

* 1. Panel Member, National Science Foundation, Division of Ocean Sciences, Program in Chemical Oceanography

1995, 1997 Panel Member, National Science Foundation, Divisions of Ocean and Earth

Sciences, Program in Environmental Geochemistry and Biogeochemistry

1998-2000 Member, Committee on Basic Research Opportunities in the Solid Earth Sciences,

U.S. National Research Council

2000 Participant and report co-author, Workshop on Terrestrial Carbon Cycle, Division

of Earth Sciences, National Science Foundation

2001-2003 Member, U.S. National Committee for SCOPE (Scientific Committee on Problems of the Environment); sponsored by the U.S. National Research Council

2001-2004 Member, Committee on the Origins and Evolution of Life, U.S National Research Council

2002 Panel Member, National Science Foundation, Division of Earth Sciences, Program in

Geology and Paleontology

2004 Member, Chronos geochemical database working group (funded by NSF)

2005-2010 Member, Board on Earth Sciences and Resources, U.S. National Research Council

2006 Panel Member, NASA Exobiology

2008-2010 Member, Committee on the Importance of Deep-Time Geologic Records for Understanding Climate Change Impacts, U.S. National Research Council

2013 Chair and Member, NASA Exobiology Funding Proposal Review Panel

2018-present Member, NASA Astrobiology Institute (NAI) Executive Council

2018-2020 Elected representative, Class Membership Committee (CMC) for Section 15, National Academy of Science (NAS)

2019-present Member, Report Review Committee (RCC), NAS

2019-present Member, Committee on Astrobiology and Planetary Science (CAPS), NAS

2021 Member, Tiger team for Planetary Protection related to Mars Sample Return, NASA

2022 Member, Tiger Team for Time-Temperature exposure for Mars Sample Return, NASA

**Professional Journal Editorships**

1993-1996 Associate Editor, *Organic Geochemistry*

1996-1999 Member, Editorial Advisory Board, *Geochimica et Cosmochimica Acta*

1999-2001 Associate Editor, *Geochimica et Cosmochimica Acta*

2005-2011 Member, Editorial Board, *Geobiology*

2000-present Member, Editorial Committee, *Annual Review of Earth and Planetary Sciences*

2006-2013 Associate Editor, *Annual Review of Earth and Planetary Sciences*

2013-presentCo-Editor*, Annual Review of Earth and Planetary Sciences*

*Continuing* Member editor, *Proceedings of the National Academy of Science*

###### Service to Professional Organizations

1999 Member, Scientific Committee, 19th International Meeting in Organic Geochemistry, European Association of Organic Geochemists

1997-2000 Member, Best Paper Award Committee, Organic Geochemistry Div., Geochem. Society

1999-2001 Member, Patterson Medal Committee, Geochemical Society

2000-2006 Member, Awards Committee, European Association of Organic Geochemists

2004-2006 Vice Chairman, 2006 Gordon Research Conference in Organic Geochemistry

2006-2008 Chairman, 2008 Gordon Research Conference in Organic Geochemistry

2007-2009 Chair, Triebs Medal award committee, The Geochemical Society

2012 Member, Joint Publication Committee, The Geochemical Society

2011-2012 Member, Geochemical Fellows selection committee

2012-2016 Chair-Elect, Chair, past-chair, Organic Geochemistry Division, The Geochemical Society

2014-2015 Member, Board of Directors, The Geochemical Society

2015-2016 Member, Honors selection committee, American Geophysical Union

2016 Member, Honors selection committee, National Academy of Science

2017 Member, Scientific Committee for IMOG 2017

2021 Member PP Fellows selection committee, AGU

2022 Chair, Honors selection committee, National Academy of Science (Walcott medal)

2022-present Member, Awards committee, European Association of Organic Geochemists

**Advisory and Review Boards**

2007- 2022 Member, Geological Sciences Alumni Advisory Board, Department of Geological Sciences, Indiana University, Bloomington, IN

2009 Member, External Review Committee, Woods Hole-MIT Ph.D. Join Program

2009-2017 Member, MIT Corporation Visiting Committee, Department of Earth, Atmospheric and Planetary Sciences (EAPS)

2010-2012 Member, National Ocean Sciences Accelerator Mass Spectrometry facility (NOSAMS) Advisory Board (Committee Chair: 2012)

2011 Member, Evaluation Committee, Department of Earth Sciences, ETH Zurich

2014 Chair, External Review Committee, Department of Earth and Planetary Sciences, Northwestern University

2016-2018 Member, Advisory Board, the Gulf Research Program, NAS

2017 Member, External Review Committee, Dept. of Earth Sciences, USC, Los Angeles, CA

2017 Member, External Review Committee, Netherlands Royal Inst. of Ocean Science (NIOZ)

2018 Member, External Review Committee, Lamont-Doherty Earth Observatory, Columbia University, New York

2018-present Member, Advisory Board, Life Sciences, The Simons Foundation, New York, NY

2018-present Member, Science Advisory Committee (SAC), Royal Netherlands Institute for Ocean Research (NIOZ)

2023-present Member, Governing Council, The National Academy of Science, including service on the program committee, international programs committee, and financial executive council.

**Membership in Professional Societies**

American Chemical Society, American Geophysical Union, European Association of Organic Geochemists, Geochemical Society, Geological Society of America, Canadian Institute for Advanced Research, American Academy of Microbiology, The Cosmos Club (Washington, DC)

**Selected Community Service**

2016-2019 Elected member, Vestry, St. Andrew’s Episcopal Church, State College, PA

2006-2019 Troop Leader, Girl Scout Troop 41374, State College, PA

2015-2020 Volunteer with “4th Fest” in the State College community