

ELIZABETH A. CANUEL
Virginia Institute of Marine Science
College of William and Mary, Gloucester Point, VA 23062

EDUCATION

Ph.D., 1992, University of North Carolina, Chapel Hill, NC, Marine Sciences.

B.S., 1981, Stonehill College, North Easton, MA, Chemistry.

ACADEMIC POSITIONS

2006-present Professor, Department of Physical Sciences, School of Marine Science, The College of William & Mary, VA.
2000-2006 Associate Professor, Department of Physical Sciences, School of Marine Science, The College of William & Mary, VA.
2002-2005 Class of 1964 Term Endowed Associate Professor of Marine Science, School of Marine Science, The College of William & Mary, VA.
1994-2000 Assistant Professor, Department of Physical Sciences, School of Marine Science, The College of William & Mary, VA.
1992-1994 National Research Council Post-doctoral Fellow, Water Resources Division, U.S. Geological Survey, Menlo Park, CA.

RESEARCH INTERESTS

Natural and human-induced changes to the origin, composition, and reactivity of organic matter
Biogeochemistry; Microbial transformations of organic matter
Stable isotope (C, N) geochemistry
Organic matter diagenesis
Biofuels and sustainable energy
Ocean Sciences education; efforts to increase the participation of under-represented groups

ADMINISTRATIVE AND LEADERSHIP POSITIONS

2010 Chair, Organic Geochemistry Division, Geochemical Society
2009-present Co-director, Undergraduate Minor in Marine Science, College of William & Mary
2008-present AGU Ocean Science Section Secretary – Marine Geochemistry (re-elected 2010)
2004-2005 Member, Search Committee, President of The College of William & Mary
2004-present Secretary, Faculty Assembly, The College of William & Mary
2002-present Chair, Academic Council, School of Marine Science
2002-present SMS/VIMS Representative, Faculty Assembly, The College of William & Mary
1998 Workshop participant, Future of Chemical Oceanography in the U.S. (FOCUS), NSF

- 1996-2001 Director, Female Initiation into Research, Science & Technology (F.I.R.S.T.) Program
 1996 Member, Future of ASLO (American Soc. of Limnology & Oceanography) Committee

HONORS, PRIZES AND AWARDS

- 2009 Plumeri Faculty Excellence Award, College of William & Mary
 2008 Plenary Speaker, American Society of Limnology & Oceanography Annual Meeting, St. Johns, Newfoundland.
 2006 Thomas Jefferson Teaching Award, College of William & Mary
 2004 Dean's Prize for the Advancement of Women in Marine Science, SMS/VIMS
 2001 William & Mary Alumni Fellowship Award for teaching
 1997 Dean's Prize for the Advancement of Women in Marine Science, SMS/VIMS
 1997 Best Paper Award in Organic Geochemistry, The Geochemical Society
 1995 National Science Foundation CAREER Grant Awardee, Ocean Sciences Division
 1992 Outstanding Student Paper Award, AGU Ocean Sciences Meeting
 1991 National Research Council Postdoctoral Fellowship
 1991 Dissertations Symposium on Chemical Oceanography, Invited Participant

CONTRIBUTIONS TO THE EDUCATIONAL PROGRAM

Graduate Courses

MSCI 501L. Fundamentals of Marine Science Lab, Coordinator and Instructor

Fall 2003: 19 students enrolled (co-coordinator with Dr. Kam Tang)

Fall 2002: 21 students enrolled (coordinator)

Fall 2001: 17 students enrolled (coordinator)

Fall 2000: 19 students enrolled (coordinator)

MSCI 503. Field and Laboratory Methods in Marine Science, Co-Instructor

Fall, 1994: 32 students enrolled

MSCI 548. Experimental Design in the Marine Science Laboratory, Co-Instructor

Summer 2001: ~20 students enrolled

Fall 2000: 20 students enrolled

MSCI 524. Principles of Chemical Oceanography

1995-2006: 50:50, Canuel:Bauer; 2009: 55:35:10, Canuel:Beck:Bauer

Fall 2009: 7 students enrolled

Spring 2006: 3 students enrolled

Spring 2003: 4 students enrolled

Spring 1999: 7 students enrolled

Fall 1997: 5 students enrolled

Spring 1996: 6 students enrolled

Spring 1995: 3 students enrolled

MSCI 610. Effects of Global Change on Modern Marine Ecosystems

Fall 2007: 10 students enrolled (Bauer, Canuel and Smith)

MSCI 627. Marine Organic Geochemistry

Spring 2010: 5 students enrolled (Canuel)

Spring 2007: 4 students enrolled (Canuel)

Spring 2004: 8 students enrolled (75:25; Canuel:Bauer)

Spring 2000: 4 students enrolled (75:25; Canuel:Bauer)

Spring 1998: 4 students enrolled (75:25; Canuel:Bauer)

Spring 1996: 6 students enrolled (75:25; Canuel:Bauer)

MSCI 698. Respiration in Aquatic Ecosystems (with D. Steinberg)

Fall 2006: 5 students enrolled

MSCI 698. Global Change (with J. Bauer)

Spring 2005: 7 students enrolled

MSCI 698. Advanced Readings in Sediment Biogeochemistry (with I. Anderson)

Spring 2003: 6 students enrolled

MSCI 698. Advanced Readings in Organic Geochemistry

Fall, 1999: 8 students enrolled

MSCI 698. Biogeochemistry (with I. Anderson, J. Bauer, H. Ducklow)

Spring 1997: 16 students enrolled

MSCI 698. Topics in Organic Geochemistry

Fall, 1994: 6 students enrolled

Undergraduate Courses

CHEM 409. Spring 2005. Undergraduate Research, Timothy Montgomery, Chemistry Department, College of William & Mary.

CHEM 409. Fall 2004. Undergraduate Research, Timothy Montgomery, Chemistry Department, College of William & Mary.

CHEM 409. Spring 1999. Undergraduate research and Honors Thesis
Jennifer Boxwell, Chemistry Department, College of William & Mary.

CHEM 409. Fall 1998. Undergraduate research and Honors Thesis
Jennifer Boxwell, Chemistry Department, College of William & Mary

Students Mentored

1. Major Advisor

Current Students:

2007 Sarah Schillawski (Ph.D.) co-advised with Jim Bauer

2008 Christie Pondell (M.S.)

2008 Stephanie Salisbury (M.S.)

Graduated Students:

- 2009 Amber Kozak (Ph.D. candidate) Co-advised with I. Anderson. *Fate of Macroalgal Organic Matter in a Shallow Coastal Lagoon: A Dual Isotope Tracer and Biomarker Approach*.
Present Position: Postdoctoral Scholar, VIMS
- 2008 Amanda Spivak (Ph.D.) Co-advised with J. Emmett Duffy. *The Effect of Trophic Structure and Biodiversity on Sediment Organic Carbon*.
Present Position: Postdoctoral Scholar, Miami University, Ohio.
- 2006 John Pohlman (Ph.D.) Co-Advised with J. Bauer. *Methane Biogeochemistry and Sulfate Reducing Bacteria Chemotaxonomy at Biogenic and Thermogenic Gas Hydrate Sites on the Northern Cascadia Margin off Vancouver Island*. Present Position: Mendenhall Postdoc, USGS.
- 2006 Vicki Pilon (Ph.D.) *Sources and Composition of Particulate Organic Matter in the Sacramento-San Joaquin River Delta, CA*. Present Position: unknown
- 2005 Elizabeth Waterson (M.S.) *Sources of Sedimentary Organic Matter in the Mississippi River and Adjacent Gulf of Mexico*.
Present Position: Chemistry Teacher, Tabb High School, York County VA
- 2005 Christine Conrad (Ph.D.). Co-advised with Michael Kelly. *Using Planar Oxides as a Novel Approach to Metal Ion Sorption Studies: From the Lab to the Field*. Present Position: unknown.
- 2002 Krisa Arzayus (Ph.D.) *Association and Partitioning of Polycyclic Aromatic Hydrocarbons With Bound and Extractable Phases of Estuarine Sediments: A Lipid Biomarker Approach*.
Present Position: Program Manager, NOAA, Office of Scientific Support, Climate Team.
- 2000 Andrew Zimmerman (Ph.D.) *Organic Matter Composition of Sediments and the History of Eutrophication and Anoxia in the Mesohaline Chesapeake Bay*.
Present Position: Assistant Professor, Department of Geological Sciences, University of Florida.
- 1999 Craig Tobias (Ph.D.) Co-advised with I. Anderson, *Nitrate Reduction at the Groundwater Saltmarsh Interface*.
Present Position: Associate Professor / Coastal Studies Program Coordinator
Department of Marine Sciences, University of Connecticut
- 1999 Jennifer Boxwell (B.S. Chemistry Dept., William & Mary), *Microwave-Assisted Extraction of Lipids from Estuarine Sediments*. Undergraduate Thesis. Graduated with high honors.

Graduate Student Awards

- 2009 Sarah Schillawski, NERRS Graduate Fellowship
- 2007 Amanda Spivak, Matthew Fontaine Maury Award (VIMS)
- 2006-present Amber Hardison, EAOG Travel Scholarship
- 2006-present Amber Hardison, US EPA STAR Fellowship
- 2005-present Amanda Spivak, US EPA STAR Fellowship
- 2005 John Pohlman, Best Student Paper Award, AGU
- 2004-2005 Elizabeth Waterson, Kelley Watson Fellowship (VIMS)
- 2004-2005 Amber Hardison, Hargis Fellowship (VIMS)

2003-2004 John Pohlman, Kelley Watson Fellowship (VIMS)
1999-2002 Christine Conrad, NSF Graduate Fellowship
1998 Craig Tobias, Matthew Fontaine Maury Award (VIMS)

2. **Student Committee Service**

Rachael Blake (Ph.D.)
David Carlini (Ph.D.; degree completed August 1998)
Tom Chisholm (Ph.D.; degree completed August 1999)
Matt Church (Ph.D.; degree completed May 2003)
Tim Dellapenna (Ph.D.; degree completed August 1999)
James Douglass (Ph.D.; degree completed August 2008)
Heidi Geisz (Ph.D.)
David Gillett (Ph.D.; degree completed December 2009)
Kimani Kimbrough (Ph.D.; degree completed December 2001)
Kewan Liu (Ph.D.; degree completed December 1996)
Ai Ning Loh (Ph.D.; degree completed December 2002)
Leigh McCallister (Ph.D.; degree completed December 2002)
Scott Neubauer (Ph.D.; degree completed December 2000)
Michelle Thompson Neubauer (Ph.D.; degree completed May 2000)
Frank Parker (Ph.D.)
Jennifer Rhode (Ph.D.; degree completed December 2002)
Wendi Ribeiro (Ph.D.)
Lila Rose (Ph.D.)
Troy Sampere (Ph.D., Tulane University; degree completed August 2008)
Gary Schultz (Ph.D.; degree completed May 1999)
Jason See (Ph.D.; degree completed 2003)
Kathryn Sobocinski (Ph.D.)
Amy Shields (Ph.D.; degree completed August 2007)
Padma T.V. (Ph.D.; degree completed May 2001)
Shelby Walker (Ph.D.; degree completed August 2003)
Stephanie Wilson (Ph.D.; degree completed December 2008)
Andrew Wozniak (Ph.D.; degree completed December 2009)

Samantha Bickel (M.S.; degree completed August 2009)
Tyler Christensen (M.S.; degree completed August 2002)
Matthew Church (M.S.; degree completed May 1999)
Rebecca Countway (M.S.; degree completed December 1999)
Jennifer DeAlteris (M.S.; degree completed)
Kristen Delano (M.S.; degree completed)
Emily Jayne (MS)
Sara Kamfe (M.S., Chemistry Dept., W&M)
Tara Kniskern (M.S.; degree completed Spring 2001)
Ai Ning Loh (M.S.; degree completed August 1998)
Tong Li (M.A.; degree completed December 1996)
Patrick Lynch (M.S.; degree completed May 2008)
William Metcalfe (M.S.; degree completed December 2005)

Andrea Miller (M.S.; degree completed May 2008)
Althea Moore (M.S.)
Heidi Romine (M.S.; degree completed)
Lila Rose (M.S.; degree completed May 2008)
Emily Yam (M.S.; degree completed)

3. Undergraduate Research

Hadley McIntosh College of Saint Benedict | Saint John's University, Summer 2009
Carolina Funkey University of Mary Washington, REU, Co-advised with I. Anderson, Summer 2006
Tim Montgomery College of William & Mary, REU, Summer 2004
Jennifer Boxwell College of William & Mary, REU, Summer, 1997-1999
Chia Chia Chang University of Alabama, REU, Summer, 1995
Heidyleen Cruz Inter-American U., Puerto Rico, REU, Summer, 1996

4. Postdoctoral Scholars

2010 Amber Hardison
2008-present Yuehan Lu, Mellon Postdoctoral Scholar (co-advised with J. Bauer and R. Chambers)
2006-2008 Laura Palomo, Fulbright Fellow, Spain.
2002 Renato Carreira, EAOG Fellow, Brazil.

5. Other Educational Activities

2009 Mentor, Charlie Shobe, Governor's School in Marine Science.
2003-2009 VIMS REU Program, Workshop Coordinator, "Responsible Conduct in Science". Annual workshop presented to REU students.
2005 Hall-Bonner Program, Workshop Co-coordinator, "Responsible Conduct in Science".
2003-2004 VIMS REU Program, PI and coordinator Bay Eagle Cruise.
2001-2002 Mentor, Nichole Hirst, New Horizons Governor's School for Science and Technology.
1997-2001 Director, Female Initiation into Research, Science and Technology Program.

FELLOWSHIPS AND GRANTS

2010-2013 Collaborative Research: Constraining the Sources, Ages and Alteration of Dissolved and Particulate Lipids in Estuarine and Coastal Organic Matter. NSF Chemical Oceanography Program. Total Award: \$710k (\$362k to Canuel).
2009-present An Integrated Research Program for Algal Energy and Environmental Remediation, StatOil Hydro. Total Award: \$1M (~\$385 to VIMS).
2008-present Collaborative Research: Assessing the bioavailability of effluent organic nitrogen along a freshwater to saltwater continuum, NSF CBET. D. Bronk (PI), E. Canuel, M. Mulholland and P. Hatcher (ODU), N. Love (U.

- Michigan). Total Award: \$448k (\$40k to Canuel).
- 2006-2011 Collaborative Research: Benthic Microalgal Regulation of Carbon and Nitrogen Turnover in Land margin Ecosystems: A Dual Stable Isotope Tracer Approach. NSF Ecosystems Program. C. Tobias (PI), J. Vallino, I. Anderson, E. Canuel. Total Award: \$700k (\$380k to Anderson, Canuel).
- 2007-2009 Investigation of potential for biodiesel production from algae, Virginia Coastal Energy Research Consortium, ~\$40k per year.
- 2005-2007 Modeling Atlantic Menhaden in Support of Nutrient and Multispecies Management. R. Latour (PI), M. Brush and E. Canuel. US EPA Chesapeake Bay Program, \$256k.
- 2005-2007 Collaborative Research: Anthropogenic Impacts on Carbon Cycling in the Sacramento-San Joaquin River Delta: Changes in Source, Nature, and Age of Organic Carbon. NSF DEB Ecosystems, E. Canuel (PI), S. Wakeham and T. Bianchi, Total Award: \$310k (\$150k to Canuel).
- 2002-2005 Collaborative Research: How Temporal Changes in River Discharge and Storms Affect the Source and Age Distribution of Sedimentary Organic Carbon Across a River-Dominated Margin. T. Bianchi, B. McKee, M. Allison, E. Canuel, and S. Wakeham. Funded by: NSF Ocean Sciences. Total Award: \$500K (\$115K to Canuel).
- 2004-2005 Assessing effectiveness of restoration of salt marsh cordgrass (*Spartina alterniflora*) marshes by replacing the invasive common reed (*Phragmites australis*). Ken Able, (PI), C. Currin and S. Thorrold; subcontract to E. Canuel (\$10k to Canuel).
- 2004-2005 Sediment Organic Matter Quality as an Indicator for The Distribution and Abundance of *Corbicula Fluminea* In The Sacramento-San Joaquin Delta. San Francisco Bay-Delta Consortium Science Support Funds. \$25k.
- 2002 Use of Stable Isotopes for Developing a Food Web Model in a Recovering Seagrass System in Virginia Coastal Bays. R.J. Orth and E.A. Canuel. Funded by NOAA VCR. \$10k.
- 2001-2002 Interaction of Sediment Surfaces with Organics: Mechanistic Studies and Connection to Environmental Behavior. M.J. Kelley and E.A. Canuel. Funded by VIMS and W&M Collaborative Research Program. \$24k.
- 2000 Accelerated Solvent Extractor System for Contaminant and Organic Geochemical Analyses. E.A. Canuel (PI) and R.M. Dickhut (co-PI). Funded by Harbor Processes Program, Office of Naval Research. \$44k.
- 1999 Mass Spectrometer and Data Analysis System for Contaminant and Organic Geochemistry. R.M. Dickhut (PI) and E.A. Canuel (co-PI). Funded by Harbor Processes Program, Office of Naval Research. \$90k.
- 1998-2001 The Role of Seabed Dynamics in Controlling the Distribution and Preservation of Polycyclic Aromatic Hydrocarbons (PAHs) in Estuarine Sediments. E.A. Canuel (PI) with R.M. Dickhut and S.A. Kuehl. Funded by Office of Naval Research, Harbor Processes Program. \$300,000.
- 1998-2002 Assessment of the Sacramento-San Joaquin Delta as Habitat for Production of the Food Resources that Support Fish Recruitment. E.A. Canuel (PI). Funded by U.S. Geological Survey. \$232,567.
- 1995-1998 Particulate Organic Matter-Contaminant Associations at the Water-Sediment Interface: Biological and Physical Controls. E.A. Canuel (PI) with R.M.

- Dickhut (co-PI). Funded by Office of Naval Research, Marine Environmental Quality Program. \$300,000.
- 1995-2000 Sources of Particulate and Sedimentary Organic Matter in the Chesapeake Bay Estuary: A Biomarker Approach. E.A. Canuel (PI). Funded by National Science Foundation CAREER Program, Ocean Sciences Division. \$293,536.
- 1995-1997 Organic Carbon Abundance and Distribution at the Oyster, Virginia, Study Site. E.A. Canuel (PI). Exploratory Funds from the Subsurface Science Program, Department of Energy. \$25,000.
- 1995-1996 Sources and Reactivity of Organic Matter in San Francisco Bay: The Roles of Hydrologic Regime and Autochthonous Production. E.A. Canuel. Funded by California Department of Water Resources. \$27,394.
- 1995-1996 Lipid Biomarker Composition of Particulate Organic Matter in the Lower Chesapeake Bay. E.A. Canuel (PI). Funded by the Virginia Water Resources Research Center. \$20,000.
- 1995 Sources and Reactivity of Organic Matter in San Francisco Bay, CA. E.A. Canuel (PI). U.S. Geological Survey. \$5950.
- 1994-1995 Benthic Microalgal Production Associated with Intertidal Habitats in San Francisco Bay, CA. E.A. Canuel, with co-PI's C.A. Currin (NOAA-NMFS) and S.B. Joye (San Francisco State University). Funded by California Department of Water Resources, \$20,000.

RESEARCH

Refereed publications in periodicals, chapters in books, law review articles and conference proceedings (also see Manuscripts Submitted and In Preparation below)

- Bianchi, T.S. and **E.A. Canuel** (book manuscript in production) Chemical Biomarkers in Aquatic Ecosystems. Princeton University Press.
- Canuel, E.A.**, Brush, G. Cronin, T.M., Lockwood, R. and Zimmerman, A.R. (invited contribution; in revision) Paleoecology studies in Chesapeake Bay: A model system for understanding interactions between climate, anthropogenic activities and the environment. *In: Application of paleoenvironmental techniques in estuarine studies.* Gibson, Saunders, Gell, and Tibby (Eds.) Springer.
- Hardison, A.K., **Canuel, E.A.**, Anderson, I., Veuger, B. (in revision) Fate of macroalgae in benthic systems: Carbon and nitrogen cycling within the microbial community. *Mar. Ecol. Prog. Series.*
- Hardison, A.K., Tobias, C., Stanhope, J., **Canuel, E.**, Anderson, I. (in press) An experimental apparatus for laboratory and field-based perfusion of sediment porewater with dissolved tracers. *Estuaries and Coasts.*
- Palomo, L. and **E.A. Canuel** (in press) Sources of fatty acids in sediments of the York River estuary: Relationships with physical and biological processes. *Estuaries and Coasts.* DOI 10.1007/s12237-010-9268-3.
- Hardison, A.K. and **E.A. Canuel** (in press) Carbon (Organic, Cycling). *Encyclopedia of Geobiology*, Joachim Reitner and Volker Thiel (Eds.), Springer Publications.
- Brackley, H.L., Blair, N.E., Trustrum, N.A., Carter, L., Leithold, E.L., **Canuel, E.A.**, Jim Johnston, J. and Tate, K.R. (2010) Dispersal and transformation of organic carbon across an episodic, high sediment discharge continental margin, Waipaoa sedimentary system, New Zealand. *Marine Geology* 270: 202–212.

- Wakeham, S.G., **Canuel, E.A.**, Lerberg, E.J., Mason, P., Sampere, T.P. and Bianchi, T.S. (2009) Partitioning of organic matter in continental margin sediments among density fractions. *Marine Chemistry* 115: 211–225.
- Spivak, A.C., **Canuel, E.A.**, Duffy, J.E. and Richardson, P.R. (2009) Nutrient enrichment and food web composition affect ecosystem metabolism in an experimental seagrass habitat. *PLoS ONE* 4(10): e7473. doi:10.1371/journal.pone.0007473.
- Pohlman, J.W., Bauer, J.E., **Canuel, E.A.**, Grabowski, K.S., Knies, D.L, Mitchell, C.S., Whiticar, M.J. and Coffin, R.B. (2009) Sources and Fluxes of Methane in Gas Hydrate Cold-Seep Systems: Evidence from Radiocarbon and Stable Isotopic Signatures. *Marine Chemistry* 115: 102–109.
- Canuel, E.A.**, Lerberg, E.J., Dickhut, R.M., Kuehl, S.A., Bianchi, T.S. and Wakeham, S.G. (2009) Changes in Sediment and Organic Carbon Accumulation in a Highly-Disturbed Ecosystem: The Sacramento-San Joaquin River Delta, (California, U.S.A.). *Marine Pollution Bulletin* 59: 154–163.
- Spivak, A.C., **Canuel, E.A.**, Duffy, J.E., Douglass, J.G. and Richardson, J.P. (2009) Epifaunal community composition and nutrient addition alter sediment organic matter composition in a seagrass bed: a field experiment. *Mar. Ecol. Prog. Ser.* 376: 55-67.
- Loh, A.N., **Canuel, E.A.** and Bauer, J.E. (2008) Potential source and diagenetic signatures of oceanic dissolved and particulate organic matter as distinguished by lipid biomarker distributions. *Mar. Chem.* 112: 189-202.
- Waterson, E.J. and **Canuel, E.A.** (2008) Sources of sedimentary organic matter in the Mississippi River and adjacent Gulf of Mexico as revealed through lipid biomarker and $\delta^{13}\text{C}$ (TOC) analyses. *Org. Geochem.* 39: 422–439.
- Pourmand, A., Marcantonio, F, Bianchi, T.S., **Canuel, E.A.** and Waterson, E.J. (2007) A 28-ka history of sea surface temperature, primary productivity and planktonic community variability in the western Arabian Sea. *Paleoceanography* 22, doi:10.1029/2007PA001502.
- Spivak, A.C., **Canuel, E.A.**, Duffy, J.E. and Richardson, J.P. (2007) Top-down and bottom-up controls on sediment organic matter composition in an experimental seagrass ecosystem. *Limnol. Oceanogr.* 52(6): 2595-2607.
- Canuel, E.A.**, Spivak, A.C., Waterson, E.J. and Duffy, J.E. (2007) Biodiversity and food web structure influence short-term accumulation of sediment organic matter in an experimental seagrass system. *Limnol. Oceanogr.* 52(2): 590-602.
- Countway, R.E., **Canuel, E.A.**, and Dickhut, R.M. (2007) Sources of particulate organic matter in surface waters of the York River, VA estuary. *Org. Geochem.* 38: 365-379
- Bianchi, T.S., Allison, M.A., **Canuel, E.A.**, McKee, B.A., and Wakeham, S.G. (2006) Evidence for rapid export of riverine and shelf-derived organic matter into Mississippi Canyon. *EOS—Trans. Amer. Geophys. Union* 87:565, 572-573.
- Loh, A.N., Bauer, J.E. and **Canuel, E.A.** (2006) Dissolved and particulate organic matter source-age characterization in river and estuarine outflow waters: a combined isotope and biochemical approach. *Limnol. Oceanogr.* 51(3): 1421–1431.
- McCallister, S.L., Bauer, J. E., Ducklow, H. W. and **Canuel, E. A.** (2006) Sources and potential transformations of estuarine dissolved and particulate organic matter distributions: A multi-tracer approach. *Org. Geochem.* 37: 454-468.
- McCallister, S.L., Bauer, J. E., Ducklow, H. W. and **Canuel, E. A.** (2006) Bioreactivity of estuarine dissolved organic matter: A multi-disciplinary approach. *Limnol. Oceanogr.* 51(1): 94–100.

- Wakeham, S.G. and **E.A. Canuel** (2005) Degradation and preservation of organic matter in marine sediments. *In: The Handbook of Environmental Chemistry. Vol. 2 Series: Reactions and Processes: Bio and Chemical Markers in Environmental Chemistry.* John Volkman (Ed.), Springer-Verlag.
- Pourmand, A., Marcantonio, F., Bianchi, T.S, **Canuel, E.**, Waterson, E. and Schulz, H. (2005) Tracing Climate-Related Changes in Planktonic Community Structure and Deep-Ocean Circulation Patterns in the Arabian Sea. *Geophysical Res. Letters.* 32, L10610, doi:10.1029/2005GL022612.
- Pohlman, J.W., **E. A. Canuel**, N. R. Chapman, G. D. Spence, M. J. Whiticar, R. B. Coffin (2005) The origin of thermogenic gas hydrates on the northern Cascadia Margin as inferred from isotopic ($^{13}\text{C}/^{12}\text{C}$ and D/H) and molecular composition of hydrate and vent gas. *Org. Geochem.* 36: 703-716.
- Arzayus, K. and **E.A. Canuel** (2005) Organic matter degradation in sediments of the York River estuary: effects of biological vs. physical mixing. *Geochimica et Cosmochimica Acta.* 69: 455–463.
- Canuel, E.A.**, T.A. Abrajano, T.S. Bianchi, and S.A. Macko (2003) Sources and Fate of Biogenic and Anthropogenic Organic Matter in Freshwater and Estuarine Systems. Guest Edited volume of *Organic Geochemistry*, 34:163-317.
- Duffy, J.E., J.P. Richardson and **E.A. Canuel** (2003) Grazer diversity effects on ecosystem functioning in seagrass beds. *Ecology Letters* 6:637-645.
- Countway, R. E., R. M. Dickhut and **E. A. Canuel** (2003) Polycyclic aromatic hydrocarbon (PAH) distribution and association with organic matter in surface waters of the York River, VA estuary. *Organic Geochemistry* 34(2): 209-224.
- Arzayus, K. M., R. M. Dickhut, **E. A. Canuel** (2002) Effects of physical mixing on the attenuation of polycyclic aromatic hydrocarbons in estuarine sediments. *Organic Geochemistry.* 33(12): 1759-1769.
- Zimmerman, A.R. and **E.A. Canuel** (2002) Historical progression of eutrophication in the mesohaline Chesapeake Bay: A sediment geochemical record. *Limnology & Oceanography*, 47:1084-1093.
- Marcantonio, F., A. Zimmerman, Y. Xu and **E. Canuel** (2002) A Pb isotope record of mid-Atlantic US atmospheric Pb emissions in Chesapeake Bay sediments. *Marine Chemistry*, 77: 123– 132.
- Cloern, J.E., **E.A. Canuel** and D. Harris (2002) Stable-isotopes of C and N in aquatic and terrestrial plants of the San Francisco Bay estuarine system. *Limnology & Oceanography*, 47:713-729.
- Tobias, C. R., S. A. Macko, I. C. Anderson, **E. A. Canuel**, and J. W. Harvey (2001) Tracking the fate of a high concentration groundwater nitrate plume through a fringing marsh: a combined groundwater tracer and *in situ* isotope enrichment study. *Limnology and Oceanography*, 46: 1977-1989.
- Arzayus, K.M., R.M. Dickhut and **E.A. Canuel** (2001) Fate of atmospherically deposited polycyclic aromatic hydrocarbons (PAHs) in Chesapeake Bay. *Environmental Science & Technology*, 35: 2178-2183.
- Canuel, E.A.** (2001) Relations between river flow, primary production and fatty acid composition of particulate organic matter in San Francisco and Chesapeake Bays: A multivariate approach. *Organic Geochemistry*, 32: 563-583.
- Bianchi, T.S. and **Canuel, E.A.** (2001) Introduction to “Organic Geochemical Tracers in Estuaries.” Guest Edited volume of *Organic Geochemistry*, 32: 451-621.

- Zimmerman, A.R. and **E.A. Canuel** (2001) Bulk organic matter and lipid biomarker composition of Chesapeake Bay surficial sediments as indicators of environmental processes. *Estuarine Coastal and Shelf Science*, 53: 319-341.
- Tobias, C.R., I.C. Anderson, **E.A. Canuel** and S.A. Macko (2001) Nitrogen cycling through a fringing marsh-aquifer ecotone. *Marine Ecol. Prog. Series*. 210: 25-39.
- Zimmerman, A.R. and **E.A. Canuel**. (2000) A geochemical record of eutrophication and anoxia in Chesapeake Bay sediments: anthropogenic influence on organic matter composition. *Marine Chemistry*, 69: 117-137.
- Dickhut, R.M., **E.A. Canuel**, and coauthors (2000) Automotive sources of carcinogenic polycyclic aromatic hydrocarbons associated with particulate matter in the Chesapeake Bay. *Environmental Science & Technology* 34: 4635-4640.
- Canuel, E.A.** and A.R. Zimmerman (1999) Composition of particulate organic matter in the Southern Chesapeake Bay: Sources and reactivity. *Estuaries*, 22(4): 980-994
- Canuel, E.A.**, K.H. Freeman, and S.G. Wakeham (1997) Isotopic compositions of lipid biomarker compounds in estuarine plants and surface sediments. *Limnology and Oceanography*, 42(7):1570-1583.
- Canuel, E.A.** and C.S. Martens (1996) Reactivity of recently-deposited organic matter: Degradation of lipid compounds near the sediment-water interface. *Geochimica et Cosmochimica Acta*, 60:1793-1806.
- Canuel, E.A.** and J.E. Cloern (1996) Regional differences in the origins of organic matter in the San Francisco Bay ecosystem: Evidence from lipid biomarkers. In: J.T. Hollibaugh (ed.), *San Francisco Bay: The Ecosystem*. Pacific Division, American Association for the Advancement of Science, San Francisco, CA.
- Canuel, E.A.**, J.E. Cloern, D.B. Ringelberg, J.B. Guckert, and G.H. Rau (1995) Using molecular and isotopic tracers to examine sources of organic matter and its incorporation into the food webs of San Francisco Bay. *Limnology and Oceanography*, 40:67-81.
- Canuel, E.A.** and C.S. Martens (1993) Seasonal variations in the sources and alteration of organic matter associated with recently-deposited sediments. *Organic Geochemistry*, 20:563-577.
- Canuel, E.A.**, C.S. Martens, and L.K. Benninger (1990) Seasonal variations in beryllium-7 activity in the sediments of Cape Lookout Bight, NC. *Geochimica et Cosmochimica Acta*, 54:237-245.
- Wakeham, S.G. and **E.A. Canuel** (1990) Fatty acids and sterols of particulate matter in a brackish and seasonally anoxic coastal salt pond. *Organic Geochemistry*, 16:703-713.
- Wakeham, S.G. and **E.A. Canuel** (1988) Organic geochemistry of particulate matter in the eastern tropical North Pacific Ocean: Implications for particle dynamics. *Journal of Marine Research*, 46:183-213.
- Wirsen, C.O., H.W. Jannasch, S.G. Wakeham, and **E.A. Canuel** (1986) Membrane lipids of a psychrophilic and barophilic deep-sea bacterium. *Current Microbiology*, 14:319-322.
- Wakeham, S.G. and **E.A. Canuel** (1986) Lipid composition of the pelagic crab *Pleuroncodes planipes*, its feces and sinking particulate organic matter in the equatorial North Pacific Ocean. *Organic Geochemistry*, 9:331-343.
- Wakeham, S.G., **E.A. Canuel**, and P.H. Doering (1986) Geochemistry of volatile

- organic compounds in seawater. *Geochim. et Cosmochim. Acta*, 50:1163-1172.
- Wakeham, S.G., **E.A. Canuel**, and P.H. Doering (1986). The behavior of aliphatic hydrocarbons in coastal seawater: Mesocosm experiments with ¹⁴C-octadecane and ¹⁴C-decane. *Environmental Science and Technology*, 20:574-580.
- Wakeham, S.G., **E.A. Canuel**, P.H. Doering, J.E. Hobbie, J.V.K. Helfrich, and G.R.G. Lough (1985). The biogeochemistry of toluene in coastal seawater: Radiotracer experiments in controlled ecosystems. *Biogeochemistry*, 1:307-328.
- Wakeham, S.G., R.B. Gagosian, J.W. Farrington, and **E.A. Canuel** (1984). Sterenes in suspended particulate matter in the eastern tropical North Pacific. *Nature* 308:840-843.

Invited scholarly papers and talks

- 2010 “Turning pollution into fuel: Prospects for using wild algae to clean coastal waters and produce biofuels” Department of Civil and Environmental Engineering, University of Virginia, March, 2010.
- 2009 “An Integrated Research Program for Algal Energy and Environmental Remediation at VIMS/W&M” Hampton Roads Research Partnership, August, 2009.
- 2009 “Turning pollution into fuel: Prospects for using wild algae to clean coastal waters and produce biofuels” Garden Club of Gloucester and Williamsburg, October, 2009.
- 2009 “Can algae fuel our cars?” Geology Dept. Brown Bag Series, College of William & Mary, April, 2009.
- 2008 “Can algae fuel our cars?” Christopher Wren Society, College of William & Mary, October, 2008.
- 2008 “Can algae fuel our cars?” VIMS After Hours Lecture Series, September 2008.
- 2008 “Organic carbon composition in the coastal zone: Insights from biomarker studies”, ASLO Plenary Presentation, St. Johns, Newfoundland, June 2008.
- 2006 “Biodiversity and Food Web Structure Influence Short-term Accumulation of Sediment Organic Matter in an Experimental Seagrass System, Marine Sciences Program, University of South Carolina, November 2006.
- 2006 “Anthropogenic Impacts on Carbon Cycling in the Sacramento-San Joaquin River Delta: Changes in Source, Nature and Age of Organic Carbon”, ASLO, Victoria, Canada, June, 2006.
- 2006 “Molecular Fossils: Unraveling the Mysteries of the Carbon Cycle in Past and Present Ecosystems”, Department of Marine Science, Hampton University, Hampton, VA, January 2006.
- 2005 “Biodiversity and Food Web Structure Influence Short-Term Accumulation of Sediment Organic Matter in an Experimental Seagrass System”, Department of Marine Sciences, University of Connecticut, Groton CT.
- 2005 “Tracers and Chemical Biomarkers in Food Web Research”, Invited Speaker, Response of Aquatic Food Webs to Nutrient Enrichment: Assessing the State of the Science, EPA Sponsored Workshop, Gulf Breeze, FL.
- 2004 “Organic Matter Diagenesis in Surface Sediments: Factors Controlling Organic Matter Passage from the Biosphere to the Geosphere: A Tribute to Mary Jo Baedeker”, Geological Society of America, Denver CO.

- 2004 “Sources and Composition of Organic Carbon in an Anthropogenically-Modified Ecosystem: The Sacramento-San Joaquin River Delta, CA”, Chesapeake Biological Laboratory, University of Maryland, Solomons, MD.
- 2004 “Sources and Composition of Organic Carbon in an Anthropogenically-Modified Ecosystem: The Sacramento-San Joaquin River Delta, CA”, Department of Geography and Environmental Engineering, Johns Hopkins University, MD.
- 2004 “Composition of Organic Matter in South San Francisco Bay: Seasonal Variations and Linkages between Water Column Production and Sediment Organic Matter.” ASLO/TOS Ocean Research Conference.
- 2004 “Trophic Structure, Biodiversity and Carbon Cycling: Evidence of Cascading Effects in an Experimental Eelgrass System.” A.C. Spivak*, E.A. Canuel, J.E. Duffy and E.J. Waterson, ASLO/TOS Ocean Research Conference.
- 2003 “Accumulation and Composition of Sediment Organic Carbon in Eelgrass Beds: Effects of Benthic Biodiversity and Food Web Structure on Sediment Biogeochemistry.” Estuarine Research Federation Meeting, Seattle, WA.
- 2002 “Sources of Organic Matter in the Sacramento-San Joaquin Delta: Insights Gained from Coupled Biomarker-Stable Isotope Studies.” Interagency Ecological Program of San Francisco Bay-Delta, Annual Meeting, Pacific Grove, CA.
- 2002 “Back to the Source: Can Isotopes Tell Us the Origin of Organic Matter that Fuels Biological Production in the Bay-Delta?” J.E. Cloern and E.A. Canuel, Interagency Ecological Program of San Francisco Bay-Delta, Annual Meeting, Pacific Grove, CA.
- 2001 “Molecular Fossils: Geochemical Tools for Assessing Water Quality in the Past and Present.” Invited Speaker, The College of William & Mary, Homecoming Academic Festival.
- 2001 “Effects of Physical Mixing on PAH Diagenesis in Estuarine Sediments.” Harbor Processes Program PIs Workshop, Office of Naval Research, VA.
- 2000 “Influence of river flow, primary production and anthropogenic activity on POM composition in Chesapeake Bay.” Invited Seminar. Chesapeake Biological Laboratory, University of Maryland Solomons, MD.
- 2000 “Sources of organic matter in the Sacramento-San Joaquin River Delta as inferred through the use of biomarkers.” CALFED Science Conference, Sacramento, CA.
- 2000 “Role of physical mixing and organic matter diagenesis on PAH distributions in estuarine sediments.” San Diego Bay: Marine Sediment Processes Workshop, Sponsored by ONR, San Diego, CA.
- 1999 “Applications of lipid biomarker compounds: Assessing sources of organic matter in estuarine systems.” Dept. of Environmental Sciences, University of Virginia, Charlottesville, VA.
- 1999 “Applications of biomarkers to understanding sources and composition of organic matter in estuaries: Comparisons between San Francisco and Chesapeake Bay” Estuarine Research Federation Meeting, New Orleans, LA.
- 1999 “Eutrophication history of Chesapeake Bay established from sedimentary organic matter composition.” A.R. Zimmerman* and E.A. Canuel. Estuarine Research Federation Meeting, New Orleans, LA.

- 1999 "Applications of lipid biomarker compounds to assessing sources of organic matter in estuarine systems." Institute for Earth and Ecosystem Science, Tulane University, New Orleans, LA.
- 1999 "Microbial responses to the influx of labile organic matter to the sediment-water interface: Insights gained from biomarker studies." Dept. of Ocean, Earth and Atmospheric Sciences, Old Dominion University, Norfolk, VA.
- 1999 "Use of lipid compounds for evaluating phytoplankton, bacterial and terrestrial sources of organic matter." Workshop on the Use of Chemical Markers in Historical Environmental Assessments, U.S. Environmental Protection Agency, Narragansett, RI.
- 1999 "Sources of organic matter in the Chesapeake Bay: A biomarker approach." Poster Presentation, CAREER Program P.I. Meeting, National Science Foundation, Washington, DC.
- 1998 "Application of lipid biomarker techniques for understanding and quantifying early diagenetic processes." Gordon Research Conference on Organic Geochemistry, Plymouth, NH.
- 1997 "Composition of particulate organic matter in estuarine systems: Comparisons between San Francisco Bay and the Chesapeake Bay." Department of Marine Sciences, University of North Carolina at Chapel Hill.
- 1997 "Microbial utilization of organic matter at the water-sediment interface." Special Session on Inputs and Heterotrophic Utilization of Organic Matter in Lakes, Rivers and Estuaries, ASLO Aquatic Sciences Meeting, Sante Fe, NM.
- 1996 "Composition of particulate organic matter in estuarine systems: Comparisons between San Francisco Bay and the Chesapeake Bay." College of Marine Studies, University of Delaware, Lewes, DE.
- 1995 "Seasonal changes in the sources of organic matter delivered to a coastal sediment: A GC-IRMS approach." Symposium on Isotopic and Molecular Biogeochemistry of Organic Matter in Ancient and Modern Environments. American Chemical Society Meeting, Chicago, IL.
- 1995 "Marine organic geochemistry: Chemical fossils for understanding sources of organic matter." Geology Department Colloquium, College of William and Mary, Williamsburg, VA.
- 1994 "The roles of hydrologic regime and autochthonous production in controlling the reactivity of organic matter in San Francisco Bay: Evidence from lipid biomarker compounds." Horn Point Environmental Laboratory, Cambridge, MD.
- 1994 "Regional differences in the composition of organic matter in the San Francisco Bay Ecosystem: Evidence from lipid biomarkers." Chesapeake Biological Laboratory, Solomons, MD.
- 1994 "Regional differences in the composition of organic matter in the San Francisco Bay Ecosystem: Evidence from lipid biomarkers." Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, VA.
- 1994 "Variability in organic matter inputs to the San Francisco Bay estuary." San Francisco Bay: The Ecosystem, Special Symposium at the AAAS Pacific Division Meeting, San Francisco, CA.
- 1992 "Seasonal variations in the sources and accumulation of organic matter in coastal/estuarine environments." U.S. Geological Survey, Menlo Park, CA.

- 1992 “Seasonal variations in the sources and accumulation of organic matter in a coastal sediment.” Virginia Institute of Marine Science, Gloucester Point, VA.
- 1991 “Seasonal variations in the sources, accumulation and early diagenesis of organic matter in a coastal sediment.” Dissertations Symposium on Chemical Oceanography (DISCO), Honolulu, HI.
- 1990 “Source variations in organic constituents associated with recently-deposited coastal sediments.” U.S. Geological Survey, Menlo Park, CA.
- 1990 “Source variations in organic constituents associated with recently-deposited coastal sediments.” U.S. Geological Survey, Reston, VA.

Contributed scholarly papers and talks (oral presentation unless otherwise indicated; asterisk indicates speaker if other than Canuel)

- 2009 Hardison, A., **E. Canuel**, I. Anderson, C. Tobias, B. Veuger. Microbes mediate carbon and nitrogen retention in shallow photic sediments. Poster presentation. AGU Meeting, December 2009.*
- 2009 Hardison, A., **E. Canuel**, I. Anderson, C. Tobias, B. Veuger. Macroalgal blooms change the sediment microbial community of a shallow coastal lagoon. CERF Meeting, November 2009.*
- 2009 Hardison, A., **E. Canuel**, I. Anderson, B. Veuger. Tracking carbon and nitrogen flow through the sediment microbial community of a shallow subtidal lagoon. ASLO Meeting, January 2009.*
- 2009 Anderson, I., A. Hardison, **E. Canuel**, C. Tobias. Tracking the fate of carbon and nitrogen in a shallow photic coastal lagoon. ASLO Meeting, January 2009.*
- 2008 “Use of Sediment Core Records to Understand Anthropogenic Impacts on Carbon Delivery to the Sacramento-San Joaquin River Delta, CA.” **E.A. Canuel**, E.J., Lerberg, R.M. Dickhut, S.A. Kuehl, T.S. Bianchi and S.G. Wakeham. Oral Presentation, AGU Fall Meeting, San Francisco CA.
- 2008 “Use of Sediment Core Records to Understand Anthropogenic Impacts on Carbon Delivery to the Sacramento-San Joaquin River Delta, CA.” **E.A. Canuel**, E.J., Lerberg, R.M. Dickhut, S.A. Kuehl, T.S. Bianchi and S.G. Wakeham. Poster Presentation, Gordon Research Conference on Organic Geochemistry.*
- 2008 “Isotopic Analysis of Microbial Biomarkers: Tracking Nutrient Flow Through the Sediment Microbial Community.” A.K. Hardison, **E.A. Canuel** and B. Veuger, Gordon Research Conference on Organic Geochemistry.*
- 2008 “New Biomarkers and Novel Applications of Classic Biomarkers in Aquatic Systems: An Overview” **E.A. Canuel** and T.S. Bianchi, Oral Presentation, Ocean Sciences Meeting, Orlando FL.*
- 2008 “Resource Availability, Biodiversity, And Trophic Structure Affect Sediment Nutrient Dynamics In A Seagrass Habitat: A Mesocosm Experiment.” A.C. Spivak*, **E.A. Canuel**, J.E. Duffy and J.P. Richardson. Oral Presentation, Ocean Sciences Meeting, Orlando FL.*
- 2008 “Examination Of Organic Matter In Sediment Core Records To Elucidate Anthropogenic Impacts Within The Sacramento-San Joaquin River Delta.” **E.J., Lerberg**, E.A. Canuel, R.M. Dickhut, S.A. Kuehl, T.S. Bianchi and S.G. Wakeham, Oral Presentation, Ocean Sciences Meeting, Orlando FL.*

- 2007 “Trophic Structure and Resource Availability Alter SOM Composition in a Seagrass System: A Field Experiment.” A. Spivak*, **E. Canuel**, J.E. Duffy, J. Douglass and J.P. Richardson. Oral Presentation, ERF Biennial Meeting, Providence, RI.
- 2007 “Fate of Carbon and Nitrogen Sequestered by Macroalgae in a Coastal Lagoon.” A. Hardison*, B. Veuger, I. Anderson and **E. Canuel**. Oral Presentation, ERF Biennial Meeting, Providence, RI.
- 2007 “Use of Sediment Records to Understand Anthropogenic Impacts on Carbon cycling in Coastal Ecosystems.” **E. Canuel**, E. Waterson, R. Dickhut, S. Kuehl, T. Bianchi, S. Wakeham. Poster Presentation, ERF Biennial Meeting, Providence, RI.
- 2007 “Short-term Degradation of Fatty Acids in Biological vs. Physical Mixing Regimes in the York River Estuary.” L. Palomo*, P. Dickhudt, A. Brylawski, C. Friedrichs, L. Schaffner, **E. Canuel**. Poster Presentation, ERF Biennial Meeting, Providence, RI.
- 2007 “Measuring the Effects of Decomposition of a Macroalgal Bloom on Sediment Metabolism.” Funkey, C., I. Anderson, **E. Canuel**, and A. Hardison. Poster Presentation, AERS Meeting, Spring 2007.
- 2006 “Persistent Organic Pollutants in Sediments Cores from the San Joaquin and Sacramento Rivers.” R.M. Dickhut, **E.A. Canuel**, E.J. Waterson and M.A. Cochran, SETAC Meeting.
- 2006 “Contributions of Terrigenous and Algal Derived Organic Matter to Sediments of the Mississippi River and Adjacent Gulf of Mexico.” E.J. Waterson and **E.A. Canuel***, Gordon Research Conference on Organic Geochemistry, Poster Presentation, Holderness, NH.
- 2006 Biogeochemical Effects of a Nuisance Macroalgal Crash: A Stable Isotope Tracer and Biomarker Approach”, A.K. Hardison*, **E.A. Canuel** and I.C. Anderson. Gordon Research Conference on Organic Geochemistry, Poster Presentation, Holderness, NH
- 2006 “Density Fractionations of Continental Margin Sediments” S.G. Wakeham*, I. Putnam, **E.A. Canuel**, E.J. Waterson, T. Bianchi, and T. Sampere. Gordon Research Conference on Organic Geochemistry, Poster Presentation, Holderness, NH.
- 2006 “The Biogeochemical Effects of a Nuisance Macroalgal Crash: A Field Monitoring and Mesocosm Approach”, A.K. Hardison*, I.C. Anderson and **E.A. Canuel**, Poster Presentation, LTER All Scientists Meeting, Estes Park, CO.
- 2006 “Linking community structure to carbon cycling: evidence of cascading effects in an experimental seagrass system” A.C. Spivak*, E.A. Canuel, J.E. Duffy, and P. Richardson, Ecological Society of America, Memphis TN.
- 2006 “Contributions of Terrigenous and Algal Derived Organic Matter to Sediments of the Mississippi River and Adjacent Gulf of Mexico” E.J. Waterson* and E.A. Canuel, Poster Presentation, Ocean Sciences Meeting, Honolulu, HI.
- 2006 “Density Fractionations of Continental Margin Sediments” I. Putnam, S.G. Wakeham*, E.A. Canuel, E.J. Waterson, and T. Bianchi, Poster Presentation, Ocean Sciences Meeting, Honolulu, HI.
- 2005 “Lipid Biomarker Composition of Particulate Organic Matter in Antarctic Surface Waters” E.J. Waterson*, M.A. Cochran, H.W. Ducklow and E.A. Canuel, Poster Presentation, LTER site meeting, Gloucester Pt., VA.
- 2005 “Interactions Between Benthic Community Structure and the Accumulation of Microalgal Biomass in an Experimental Seagrass System: Biomarker Insights.” **E.A. Canuel***, A.C. Spivak, E.J. Waterson and J.E. Duffy, Estuarine Research Federation Biennial Meeting, Norfolk VA.

- 2004 “Linking community structure to carbon cycling: evidence of cascading effects in an experimental seagrass system.” A.C. Spivak*, **E.A. Canuel**, J.E. Duffy, and J.P. Richardson. Estuarine Research Federation Biennial Meeting, Norfolk VA.
- 2005 “Seasonal effects of an ephemeral macroalgal bloom on water quality and sediment characteristics in a shallow coastal lagoon.” A.K. Hardison*, I.C. Anderson and **E.A. Canuel**, Estuarine Research Federation Biennial Meeting, Norfolk VA.
- 2005 “Sources Of Sedimentary Organic Matter in the Mississippi River and Adjacent Gulf of Mexico.” E.J. Waterson* and **E.A. Canuel**, Estuarine Research Federation Biennial Meeting, Norfolk VA.
- 2005 “Trophic Dynamics in Restored Seagrass Beds Using Stable Isotopes of Carbon, Nitrogen and Sulfur.” S.H. Harbeson*, R.J. Orth, J. van Montfrans, D. Combs and **E.A. Canuel**, Estuarine Research Federation Biennial Meeting, Norfolk VA.
- 2005 “Fate of Atmospherically Deposited Polycyclic Aromatic Hydrocarbons (PAHs) in Chesapeake Bay. R.M. Dickhut*, R.E. Countway, K.M. Arzayus, and **E.A. Canuel**, Estuarine Research Federation Biennial Meeting, Norfolk VA.
- 2005 “Linking community structure to carbon cycling: evidence of cascading effects in an experimental seagrass system.” A.C. Spivak*, **E.A. Canuel**, J.E. Duffy, J. P. Richardson, Ecological Society of America, Montreal, Canada.
- 2005 “Dissolved and Particulate Organic Matter Source-Age Characterization in River and Estuarine Outflow Waters: A Combined Isotope and Biochemical Approach.” A. N. Loh*, J.E. Bauer, and **E.A. Canuel**, ASLO Annual Meeting, Santiago, Spain.
- 2005 “Benthic Community Structure and Carbon Cycling: Evidence of Cascading Effects in an Experimental Eelgrass System.” A.C. Spivak*, **E.A. Canuel**, J.E. Duffy, J.P. Richardson, Benthic Ecology Meeting, Williamsburg, VA.
- 2005 “Sediment Organic Matter Composition in Eelgrass Beds: Goodwin’s Island VA.” T. Montgomery*, A. C. Spivak, **E. A. Canuel**, Poster Presentation, Benthic Ecology Meeting, Williamsburg, VA.
- 2004 “Biogeochemical cycling of methane in sediments overlying gas hydrates in Barkley Canyon and implications for methane flux into the water column. J. Pohlman, **E. Canuel**, L. Lapham, J. Chanton, R. Chapman, R. Coffin. Poster Presentation, Gordon Conference on Organic Geochemistry, Plymouth, NH.
- 2004 “Sources of sedimentary organic matter in the Mississippi River and adjacent Gulf of Mexico.” E. J. Waterson and **E. A. Canuel**. Poster Presentation, Gordon Conference on Organic Geochemistry, Plymouth, NH.
- 2003 “Biochemical Assessment of Particulate Organic Carbon in the Sacramento-San Joaquin River Delta- Implications for Habitat Rehabilitation and Food Web Dynamics.” V.L. Pilon* and **E.A. Canuel**, Estuarine Research Federation, Biennial Meeting, Seattle, WA.
- 2003 “Comparison of the Sources and Reactivity of Organic Matter Within a Temperate Estuary Using a Multi-Tracer Approach.” S.M. McCallister, J.E. Bauer, **E.A. Canuel**, J.E. Cherrier, and Hugh Ducklow, Estuarine Research Federation Biennial Meeting, Seattle, WA
- 2003 “A Large-scale Seagrass Restoration Program in Virginia’s Coastal Lagoons: Challenges and Opportunities.” R.J. Orth*, S.R. Marion, K.A. Moore, D.C. Combs, D.J. Wilcox, J. van Montfrans, **E.A. Canuel**. Poster Presentation, Estuarine Research Federation, Seattle, WA

- 2003 “Effects of Grazer Species Diversity on Sediment Organic Carbon Composition and Abundance.” A.C. Spivak*, **E. A. Canuel** and J. E. Duffy. Poster Presentation, Benthic Ecology Meeting, Mystic, CT.
- 2002 “Effects of Human Activities on the Composition of Organic Carbon in Estuaries: Insights Gained Through Lipid Biomarker Studies”. **E.A. Canuel**, AGU Meeting, San Francisco, CA.
- 2002 “Accumulation and Composition of Sediment Organic Carbon in Eelgrass Beds: Effects of Benthic Biodiversity and Food Web Structure on Sediment Biogeochemistry.” **E.A. Canuel**, A.C. Spivak, E.J. Waterson and J.E. Duffy. Poster presentation at Symposium on New Approaches in Marine Organic Biogeochemistry, Friday Harbor Lab, WA.
- 2002 “Sources of Particulate Organic Matter in the Sacramento-San Joaquin River Delta.” **E.A. Canuel**, V.L. Pilon, M. Ederington-Hagy, and J.E. Cloern, ASLO Meeting, Victoria, BC.
- 2002 “Flow Dynamics And Their Effect On Particulate Organic Matter Composition In The Sacramento And San Joaquin Rivers, CA” V.L. Pilon*, **E.A. Canuel**, and M. Ederington-Hagy. ASLO Meeting, Victoria, BC.
- 2001 “Organic Matter Sources in the Sacramento-San Joaquin Delta: Insights from Biomarker Studies.” **E.A. Canuel**, V. Pilon and M. Ederington-Hagy. Estuarine Research Federation, Biennial Meeting, St. Pete Beach, FL.
- 2001 “Sources and Reactivity of Organic Matter in the Sacramento-San Joaquin River Delta: Applications of Geochemical Techniques for Habitat Rehabilitation.” V. Pilon* and **E.A. Canuel**. Estuarine Research Federation, Biennial Meeting, St. Pete Beach, FL.
- 2001 “A Comparison Of Oceanic And Estuarine Particulate Organic Matter Lipid Biomarkers.” A.I. Loh*, **E.A. Canuel** and J.E. Bauer. Poster Presentation, Estuarine Research Federation, Biennial Meeting, St. Pete Beach, FL.
- 2001 “A Lipid Biomarker Approach to Assessing Differences in Sources and Reactivity of Estuarine Particulate and Dissolved Organic Matter.” S.L. McCallister*, **E.A. Canuel** and J.E. Bauer. Poster Presentation, Estuarine Research Federation, Biennial Meeting, St. Pete Beach, FL.
- 2001 “A Comparison Of Oceanic And Estuarine Particulate Organic Matter Lipid Biomarkers.” A.N. Loh, **E.A. Canuel** and J.E. Bauer. Poster Presentation, Gordon Research Conference on Chemical Oceanography, Tilton, NH.
- 2001 “Sequestration of PAHs into Non-Extractable Phases of Marine Sediments.” K.M. Arzayus*, R.M. Dickhut, **E.A. Canuel**. SETAC Annual Meeting.
- 2001 “Role of Physical Mixing on Degradation and Sequestration of Organic Matter in Marine Sediments.” K.M. Arzayus* and **E.A. Canuel**, Poster Presentation, Goldschmidt Conference, Hot Springs, VA.
- 2001 “Lipid Biomarker Compositions in Chesapeake Bay Organic Matter.” A.N. Loh*, **E.A. Canuel** and J. E. Bauer. Poster Presentation, Goldschmidt Conference, Hot Springs, VA.
- 2001 “Sources and Reactivity of Organic Matter in the Sacramento-San Joaquin River Delta: Applications of Geochemical Techniques for Habitat Rehabilitation.” V. Pilon* and **E.A. Canuel**. Atlantic Estuarine Research Society, Norfolk, VA.
- 2001 “A Lipid Biomarker Approach to Assessing Differences in Sources and Reactivity of Estuarine Particulate and Dissolved Organic Matter.” S.L. McCallister*, **E.A. Canuel**

- and J.E. Bauer. Poster Presentation, American Society of Limnology and Oceanography Meeting.
- 2000 “Role of Physical Mixing on Organic Matter and PAH Diagenesis in Sediments.” K.M. Arzayus*, **E.A. Canuel**, and R.M. Dickhut. Poster Presentation, Gordon Research Conference in Organic Geochemistry, Plymouth, NH
- 2000 “Role Of Physical Mixing On Organic Matter And PAH Diagenesis In Sediments.” K.M. Arzayus*, **E.A. Canuel**, and R.M. Dickhut. Poster Presentation, American Chemical Society 220th National Meeting.
- 2000 “Role Of Physical Mixing On Organic Matter And PAH Diagenesis In Sediments.” K.M. Arzayus*, **E.A. Canuel**, R.M. Dickhut. Platform Presentation, SETAC 21st Annual Meeting.
- 2000 “Sources and Reactivity of Organic Matter in The Sacramento-San Joaquin River Estuary: Applications of Geochemical Methods for Habitat Rehabilitation.” V.L.Pilon*, **E.A. Canuel** and M. Ederington-Hagy. Poster Presentation, Gordon Research Conference on Organic Geochemistry, Plymouth, NH.
- 2000 “Sources and Reactivity of Organic Matter in Shallow-Water Habitats in the Sacramento-San Joaquin River Delta.” V.L. Pilon*, E.A. Canuel and M. Ederington-Hagy. Poster Presentation, CALFED Science Conference, Sacramento, CA.
- 2000 “Historical Progression Of Eutrophication In The Mesohaline Chesapeake Bay: A Sediment Geochemical Record.” A.R. Zimmerman* and E.A. Canuel. Poster Presentation, Gordon Research Conference on Organic Geochemistry, Plymouth, NH.
- 1999 “Evidence for Phytoplankton and Plant Uptake of PAHs As A Mode of Transport to Sediments.” K.M. Arzayus, R.M. Dickhut, and **E.A. Canuel**, SETAC 20th Annual Meeting, Philadelphia, PA.
- 1999 “Sources and Distributions of Polycyclic Aromatic Hydrocarbons (PAHs) in Surface Waters of the York River Estuary.” R.E. Countway, R.M. Dickhut, and **E.A. Canuel**, Poster Presentation, SETAC 20th Annual Meeting, Philadelphia, PA.
- 1999 “Processes Controlling Distributions of PAHs in Chesapeake Bay, U.S.A. Sediments.” K.M. Arzayus*, R.M. Dickhut, and **E.A. Canuel**, Estuarine Research Federation Meeting, New Orleans, LA.
- 1999 “Benthic-Pelagic Coupling Within Lower Chesapeake Bay: Sources of Organic Matter.” M.L.Thompson*, L.C. Schaffner and **E.A. Canuel**. Poster Presentation, Estuarine Research Federation Meeting, New Orleans, LA.
- 1999 “Sources of Particulate Organic Matter in Sub-habitats of the San Joaquin-Sacramento River Delta.” M.C. Ederington-Hagy*, V.L. Pilon, and **E.A. Canuel**, Estuarine Research Federation Meeting, New Orleans, LA.
- 1999 “Biochemical Characterization of Suspended Particles and Surficial Sediments Collected from the Sacramento-San Joaquin Delta.” V.L. Pilon* and **E.A. Canuel**, Poster Presentation, Estuarine Research Federation Meeting, New Orleans, LA.
- 1999 “Automobiles as a Source of Carcinogenic Polycyclic Aromatic Hydrocarbons to Chesapeake Bay.” R.M. Dickhut*, **E.A. Canuel**, and others. Poster Presentation, Estuarine Research Federation Meeting, New Orleans, LA.
- 1999 “Sources of Suspended and Sedimentary Particulate Organic Matter in the Chesapeake Bay.” **E.A. Canuel**, ASLO Aquatic Sciences Meeting, Santa Fe, NM.
- 1999 “Applications of Microwave-Assisted Solvent Extraction (MASE) for Isolating Lipid Biomarker Compounds Associated with Estuarine Particulate Matter.”

- J.A. Boxwell* and **E.A. Canuel**, Poster Presentation, ASLO Aquatic Sciences Meeting, Santa Fe, NM.
- 1999 “The F.I.R.S.T. Program: Female Initiation into Research, Science and Technology.” **E.A. Canuel**, ASLO Aquatic Sciences Meeting, Santa Fe, NM.
- 1998 “Spatial and Temporal Distributions of PAHs and Organic Matter in Chesapeake Bay Sediments.” K.M. Arzayus*, **E.A. Canuel** and R.M. Dickhut. Poster Presentation, SETAC 19th Annual Meeting, Charlotte, NC.
- 1998 “Spatial and Temporal Distributions of PAHs and Organic Matter in Chesapeake Bay Sediments.” K.Y. Murray*, **E.A. Canuel** and R.M. Dickhut. Poster Presentation, Gordon Research Conference on Organic Geochemistry, Plymouth, NH.
- 1998 “An Organic Geochemical Record of Eutrophication in Chesapeake Bay Sediments.” A.R. Zimmerman* and **E.A. Canuel**, Poster Presentation, Gordon Research Conference on Organic Geochemistry, Plymouth, NH.
- 1997 “A Geochemical Record of Eutrophication in Chesapeake Bay Sediments.” A.R. Zimmerman* and **E.A. Canuel**, Estuarine Research Federation Meeting, Providence, RI.
- 1997 “Organic Geochemical Evidence for Increasing Eutrophication in Chesapeake Bay: A 200 Year Sediment Record.” A.R. Zimmerman* and E.A. Canuel, AGU Spring Meeting, Baltimore, MD.
- 1997 “Composition of Particulate Organic Matter in the Lower Chesapeake Bay. Sources and Reactivity.” E.A. Canuel, A.R. Zimmerman, and S.T. Burcham. Poster Presentation, ASLO Aquatic Sciences Meeting, Santa Fe, NM.
- 1997 “Tidal Cycle Variations of Particle Associated Contaminants in the Southern Chesapeake Bay.” G.M. Edgecombe, J. Gosz, K. Liu, R. Dickhut, and **E. Canuel**, Poster Presentation, ASLO Aquatic Sciences Meeting, Santa Fe, NM.
- 1996 “Biomarker Determination of Sources of Particulate Organic Matter in Estuarine Systems: Comparisons between San Francisco Bay and the Chesapeake Bay.” **E.A. Canuel**, Poster Presentation, Gordon Research Conference in Organic Geochemistry, Plymouth, NH.
- 1996 “Tracing Benthic Microalgal Production in Estuarine Food Webs with Multiple Stable Isotopes. C. Currin*, J. Cambalik, and **E. Canuel**. Stable Isotopes and the Integration of Biological, Ecological and Geochemical Processes Conference, Newcastle upon Tyne, UK.
- 1994 “Variations in Organic Matter Inputs to the San Francisco Bay Estuary.” **E.A. Canuel** and J.E. Cloern, AGU-ASLO Ocean Sciences Meeting, San Diego, CA.
- 1993 “Application of Isotopic and Molecular Biomarkers to Understanding Trophic Relationships in San Francisco Bay.” **E.A. Canuel**, J.E. Cloern, D.B. Ringelberg, J.B. Guckert, and G.H. Rau. ASLO & SWS 1993 Annual Meeting, Edmonton, Canada.
- 1992 “Differential Reactivity of Lipid Biomarker Compounds Associated with Recently-deposited Coastal Sediments.” **E.A. Canuel** and C.S. Martens. Poster Presentation, Gordon Research Conference in Organic Geochemistry, Plymouth, NH.
- 1992 “Seasonal Variations in Rates of Sediment Accumulation and Bacterial Sulfate Reduction: Implications for the Diagenesis of Recently-deposited Lipid Biomarker Compounds.” **E.A. Canuel** and C.S. Martens, AGU Ocean Sciences Meeting, New Orleans, LA.

- 1991 “Bacterial Degradation and Synthesis of Lipid Constituents Associated with Recently-deposited Sediment.” **E.A. Canuel** and C.S. Martens. ACS Symposium on Marine Organic Chemistry, Atlanta, GA.
- 1990 “Seasonal Variations in the Distribution of Lipid Components Associated with Newly-deposited Particulate Matter.” **E.A. Canuel** and C.S. Martens. Poster Presentation, Gordon Research Conference in Organic Geochemistry, Plymouth, NH.
- 1989 “Seasonal Variations in Particulate Matter Delivery to a Coastal Sedimentary Environment.” **E.A. Canuel** and C.S. Martens. Poster Presentation, Gordon Research Conference in Chemical Oceanography, Tilton, NH.

Unrefereed publications not listed above

- Canuel, E.A.** (2007) Book Review: Molecular Geomicrobiology. *Org. Geochem.*,
- Canuel, E.A.** (2005) Invited autobiography, *Women in Oceanography*, *Oceanography* 18(1): 85.
- Canuel, E.A.**, T.A. Abrajano, T.S. Bianchi, and S.A. Macko (2003) Introduction to “Sources and Fate of Biogenic and Anthropogenic Organic Matter in Freshwater and Estuarine Systems.” Guest Edited issue of *Organic Geochemistry* 34:163.
- Riisgard, H.U. and contributors (2003) Misuse of the peer-review system: time for countermeasures? *Marine Ecol. Prog. Series*, 258: 297-309.
- Bianchi, T.S. and **Canuel, E.A.** (2001) Introduction to “Organic Geochemical Tracers in Estuaries.” Guest Edited issue of *Organic Geochemistry* 32:451.
- Canuel, E.A.**, 1999. Sources of organic matter in the Delta as inferred through the use of biomarkers. Interagency Ecological Program for the Sacramento - San Joaquin Estuary Newsletter. Winter, 1999.
- Currin, C.A., **E.A. Canuel**, and S.B. Joye, 1995. Preliminary estimates of intertidal benthic microalgal production. Interagency Ecological Program for the Sacramento-San Joaquin Estuary Newsletter. Winter, 1995.

Research reports from grant or contract work

- Canuel, E.A.** and R.J. Orth. Use of Stable Isotopes for Developing a Food Web Model in a Recovering Seagrass System in Virginia Coastal Bay. Final Report submitted to: NOAA VCR. December 2002.
- Canuel, E.A.**, R.M. Dickhut and S.A. Kuehl. The Role of Seabed Dynamics in Controlling the Distribution and Preservation of Polycyclic Aromatic Hydrocarbons (PAHs) in Estuarine Sediments. Final Report submitted to Office of Naval Research, Harbor Processes Program. December 2001.
- Canuel, E.A.**, 2000. Sources of Particulate and Sedimentary Organic Matter in the Chesapeake Bay Estuary: A Biomarker Approach. Final Report submitted to NSF Chemical Oceanography Program, Ocean Sciences Division, November 2000.
- Canuel, E.A.** and R.M. Dickhut, 1998. Particulate organic matter-contaminant associations at the water-sediment interface: Biological and physical controls. Final Report submitted to Harbor Processes Program, Office of Naval Research, December 1998.

- Canuel, E.A.**, 1997. Sources and reactivity of organic matter in San Francisco Bay: The roles of hydrologic regime and autochthonous production. Final Data Report submitted to California Department of Water Resources, December 1997, 65 p.
- Canuel, E.A.**, I. Anderson, and C. Tobias, 1997. Organic carbon abundance, distribution and metabolism at the Oyster, Virginia study site. Final Data Report submitted to the Batelle Pacific Northwest National Laboratory, June 1997, 32 p.
- Canuel, E.A.**, A.R. Zimmerman, and S.T. Burcham, 1996. Lipid biomarker composition of particulate organic matter in the lower Chesapeake Bay. Final Data Report submitted to Virginia Water Resources Research Center, October 1996, 72 p.
- Cloern, J.E., **E.A. Canuel**, and S.M. Wienke, 1993. Particulate organic matter in the San Francisco Bay estuary California: Chemical indicators of its origin and assimilation into the benthic food web. U.S. Geological Survey, Open-File Report 93-146, 46 p.

Work in progress or submitted

- Pohlman, J.W., **E.A. Canuel**, J.E. Bauer, L. Lapham, C.D. Ruppel, T.I. Eglinton, M. Elvert, K. Grabowskig, D. Knies, R.B. Coffin, and N. R. Chapman (in prep.) Flux regimes, sediment biogeochemistry and bacterial fatty acids in Barkley Canyon, an accretionary margin thermogenic gas hydrate-bearing seep. For submission to: Chemical Geology.
- Hardison, A., E. Canuel, C. Tobias, I. Anderson, B. Veuger (in prep). Carbon and nitrogen dynamics in shallow photic systems: Interactions between macro- and microalgal communities. For submission to: Limnology & Oceanography.
- Hardison, A. E. Canuel, I. Anderson, C. Tobias, B. Veuger, M. Waters (in prep). Benthic algae determine sediment organic matter composition in shallow photic sediments. For submission to: Estuarine, Coastal and Shelf Science.

PROFESSIONAL SERVICE

College-wide committee service

- Member, Ad Hoc Committee for Interdisciplinary Environmental Activities, 2009-present.
- Member, Committee for Continuous Improvement, 2009-present.
- Member, Jefferson Awards Selection Committee, 2006 and 2009.
- Secretary, Faculty Assembly, 2006-2007.
- Member, Inaugural Committee for President Gene Nichol, 2005-2006.
- Member, Honorary Degrees Committee, 2006.
- Member, Search Committee for W&M President, August 2004-May 2005.
- Secretary, Faculty Assembly. 2004-2005.
- SMS Representative, Faculty Assembly. August 2002 to August 2008*.
- Member, Executive Committee of the Faculty Assembly. August 2002-2008*.
- Member, Liaison Committee of the Faculty Assembly. August 2002-2008*.
- Member, Academic Affairs Committee of the Faculty Assembly. August 2002-present.
- Participant, University Teaching Project, W&M, 1998-1999
- W&M Women's Studies Committee (SMS representative; ex-officio), September 1994 through June 1998
- Swem Library (SMS representative), September 1997-June 2000

School of Marine Science/VIMS Governance

Member, Steering Committee for Strategic Planning, 2007-present.
Member, Search Committee for Assistant to Director for Development, 2007-2008.
Member, Committee for Administrative Evaluation of John Wells, 2006-2007.
Member, Search Committee for Inorganic Geochemist, 2006-2007.
Chair, Search Committee for Director of Development, August 2005-February 2006.
Academic Council
 Chair, July 2002-June 2008
 Dept. Physical Sciences Representative, July 1996-June 2002
 Dept. Physical Sciences Alternate Representative, July 1995- June 1996
Advisory Committee for Marine & Environmental Policy Program, 2005-present.
Faculty Status & Tenure Review Committee, Dept. Physical Sciences Representative, July 2001- June 2004.
Member, Ad hoc Committee to advise Dean/Director, 2002.
Professional Faculty Review Committee, Newt Munsen, 2001-2002.
Faculty Council, Academic Council Representative, July 2002-present
Participant, Faculty Retreat, Upper Brandon, October 2001.
Chair, Research Mission Working Group and lead author of white paper presented at Upper Brandon, October 1999
Member, Administrative Evaluation Committee for Dean L. Donelson Wright, 1999
VIMS/SMS Seminar Committee
 Department Physical Sciences Representative, June 1997-present
 Chair, January 1995 through June 1997
Library Policy Committee
 Chair, September 1997-June 2000
 Departmental Representative, September 1994-June 2000
VIMS Analytical Service Lab Advisory Committee
Served on Search Committees for the Following Faculty Positions:
 Inorganic Geochemist, Fall-Spring 2007
 Inorganic Geochemist, Fall 2001 (search was suspended due to budget cuts)
 Dean of Graduate Studies, Spring 2002
 Dean of Graduate Studies, Summer 1999
 Coastal Physical Oceanographer, Summer, 1996
 Estuarine Ecologist/Ecosystem Modeler, Spring 1996

Editorial Board Services, review panels, program reviews, national or international research programs

Editorial Board Services

Associate Editor, *Limnology & Oceanography*, May 2003-2007
 2007: 11 manuscripts
 2006: 24 manuscripts
 2005: 26 manuscripts
 2004: 21 manuscripts
 2003: 16 manuscripts

Associate Editor, *Organic Geochemistry*, January 2001-present

2009: 9 manuscript

2008: 10 manuscripts

2007: 9 manuscripts

2006: 5 manuscripts

2005: 5 manuscripts

2004: 8 manuscripts

2003: 5 manuscripts (+ special issue)

2002: 4 manuscripts

2001: 11 manuscripts (special issue)

Guest Editorships

Organic Geochemical Tracers in Estuaries, *Organic Geochemistry Vol. 32, 2001*.

Sources and Fate of Biogenic and Anthropogenic Organic Matter in Freshwater and Estuarine Systems. *Organic Geochemistry Vol. 34, 2003*.

Review Panels:

NSF DEB Ecosystems Program, April 2008

NSF DEB Ecosystems Program, November 2006

NSF Biological Oceanography Program, May 2006

NSF COSEE Program, May 2005

NASA Carbon Cycle Science, May 2004

NSF CAREER Program, Ocean Sciences Division

Proposal Review Panel, November 1999

Proposal Review Panel, November 2000

Proposal Reviews:

National Science Foundation

Ocean Sciences Division: 2009 (4), 2008 (3), 2007 (5), 2006 (13), 2005 (3), 2004 (3), 2003 (3), 2002 (1), 2001 (1), 2000 (5), 1999 (4), 1998 (3), 1997 (1), 1996 (1), 1995 (1)

Division of Environmental Biology-Ecosystems Program:

2008 (22), 2007 (1), 2006 (23), 2005 (3)

Environmental Geochemistry: 2006 (1)

Geology & Geophysics: 2009(1)

Geology and Paleontology: 2002 (1)

Office of Polar Programs: 2008 (1), 2006 (1), 1997 (1)

Atmospheric Sciences Division: 2003 (1), 1998 (1), 1997 (1)

CAREER: 2003 (1), 2000 (15), 1999 (18), 1998 (1)

International Programs: 2003 (1), 2002 (1), 2000 (1)

Paleoclimate Program: 2003 (1), 2000 (1)

Geosciences MRI Program: 2008 (1); 2005 (1)

MRI-R2: 2009(2)

STC: 2009(1)

AAAS WISC (1)

Heisenberg Foundation: 2008 (1)
NERC, UK: 2008 (1), 2006 (1)
NOAA Coastal Ocean Program: 2005 (1)
NOAA Climate and Global Change: 2003(1)
NOAA Office of Ocean Exploration: 2002 (1)
NSERC, Canada: 2006 (1)
Environmental Protection Agency: 2000 (1)
ACS Petroleum Research Fund: 2006 (1), 2005 (2), 2004 (1), 2003 (2), 2002 (2),
2001 (1)
Sea Grant: 2008 (1), 2001(1), 1996 (1)
Jeffress Memorial Trust: 2002 (1)
Oxford University Press, 2002
NWO/Earth and Life Sciences Proposal, Netherlands. 2003 (1), 2002 (1)

External Reviewer for Tenure Candidates:

2008: 3 candidates
2007: 2 candidates
2006: 3 candidates

Workshops:

Invited Participant, *MARGINS S2S Synthesis and Integration Workshop*, Gisborne, New Zealand, April, 2009.
Invited Participant, *Thresholds and Non-Linear Trajectories in Recovery of Eutrophic Coastal Ecosystems*, February 2007, Annapolis, MD.
Invited Participant, Symposium on New Approaches in Marine Organic Biogeochemistry, Friday Harbor Lab, August 2003.
Invited Speaker and Participant, "*Response of Aquatic Food Webs to Nutrient Enrichment: Assessing the State of the Science.*" US EPA, Gulf Breeze, FL, March 2005.
Invited Participant, NSF Margins Workshop – Waipaoa Focus Area (Source-to-Sink), New Zealand, May 2003.
Invited Participant, RioMar Workshop, Sponsored by National Science Foundation, October 2001.
Invited Participant, Harbor Processes Program Workshop, Sponsored by Office of Naval Research, June 2001.
Invited Participant, Harbor Processes Program Workshop, Office of Naval Research, November, 1999.
Invited Participant, CALFED PIs Workshop, U.S. Geological Survey, September, 1999.
Invited Participant, Chinese-American Frontiers of Science Symposium, Co-sponsored by U.S. National Academy of Sciences and the Chinese Academy of Sciences, Beijing China, August, 1999.
Invited Participant, Workshop on the Use of Chemical Markers in Historical Environmental Assessments, U.S. EPA, Narragansett, RI, April, 1999.
Invited Participant, CAREER Program P.I. Meeting, National Science Foundation, January, 1999.
Invited Participant, Harbor Processes Program Workshop, Office of Naval Research, May, 1998.

Invited Participant, Future of Chemical Oceanography in the U.S. (FOCUS), National Science Foundation, Rapporteur for Education Issues, 5-9 January, 1998.

Invited Participant, Harbor Processes Program Workshop, Office of Naval Research, April, 1996.

Invited Participant, Bacterial Origins Workshop, Subsurface Science Program, Dept. of Energy, Portland, Oregon, July, 1995.

Journal Article Reviews:

(Note: I have significantly reduced the number of reviews I perform since assuming Associate Editor duties at *Limnology & Oceanography* and *Organic Geochemistry* and while working on my the book I am coauthoring).

- 2009 *Limnology & Oceanography* (2)
- 2008 *Geochimica Cosmochimica Acta* (1), *ES&T* (1)
- 2007 *Marine Chemistry* (1), *Ecology Letters* (1), *Estuaries* (1), *Cont. Shelf Res.* (1)
- 2006 *Continental Shelf Research* (1)
- 2005 *Biogeosciences Discussions* (1)
- 2004 *Geochimica et Cosmochimica Acta* (1)
- 2003 *Environmental Science & Technology* (1), *Limnology & Oceanography* (1), *Estuarine Coastal and Shelf Science* (1)
- 2002 *Marine Chemistry* (3), *Limnology & Oceanography* (2), *Marine Ecology Progress Series* (1), *Estuarine Coastal and Shelf Science* (1)
- 2001 *Organic Geochemistry* (13), *Marine Chemistry* (3), *Limnology & Oceanography* (1), *Estuarine Coastal and Shelf Science* (1), *Paleobiology* (1)
- 2000 *Geochimica Cosmochimica Acta* (2), *Estuaries* (2), *Estuarine Coastal and Shelf Science* (2), *Limnology and Oceanography* (1), *Organic Geochemistry* (10)
- 1999 *J. Marine Research* (1), *Marine Chemistry* (2), *Geology* (1), *Estuaries* (1), *Organic Geochemistry* (1), *Continental Shelf Research* (1), *Limnology and Oceanography* (1)
- 1998 *Geology* (2), *Organic Geochemistry* (2), *Geochimica et Cosmochimica Acta* (1), *Paleoceanography* (1), *Estuaries* (1), *Limnology and Oceanography* (1)
- 1997 *Marine Chemistry* (2), *Nature* (2), *Estuarine, Coastal and Shelf Science* (1)
- 1996 *Organic Geochemistry* (2), *Marine Chemistry* (3), *Estuarine, Coastal, and Shelf Science* (1), *ACS Symposium Volume* (1)
- 1995 *Organic Geochemistry* (1), *Marine Chemistry* (1), *Geochimica et Cosmochimica Acta* (1), *Limnology and Oceanography* (1)
- 1994 *Geochimica et Cosmochimica Acta* (2), *Limnology and Oceanography* (1), *Marine Ecology Progress Series* (1), *Marine Environmental Research* (1)

Service to Professional Societies

Geochemical Society

Organic Geochemistry Division, Chair, 2010-present.

Organic Geochemistry Division, Chair-Elect, 2008-2009.

Session Organizer, Goldschmidt Conference, 2001
“Organic Geochemical Applications to Freshwater and Estuarine Systems”

Nominations Committee

American Geophysical Union

Ocean Sciences – Secretary Marine Geochemistry, 2008-present.*
Fall Meeting Organizing Committee, Ocean Sciences Section, Fall 2008.
Fall Meeting Organizing Committee, Ocean Sciences Section, Fall 2009.*

AAAS Nominating Committee, 2008-2010.*

American Society of Limnology & Oceanography (ASLO)

Lindemann Award Selection Committee, 2004-present
Associate Editor, *Limnology & Oceanography*
Future of ASLO Committee, 1996
Finance Committee, 1995-2000

Estuarine Research Federation

Session Co-Organizer: Interactions with Estuarine Chemistry, ERF Biennial Meeting,
October 2005.
Session Co-Chair, ERF '99 Meeting, September 1999.
"Biomarkers in Estuarine Science."

Session Chair, Hot Topics in Organic Biogeochemistry, Gordon Research Conference on
Organic Geochemistry, August 2004.

Session Chair, AGU-ASLO Ocean Sciences Meeting, February 1994.
"Coastal and Estuarine Waters I. Processes Affecting Fluxes."

ADVISORY SERVICE ACTIVITY

Advisory service

2006 STAC DON working group. Bioavailability of organic nitrogen in wastewater streams. Margaret R. Mulholland, Nancy G. Love, Vikram M. Pattarkine, Deborah A. Bronk, Elizabeth A. Canuel.

Public outreach

2009 Speaker, VIMS Marine Sciences Day
2008 Speaker, VIMS After-Hours Lecture Series
2008 Speaker, Christopher Wren Society, College of William & Mary
2008-present Board Member, Gloucester Montessori School
2002-2004 VIMS representative, Northern Neck-Middle Peninsula Public Education Consortium
2002-2006 Board Member, Gloucester Montessori School

2001-2002 Mentor, New Horizons Governor's School for Science & Technology,
2000 Lab Tour, H.S. girls visiting from Massaponax High School
2000 Panelist, "Brave New World: Preparing Girls and Women for the New
Technologies." Sponsored by Girls, Inc. and U.S. Dept. of Labor.
2000 Poster Presentation, Packard Foundation Visit, W&M.
2000 Met with faculty from Thomas Jefferson High School, Arlington VA.
2000 F.I.R.S.T. Program Presentation at Women's Studies Conference, W&M.
1999-2001 F.I.R.S.T. Program visits to Dept. of Ocean, Earth, and Atmospheric
Sciences/CCPO, Old Dominion University, VA.
1999 Speaker, New Horizons Governor's School for Science and Technology.
1999 Science Judge, Blue Crab Bowl, Mid-Atlantic Regional National Ocean
Sciences Bowl.
1999 Speaker, Girl Scouts, Gloucester VA.
1997 Speaker, Girl Scout Career Day, Gloucester, VA.
1997 Presentation Evaluator, New Horizon's Governor's School for Science and
Technology, Hampton, VA.
1997 Lab Tour to Lady Margaret Thatcher, Chancellor of the College of William
and Mary.
1997-2001 Developed and directed the Female Initiation into Research, Science and
Technology (F.I.R.S.T.) Program. Funded through NSF CAREER Program
with support from the Ocean Sciences Division.