

WILLIAM & MARY
Curriculum Vita SMS/VIMS Format

PERSONAL INFORMATION

Name: Carl T. Friedrichs Date: September 2022
Chesapeake Bay National Estuarine Research Reserve in Virginia (CBNERR-VA), and
Department of Physical Sciences, Virginia Institute of Marine Science (VIMS),
School of Marine Science (SMS), William & Mary (W&M), Gloucester Point, VA 23062, USA
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Web: https://www.vims.edu/people/friedrichs_ct/

EDUCATION

Ph.D., 1993 M.I.T./Woods Hole Oceanographic Institution Joint Program, Oceanography
1986-1987 Visiting Student, Clare College, Cambridge University, Physics
B.A., 1986 Summa Cum Laude, Amherst College, Geology

ACADEMIC POSITIONS

2019-present Research Coordinator & Associate Director, CBNERR-VA, VIMS, W&M
2018-2020 Chair, Department of Physical Sciences, SMS/VIMS, William & Mary
2016-present Loretta and Lewis Glucksman Professor of Marine Science, SMS/VIMS, W&M
2010-2016 Chair, Department of Physical Sciences, SMS/VIMS, William & Mary
2006-present Professor, School of Marine Science, SMS/VIMS, William & Mary
2001-2006 Associate Professor, SMS/VIMS, William & Mary
1996-2001 Assistant Professor, SMS/VIMS, VIMS, William & Mary
1993-1996 Visiting Assistant Professor, SMS/VIMS, William & Mary
1993 Post-Doctoral Investigator, Woods Hole Oceanographic Institution

HONORS, PRIZES AND AWARDS

2017 SERDP Munitions Response Project of the Year Award
2016 William & Mary Glucksman Eminent Scholar Award
2013 INTERCOH Mehta Award for Advancements in Cohesive Sediment Research
2010 William & Mary Plumeri Award for Faculty Excellence
2008 Commonwealth of Virginia Outstanding Faculty Award
2005 William & Mary Alumni Fellowship Award for Teaching
2001-2004 William & Mary Class of 1964 Distinguished Professorship
2000 White House Presidential Early Career Award for Scientists and Engineers
2000 National Science Foundation Division of Ocean Sciences CAREER Award
1992 Woods Hole Oceanographic Institution Ocean Ventures Fund Research Award
1987-1990 Office of Naval Research Graduate Fellowship
1985 Amherst College Junior Year Phi Beta Kappa Award

CONTRIBUTIONS TO THE EDUCATIONAL PROGRAM

Courses Taught

Instructor or co-instructor

Fall 2022 MSCI 515A Interdisciplinary Marine Science Seminar, Enroll. 45
Spring 2022 MSCI 515A Interdisciplinary Marine Science Seminar, Enroll. 48
Fall 2021 MSCI 515A Interdisciplinary Marine Science Seminar, Enroll. 52
Spring 2021 MSCI 515A Interdisciplinary Marine Science Seminar, Enroll. 45

Fall 2020	MSCI 515A Interdisciplinary Marine Science Seminar, Enroll. 49
Summer 2020	MSCI 698-03 Fine Sediment Properties and Processes, Enroll. 4
Spring 2020	MSCI 515D Physical Sciences Seminar, Enroll. 9
Fall 2019	MSCI 515D Physical Sciences Seminar, Enroll. 11
Spring 2019	MSCI 515D Physical Sciences Seminar, Enroll. 13
Fall 2018	MSCI 515D Physical Sciences Seminar, Enroll. 11
Spring 2018	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2018	MSCI 515D Physical Sciences Seminar, Enroll. 9
Fall 2017	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Fall 2017	MSCI 515D Physical Sciences Seminar, Enroll. 14
Summer 2017	MSCI 520 Principles of Coastal & Ocean Dynamics, Enroll. 4
Spring 2017	GEOL 404-09 Intro Geological Research II, Enroll. 1
Spring 2017	MSCI 515D Physical Sciences Seminar, Enroll. 14
Fall 2016	MSCI 515D Physical Sciences Seminar, Enroll. 15
Fall 2016	MSCI 698-02 Data Analysis for Coastal Physical Processes Using MATLAB, Enroll. 13
Fall 2016	MSCI 698-03 Fine Sediment Transport Processes, Enroll. 6
Spring 2016	MSCI 515D Physical Sciences Seminar, Enroll. 11
Fall 2015	MSCI 698-02 Advances in Estuarine Particle Transport Dynamics ^[SEP] (Special topics course), Enroll. 2
Fall 2015	MSCI 515D Physical Sciences Seminar, Enroll. 7
Spring 2015	MSCI 515D Physical Sciences Seminar, Enroll. 12
Fall 2014	MSCI 515D Physical Sciences Seminar, Enroll. 11
Spring 2014	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2014	MSCI 515D Physical Sciences Seminar, Enroll. 9
Spring 2014	MSCI 520 Principles of Coastal & Ocean Dynamics, Enroll. 5
Fall 2013	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Fall 2013	MSCI 515D Physical Sciences Seminar, Enroll. 13
Fall 2013	MSCI 698-02 Effects of Organic Matter on Physical Properties of Muddy Suspensions, Enroll. 5
Spring 2013	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2013	MSCI 515D Physical Sciences Seminar, Enroll. 6
Fall 2012	MSCI 515D Physical Sciences Seminar, Enroll. 7
Fall 2012	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Spring 2012	MSCI 515D Physical Sciences Seminar, Enroll. 4
Spring 2012	MSCI 520 Principles of Coastal & Ocean Dynamics, Enroll. 4
Spring 2012	MSCI 698-06 York River Sediment Dynamics, Enroll. 4
Spring 2012	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Fall 2011	MSCI 515D Physical Sciences Seminar, Enroll. 7
Fall 2011	MSCI 621 Coastal Morphodynamic Processes, Enroll. 5
Fall 2011	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Spring 2011	MSCI 515D Physical Sciences Seminar, Enroll. 12
Fall 2010	MSCI 515D Physical Sciences Seminar, Enroll. 11
Fall 2010	MSCI 553 Intro to Benthic Boundary Layers & Sediment Transport, Enroll. 6
Spring 2010	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2010	MSCI 515D Physical Sciences Seminar, Enroll. 6
Spring 2010	MSCI 520 Principles of Coastal & Ocean Dynamics, Enroll. 6
Fall 2009	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Fall 2009	MSCI 515D Physical Sciences Seminar, Enroll. 8
Spring 2009	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2009	MSCI 515D Physical Sciences Seminar, Enroll. 8
Fall 2008	GEOL 491-09 Undergraduate Senior Research, Enroll. 1

Fall 2008	MSCI 515D Physical Sciences Seminar, Enroll. 9
Fall 2008	MSCI 621 Coastal Morphodynamic Processes, Enroll. 6
Spring 2008	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2008	MSCI 515D Physical Sciences Seminar, Enroll. 9
Spring 2008	MSCI 520 Principles of Coastal & Estuarine Physical Oceanography, Enroll. 8
Fall 2007	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Fall 2007	MSCI 515D Physical Sciences Seminar, Enroll. 11
Spring 2007	GEOL 492-09 Undergraduate Senior Research, Enroll. 1
Spring 2007	MSCI 515D Physical Sciences Seminar, Enroll. 14
Fall 2006	GEOL 491-09 Undergraduate Senior Research, Enroll. 1
Fall 2006	MSCI 515D Physical Sciences Seminar, Enroll. 21
Fall 2006	MSCI 553 Intro to Benthic Boundary Layers & Sediment Transport, Enroll. 6
Spring 2006	MSCI 515D Physical Sciences Seminar, Enroll. 21
Fall 2005	MSCI 515D Physical Sciences Seminar, Enroll. 23
Fall 2005	MSCI 621 Morphodynamics of Deltaic Coasts and Shelves, Enroll. 12
Spring 2005	MSCI 515D Physical Sciences Seminar, Enroll. 25
Spring 2005	MSCI 520 Principles of Coastal & Estuarine Physical Oceanography, Enroll. 9
Fall 2004	MSCI 601D Physical Sciences Seminar, Enroll. 24
Spring 2004	GEOL 406-08 Undergraduate Senior Research, Enroll. 1
Spring 2004	MSCI 613 Ocean Dynamics, Enroll. 6
Spring 2004	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 26
Spring 2004	MSCI 601D Physical Sciences Seminar, Enroll. 18
Fall 2003	MSCI 601D Physical Sciences Seminar, Enroll. 23
Spring 2003	GEOL 408-02 Undergraduate Senior Research, Enroll. 1
Spring 2003	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 28
Spring 2003	MSCI 601D Physical Sciences Seminar, Enroll. 4
Fall 2002	MSCI 698 Tools and Techniques for Geological and Physical Oceanography (Special topics course), Enroll. 6
Spring 2002	GEOL 496-02 Undergraduate Honors Research, Enroll. 1
Spring 2002	MSCI 520 Principles of Coastal and Estuarine Physical Oceanography, Enroll. 7
Spring 2002	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 16
Fall 2001	GEOL 495-02 Undergraduate Honors Research, Enroll. 1
Fall 2001	MSCI 698-06 Sediment Dynamics (Special topics course), Enroll. 5
Spring 2001	MSCI 697-06 Sediment Dynamics (Special topics course), Enroll. 2
Spring 2001	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 21
Fall 2000	MSCI 497-01 Estuarine Sediment Transport (Special topics course), Enroll. 1
Fall 2000	MSCI 697-02 Estuarine and Coastal Sediment Processes (Special topics course), Enroll. 7
Spring 2000	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 27
Spring 2000	MSCI 520 Principles of Coastal and Estuarine Physical Oceanography, Enroll. 4
Spring 1999	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 27
Fall 1998	MSCI 698-04 Tidal Marsh Sediment Transport and Sedimentation (Special topics course), Enroll. 4
Spring 1998	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 23
Spring 1997	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 28
Spring 1997	MSCI 520 Introduction to Fluid Mechanics, Enroll. 4
Fall 1996	MSCI 698-03 Data Assimilation Applied to Suspended Particle Properties (Special topics course), Enroll. 1
Spring 1996	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 25
Spring 1996	MSCI 613 Ocean Dynamics, Enroll. 4
Spring 1995	MSCI 502 Coastal and Estuarine Processes and Issues, Enroll. 32
Spring 1995	MSCI 520 Introduction to Fluid Mechanics, Enroll. 8

Fall 1993 MSCI 501 Introduction to Physical Oceanography, Enroll. 28

Guest instructor (3 or more hours)

Fall 1999 MSCI 621 Coastal Morphodynamic Processes, Enroll. 3

Fall 1995 MSCI 621 Coastal Morphodynamic Processes, Enroll. 8

Fall 1993 MSCI 614 Coastal Morphodynamic Processes, Enroll. 10

Students Mentored

Major/Co-Major Advisor (VIMS M.S./Ph.D.) or Faculty Mentor (VIMS M.A.)

- Amy Nicholson, seeking M.A. at SMS/VIMS. On developing a capstone project for professional outreach in marine science.
- Graduated 2022, David Perkey, Ph.D., SMS/VIMS. "Importance of muddy bed aggregate processes in cohesive sediment dynamics associated with sediment management projects."
- Withdrew, 2022, Thomas Sacco, from M.S. program at SMS/VIMS. On relating sediment water content and grain size to portable free-fall penetrometer measurements of sediment strength (Co-Major Advisor with G. Massey).
- Graduated 2021, Ph.D., Jessica Turner, SMS/VIMS. "Water clarity and suspended particle dynamics in the Chesapeake Bay: local effects of oyster aquaculture, regional effects of reduced shoreline erosion, and long-term trends in remotely sensed reflectance" (Co-Major Advisor with M. Friedrichs).
- Graduated 2021, M.S., Cristin Wright, SMS/VIMS. "Controls on estuarine sediment bed erodibility: insights from the York River Estuary" (Co-Major Advisor with G. Massey).
- Graduated 2020, Ph.D., Kelsey Fall, SMS/VIMS. "Influence of suspended particle size and composition on particle image processing, estuarine floc fractal properties, and resulting estuarine light attenuation."
- Graduated 2020, Ph.D., Danielle Tarpley, SMS/VIMS. "Temporal variability in cohesive sediment dynamics in a partially mixed estuary, the York River Estuary, Virginia, USA: a numerical study developed from observations" (Co-Major Advisor with C. Harris).
- Graduated 2013, Ph.D., Grace Cartwright, SMS/VIMS. "Application of acoustics and optics for the characterization of suspended particulate matter within an estuarine observing system."
- Graduated 2013, Ph.D., Lindsey Kraatz, SMS/VIMS. "Acoustic and sedimentological investigations of seabed conditions and related bio-physio-geological parameters in a tidally energetic, fine-grained environment: York River Estuary, Virginia."
- Graduated 2013, M.S., Carissa Wilkerson, SMS/VIMS. "Analysis of extreme water levels in the Lower Chesapeake Bay" (Co-Major Advisor with J. Brubaker).
- Graduated 2012, M.S., Kelsey Fall, SMS/VIMS, "Relationships among fine sediment settling and suspension, bed erodibility, and particle type in the York River estuary, Virginia" (Co-Major Advisor with M. Friedrichs).
- Graduated 2011, Ph.D., S. Jarrell Smith, SMS/VIMS. "Fine sediment dynamics in dredge plumes."
- Graduated 2009, M.S., Amy Foxgrover, SMS/VIMS, "Quantifying the overwash component of barrier island morphodynamics: Onslow Beach, NC" (Co-Major Advisor with J. McNinch).
- Graduated 2009, Ph.D., Yanxia Ma, SMS/VIMS. "Continental shelf sediment transport and depositional processes on an energetic active margin: the Waiapu River shelf, New Zealand" (Co-Major Advisor with C. Harris).
- Graduated 2008, M.S., Joshua Bearman, SMS/VIMS. "Factors controlling tidal flat morphology in South San Francisco Bay between the 1890s and 2005."
- Graduated 2008, M.S., Patrick Dickhudt, SMS/VIMS. "Controls on erodibility in a partially mixed estuary: York River, Virginia."
- Graduated 2007, M.S., Lynsey LeMay, SMS/VIMS. "The impact of drainage ditches on salt marsh flow patterns, sedimentation and morphology: Rowley River, Massachusetts."
- Graduated 2005, Ph.D., Malcolm Scully, SMS/VIMS. "The interaction between stratification, circulation, and sediment transport in a partially-mixed estuary."

- Graduated 2004, M.S., Heidi Romine, SMS/VIMS. "Documenting the suspended and bottom sediment dynamics of a two estuarine turbidity maximum system using ^7Be and ^{234}Th " (Co-Major Advisor with S. Kuehl).
- Graduated 2004, Ph.D., Arthur Trembanis, SMS/VIMS. "Complex inner shelf environments: Observations and modeling of morphodynamics and scour processes" (Co-Major Advisor with D. Wright).
- Graduated 2002, Ph.D., David Fugate, SMS/VIMS. "Estuarine suspended aggregate dynamics and characteristics."
- Graduated 2001, M.S., Malcolm Scully, SMS/VIMS. "Application of an analytical model for gravity-driven sediment transport and deposition to the Eel River shelf" (Co-Major Advisor with D. Wright).
- Graduated 2000, M.S., Grace Battisto, SMS/VIMS. "Field measurement of mixed grain size suspension under waves."
- Graduated 2000, Ph.D., Guan-Hong Lee, SMS/VIMS. "Across-shelf sediment transport modeling and its application to storms at Duck, North Carolina" (Co-Major Advisor with D. Wright).
- Graduated 1996, Ph.D., Linda Frizzell-Makowski, SMS/VIMS. "Temporal variability in the pycnocline in the mid-Chesapeake Bay" (Co-Major Advisor with D. Wright).
- Withdrew, 1996, Bruce Armbrust, from M.S. program at SMS/VIMS. On the roles of critical velocity, tidal symmetry and finite channel length in the morphodynamics of tidal channels. (Co-Major Advisor with J. Boon).

Student committee service

- Ryan Beecroft, seeking Ph.D. at University of Queensland, Australia. On mechanisms of fine sediment transport within a shallow coastal embayment. Major Advisor R. Cossu.
- Kyle Hinson, seeking Ph.D. at SMS/VIMS. On the effects of climate change on Chesapeake Bay biogeochemistry. Major Advisor M. Friedrichs.
- Spencer Marquardt, seeking M.S. at University of New Hampshire. On resolving the role of surface pressure gradients on short cylinders in nearshore environments. Major Advisor Diane Foster.
- Nathan Shunk, seeking M.S. at SMS/VIMS. On the impacts of marine heatwaves on hydrography and water quality in the Chesapeake Bay. Major Advisor P. Mazzini.
- Graduated 2022, Fernanda Maciel, Ph.D. at Universidad de la República, Uruguay. "Satellite remote sensing of water quality applications in optically complex coastal waters: The case of the Río de la Plata estuary". Major Advisor F. Pedocchi.
- Withdrew 2021, Elisa Aitoro, M.S. Program at SMS/VIMS. On sediment induced stratification in the northern Gulf of Mexico. Major Advisor C. Harris.
- Graduated 2021, Matthew Fair, M.S. at SMS/VIMS. "Sediment transport and trapping on the Ayeyarwady and Martaban continental shelf." Major Advisor C. Harris.
- Graduated 2021, Laur Ferris, Ph.D. at SMS/VIMS. "Across-scale energy transfer in the Southern Ocean." Major Advisory D. Gong.
- Graduated 2021, Shantelle Landry, M.S. at SMS/VIMS. "Recruitment and post-settlement mortality of the soft-shell clam, *Mya arenaria*." Major Advisor R. Seitz.
- Graduated 2021, Kristen Sharpe, M.S. at SMS/VIMS. "The role of zooplankton community composition in fecal pellet carbon production in the York River Estuary, Chesapeake Bay." Major Advisor D. Steinberg.
- Graduated 2020, Daniel Coleman, Ph.D. at SMS/VIMS. "The role of suspended sediment in assessing coastal wetland vulnerability". Major Advisor M. Kirwan.
- Graduated 2020, Lindsey Nelson, M.S. at SMS/VIMS. "Genetic and morphological assessment of population structure of the clearnose skate (*Rostroraja eglanteria*) from the Western North Atlantic Ocean". Major Advisor J. McDowell.
- Graduated 2019, Brent Law, Ph.D. at Dalhousie University. "Quantifying transport of aquaculture particulate wastes." Major Advisor P. Hill.
- Graduated 2018, John Gray, M.S. at College of Marine Science, University of South Florida. "The stability of sand waves in a tidally-influenced shipping channel, Tampa Bay, Florida. Major advisor D. Naar.

- Graduated 2018, Itchika Sivaipram, Ph.D. at SMS/VIMS. "Crab larval abundance and settlement patterns in a changing Chesapeake Bay". Major Advisor L. Schaffner.
- Graduated 2017, Isaac Irby, Ph.D. at SMS/VIMS. "Using water quality models in management: a multiple model assessment, analysis of confidence, and evaluation of climate change impacts". Major Advisor M. Friedrichs.
- Graduated 2017, Julia Moriarty, at SMS/VIMS. "The role of seabed resuspension on oxygen and nutrient dynamics in coastal systems: a numerical modeling study". Major Advisor C. Harris, Co-Major Advisor, M. Friedrichs.
- Graduated 2017, Megan Wood, Ph.D. at SMS/VIMS. "Junvenile blue crab (*Callinectes sapidus*) response to altered nursery habitat". Major Advisor R. Lipcius.
- Graduated 2016, Haixing Wang, M.S. at SMS/VIMS. "On shelf-slope water mass exchanges near Norfolk Canyon and Washington Canyon in Mid-Atlantic Bight". Major Advisor D. Gong.
- Graduated 2015, Emily French, M.S. at SMS/VIMS. "Z. marina and R. maritime in the Chesapeake Bay: effects of recent seagrass species change on habitat structure and function". Major Advisor K. Moore.
- Graduated 2015, Xioateng Shen, Ph.D. at SMS/VIMS. "Modeling flocculation and deflocculation processes of cohesive sediments". Major Advisor J. Maa.
- Graduated 2014, Justin Birchler, M.S. at SMS/VIMS. "Sediment deposition and reworking: a modeling study using isotopically tagged sediment classes". Major Advisor C. Harris.
- Graduated 2014, Miguel De Lucas Pardo, Ph.D. Delft University of Technology. "Effect of biota on fine sediment transport processes: a study of lake Markermeer". Major Advisor J. Winterwerp.
- Graduated 2013, Matthew Freedman, M.S. at SMS/VIMS. "Distribution and impacts of invasive bivalve *Corbicula fluminea* in tidal freshwater York River tributaries". Major Advisor L. Schaffner.
- Graduated 2013, Haley Garrison, M.S. at SMS/VIMS. "Effects of episodic turbulence on diatoms, with comments on the use of evens blue stain for live-dead determinations." Major Advisor K. Tang.
- Graduated 2013, Giulio Mariotti, Ph.D. at Geology Department, Boston University. "Morphodynamics of shallow coastal bays." Major Advisor S. Fagherazzi.
- Graduated 2013, Hadley Mcintosh, M.S. at SMS/VIMS. "Composition, sources, and age of dissolved and particulate organic matter in the Delaware River and estuary". Major Advisor E. Canuel.
- Graduated 2013, R. Garrik Secrist, M.S. at SMS/VIMS. "Food availability and utilization for cultured hard clams." Co-Major Advisors M. Luckenbach, I. Anderson.
- Graduated 2012, Theresa Davenport, M.S. at SMS/VIMS. "The consequences of shoreline modification for near-shore communities in Chesapeake Bay, USA: a before-after impact study." Major Advisor R. Seitz.
- Graduated 2012, Daniel Maxey, M.S. at SMS/VIMS. "Shedding light on the estuarine coastal filter: the relative importance of benthic microalgae in shallow photic systems." Major Advisor I. Anderson.
- Graduated 2012, Julia Moriarty, M.S. at SMS/VIMS. "Transport and fate of sediment on the Waipaoa River continental shelf: implications for the formation and reworking of flood deposits." Major Advisor C. Harris.
- Graduated 2012, Noelle Relles, Ph.D. at SMS/VIMS. "A case study in the effectiveness of marine protected areas (MPA's): the islands of Bonaire and Curacao, Dutch Caribbean." Major Advisor M. Patterson.
- Graduated 2012, Stephanie Salisbury, M.S. at SMS/VIMS. "Dynamics and composition of the extracellular polymeric substances produced by benthic microalgae: an in situ ¹³C and ¹⁵N approach." Major Advisor E. Canuel.
- Withdrew 2012, Hilary Stevens, from Ph.D. Program in Geological Sciences Department, University of Delaware. On morphodynamic evolution of fetch limited barrier beaches. Major Advisor A. Trembanis.
- Graduated 2012, Sarah Sumoski, M.S. at SMS/VIMS. "Mobile animals as a potential dispersal mechanism in *Zostera Marina* (eelgrass)." Major Advisor R. Orth.
- Graduated 2011, Cassie Bradley, M.S. at SMS/VIMS. "The impacts of shoreline development on shallow-water benthic communities in the Patuxent River, MD." Major Advisor R. Seitz.

- Graduated 2011, Kersey Sturdivant, Ph.D. at SMS/VIMS. "The effects of hypoxia on macrobenthic production and function in the lower Rappahannock River, Chesapeake Bay, USA." Co-Major Advisors R. Diaz, R. Seitz.
- Withdrew 2011, Payal Dharia, from M.S. Program at SMS/VIMS. On the control of erosion and deposition on larval settlement and recruitment. Major Advisor L. Schaffner.
- Graduated 2010, Mick van der Wegen, Ph.D. Delft University of Technology. "Modeling Morphodynamic Evolution in Alluvial Estuaries." Major Advisor J. Roelvink.
- Graduated 2010, Katherine Brodie, Ph.D., SMS/VIMS. "Observations of storm morphodynamics using Coastal Lidar and Radar Imaging System (CLARIS): importance of wave refraction and dissipation over complex surf-zone morphology at a shoreline erosional hotspot." Major Advisor J. McNinch.
- Graduated 2010, Amber Hardison, Ph.D., SMS/VIMS. "Interactions between macroalgae and the sediment microbial community: nutrient cycling within shallow coastal bays." Major Advisor I. Anderson.
- Graduated 2010, Cielomar Rodriguez-Calderon, M.S., SMS/VIMS. "Spatial and temporal patterns in erosional and depositional processes: physical and biological controls in the York River, Chesapeake Bay, VA." Major Advisor S. Kuehl.
- Withdrew 2010, Lorraine Brasseur, from Ph.D. program, at SMS/VIMS. On the dynamics of estuarine stratification. Major Advisor J. Brubaker.
- Graduated 2009, Juliette Poletto, M.S., SMS/VIMS. "Nutrient loading and system response in the coastal lagoons of the Delmarva Peninsula." Co-Major Advisors I. Anderson, M. Brush.
- Graduated 2008, J. Paul Rinehimer, M.S., SMS/VIMS. "Sediment transport and erodibility in the York River estuary: a modeling study." Major Advisor C. Harris.
- Graduated 2008, Shih-Nan Chen, Ph.D., Marine and Estuarine Environmental Sciences Program, University of Maryland. "Density- and wind-driven lateral circulation and the associated transport of sediments in idealized, partially mixed estuaries." Major Advisor L. Sanford.
- Graduated 2008, Ho Kyung Ha, Ph.D., SMS/VIMS. "Acoustic measurements of cohesive sediment transport: suspension to consolidation." Major Advisor J. Maa.
- Graduated 2008, Heidi Wadman, Ph.D., SMS/VIMS. "Controls on continental shelf stratigraphy: Waiapu River, New Zealand." Major Advisor J. McNinch.
- Graduated 2007, Jennifer Miselis, Ph.D., SMS/VIMS. "Nearshore morphology and lithology: links to framework geology and shoreline change." Major Advisor J. McNinch.
- Graduated 2007, Peng Cheng, Ph.D., Marine Sciences Research Center, State University of New York at Stony Brook. "Modeling sediment transport in estuarine environment: effects of tidal asymmetry, lateral circulation and sediment-induced stratification." Major Advisor R. Wilson.
- Graduated 2007, Justin Vandever, M.S., SMS/VIMS. "Acoustic measurement and modeling of waves in estuarine and coastal environments." Major Advisor J. Brubaker.
- Graduated 2006, Aaron Bever, M.S., SMS/VIMS. "Physical processes behind delta propagation and flood layer dynamics: Po River, Italy." Major Advisor C. Harris.
- Graduated 2005, Jae-Il Kwon, Ph.D., SMS/VIMS. "Simulation of turbidity maximums in the York River, Virginia." Major Advisor J. Maa.
- Graduated 2005, Joanne O'Callaghan, Ph.D., Dept. of Environmental Engineering, University of Western Australia. "Tidal and sediment dynamics of a partially mixed, micro-tidal estuary." Major Advisor C. Pattiaratchi.
- Graduated 2005, Monica Wolfson, M.S., College of Marine Science, University of South Florida. "Multibeam Observations of Mine Scour and Burial Near Clearwater Florida, Including a Test of the VIMS 2D Burial Model." Major Advisor D. Naar.
- Withdrew 2005, Scott Lerberg, seeking Ph.D. at SMS/VIMS. "Benthic secondary production in tidal marsh habitats -- between and within marsh variability along a salinity gradient in the York River subestuary." Major Advisor R. Diaz.
- Graduated 2004, M.S., Sarah Davies, SMS/VIMS. "Temporal changes in vegetation patterns at Sweet Hall Marsh." Major Advisor J. Perry.
- Graduated 2002, M.S., Scott Marion, SMS/VIMS. "Habitat fragmentation effects on the abundance and production of seagrass-associated fauna." Major Advisor R. Orth.

- Graduated 2002, Ph.D., Elizabeth Hinchey, SMS/VIMS. "Linking benthic biology with boundary layer processes and sediment disturbance in the York River estuary." Major Advisor L. Schaffner.
- Graduated 2001, Ph.D., Julie Herman, SMS/VIMS. "Sediment budgets, estuarine sediment loads, and wetland sediment storage at watershed scales, York River watershed, Virginia." Major Advisor C. Hershner.
- Graduated 2001, Ph.D. William Stockhausen, SMS/VIMS. "The impact of marine reserves on exploited species with complex life histories: a modeling study using the Caribbean spiny lobster in Exuma Sound, Bahamas." Major Advisor R. Lipcius.
- Graduated 2000, M.S., Kevin Skunda, SMS/VIMS. "Application of a theoretical model in the analysis of shoreline stability." Major Advisor C. Hershner.
- Graduated 2000, Ph.D., Robert Wood, SMS/VIMS. "Multispecies patterns of recruitment in the Chesapeake Bay among monitored fishes and the blue crab". Major Advisor H. Austin.
- Graduated 2000, Ph.D., Alessandra Sagasti, SMS/VIMS. "Effects of hypoxia on epifaunal communities, lower Chesapeake Bay." Co-Major Advisors E. Duffy and L. Schaffner.
- Withdrew 2000, Diana Whittington, seeking M.S. at SMS/VIMS. "Time series analysis of response of fish assemblages to fluctuating hydrographic regimes/refugia provided by morphology." Co-Major Advisors J. Hoenig and D. Evans.
- Graduated 1999, M.S., Rebecca Little Countway, SMS/VIMS. "Spatial and temporal distributions of organic matter and polycyclic aromatic hydrocarbons (PAHs) in surface waters of the York River, VA estuary." Major Advisor R. Dickhut.
- Graduated 1999, Ph.D., Timothy Dellapenna, SMS/VIMS. "Controls on strata formation in physically and biologically dominated environments: A comparison of the lower Chesapeake Bay and York River estuaries". Major Advisor S. Kuehl.
- Graduated 1999, Ph.D., David Niebuhr, SMS/VIMS. "The source and effect of chronic, low-level sedimentation on coral health and ecology." Co-Major Advisors M. Patterson and J. Boon.
- Graduated 1998, M.S., Eva Machelor Bailey, SMS/VIMS. "The role of macroalgae in shallow seagrass systems of the York River, VA: Interactions and competition". Major Advisor K. Moore.
- Graduated 1998, M.S., Michael Campana, SMS/VIMS. "The effect of reed grass (*Phragmites australis*) invasion on nitrogen cycling, sedimentation, and habitat value of tidal brackish wetlands". Major Advisor J. Perry.
- Graduated 1998, Ph.D., Sarah Rennie, SMS/VIMS. "Wind interaction with buoyant plumes on the inner continental shelf". Co-Major Advisors J. Brubaker and D. Wright.
- Graduated 1997, M.S., Katherine Farnsworth, SMS/VIMS. "Seasonal trends in wave energy at the Thimble Shoals area of lower Chesapeake Bay". Major Advisor J. Boon.
- Graduated 1997, Ph.D., Pablo Glorioso, SMS/VIMS. "Seasonal stratification decay related to inertial oscillations in the northern North Sea -- observations and numerical modeling". Major Advisor J. Brubaker.
- Graduated 1996, M.S., David Fugate, SMS/VIMS, "Quantification of tidal creek network patterns using fractal methods." Major Advisor R. Wetzel.
- Graduated 1996, M.S., Jennifer Schulman, SMS/VIMS. "How does survival of juvenile blue crabs vary as a function of grass bed density?" Major Advisor R. Lipcius.
- Graduated 1996, M.S., Renee Pardieck, SMS/VIMS. "A comparison of settlement of blue crab post-larvae (*Callinectes sapidus* Rathbun) in *Ruppia maritima* and *Zostera marina*." Major Advisor R. Orth.

Undergraduate and high school mentoring

- Summer 2020, Co-mentor (with G. Massey) of Thomas Sacco, an undergraduate at Middlebury College, in the William & Mary SMS/VIMS Summer Internship Program
- Summer 2018, Co-mentor (with G. Massey) of Emmalynn Hicks, an undergraduate at Bryn Mawr College, in the William & Mary SMS/VIMS Summer Internship Program
- Fall 2016 to Spring 2018, Co-mentor (with G. Massey) and Senior Thesis co-advisor (with G. Massey) to Moira Taylor, CHSD Lab volunteer, research assistant, Geology Major, William & Mary.
- Summer 2017, Co-mentor (with G. Massey) of Emily Mushlitz, an undergraduate at William & Mary, in the William & Mary SMS/VIMS Summer Internship Program

Summer 2016, Co-mentor (with G. Massey) to Cristin Wright, an undergraduate at Maine Maritime Academy, in the William & Mary SMS/VIMS Summer Internship Program.

Spring 2015 to Spring 2016, Co-supervisor (with G. Cartwright) of Jacob Seefeldt, CHSD Lab volunteer, Geology Major, William & Mary.

Spring 2014 to Spring 2015, Co-supervisor (with G. Cartwright) and Senior Thesis co-advisor (with G. Cartwright) to Meg Gillespie, CHSD Lab volunteer, research assistant, Geology Major, William & Mary.

Spring 2013 to Spring 2014, Senior Thesis Co-advisor (with G. Cartwright) to Brandon McCoy, Geology Department, William & Mary.

Spring 2013, Co-supervisor (with G. Cartwright) of Ciara Mills, CHSD Lab volunteer, Geology Major, William & Mary.

Spring 2013, Co-supervisor (with G. Cartwright) of Elizabeth Stoeckle, CHSD Lab volunteer, Geology Major, William & Mary.

Spring 2012 to Spring 2013, Senior Thesis Co-advisor (with G. Cartwright) to Dominique Paxton, Geology Department, William & Mary.

Summer 2012, Co-mentor (with G. Cartwright) to Laura Tait, an undergraduate at Amherst College, in the William & Mary SMS/VIMS Summer Internship Program.

Spring 2012 to Spring 2013, Co-supervisor (with G. Cartwright) of Brandon McCoy, CHSD Lab volunteer and research assistant, Geology Major, William & Mary.

Fall 2011, Co-supervisor (with G. Cartwright) of Patti Burton, CHSD Lab volunteer, Geology Major, William & Mary.

Fall 2011, Co-supervisor (with G. Cartwright) of Katherine Martin, CHSD Lab volunteer, Geology Major, William & Mary.

Summer 2011 to Spring 2012, Co-supervisor (with G. Cartwright) of Dominique Paxton, CHSD Lab volunteer, Geology Major, William & Mary.

Summer 2011, Mentor to Emily Wei, an undergraduate at Middlebury College, in the William & Mary SMS/VIMS Summer Internship Program.

Spring 2011 to Spring 2012, Senior Thesis Advisor to Isaac Clark, Geology Department, William & Mary.

Summer 2010, Co-Mentor (with M. Friedrichs) to Leslie Bland, an undergraduate at James Madison University, in the William & Mary SMS/VIMS Summer Internship Program.

Fall 2008 to Spring 2010, Senior Thesis Advisor to Donte Newbill, Geology Department, William & Mary.

Spring 2008 to Spring 2009, Senior Thesis Advisor to Benjamin Lewis, Geology Department, William & Mary.

Summer 2008, Mentor to Ryan Scott, an undergraduate at George Mason University, in the William & Mary SMS/VIMS Summer Internship Program.

Spring 2007 to Spring 2008, Senior Thesis Advisor to Sam Bruno, Geology Department, William & Mary.

Spring 2006 to Spring 2007, Senior Thesis Advisor to Katherine Luciano, Geology Department, William & Mary.

Summer 2006, Mentor to Emilee Mroz, an undergraduate at St. Lawrence University, in the William & Mary SMS/VIMS Summer Internship Program.

Summer 2005, Mentor to Andrew Kowalczyk, an undergraduate at Texas A&M University, Galveston, in the William & Mary SMS/VIMS Summer Internship Program.

Summer 2005, Supervisor of Katherine Luciano, undergraduate in Geology Department, William & Mary, working as Summer Intern at VIMS.

Summer 2004, Supervisor of Joe Levitt, undergraduate at Tulane University, working as Summer Intern at VIMS.

Summer 2004, Mentor to Lauren Trobick, a Gloucester High School, VA, junior in the Rappahannock Community College Governor's school.

Fall 2003 to Spring 2004, Senior Thesis Advisor to McDonald Lee, Geology Department, William & Mary.

Fall 2002 to Spring 2003, Senior Thesis Advisor to Rebecca Roper, Geology Department, William & Mary.

Fall 2002 to Spring 2003, Mentor to LaDawn Richmond, a Grafton High School, VA, senior in the New Horizons Governor's School for Science and Technology Mentorship Research Program.

- Fall 2001 to Spring 2002, Senior Thesis Advisor to Lynsey Ellis, Geology Department, William & Mary.
- Summer 2001, Mentor to Lynsey Ellis, an undergraduate at the William & Mary, in the William & Mary SMS/VIMS Summer Internship Program.
- Summer 2001, Mentor to Brian Zelenke, an undergraduate at Humboldt State University, in the William & Mary SMS/VIMS Summer Internship Program.
- Summer 2001, Mentor to Elizabeth Buckner, White Post High School, VA, a rising senior in the VIMS Marine Science Apprenticeship Governor's School.
- January 2001, Supervisor for Brian Schott, an undergraduate at Randolph-Macon College as part of the Randolph-Macon College Internship in Environmental Studies.
- Fall 2000 to Spring 2001, Senior Thesis Advisor to Carrie Snyder, Geology Department, William & Mary.
- Fall 2001 to Spring 2002, Mentor to Brett Nobile, a Poquoson High School, VA, senior in the New Horizons Governor's School for Science and Technology Mentorship Research Program.
- Fall 2001 to Spring 2002, Mentor to Megan Weldon a James City High School, VA, senior in the New Horizons Governor's School for Science and Technology Mentorship Research Program.
- Fall 2000, Mentor to Daniel Norfleet, a Gloucester Point, VA high school student in the New Horizons Governor's School for Science and Technology Mentorship Research Program.
- Summer 2000, Mentor to Carrie Snyder, an undergraduate at the William & Mary, in the William & Mary SMS/VIMS Summer Internship Program.
- Fall 1999/Spring 2000, co-Mentor (with John Brubaker) to Michelle Venanzi for senior research project, Physics Department, William & Mary.
- Summer 1999. Mentor to Selma van Houwelingen and Manon Rommens, undergraduate students at the University of Utrecht, The Netherlands, as part of their Department of Geography Research Placement Program.
- Fall 1997, Mentor to Arno de Kruif and Daan Rijks, undergraduate students at the University of Utrecht, The Netherlands, as part of their Department of Geography Research Placement Program.
- Summer 1997, Mentor to Stefan Petranek, an undergraduate at Bowdoin College, Maine, in the William & Mary SMS/VIMS Summer Internship Program.
- Spring 1997, Co-Mentor to Kelly Dorgan, a York, VA high school student in the New Horizons Governor's School for Science and Technology Mentorship Research Program.
- Fall 1994, Co-Mentor to Benjamin Hiza, a Gloucester, VA high school student in the New Horizons Governor's School for Science and Technology Mentorship Research Program.

Post-doctoral mentoring

- 2010-2011, Aaron Bever, SMS/VIMS. On the subject of estuarine model skill assessment. (Co-advisor with M. Friedrichs).
- 2002-2003, David Fugate, SMS/VIMS. On the subject of estuarine sediment transport. (Co-advisor with C. Harris).

FELLOWSHIPS AND GRANTS

All fellowships, grants, contracts, etc., awarded by entities outside of VIMS

- Aug 2023 - Aug 2025, "Quantifying munitions mobility and burial in riverine environments." Strategic Environmental Research and Development Program via Subcontract through U.S. Naval Research Laboratory, C.T. Friedrichs, VIMS Principal Investigator, \$145,300.
- Sep 2021 - Sep 2024, "Rapid soil classification and integration of soil characteristics for UXO site characterization and risk assessment." Strategic Environmental Research and Development Program via Subcontract through Virginia Tech, G.M. Massey, VIMS Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$327,217.
- Jul 2022 - Jun 2023, "2021-2022 Water quality monitoring for Bay water quality standards assessment." Virginia Department of Environmental Quality. C.T. Friedrichs, Principal Investigator, \$366,150.
- Jul 2021 - Jun 2022, "2021-2022 Water quality monitoring for Bay water quality standards assessment." Virginia Department of Environmental Quality. C.T. Friedrichs, Principal Investigator, \$366,150.

- Jul 2020 - Jun 2021, "2020-2021 Water quality monitoring for Bay water quality standards assessment." Virginia Department of Environmental Quality. C.T. Friedrichs, Principal Investigator, \$366,150.
- Jul 2019 - Jun 2020, "2019-2020 Water quality monitoring for Bay water quality standards assessment." Virginia Department of Environmental Quality. W. Reay, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$404,205.
- Jun 2018 - May 2020, "Improved penetrometer performance in stratified sediment for cost-effective characterization, monitoring and management of submerged munitions sites." Strategic Environmental Research and Development Program via Subcontract through Virginia Tech., G.M. Massey, VIMS Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$253,366.
- Oct 2018 - Jul 2019, "Evaluation of environmental concerns in Buchanan Creek." Virginia Department of Environmental Quality. C.T. Friedrichs, Principal Investigator, \$250,000.
- Jul 2016 - Sep 2019, "Parameterized process models for underwater munitions expert system." Strategic Environmental Research and Development Program. C.T. Friedrichs, Principal Investigator, \$96,387.
- Apr 2015 - Apr 2020, "Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity." National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$691,150.
- Sep 2013 - Aug 2018, "Transitioning an estuarine hypoxia model to operations via a Coastal Ocean Modeling Testbed in the Chesapeake Bay." NOAA US-IOOS Coastal and Ocean Modeling Testbed, M.A.M Friedrichs, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$533,212.
- Jun 2014 - Feb 2017, "Empirical investigation of the factors influencing marine applications of electromagnetic induction." Strategic Environmental Research and Development Program via Subcontract through U.S. Naval Research Laboratory. C.T. Friedrichs, VIMS Principal Investigator, \$174,790.
- Apr 2011 - Mar 2016, "Improved observation, analysis and modeling of fine sediment dynamics in turbid, biologically active coastal environments." National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$644,025.
- Jun 2011 - May 2015, "Collaborative research: the role of wind in estuarine dynamics." National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, VIMS Principal Investigator, \$193,820.
- Mar 2012 - Feb 2014, "Simple parameterized models for predicting mobility, burial and re-exposure of underwater munitions." Strategic Environmental Research and Development Program. C.T. Friedrichs, Principal Investigator, \$84,700.
- May 2013 - Nov 2013, "Acoustic assessment of subsea chemical dispersant efficacy." BOERMRE Technology Assessment & Research Program via Subcontract through Applied Research Associates, Inc. C.T. Friedrichs, VIMS Principal Investigator, \$76,478.
- Oct 2011 - Apr 2013, "VIMS contribution to the estuarine hypoxia component of the US IOOS Coastal Modeling Testbed." M.A.M Friedrichs, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, Southeastern Universities Research Association, \$55,000.
- Dec 2011 - Feb 2013, "BOERMRE oil particle sizing." BOERMRE Technology Assessment & Research Program via Subcontract through Applied Research Associates, Inc. C.T. Friedrichs, VIMS Principal Investigator, \$64,547.
- Jan 2009 - Dec 2011, "Collaborative research: A real-time and rapid response observing system for the study of physical and biological controls on muddy seabed deposition, reworking and resuspension." (Supplement) National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$388,872.
- Jun 2010 - June 2011, "A super-regional testbed to improve models of environmental processes on the U.S. Atlantic and Gulf of Mexico coasts." NOAA US-IOOS Coastal and Ocean Modeling Testbed. C.T. Friedrichs, VIMS Principal Investigator, \$879,717.
- Dec 2009 - Sep 2010, "DOT ultrasonic measurement of strain in pipelines." US Department of Transportation via Subcontract through Applied Research Associates. G.M. Cartwright, Principal Investigator, C.T. Friedrichs, Investigator, \$7,480.

- Nov 2009 - Apr 2010, "Ultrasonic in-situ characterization of tank waste." Department of Energy via Subcontract through Luna Innovations Inc. C.T. Friedrichs, VIMS Principal Investigator, \$25,000.
- Oct 2008 - Sep 2009, "Estuarine suspended sediment loads and sediment budgets in tributaries of Chesapeake Bay." US Army Corps, Baltimore District. J. Herman, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$48,868.
- Jan 2006 - Dec 2008, "Collaborative research: A real-time and rapid response observing system for the study of physical and biological controls on muddy seabed deposition, reworking and resuspension." National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$1,946,500.
- Jun 2006 - May 2008, "Development of morphological models for South San Francisco Bay." U.S. Geological Survey, Western Coastal and Marine Geology Program. C.T. Friedrichs, Principal Investigator, \$50,106.
- Feb 2007 - Dec 2007, "Morphodynamics of tidal flat coastlines." Office of Naval Research, Marine Geosciences Program, C.T. Friedrichs, Principal Investigator, \$57,861.
- Jan 2005 - Dec 2007, "Development of hydrodynamic and water quality models for the Lynnhaven River system." US Army Corps, Fort Norfolk Office. M. Sisson, Principal Investigator, C.T. Friedrichs, Investigator, \$500,000.
- Dec 2004 - Nov 2007, "Reformulation of mine scour equations using observations from MBP field sites." Office of Naval Research, Marine Geosciences Program. C.T. Friedrichs, Principal Investigator, \$63,469.
- Oct 2002 - Sep 2007, "TIDE: Trophic cascade and interacting control processes in a detritus-based aquatic ecosystem." National Science Foundation, Division of Environmental Biology. C.T. Friedrichs, VIMS Principal Investigator, \$205,000.
- Sep 2006 - Aug 2007, "Detection and prediction of hazards in ports, bays and the littoral zone: a lower Chesapeake Bay test bed (expansion)." Office of Naval Research, Processes and Prediction Division. C.T. Friedrichs, Principal Investigator, \$1,724,000.
- Mar 2005 - Sep 2006, "Detection and prediction of hazards in ports, bays and the littoral zone: a lower Chesapeake Bay test bed." Office of Naval Research, Processes and Prediction Division, L.D. Wright Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$959,000.
- Oct 2004 - Sep 2006, "Chesapeake Bay observing cooperative expansion and integration demonstration: VIMS/CBNERRVA component." National Oceanic and Atmospheric Administration, National Marine Fisheries Service, C.T. Friedrichs, Principal Investigator, \$111,099.
- Oct 2003 - Sep 2006, "Development of a sediment transport model for the Chesapeake Bay: Supporting physical data." US Army Corps, Engineer Research and Development Center. C.T. Friedrichs, VIMS Principal Investigator, \$248,619.
- Oct 2003 - Sep 2006, "Sediment dispersal off a high-yield river: observations and modeling of gravity-driven transport and deposition." National Science Foundation, Division of Ocean Sciences. S.A. Kuehl, Principle Investigator, C.T. Friedrichs, Co-Principal Investigator, \$646,519.
- May 2004 - Apr 2005, "The role of negative buoyancy in the morphodynamics of river dominated shelves: a global synthesis." Office of Naval Research, Coastal Geosciences Program. L.D. Wright Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$38,942.
- Mar 2000 - Feb 2005, "CAREER: Sediment dynamics of a microtidal partially-mixed estuary" National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$499,978.
- Dec 2002 - Sep 2004, "Forecasting scour related mine burial using a parameterized model." Office of Naval Research, Marine Geosciences Program. C.T. Friedrichs, Principal Investigator, \$99,660.
- Jul 2003 - Jul 2004, "Prototype of new peer into the Waterways Information System." U.S. Coast Guard Research and Development Center. L.D. Wright, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$250,000.
- Oct 2002 - Sep 2003, "Upscaling simple models for energetic shelf sediment transport". Office of Naval Research, Marine Geosciences Program. C.T. Friedrichs, Principal Investigator, \$19,627.
- Aug 2001, "Oyster shell dredge monitoring" Virginia Marine Resources Commission. C.T. Friedrichs, Principal Investigator, \$6,100.

- Nov 2000 - Oct 2004, "Collaborative proposal: How do estuarine turbidity maxima entrap particles, retain zooplankton, and promote recruitment of fish?" National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$217,512.
- Nov 2000 - Oct 2003, "Fate of 'reactive nitrogen' derived from agricultural sources in coastal lagoons." U.S. Department of Agriculture Ecosystems Panel. I. Anderson, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$190,886.
- Oct 2000 - Sep 2002, "Integration of an analytical model for shelf sediment deposition into SEDFLUX". Office of Naval Research, Geology and Geophysics Program. C.T. Friedrichs, Principal Investigator, \$99,790.
- Apr 2001 - Mar 2002, "Instrument calibrations and water column profile surveys of a mixed-sediment disposal site." Evans-Hamilton/US Army Corps of Engineers. G.M. Battisto, Principal Investigator, C.T. Friedrichs, Investigator, \$68,600.
- Oct 2000 - Sep 2001, "A review of the present knowledge of mine burial". Office of Naval Research, Geology and Geophysics Program. C.T. Friedrichs, Principal Investigator, \$8,624.
- Aug 2000 - Jul 2001, "The role of spatially complex shoreface roughness in sediment transport and deposition: A New Zealand case study and model development." National Science Foundation, Division of International Programs. L.D. Wright, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$91,716.
- Jan 1998 - Dec 2000, "Transport and fate of sediment-associated polycyclic aromatic hydrocarbons and trace elements in the Elizabeth River". Chesapeake Bay Environmental Effects Committee, Sea Grant. R. Dickhut, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$455,247.
- Jul 2000 - Sep 2000, "Characterization of turbidity and suspended sediment size distribution in support of along-shore sediment flux measurement during storms, Duck, NC (Expansion)." Waterways Experiment Station, U.S. Army Corps of Engineers. C.T. Friedrichs, Principal Investigator, \$19,151.
- Oct 1998 - Sep 2000, "Bottom boundary layer processes associated with fine sediment accumulation: Application to STRATAFORM". Office of Naval Research, Geology and Geophysics Program. C.T. Friedrichs, Principal Investigator, \$99,968.
- Apr 1999 - Sep 1999, "Characterization of turbidity and suspended sediment size distribution in support of along-shore sediment flux measurement during storms, Duck, NC (Expansion)" Waterways Experiment Station, U.S. Army Corps of Engineers. C.T. Friedrichs, Principal Investigator, \$43,703.
- Feb 1996 - Jan 1999, "Cross-shoreface suspended sediment transport: A response to the intersection of nearshore and shelf processes". National Science Foundation, Division of Ocean Sciences. C.T. Friedrichs, Principal Investigator, \$239,806.
- Jan 1996 - Dec 1998, "Biological mediation of material fluxes across the sediment-water interface in estuaries and coastal systems: An expansion". Office of Naval Research, Harbor Processes Program. L.C. Schaffner and L.D. Wright, Principal Investigators, C.T. Friedrichs, Investigator, \$988,793.
- Jul 1998 - Sep 1998, "Characterization of turbidity and suspended sediment size distribution in support of along-shore sediment flux measurement during storms, Duck, NC". Waterways Experiment Station, U.S. Army Corps of Engineers. C.T. Friedrichs, Principal Investigator, \$21,202.
- Mar 1997 - Jan 1998, "Pump sampling and quantitative analysis of suspended sand and turbidity in support of the sensor insertion system, Duck, NC". Coastal Engineering Research Center, U.S. Army Corps of Engineers. C.T. Friedrichs, Principal Investigator, \$15,183.
- Oct 1994 - Sep 1997, "Physical transport processes influencing shelf sedimentary structure". Naval Research Laboratory, Coastal Benthic Boundary Layer Special Research Project. L.D. Wright, Principal Investigator, C.T. Friedrichs, Co-Principal Investigator, \$186,619.
- Jan 1993 - Sep 1994, "Physical and biological mechanisms influencing the development and evolution of sedimentary structure". Naval Research Laboratory, Coastal Benthic Boundary Layer Special Research Project. L.D. Wright, Principal Investigator, C.T. Friedrichs, Investigator, \$236,970.
- Jul 1994, "Synthesis of sediment transport and tidal dynamics experiment, Great Bay, NH". Subcontract to National Science Foundation Grant through Woods Hole Oceanographic Institution. C.T. Friedrichs, Principal Investigator, \$4,122.

RESEARCH

Refereed publications in periodicals, chapters in books, and conference proceedings

- Turner, J.S., K.A. Fall, and C.T. Friedrichs, 2022. Clarifying water clarity: a call to use metrics best suited to corresponding research and management goals in aquatic ecosystems. Submitted to *Limnology and Oceanography Letters*.
- Wright, C.L., C.T. Friedrichs, and G.M. Massey, 2022. Controls on sediment bed erodibility in a muddy, partially-mixed tidal estuary. *Frontiers in Earth Science*, 10: 805130. <https://www.frontiersin.org/articles/10.3389/feart.2022.805130/>
- Fall, K.A., C.T. Friedrichs, G.M. Massey, D.G. Bowers, and S.J. Smith, 2021. The importance of organic content to fractal floc properties in estuarine surface waters: Insights from video, LISST, and pump sampling. *Journal of Geophysical Research: Oceans*, 126: e2020JC016787. <https://doi.org/10.1029/2020JC016787>
- Turner, J.S., C.T. Friedrichs, and M.A.M. Friedrichs, 2021. Long-term trends in Chesapeake Bay remote sensing reflectance: implications for water clarity. *Journal of Geophysical Research: Oceans*, 126: e2021JC017959. <https://doi.org/10.1029/2021JC017959>
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2021. Effects of reduced shoreline erosion on Chesapeake Bay water clarity. *Science of the Total Environment*. <https://doi.org/10.1016/j.scitotenv.2021.145157> [90]
- Bowers, D.G., E.M. Roberts, A.M. Hoguane, K.A. Fall, G.M. Massey, and C.T. Friedrichs, 2020. Secchi disk measurements in turbid water. *Journal of Geophysical Research: Oceans*. 125: e2020JC016172. <https://doi.org/10.1029/2020JC016172>
- Perkey, D.W., S.J. Smith, K.A. Fall, G.M. Massey, C.T. Friedrichs, and E.M. Hicks, 2020. Impacts of muddy bed aggregates on sediment transport and management in the tidal James River, VA. *ASCE Journal of Waterway, Port, Coastal and Ocean Engineering*. 146(5). [https://doi.org/10.1061/\(ASCE\)WW.1943-5460.0000578](https://doi.org/10.1061/(ASCE)WW.1943-5460.0000578)
- Bilici, C., N. Stark, C.T. Friedrichs, and G.M. Massey, 2019. Coupled sedimentological and geotechnical data analysis of surficial sediment layer characteristics in a tidal estuary. *Geo-Marine Letters*, 39: 175-189. <https://doi.org/10.1007/s00367-019-00565-3>
- Tarpley, D.R.N., C.K. Harris, C.T. Friedrichs, and C.R. Sherwood, 2019. Tidal variation in cohesive sediment distribution and sensitivity to flocculation and bed consolidation in an idealized, partially-mixed estuary. *Journal of Marine Science and Engineering*. 7(334): 1-27. <https://doi.org/10.3390/jmse7100334>
- Turner, J.S., M.L. Kellogg, G.M. Massey, and C.T. Friedrichs, 2019. Minimal effects of oyster aquaculture on local water quality: examples from southern Chesapeake Bay. *PLoS ONE*, 14(11): e0224768. <https://doi.org/10.1371/journal.pone.0224768>
- Bever, A.J., M.A.M. Friedrichs, C.T. Friedrichs, and M.E. Scully, 2018. Estimating hypoxic volume in the Chesapeake Bay using two continuously sampled oxygen profiles. *Journal of Geophysical Research: Oceans*, 123: 6392–6407. <https://doi.org/10.1029/2018JC014129>
- Olabarrieta, M., W.R. Geyer, G. Coco, C.T. Friedrichs, and Z. Cao, 2018. Effects of density driven flows on the long-term morphodynamic evolution of funnel-shaped estuaries. *Journal of Geophysical Research: Earth Surface*, 123: 2901-2924. <https://doi.org/10.1029/2017JF004527>
- Zhou, Z., L.Y. Chen, I. Townend, C. Friedrichs, and G. Coco, 2018. Revisiting the relationship between tidal asymmetry and tidal embayment morphology: a comparison between 1D and 2D tidal flow models. *Journal of Coastal Research*, SI 85: 151-155. <https://doi.org/10.2112/SI85-031.1>
- Rennie, S.E., A. Brandt, and C.T. Friedrichs, 2017. Initiation of motion and scour burial of objects underwater. *Ocean Engineering*, 131: 282-294. <https://doi.org/10.1016/j.oceaneng.2016.12.029>
- Colden, A.M., K.A. Fall, G.M. Cartwright, and C.T. Friedrichs, 2016. Suspension and deposition of sediment across subtidal oyster reefs of varying orientation to flow: implications for restoration. *Estuaries and Coasts*, 39: 1435-1448. <https://doi.org/10.1007/s12237-016-0096-y> [80]

- Friedrichs, C.T., S.E. Rennie, and A. Brandt, 2016. Self-burial of objects on sandy beds by scour: A synthesis of observations. In: J.M. Harris, R.J.S. Whitehouse, and S. Moxon (eds.), *Scour and Erosion*. CRC Press, p. 179-189. <https://bit.ly/2mH5rZN>
- Irby, I.D., M.A.M. Friedrichs, C.T. Friedrichs, A.J. Bever, R.R. Hood, L.W.J. Lanerolle, M.E. Scully, K. Sellner, J. Shen, J. Testa, M. Li, H. Wang, P. Wang, L. Linker, and M. Xia, 2016. Challenges associated with modeling low-oxygen waters in Chesapeake Bay: a multiple model comparison. *Biogeosciences*, 13: 2011-2028. <https://doi.org/10.5194/bg-13-2011-2016>
- Briggs, K.B., G.M. Cartwright, C.T. Friedrichs, and S. Shivarudruppa, 2015. Biogenic effects on cohesive sediment erodibility resulting from recurring seasonal hypoxia on the Louisiana shelf. *Continental Shelf Research*, 93: 17-26. <https://doi.org/10.1016/j.csr.2014.11.005>
- Smith, S.J., and C.T. Friedrichs, 2015. Image processing methods for in situ estimation of cohesive sediment floc size, settling velocity and density. *Limnology and Oceanography Methods*, 13: 250-264. <https://doi.org/10.1002/lom3.10022>
- Fall, K.A., C.K. Harris, C.T. Friedrichs, J.P. Rinehimer, and C.R. Sherwood, 2014. Model behavior and sensitivity in an application of the cohesive bed component of the Community Sediment Transport Modeling System for the York River Estuary, VA. *Journal of Marine Science and Engineering*, 2: 413-436. <https://doi.org/10.3390/jmse2020413>
- Xu, K., D.R. Corbett, J.P. Walsh, D. Young, K.B. Briggs, G.M. Cartwright, C.T. Friedrichs, C.K. Harris, R.C. Mickey, and S. Mitra, 2014. Seabed erodibility variations on the Louisiana Continental Shelf before and after the 2011 Mississippi River Flood. *Estuarine Coastal and Shelf Science*, 149: 283-293. <https://doi.org/10.1016/j.ecss.2014.09.002>
- Bever, A.J., M.A.M. Friedrichs, C.T. Friedrichs, M.E. Scully, and L.W. Lanerolle, 2013. Combining observations and numerical model results to improve estimates of hypoxic volume within the Chesapeake Bay, USA. *Journal of Geophysical Research: Oceans*, 118: 4924-4944. <https://doi.org/10.1002/jgrc.20331>
- Cartwright, G.M., C.T. Friedrichs, and S.J. Smith, 2013. A test of the ADV-based Reynolds-flux method for in situ estimation of sediment settling velocity in a muddy estuary. *Geo-Marine Letters*, 33: 477-484. <https://doi.org/10.1007/s00367-013-0340-4>
- Luettich, R.A., L.D. Wright, R. Signell, C. Friedrichs, M. Friedrichs, J. Harding, K. Fennel, E. Howlett, S. Graves, E. Smith, G. Crane, and R. Baltas, 2013. The U.S. IOOS Super-regional Coastal Ocean Modeling Testbed: implementation and overview of findings. *Journal of Geophysical Research: Oceans*, 118: 6319-6328. <https://doi.org/10.1002/2013JC008939>
- Van Maanen, B., G. Coco, K.R. Bryan, and C.T. Friedrichs, 2013. Modelling the morphodynamic response of tidal embayments to sea-level rise. *Ocean Dynamics*, 63: 1249-1262. <https://doi.org/10.1007/s10236-013-0649-6> [70]
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- Friedrichs, C.T., D.R. Lynch, and D.G. Aubrey, 1990. Velocity asymmetries in well-mixed tidal embayments: Longitudinal and lateral variability. Proceedings, Physics of Estuaries and Coastal Seas, 5th International Biennial Conference, Sponsored by the Natural Environment Research Council, UK, University of Wales, Gregynog, UK, 9-13 July, p. 47-51.

Invited presentations by C. Friedrichs (Past 10 years)

- Sep 30, 2021, "Estuarine sentinel sites: measurements for managing under climate change", After Hours Lecture Series, Virginia Institute of Marine Science.
- Jun 22, 2021, "Controls on multiple measures of water clarity", Teachers On The Estuary (TOTE) Outreach Speaker Series, Chesapeake Bay National Estuarine Research Reserve in Virginia, Virginia Institute of Marine Science. (Presented virtually)
- Mar 22, 2021, "What will William & Mary look like in a post-pandemic world?" Community Conversation with President Rowe. <https://www.youtube.com/watch?v=mWLBsSwt88Q>
- Jun 28, 2019, "What controls bed erodibility in muddy estuaries? Insights from the York River, Virginia". Coastal and Ocean Fluid Dynamics Laboratory Seminar Series, Woods Hole Oceanographic Institution, Woods Hole, MA.
- Jun 18, 2019, "How the ocean works", Discover Lab Community Outreach Speaker Series, Chesapeake Bay National Estuarine Research Reserve in Virginia, Virginia Institute of Marine Science.
- Feb 27, 2019, "Friedrichs' (plural) group interests with regards to long-term trends in Chesapeake Bay tidal waters", Invited webinar presentation to Chesapeake Bay Program Tidal Trends Analysis Team.
- Nov 9, 2018, "Initiation of motion of objects by waves and currents and object burial by scour and liquefaction". Geotech/Water Resources Program Seminar, Civil & Environmental Engineering Department, Virginia Tech University, Blacksburg, VA.
- Jun 29, 2018, "Motion and burial of objects on the seabed in sand". Coastal and Ocean Fluid Dynamics Laboratory Seminar Series, Woods Hole Oceanographic Institution, Woods Hole, MA.
- May 15, 2018, "Parameterized process models for Underwater Munitions Expert System", SERDP & ESTEP In-Progress Review Meeting for the Munitions Response Program Area, The Potomac Institute for Policy Studies, Alexandria, VA.
- Dec 12, 2017, "Understanding patterns in Chesapeake Bay water clarity: the importance of measurement, location, and physical versus biological controls", Chesapeake Bay Program, STAC Workshop on Integrating Recent Findings to Explain Water Quality Change: Support for the Mid-Point Assessment and Beyond, Annapolis, MD.
- Sep 13, 2017, "STAC Review Panel for the Generalized Additive Model (GAM) Approach for Water Quality Trends in Tidal Waters", Chesapeake Bay Program, Scientific and Technical Advisory Committee Quarterly Meeting, Annapolis, MD.
- Jun 20, 2017, "Parameterized process models for Underwater Munitions Expert System", SERDP Informal Workshop on Burial and Mobility Modeling of Munitions in the Underwater Environment, Johns Hopkins University Applied Physics Laboratory, Laurel, MD.
- May 9, 2017, "Parameterized process models for Underwater Munitions Expert System", SERDP & ESTEP In-Progress Review Meeting for the Munitions Response Program Area, The Potomac Institute for Policy Studies, Alexandria, VA.
- Feb 6, 2017, "Synthesis: understanding of Chesapeake Bay water clarity patterns", Chesapeake Bay Program STAC Workshop: Understanding and Explaining 30+ Years of Water Clarity Trends in the Bay's Tidal Waters, UMCES Chesapeake Bay Laboratory, Solomons, MD.

- Nov 17, 2016, "Fractal floc size, density, settling velocity, and implications for water clarity in partially mixed-estuaries: The role of small, organic-rich particles", Fall Seminar Series, Department of Ocean, Earth and Atmospheric Sciences, Old Dominion University, Norfolk, VA.
- Dec 8, 2015, "Simple parameterized models for predicting mobility, burial, and re-exposure of underwater munitions", Workshop on Burial and Mobility Modeling of Munitions in the Underwater Environment, Johns Hopkins University Applied Physics Laboratory, Laurel, MD.
- Sep 24, 2015, "Tidal Flat Morphodynamics", Fall Seminar Series, Department of Physical Sciences, Virginia Institute of Marine Science.
- Aug 31, 2015, "Tidal flat morphodynamics: a synthesis", Keynote Presentation at 9th Symposium on River, Coastal and Estuarine Morphodynamics, Iquitos, Peru.
- May 7, 2015, "Factors affecting munitions mobility underwater", Strategic Environmental Research and Development Program/Environmental Security Technology Certification Program (SERDP/ESTCP) Webinar Series, <https://www.serdp-estcp.org>.
- Feb 17, 2015, "What controls bed erodibility in muddy estuaries? Insights from the York River, Virginia", Coastal and Hydraulics Laboratory Seminar, U.S. Army Engineer Research and Development Center, Vicksburg, MS.
- Jan 29, 2015, "Controls on bed erodibility in the York River estuary", Spring Seminar Series, Department of Physical Sciences, Virginia Institute of Marine Science.
- Dec 8, 2014, "Assessment options support: Lessons from model assessments of Bay monitoring data", Chesapeake Bay Program, Innovative Water Quality Monitoring Workshop, Annapolis, MD.
- Dec 4, 2014, "Dependence of water clarity on the properties of suspended solids", Virginia Institute of Marine Science meeting with NASA-GSFC Wallops Flight Facility Code 610.W, Wallops Island, VA.
- Oct 16, 2014, "Estuarine sediment dynamics", MSCI 501-C: Fundamentals of Marine Geology, Virginia Institute of Marine Science.
- Sep 10, 2014, "STAC Lower Susquehanna River Watershed Assessment (LSRWA) Review update", Chesapeake Bay Program, Scientific and Technical Advisory Committee Quarterly Meeting, Annapolis, MD.
- Sep 4, 2014, "Combining observations and numerical model results to improve estimates of hypoxic volume within the Chesapeake Bay", Fall Seminar Series, Department of Physical Sciences, Virginia Institute of Marine Science.
- May 21, 2014, "Simple parameterized models for predicting mobility, burial, and re-exposure of underwater munitions", SERDP & ESTEP In-Progress Review Meeting for the Munitions Response Program Area, The Potomac Institute for Policy Studies, Alexandria, VA.
- Nov 14, 2013, "Recent field observations of mixed and cohesive sediment particle properties in coastal and estuarine environments", Fall Seminar Series, Department of Physical Sciences, Virginia Institute of Marine Science.
- Oct 22, 2013, "Recent field observations of mixed and cohesive sediment particle properties in coastal and estuarine environments", Keynote Presentation at 12th International Conference on Cohesive Sediment Transport Processes (INTERCOH), Gainesville, FL.
- Oct 10, 2013, "Intercomparison of 3-D models for estuarine hydrodynamics and hypoxia within the US IOOS Super-Regional Coastal Modeling Testbed", Institute of Marine Sciences Seminar Series, University of North Carolina-Chapel Hill, Morehead City, NC.
- Oct 4, 2013, "Collaborative opportunities with the Physical Sciences Research Group", VIMS-Industry Partnership Meeting, Virginia Institute of Marine Science.
- Oct 1, 2013, "Estuarine sediment dynamics", MSCI 501-C: Fundamentals of Marine Geology, Virginia Institute of Marine Science.
- Feb 12, 2013, "Simple parameterized models for predicting mobility, burial, and re-exposure of underwater munitions", SERDP & ESTEP In-Progress Review Meeting for the Munitions Response Program Area, The Potomac Institute for Policy Studies, Alexandria, VA.

Research and data reports from grant or contract work (Past 10 years)

- Harris, C.K., and C.T. Friedrichs, 2021. Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity. NSF Grant OCE-1459708 Final Report, 25 p.
- Harris, C.K., and C.T. Friedrichs, 2021. Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity. NSF Grant OCE-1459708 Outcomes Report, 4 p.
https://www.nsf.gov/awardsearch/showAward?AWD_ID=1459708
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2021. A data repository for effects of reduced shoreline erosion on Chesapeake Bay water clarity. W&M ScholarWorks.
<https://doi.org/10.25773/rh56-4g63>
- Wright, C.L., G.M. Massey, P.J. Dickhudt, and C.T. Friedrichs, 2021. Supporting data: controls on sediment bed erodibility in a muddy, partially-mixed tidal estuary, York River, Virginia. W&M ScholarWorks.
<https://doi.org/10.25773/nm2b-hy57>
- Bowers, D.G., E.M., Roberts, A.M. Hogue, K.A. Fall, G.M. Massey, and C.T. Friedrichs, 2020. Secchi disk measurements in turbid water: supporting data. W&M ScholarWorks. <https://doi.org/10.25773/z8qm-c773>
- Fall, K.A., G.M. Massey, and C.T. Friedrichs, 2020. The importance of organic content to fractal floc properties in estuarine surface waters, insights from video, LISST, and pump sampling: supporting data. W&M ScholarWorks. <https://doi.org/10.25773/7gbc-6739>
- Kiptoo, D., N. Stark, G. Massey, C. Wright, and C. Friedrichs, 2020. In-situ geotechnical characterization of soft estuarine surficial sediments using a portable free fall penetrometer: data. University Libraries, Virginia Tech. <https://doi.org/10.7294/YZRV-QJ06>
- Massey, G.M., C.L. Wright, C.T. Friedrichs, N. Stark, N., and D. Kiptoo, 2020. VIMS 2019 Potomac River Estuary data in support of: Improved penetrometer performance in stratified sediment for cost-effective characterization, monitoring and management of submerged munitions sites (SERDP project: MR18-1233) W&M ScholarWorks. <https://doi.org/10.25773/hg68-xf88>
- Massey, G.M., C.L. Wright, C.T. Friedrichs, N. Stark, N., and D. Kiptoo, 2020. VIMS 2019 York River Estuary data in support of: Improved penetrometer performance in stratified sediment for cost-effective characterization, monitoring and management of submerged munitions sites (SERDP project: MR18-1233). W&M ScholarWorks. <https://doi.org/10.25773/2rze-fg21>
- Friedrichs, C.T., and C.K. Harris, 2019. Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity. NSF Grant OCE-1459708 Year 4 Annual Report, 13 p.
- Tarpley, D.R.N., C.K. Harris, and C. Friedrichs, 2019. A model archive for simulations for a partially-mixed idealized estuary using the COAWST System. W&M ScholarWorks. <https://doi.org/10.25773/86rw-6393>
- Turner, J.S., G.M. Massey, M.L. Kellogg, and C.T. Friedrichs, 2019. A data repository for minimal effects of oyster aquaculture on water quality: examples from southern Chesapeake Bay. W&M ScholarWorks. <https://doi.org/10.25773/wwwva-tz18>
- Kellogg, M.L., J. Turner, J. Dreyer, and C. Friedrichs, 2018. Environmental and ecological benefits and impacts of oyster aquaculture: addendum. An addendum to the final report to The Nature W&M ScholarWorks. Conservancy, 13 p. <https://doi.org/10.25773/r01b-tg44>
- Friedrichs, C.T., and C.K. Harris, 2018. Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity. NSF Grant OCE-1459708 Year 3 Annual Report, 15 p.
- Friedrichs, C.T., S.E. Rennie, and A. Brandt, 2018. Simple Parameterized Models for Predicting Mobility, Burial and Re-Exposure of Underwater Munitions. Strategic Environmental Research and Development Program (SERDP) Project MR-2224 Final Report, 72 p. + supplementary data file. W&M ScholarWorks. <https://doi.org/10.25773/gk95-bb88>

- Friedrichs, C.T., and C.K. Harris, 2017. Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity. NSF Grant OCE-1459708 Year 2 Annual Report, 15 p.
- Massey, G.M., and C.T. Friedrichs, 2017. Resistivity, magnetic susceptibility and sediment characterization of the York River in support of the Empirical investigation of the factors influencing marine applications of EMI. Year 2 Final Report for VIMS Subcontract to Nova Contract N00173-14-2001, 61 p. W&M ScholarWorks. <https://doi.org/10.21220/V5QS3Z>
- Friedrichs, C.T., M.A.M. Friedrichs, and C.K. Harris, 2016. Improved observation, analysis and modeling of fine sediment dynamics in turbid, biologically active coastal environments. NSF Grant OCE-1061781 Final Report, 23 p.
- Friedrichs, C.T., and C.K. Harris, 2016. Interactions of estuarine physics, sediment, and organic matter in determining suspended particle properties, their spatial and temporal distribution, and resulting water clarity. NSF Grant OCE-1459708 Year 1 Annual Report, 15 p.
- Cartwright, G.M., and C.T. Friedrichs, 2015. Resistivity, magnetic susceptibility and sediment characterization of the York River in support of the Empirical investigation of the factors influencing marine applications of EMI. Year 1 Annual Report for VIMS Subcontract to Nova Contract N00173-14-D2037, 59 p.
- Friedrichs, C.T., 2015. Collaborative research: the role of wind in estuarine dynamics. NSF Grant OCE-1061564 Final Report, 14 p.
- Friedrichs, C.T., M.A.M. Friedrichs, and C.K. Harris, 2015. Improved observation, analysis and modeling of fine sediment dynamics in turbid, biologically active coastal environments. NSF Grant OCE-1061781 Annual Report, 33 p.
- Cartwright G.M., and C.T. Friedrichs, 2014. Cruise: YR090811, Stations: S4820-S4846, Clay Bank, York River Virginia 6-hour MUDBED Calibration Survey bracketing a Flood Tide. W&M ScholarWorks. <http://hdl.handle.net/10288/18931> (and 26 other cruise reports from other dates with similar URLs, but ending in /18948, /20237, /20238, /20239, /20240, /20241, /20242, /20243, /20244, /20328, /20329, /20330, /20331, /20332, /20333, /20334, /20335, /20336, /20337, /20338, /20339, /20340, /20341, /20342, /20343 and /20344.)
- Cartwright, G.M., and C.T. Friedrichs, 2014. Resistivity, magnetic susceptibility and sediment characterization of the York River in support of the Empirical investigation of the factors influencing marine applications of EMI. Progress Reports for VIMS Subcontract to Nova Contract N00173-14-D2037, (July, 1 p.; August, 10 p.; September, 5 p.; October, 12 p., November, 20 p.)
- Fall K.A., Cartwright G.M., Friedrichs C.T., Bowers D.G., 2014 Cruise: YR130612, Stations: S5127- S5138, York River Estuary and Pamunkey River, Virginia, MUDBED Longitudinal Profiler Station Survey bracketing an Ebb Tide. W&M ScholarWorks. <http://hdl.handle.net/10288/20408> (and 2 other cruise reports from other dates with similar URLs, but ending in /20407 and /20408.)
- Friedrichs, C.T., 2014. Collaborative research: the role of wind in estuarine dynamics. NSF Grant OCE-1061564 Annual Report, 15 p.
- Friedrichs, C.T., M.A.M. Friedrichs, and C.K. Harris, 2014. Improved observation, analysis and modeling of fine sediment dynamics in turbid, biologically active coastal environments. NSF Grant OCE-1061781 Annual Report, 29 p.
- Friedrichs, C.T., 2013. Collaborative research: the role of wind in estuarine dynamics. NSF Grant OCE-1061564 Annual Report, 14 p.
- Friedrichs, C.T., M.A.M. Friedrichs, and C.K. Harris, 2013. Improved observation, analysis and modeling of fine sediment dynamics in turbid, biologically active coastal environments. NSF Grant OCE-1061781 Annual Report, 23 p.
- Panetta, P.D., L. Bland, K. Winfield, D. McElhone, G. Cartwright, and C. Friedrichs, 2013. Assessment of dispersant effectiveness using ultrasound to measure oil droplet particle size distributions. U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement, Project #697 Final Report, 43 p.

Unrefereed publications not listed above (Past 10 years)

- Kiptoo, D.K., N. Stark, G. Massey, C. Wright, and C. Friedrichs, 2020. Derivation of undrained shear strength in fine grained estuarine soils from a portable free fall penetrometer. 37 p. University Libraries, Virginia Tech. <https://bit.ly/3KJJtuZ>
- Keisman, J., C. Friedrichs, R. Batiuk, J. Blomquist, J. Cornwell, C. Gallegos, S. Lyubchich, K. Moore, R. Murphy, R. Orth, L. Sanford, P. Tango, J. Testa, M. Trice, and Q. Zhang. 2019. Understanding and Explaining 30 Years of Water Clarity Trends in the Chesapeake Bay's Tidal Waters. Chesapeake Bay Program Scientific and Technical Advisory Committee, STAC Publication Number 19-004, Edgewater, MD, 25 pp. http://www.chesapeake.org/pubs/411_Keisman2019.pdf
- Keisman, J., J. Blomquist, J.K. Bohlke, J. Davis-Martin, W. Dennison, C. Friedrichs, R. Murphy, S. Phillips, J. Testa, E. Trentacoste, and D. Weller, 2018. Integrating Recent Findings to Explain Water-Quality Change: Support for the Mid-Point Assessment and Beyond. Chesapeake Bay Program Scientific and Technical Advisory Committee, STAC Publication Number 18-005, Edgewater, MD, 27 pp. http://www.chesapeake.org/pubs/394_Keisman2018.pdf
- Tango, P., W. Dennison, M. Bennett, S. Phillips, M.F. Ehrich, K. Boomer, and C. Friedrichs, 2017. Integrating and Leveraging Monitoring Networks to Support the Assessment of Outcomes in the Chesapeake Bay Watershed Agreement. Chesapeake Bay Program Scientific and Technical Advisory Committee, STAC Publication Number 17-003, Edgewater, MD, 35 pp. http://www.chesapeake.org/pubs/371_Tango2017.pdf
- Ellis, H., P. Du, C. Friedrichs, and V. Lyubchich, 2017. Scientific and Technical Advisory Committee Review of the Generalized Additive Model (GAM) Approach for Water Quality Trends in Tidal Waters. Chesapeake Bay Program Scientific and Technical Advisory Committee, STAC Publication Number 17-001, Edgewater, MD, 22 pp. http://www.chesapeake.org/pubs/365_Ellis2017.pdf
- Linker, L., R. Hirsch, W. Ball, J. Testa, K. Boomer, C. Cerco, L. Sanford, J. Cornwell, L. Currey, C. Friedrichs, R. Dixon. 2016. Conowingo Reservoir Infill and Its Influence on Chesapeake Bay Water Quality. Chesapeake Bay Program Scientific and Technical Advisory Committee, STAC Publication Number 16-004, Edgewater, MD. 51 pp. http://www.chesapeake.org/pubs/356_Linkers2016.pdf
- Friedrichs, C.T., 2014. Book Review of "An Introduction to Hydraulics of Fine Sediment Transport" by A.J. Mehta, in press, J. Waterway, Port, Coastal and Ocean Engineering, ASCE, 140(4). [https://doi.org/10.1061/\(ASCE\)WW.1943-5460.0000265](https://doi.org/10.1061/(ASCE)WW.1943-5460.0000265)
- Friedrichs, C., T. Dillaha, J. Gray, R. Hirsch, A. Miller, D. Newburn, J. Pizzuto, L. Sanford, J. Testa, G. Van Houtven, and P. Wilcock, 2014. Review of the Lower Susquehanna River Watershed Assessment. Chesapeake Bay Program Scientific and Technical Advisory Committee, STAC Publication 14-006, August 2014, Edgewater, MD, 40 p. http://www.chesapeake.org/pubs/335_Friedrichs2014.pdf
- Friedrichs, C., 2013. Key uncertainties related to diverted fresh water, nutrients and sediment: Estuarine hydraulics and sediment transport. Submitted to The Water Institute of the Gulf, 8 p.

Conference Convener or Session Chair

- 2021 Chair of Session of Physics of Estuaries and Coastal Seas Seminar Series, held virtually, 3 March. <https://www.io-warnemuende.de/v-pecs-schedule.html>
- 2019 Chair of Session on Bottom Shear, Erosion and Bed Exchange/Suspended Matter and Flocculation, 15th International Conference on Cohesive Sediment Transport Processes. Istanbul, Turkey, 13-17 October.
- 2018 Co-chair of Session on Water Clarity in Chesapeake Bay: Trends, Drivers, and Research Priorities, 2018 Chesapeake Community Research and Modeling Symposium, Annapolis, MD, 12-14 June.
- 2018 Chair of Session on Fish and Aquaculture, 17th Annual William & Mary Graduate Research Symposium, Williamsburg, VA, 16-17 March.
- 2017 Chair of Session on Hydrodynamics and Sediment Dynamics in Estuaries and Coastal Seas, 23rd Biennial Conference of the Coastal and Estuarine Research Federation, Providence, RI, 5-9 November.

- 2015 Chair of Session on Hydrodynamics and Sediment Dynamics in Estuaries and Coastal Seas, 22nd Biennial Conference of the Coastal and Estuarine Research Federation, Portland, OR, 8-12 November.
- 2015 Chair of Session on Suspended Matter, 13th International Conference on Cohesive Sediment Transport Processes. Leuven, Belgium, 7-11 September.
- 2014 Organizing Committee, Mid-Atlantic Bight Physical Oceanography and Meteorology Conference, Virginia Institute of Marine Science, Gloucester Point, VA, 30-31 October.
- 2014 Co-Chair of Poster Session, 17th International Biennial Conference on the Physics of Estuaries and Coastal Seas, Porto de Galinhas, Pernambuco, Brazil 19-23 October.
- 2013 Co-chair of Session on Hydrodynamics and Sediment Dynamics in Estuaries and Coastal Seas, 22nd Biennial Conference of the Coastal & Estuarine Research Federation, San Diego, CA, 3-7 November.
- 2011 Chair of Session on Estuarine Sediment Dynamics, 21st Biennial Conference of the Coastal and Estuarine Research Federation, Daytona Beach, FL, 6-10 November.
- 2011 Chair of Plenary Session, Community Surface Dynamics Modeling System Meeting 2011: Impact of Time and Process Scales, Boulder, CO, 28-30 October.
- 2011 Chair of Session, Warnemünde Turbulence Days Workshop, Isle of Vilm, Germany, 5-8 September.
- 2010 Chair of Session on Estuarine Sediment Dynamics, 15th International Biennial Conference on the Physics of Estuaries and Coastal Seas, Colombo, Sri Lanka, 14-17 September.
- 2009 Co-chair of Session on Estuarine Sedimentary Processes and Products, 20th Biennial Conference of the Coastal & Estuarine Research Federation, Portland, OR, 4-8 November.
- 2009 Chair of Plenary Discussion Session on Tidal Flats, Coastal Shelves and Lakes, 10th International Conference on Nearshore and Estuarine Cohesive Sediment Transport Processes. Rio de Janeiro and Paraty, Brazil, 3-8 May.
- 2008 Chair of Session on Tidal Flats and Channels, 14th International Biennial Conference on the Physics of Estuaries and Coastal Seas, Liverpool, United Kingdom, 25-29 August.
- 2008 Co-chair of Session on Advances in Coastal Morphodynamics: From Estuaries and Beaches to Deltas and Shelves, 2008 Ocean Sciences Meeting, Orlando, FL, 2-7 March.
- 2007 Co-chair of Session on Morphological Evolution of Tidal Wetlands and Tidal Flats, 19th Biennial Conference of the Estuarine Research Federation, Providence, RI, 4-8 November.
- 2005 Co-chair of Session on Estuarine Sediment Dynamics and Morphodynamics, 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA, 16-21 October.
- 2004 Co-convenor, Mid-Atlantic Bight Physical Oceanography and Meteorology Conference, Virginia Institute of Marine Science, Gloucester Point, VA, 4-5 November.
- 2004 Session Chair, 12th International Biennial Conference on the Physics of Estuaries and Coastal Seas, Merida, Mexico, 18-22 October.
- 2003 Session Chair, 7th International Conference on Nearshore and Estuarine Cohesive Sediment Transport Processes, Gloucester Point, VA, 1-4 October.
- 2003 Co-chair of Symposium on the Dynamics of Estuarine Particles, 17th Biennial Conference of the Estuarine Research Federation, Seattle, WA, 14-18 September.
- 2000 Co-convenor, 10th International Conference on the Physics of Estuaries and Coastal Seas, Norfolk, Virginia, 7-11 October.
- 1998 Co-chair of the Formation of Sedimentary Strata on Continental Margins, Sessions I and II, American Geophysical Union 1998 Fall Meeting, San Francisco, CA, 6-10 December.
- 1998 Chair of Shelf Sea Session, 9th International Conference on the Physics of Estuaries and Coastal Seas, Matsuyama, Japan, 24-26 September.
- 1994 Chair of Sediment Transport Session, 7th International Conference on the Physics of Estuaries and Coastal Seas, Woods Hole, MA, 28-30 November.

Other scholarly presentations authored or co-authored by Friedrichs (Past 5 years)

- St-Laurent, P., C. Friedrichs, and M. Friedrichs, 2022. Variability of the estuarine circulation inside tidal tributaries of the Chesapeake Bay. Chesapeake Community Research Symposium, Annapolis, MD, 6-8 June. <https://ccmp2022.chesapeake.org>

- St-Laurent, P., M. Friedrichs, and C. Friedrichs, 2022. Examining the role of mixing in the circulation of the York and Rappahannock estuaries. Ocean Sciences Meeting, held virtually, 27 February - 4 March. <https://osm2022.secure-platform.com/a/gallery/rounds/3/details/7429>
- Turner, J., C. Friedrichs, and M. Friedrichs, 2022. Long-term trends in Chesapeake Bay remote sensing reflectance: implications for water clarity. Chesapeake Community Research Symposium, Annapolis, MD, 6-8 June. <https://ccmp2022.chesapeake.org>
- Turner, J., C. Friedrichs, and M. Friedrichs, 2022. Long-term trends in Chesapeake Bay remote sensing reflectance: implications for water clarity. Ocean Sciences Meeting, held virtually, 27 February - 4 March <https://osm2022.secure-platform.com/a/gallery/rounds/3/details/5544>
- Turner, J., C. Friedrichs, and M. Friedrichs, 2022. Long-term trends in Chesapeake Bay remote sensing reflectance: Implications for water clarity. PACE Early Adopters E-Poster. Virtual. PACE Applications Workshop, 14-15 September. <https://bit.ly/3SnSBcg>
- Fall, K., C. Friedrichs, G. Massey, D. Bowers, and J. Smith, 2021. The importance of organic content to fractal floc properties in estuarine surface waters: insights from video, LISST, and pump sampling. Physics of Estuaries and Coastal Seas Seminar Series, held virtually, 28 April. <https://www.io-warnemuende.de/v-pecs-schedule.html>
- Friedrichs, C., D. Fall, G. Massey, K. Moore, B. Neikirk, D. Parrish, W. Reay, and E. Shields, 2021. Controls on multiple measures of water clarity in the York River estuary. York River and Small Coastal Basins Research Symposium, held virtually, 13 May. <https://bit.ly/3tRh2nW>
- Friedrichs, C., K. Fall, and G. Massey, 2021. Estuarine light attenuation, scattering, and absorption as a function of suspended floc properties and other water column constituents. 15th International Conference on Cohesive Sediment Transport Processes (INTERCOH), Delft, The Netherlands and virtually, 13-17 September. <https://www.intercoh2021.org/program>
- Stark, N., A Rodriguez-Marek, G. Massey, C. Friedrichs, and K. Dorgan, 2021. Rapid soil classification and integration of soil characteristics for UXO site characterization and risk assessment. SERDP-ESTCP Symposium, held virtually, 29 November - 3 December. <https://bit.ly/3KBYWwY>
- St-Laurent, P., M. Friedrichs, and C. Friedrichs, 2021. Re-examining the estuarine circulation of the York River. York River and Small Coastal Basin Research Symposium, held virtually, 13 May. <https://bit.ly/3tRh2nW>
- St-Laurent, P., M. Friedrichs, and C. Friedrichs, 2021. Contrasting the estuarine circulation of the York and Rappahannock estuaries. 25th Biennial Conference of the Coastal and Estuarine Research Federation, held virtually, 1-11 November. <https://bit.ly/37tbb0H>
- Turner, J., C. Friedrichs, M. Friedrichs, 2021. Long-term trends in Chesapeake Bay satellite remote sensing reflectance: Implications for water clarity. Ocean Carbon and Biogeochemistry Meeting, held virtually, June. <https://web.whoi.edu/ocb-workshop/>
- Turner, J., C. Friedrichs, M. Friedrichs, 2021. Long-term trends in Chesapeake Bay water clarity from satellite remote sensing reflectance. 25th Biennial Conference of the Coastal and Estuarine Research Federation, held virtually, 1-11 November. <https://bit.ly/37tbb0H>
- Turner, J., C. Friedrichs, P. St-Laurent, and M. Friedrichs, and 2021. Effects of shoreline sediment erosion on estuarine water clarity: results from a Chesapeake Bay modeling study. The 52nd International Liège Colloquium on Ocean Dynamics, held virtually, 17-21 May. <https://bit.ly/3KBXb2Q>
- Turner, J., M. Friedrichs, C. Friedrichs, 2021. Long-term estuarine water clarity from satellite remote sensing reflectance. ASLO Aquatic Sciences Meeting, held virtually, 22-27 June. <https://www.aslo.org/2021-virtual-meeting/>
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2021. Effects of reduced shoreline erosion on Chesapeake Bay water clarity. Integrated Trends and Analysis Team Meeting, Chesapeake Bay Program, held virtually, 27 January. <https://bit.ly/3KGp1Lg>
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2021. Effects of reduced shoreline erosion on Chesapeake Bay water clarity. Modeling Workgroup Quarterly Review Meeting, Chesapeake Bay Program, held virtually, 7 April. <https://bit.ly/34Jb93O>

- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2021. Impacts of reduced shoreline erosion on estuarine water clarity: a Chesapeake Bay modeling study. Physics of Estuaries and Coastal Seas Seminar Series, held virtually, 14 April. <https://www.io-warnemuende.de/v-pecs-schedule.html>
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2021. Impacts of reduced shoreline erosion on estuarine water clarity: a Chesapeake Bay modeling study. 6th Conference on Advances in Marine Ecosystem Modelling Research, held virtually, 12-15 July. <https://www.amemr.com/programme.html>
- Fall, K., J. Smith, and C. Friedrichs, 2020. Improvement and validation of image processing methods for floc size, settling velocity, and density. 2020 Ocean Sciences Meeting, San Diego, CA, 16-21 February. <https://agu.confex.com/agu/osm20/meetingapp.cgi/Paper/655481>
- Fall, K., C. Friedrichs, G. Massey, K. Moore, B. Neikirk, D. Parrish, W. Reay, and E. Shields, 2020. Controls on multiple measures of water clarity. National Estuarine Research Reserve System Annual Meeting Poster Session, held virtually, October.
- Friedrichs, C., K. Fall, G. Massey, K. Moore, B. Neikirk, D. Parrish, W. Reay, and E. Shields, 2020. Controls on light attenuation and Secchi depth as a function of water column suspended particle properties and other water column constituents: Insights from the York River estuary, Virginia, USA. 2020 Ocean Sciences Meeting, San Diego, CA, 16-21 February. <https://agu.confex.com/agu/osm20/meetingapp.cgi/Paper/657996>
- Friedrichs, C., K. Fall, G. Massey, K. Moore, B. Neikirk, D. Parrish, W. Reay, and E. Shields, 2020. Controls on multiple measures of water clarity in Chesapeake Bay as a function of suspended particle properties and other water column constituents: Insights from the York River estuary. Chesapeake Community Research Symposium, Virtual Conference, 8-10 June. <https://bit.ly/37rdUaV>
- Friedrichs, C., K. Fall, G. Massey, D. Bowers, and J. Smith, 2020. The importance of organic content to fractal floc properties in estuarine surface waters: insights from video, LISST, and pump sampling. American Geophysical Union Fall Meeting, held virtually, 1-17 December. <https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/741540>
- Kiptoo, D., N. Stark, G. Massey, C. Wright, and C. Friedrichs, 2020. Strain rate effects in soft estuarine soils using portable free fall penetrometers. 2020 Ocean Sciences Meeting, San Diego, CA, 16-21 February. <https://agu.confex.com/agu/osm20/meetingapp.cgi/Paper/639612>
- Stark, N., D. Kiptoo, C. Bilici, G. Massey, C. Wright, and C. Friedrichs, 2020. Geotechnical investigation of fine-grained top layer stratification in the York Estuary, Virginia. 2020 Ocean Sciences Meeting, San Diego, CA, 16-21 February. <https://agu.confex.com/agu/osm20/meetingapp.cgi/Paper/640338>
- Tarpley, D.R.N., C.K. Harris, and C.T. Friedrichs, 2020. Processes impacting floc size over a tidal cycle in an idealized estuary model: a numerical study. Chesapeake Community Research Symposium 2020, Virtual Conference, 8-10 June. <https://bit.ly/37rdUaV>
- Turner, J., C. Friedrichs, and M. Friedrichs, 2020. Two decades of Chesapeake Bay water clarity from satellite remote sensing. William & Mary 2020 Virtual Graduate Research Symposium. April. <https://sites.google.com/email.wm.edu/virtualgrs/turner-jessie>
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2020. Shoreline erosion impacts on Chesapeake Bay water clarity: an analysis of effects on light attenuation using a coupled hydrodynamic-biogeochemical model. 2020 Ocean Sciences Meeting, San Diego, CA, 16-21 February. <https://agu.confex.com/agu/osm20/meetingapp.cgi/Paper/646631>
- Turner, J.S., P. St-Laurent, M.A.M. Friedrichs, and C.T. Friedrichs, 2020. Water clarity impacts of sediment inputs from shoreline erosion in the Chesapeake Bay: a modeling study. Chesapeake Community Research Symposium 2020, Virtual Conference, 8-10 June, 2020. <https://bit.ly/37rdUaV>
- Wright, C., G. Massey, and C. Friedrichs, 2020. Exploratory statistical analysis of controls on sediment bed erodibility in a partially-mixed estuary. 2020 Ocean Sciences Meeting, San Diego, CA, 16-21 February. <https://agu.confex.com/agu/osm20/meetingapp.cgi/Paper/651209>
- Wright, C., G. Massey, and C. Friedrichs, 2020. Controls on sediment bed erodibility in the York River estuary, Virginia. Virginia Sea Grant Graduate Symposium, Richmond VA, 27-28 February.

- Wright, C., G. Massey, and C. Friedrichs, 2020. Controls on estuarine sediment bed erodibility: statistical model formulation and validation. American Geophysical Union Fall Meeting, held virtually, 7-11 December. <https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/708591>
- Chen, L.Y., Z. Zhou, I. Townend, C. Friedrichs, C.K. Zhang, 2019. The role of three-dimensional shape on tidal asymmetry in estuaries. 11th River Coastal and Estuarine Morphodynamics Symposium, Auckland, New Zealand, 16-21 November.
- Friedrichs, C., J. Turner, P. St. Laurent, and M. Friedrichs, 2019. Effects of shoreline erosion on Chesapeake Bay water clarity. 25th Biennial Conference of the Coastal and Estuarine Research Federation, Mobile, AL, 3-7 November.
- Friedrichs, C., C. Wright, and G. Massey, 2019. Controls on bed erodibility in muddy, partially-mixed tidal estuaries: insights from the York River estuary, Virginia, USA. 15th International Conference on Cohesive Sediment Transport Processes (INTERCOH), Istanbul, Turkey, 13-17 October.
- Hicks, E., G. Massey, C. Friedrichs, and J. Turner, 2019. Comparison of methods for analysis of silt/clay ratio in the James River Estuary. Geological Society of America Annual Meeting, Southeastern Section, Charleston, SC, 28-30 March.
- Kiptoo, D., N. Stark, G. Massey, C. Wright, and C. Friedrichs, 2019. Geotechnical site investigation of a soft clay surface layer in the Pamunkey River, Virginia. Coastal Sediments '19, Tampa/St. Petersburg, FL, 27-31 May.
- Olabarrieta, M., W.R. Geyer, G. Coco, C. Friedrichs, and Z. Cao, 2019. Morphodynamic evolution of a funnel shaped tidal estuary: an idealized modeling study. 11th River Coastal and Estuarine Morphodynamics Symposium, Auckland, New Zealand, 16-21 November.
- Parish, D., W. Reay, E. Shields, and C. Friedrichs, 2019. Investigation of an historic low salinity event in the York River Estuary, Chesapeake Bay. 25th Biennial Conference of the Coastal and Estuarine Research Federation, Mobile, AL, 3-7 November.
- Stark, N., G. Massey, and C. Friedrichs, 2019. Improved penetrometer performance in stratified sediment for cost-effective characterization, monitoring and management of submerged munitions sites. SERDP-ESTCP Symposium: Enhancing DoD's Mission Effectiveness, Washington, DC, 3-5 December.
- Stark, N., D. Kiptoo, G. Massey, C. Wright, and C. Friedrichs, 2019. Rapid geotechnical characterization of seafloor sediments at Blossom Point, Maryland, using a novel assessment framework based on portable free fall penetrometer measurements. SERDP-ESTCP Symposium: Enhancing DoD's Mission Effectiveness, Washington, DC, 3-5 December.
- Tarpley, D.R., C.K. Harris, and C.T. Friedrichs, 2019. Application and parameterization of a sediment flocculation model for OMA formation for a Gulf of Mexico continental shelf site. Gulf of Mexico Oil Spill & Ecosystem Science Conference, New Orleans, LA, 4-7 February.
- Tarpley, D.R., C.K. Harris, C.T. Friedrichs, and C.R. Sherwood, 2019. Processes impacting floc size over a tidal cycle in an idealized estuary model. 25th Biennial Conference of the Coastal and Estuarine Research Federation, Mobile, AL, 3-7 November.
- Turner, J., M.L. Kellogg, G. Massey, and C. Friedrichs, 2019. Minimal effects of oyster aquaculture on local water quality: examples from southern Chesapeake Bay. 25th Biennial Conference of the Coastal and Estuarine Research Federation, Mobile, AL, 3-7 November.
- Bever, A., M. Friedrichs, M. Scully, and C. Friedrichs, 2018. Estimating hypoxic volume in the Chesapeake Bay using two vertical profilers. Chesapeake Research & Modeling Symposium, Annapolis, MD, 12-14 June.
- Fall, K.A., C.T. Friedrichs, G.M. Massey, D.G. Bowers, and S.J. Smith, 2018. Fractal particle properties in the surface waters of a partially-mixed estuary estimated via simultaneous measurements of excess density and apparent density. 2018 Ocean Sciences Meeting, Portland, OR, 11-16 February.
- Fall, K.A., C.T. Friedrichs, G.M. Massey, D.G. Bowers, and S.J. Smith, 2018. The importance of organic matter content to fractal particle properties in estuarine surface waters as constrained by floc excess Density, floc Apparent Density, and primary particle bulk density: Insights from video settling, LISST, and pump sampling. Fall American Geophysical Union Meeting, Washington, DC, 10-14 December.

- Friedrichs, C.T., M.A.M. Friedrichs, A.J. Bever, S. Musick, and R.R. Hood, 2018. Hypoxia forecasts as a tool for Chesapeake Bay fisheries. 2018 Ocean Sciences Meeting, Portland, OR, 11-16 February.
- Friedrichs, C.T., and J. Keisman, 2018. Describing and explaining Chesapeake Bay water clarity: a literature review. Chesapeake Research & Modeling Symposium, Annapolis, MD, 12-14 June.
- Friedrichs, C.T., J.S. Turner, M.A.M. Friedrichs, J. Keisman, and R.R. Murphy, 2018. The changing nature of suspended solids in Chesapeake Bay and its relationship to trends in water clarity. Fall American Geophysical Union Meeting, Washington, DC, 10-14 December.
- Friedrichs, M.A.M., A.J. Bever, C.T. Friedrichs, S. Musick, and R.R. Hood, 2018. Short-term Hypoxia Forecasts for the Chesapeake Bay. Chesapeake Research & Modeling Symposium, Annapolis, MD, 12-14 June.
- Friedrichs, M.A.M., C.T. Friedrichs, I.D. Irby, A.J. Bever, R.R. Hood, H. Wang, and M.E. Scully, 2018. Chesapeake Bay hypoxia coastal ocean modeling testbed. U.S. IOOS Coastal and Ocean Modeling Testbed Annual Principal Investigator and Partner Meeting, Washington, DC, 6-7 August.
- Keisman, J., C. Friedrichs, C. Buchanan, R. Batiuk, J. Blomquist, J. Cornwell, M. Lane, S. Lyubchich, K. Moore, R. Murphy, G. Noe, R. Orth, E. Porter, L. Sanford, J. Testa, M. Trice, Q. Zhang, R. Zimmerman, 2018. Examining trends in water clarity in the Chesapeake Bay: A synthesis of findings from recent STAC workshops. Chesapeake Research & Modeling Symposium, Annapolis, MD, 12-14 June.
- Keisman, J., C. Friedrichs, C. Buchanan, R. Batiuk, J. Blomquist, J. Cornwell, M. Lane, S. Lyubchich, K. Moore, R. Murphy, G. Noe, R. Orth, E. Porter, L. Sanford, J. Testa, M. Trice, Q. Zhang, R. Zimmerman, 2018. Explaining trends in water clarity in the Chesapeake Bay: 2017 STAC Workshop Conclusions. Chesapeake Bay Program Integrated Trends Analysis Team Meeting, Annapolis, MD, 14 August.
- Keisman J, Friedrichs C, Buchanan C, Batiuk R, Blomquist J, Cornwell J, Lane M, Lyubchich S, Moore K, Murphy R, Noe G, Orth R, Porter E, Sanford L, Testa J, Trice M, Zhang Q, Zimmerman R
- Stark, N., D. Kiptoo, G. Massey, C. Wright, and C. Friedrichs, 2018. In-situ geotechnical and sedimentological investigation of stratified sediment in the York River, Virginia. Fall American Geophysical Union Meeting, Washington, DC, 10-14 December.
- Stark, N., G. Massey, and C. Friedrichs, 2018. Improved penetrometer performance in stratified sediment for cost-effective characterization, monitoring and management of submerged munitions sites. SERDP-ESTCP Symposium: Enhancing DoD's Mission Effectiveness, Washington, DC, 27-29 November.
- Tarpley, D., C. Harris, and C. Friedrichs, 2018. Effects of seasonal variation in discharge and bed sediment condition on observed bottom stress and sediment suspension, York River, Virginia. 2018 Ocean Sciences Meeting, Portland, OR, 11-16 February.
- Tarpley, D., C. Harris, and C. Friedrichs, 2018. Controls on suspended particle properties and water clarity along a partially-mixed estuary, York River, Virginia. Spring Seminar Series, Department of Physical Sciences, Virginia Institute of Marine Science, Gloucester Point, VA, 22 February.
- Tarpley, D., C. Harris, and C. Friedrichs, 2018. Temporal variability in sediment suspension and sediment-induced stratification related to freshwater discharge in the York River estuary, Virginia, USA. Chesapeake Research & Modeling Symposium, Annapolis, MD, 12-14 June.
- Tarpley, D., C.K. Harris, and C.T. Friedrichs, 2018. Tidal variability in flocculation dynamics in the secondary turbidity maximum of the York River estuary, Virginia: a numerical study. Fall American Geophysical Union Meeting, Washington, DC, 10-14 December.
- Tarpley, D.N., C.K. Harris, C.T. Friedrichs, and C.R. Sherwood, 2018. Tidal variation in sediment distribution in an idealized estuarine model in response to cohesive dynamics. 15th Estuarine and Coastal Modeling Conference, Seattle, WA, 25-27 June.
- Turner, J., M.A.M. Friedrichs, C.T. Friedrichs, and P. St-Laurent, 2018. Effects of shoreline erosion and organic matter sinking rates on Chesapeake Bay water clarity. Fall American Geophysical Union Meeting, Washington, DC, 10-14 December. <http://doi.org/10.13140/RG.2.2.28808.67845>
- Turner, J., G. Massey, and C. Friedrichs, 2018. Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay, Virginia. 2018 Ocean Sciences Meeting, Portland, OR, 11-16 February.

- Turner, J., G. Massey, and C. Friedrichs, 2018. Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay, Virginia. Spring Seminar Series, Department of Physical Sciences, Virginia Institute of Marine Science, Gloucester Point, VA, 22 February.
- Turner, J., G. Massey, and C. Friedrichs, 2018. Water clarity and suspended particle dynamics at oyster aquaculture sites in southwestern Chesapeake Bay, Virginia. 17th Annual William & Mary Graduate Research Symposium, Williamsburg, VA, 16-17 March.

PROFESSIONAL SERVICE

University-wide governance activities

- 2022-present, Search Committee for Vice Provost for Academic Affairs
- 2022-present, Search Committee for estuarine and coastal numerical modeler
- 2021 W&M Executive Transition Team for VIMS/SMS Dean & Director
- 2020-present, William & Mary Procedural Review Committee
- 2020-present, William & Mary Personnel Policy Committee
- 2020-2021, Chair, Search Committee for VIMS/SMS Dean & Director
- 2015-present, University Library Committee representative
- 2020 William & Mary Virginia Outstanding Faculty Award Committee
- 2019-2020, William & Mary Strategic Planning Steering Committee (W&M SPSC)
- 2019-2020, Co-chair, W&M SPSC Research and Innovation Subcommittee
- 2018-2019, Chair, Search Committee for tenure-track physical oceanographer
- 2017-2018 William & Mary Virginia Outstanding Faculty Award Committee
- 2017 William & Mary Leadership Initiative
- 2016-2019, William & Mary Faculty Assembly
- 2016-2019, William & Mary Faculty Committee on Planning and Resources
- 2016-2019, William & Mary Faculty Affairs Committee
- 2015-2016, Search Committee for tenure-track professor in the field of marine biological science
- 2013-2014, Search Committee for two tenure-track professors in the field of marine physiology/ecology
- 2011-2012, Search Committee for two tenure-track marine geologists
- 2011-2012, Search Committee for tenure-track physical oceanographer
- 2011 Evaluation Committee for Dean of School of Marine Science
- 2008-2009, Search Committee for William & Mary Provost
- 2008, William & Mary Virginia Outstanding Faculty Award Committee
- 2008-2016, William & Mary Faculty Compensation Board
- 2006-2007, Search Committee for visiting assistant professor in statistics
- 2006-2007, Evaluation Committee for Vice Provost for Research and Graduate Professional Studies
- Aug 2006, Attendee at Provost's Chesapeake Bay Initiative Retreat
- 1999-2000, Search Committee for tenure-track geological oceanographer
- 1996-1997, Search Committee for tenure-track numerical modeler
- 1995, Search Committee for visiting assistant professor in geological oceanography
- 1995, Reader for John Modi, a blind graduate student in Applied Sciences Department, William & Mary

SMS/VIMS governance activities

- 2021-2022, Lead, Strategic Planning for VIMS Organizational Structure
- 2020-present, Junior Faculty Mentoring Program, Mentor VIMS Assistant Professor
- 2019-present, Research Coordinator & Associate Director of CBNERR-VA
- 2021, VIMS Bay Data Strategic Planning Committee
- 2021, VIMS Financial Strategic Planning Committee
- 2018-2020, Chair, VIMS Department of Physical Sciences
- 2018-2020, Chair & Center Directors Committee
- 2018-2020, SMS Catalogue Committee
- 2018-2020, Space and Facilities Planning Committee

2010-2020, VIMS Administrative Council
 2017, Ad Hoc VIMS Chancellor Professorship Committee
 2016-2019, Chair, VIMS Faculty Council
 2016-2018, Junior Faculty Mentoring Program, Mentor for two VIMS Assistant Professors
 2015-2018, VIMS Research Scientist Review Committee
 Mar, Apr, Jun 2016, hosted SCHEV, SACSCOC and W&M BoV tours of CHSD lab
 2014-2015, VIMS Strategic Planning Steering Committee
 2013-2016, VIMS Nominations and Elections Committee
 2011-2016, Maynard Nichols Fellowship Award Committee
 2010-2016, SMS Catalogue Committee
 2010-2016, Space and Facilities Planning Committee
 2010-2016, Chair, VIMS Department of Physical Sciences
 2010-2016, Chair & Center Directors Committee
 2010-2014, VIMS Productivity Committee
 2010, Ad Hoc VIMS Copier Program Review Committee
 2008-2009, Ad Hoc Committee on Alternative Faculty Contract Models
 2007-2010, Best Student Paper Award Committee
 2007-2008, VIMS Strategic Planning Steering Committee
 Oct 2005, Attendee at SMS Core Course Retreat
 2005-2010, Vice Chair, VIMS Department of Physical Sciences
 2004-2010, Co-chair, VIMS Quantitative Skills Committee
 2004-2010, Advisory Committee for the Analytical Services Center
 2002-2005, Physical Sciences Department representative to Faculty Council
 2001-2002, Physical Sciences Department alternate to Faculty Council
 2000-2010, Chair, VIMS Student Research Grant Committee
 1999, Chair, Education Strategic Planning Workgroup, including retreats in May and October
 1999, Brooke Hall/Davis Hall Replacement Building Committee
 Feb 1998, Attendee at two-day SMS Academic Council retreat
 1997-2001, Physical Sciences Department alternate to Academic Council
 1997-1998, Physical Sciences Department World-Wide-Web Subcommittee
 1996-2010, VIMS Student Research Grant Committee
 Oct 1996, Attendee at three-day VIMS Core Program Retreat

Editorial board services

2019-present, Journal of Marine Science and Engineering, Editorial Board
 1998-present, Continental Shelf Research, Editorial Board
 2011-2018, Estuaries and Coasts, Associate Editor
 2002-2008, American Geophysical Union, Books Board

Membership on research steering and advisory committees

2021-present, System-Wide Monitoring Program Metabolism Advisory Group, National Estuarine Research Reserve System, National Oceanic and Atmospheric Administration.
 2020-present, Submerged Aquatic Vegetation Workgroup, National Estuarine Research Reserve System, National Oceanic and Atmospheric Administration.
 2019-present, Coastal and Ocean Acidification Workgroup, National Estuarine Research Reserve System, National Oceanic and Atmospheric Administration.
 2015-present, Steering Committee, INTERCOH International Cohesive Sediments Biennial Conference Series.
 2004-present, Coastal and Environmental Research Committee, Southeastern University Research Association.
 1996-present, Steering Committee, Physics of Estuaries and Coastal Seas International Biennial Conference Series.
 2015-2017, Coastal Master Plan Science and Engineering Board, Coastal Protection and Restoration Authority of Louisiana.

- 2014-2019, Mehta Award Subcommittee, International Conference on Cohesive Sediment Transport Processes (INTERCOH).
- 2013 Technical Expert, Key Uncertainties Related to Diverted Fresh Water, Nutrients and Sediment, The Water Institute of the Gulf.
- 2013, Chair of Pritchard Award Subcommittee, Coastal and Estuarine Research Federation.
- 2012-2014, Executive Committee, National Science Foundation Community Surface Dynamics Modeling System.
- 2009-2014, Chair of Chesapeake Focus Research Group, National Science Foundation Community Surface Dynamics Modeling System.
- 2007-2013, Core Team, Marine Working Group, National Science Foundation Community Surface Dynamics Modeling System.
- 2004-2007, Program Advisory Council, 19th Biennial Conference of the Estuarine Research Federation, Providence, RI.
- 2004-2005, Co-chair of Scientific Program for Poster Presentations and Conference Organizing Committee Member, 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA.
- 2004-2005, Steering Committee, Middle Atlantic Bight Physical Oceanography and Meteorology Conference Series.
- 2003-2006, American Society of Civil Engineers Task Committee on Management of Fluid Mud in Estuaries, Bays and Lakes.
- 2003-2004, Co-chair, Coastal Benthic Exchange Dynamics Workshop Organizing Committee, National Science Foundation Coastal Ocean Processes (CoOP) Program.
- 2002-2008, Scientific Steering Committee, National Science Foundation Coastal Ocean Processes Program.
- 2002-2003, Extended Program Committee, 17th Biennial Conference of the Estuarine Research Federation, Seattle, WA.
- 1994-2001, American Society of Civil Engineers Task Committee on Physical Processes in Tidal Wetland Enhancement and Restoration.

Participation in research advisory meetings, panels, and workshops (Past 5 years)

2022 (All Virtual)

- NOAA Chesapeake Bay National Estuarine Research Reserve-Virginia (CBNERR-VA), Chair, Margaret A. Davidson Graduate Research Fellowship Review Panel, 21 March.
- NERRS Coastal & Ocean Acidification Workgroup: Feb 16, Mar 16.
- NERRS Submerged Aquatic Vegetation Workgroup: Jan 4.

2021 (All Virtual)

- International Cohesive Sediments Conference Series Steering Committee: 9 Sep.
- NERRS Coastal & Ocean Acidification Workgroup: Feb 11, Mar 18, Jun 16, Aug 18, Dec 15.
- National Estuarine Research Reserve System (NERRS), Coastal & Ocean Acidification Workgroup: 11 Feb, 18 Mar, 16 Jun, 18 Aug.
- NERRS Research Sector Leads Meeting: 16-18 Nov.
- NERRS System-Wide Monitoring Program Metabolism Advisory Group: 1 Mar, 15 Mar, 29 Mar, 14 Apr.
- NERRS Submerged Aquatic Vegetation Workgroup: 28 Jan.
- Strategic Environmental Research and Development Program (SERDP), Recent Developments in Burial and Mobility Modeling of Munitions in the Underwater Environment, 2 Dec.

2020 (Virtual unless location specified)

- NERRS Coastal & Ocean Acidification Workgroup: 6 Jan, 13 Feb, 13 Mar, 15 Apr, 12 May, 11 Jun, 13 Jul, 19 Aug, 6 Oct.,
- NERRS Research Sector Leads Meeting: 27 May, 27-29 Oct., 4 Nov.
- NERRS Submerged Aquatic Vegetation Workgroup: 7 Aug, 18 Aug, 11 Sep.
- NERRS System-Wide Monitoring Program Metabolism Advisory Group: 21 Aug.

NOAA CBNERR-VA, Margaret A. Davidson Graduate Research Fellowship Review Panel, Gloucester Point, VA, 3 April.

National Science Foundation, Coastlines and People (CoPe) Proposal Review Panel, 30 Nov - 1 Dec.

2019

SERDP Munitions Response Program, Burial and Mobility Modeling of Munitions in the Underwater Environment, Washington, DC, 5 December 2019.

National Estuarine Research Reserve Association National Meeting, Research Sector Leads Meeting, Charleston, SC, 18-20 November 2019.

2018

U.S. IOOS Coastal and Ocean Modeling Testbed PI and Partner Meeting, Southeastern Universities Research Association Office, Washington, DC, 6 - 7 August 2018.

SERDP In-Progress Review Meeting for Munitions Response, The Potomac Institute for Policy Studies, Arlington, VA, 15 May, 2018.

Proposal reviews (Past 10 years)

2022:

NOAA National Estuarine Research Reserve Davidson Research Fellowship (9)

2021:

National Science Foundation, Ocean Technology & Interdisciplinary Coordination Program (1)

National Science Foundation, Division of Ocean Sciences (1)

2020:

Belgian Science Policy Office BRAIN-be 2.0 Research Programme (1)

Belgian Science Policy Office FED-tWIN Research Programme (1)

National Science Foundation, Coastlines and People (CoPe) (6)

National Science Foundation, Division of Earth Sciences (1)

National Science Foundation, Division of Ocean Sciences (2)

NOAA National Estuarine Research Reserve Davidson Research Fellowship (2)

Strategic Environmental Research and Development Program (1)

2019:

National Science Foundation, Division of Ocean Sciences (1)

2018:

National Science Foundation, Division of Earth Sciences (2)

2017:

Deutsche Forschungsgemeinschaft (German Research Foundation) (1)

National Science Foundation, Division of Ocean Sciences (2)

RESTORE Act Center of Excellence for Louisiana (1)

2016:

Louisiana Board of Regents Support Fund R&D Program (1)

National Science Foundation, Division of Ocean Sciences (1)

2015:

Book proposal to Environmental Science, World Scientific Publishing (1)

National Science Foundation, Division of Ocean Sciences (3)

National Science Foundation, Office of International and Integrative Activities (1)

Scientific Commission of Lower Saxony (Germany), Coastal and Marine Research Program (1)

2014:

Book proposal to Environmental Sciences, Springer (1)

Louisiana Board of Regents Research Competitiveness Program (1)

National Science Foundation, Division of Ocean Sciences (4)

Technology Foundation STW, Netherlands' Research Council for Engineering & Applied Sciences (1)

2013:

Delaware Sea Grant College Program (1)
National Science Foundation, Division of Ocean Sciences (3)

Manuscript and book reviews (Past 10 years)

2022:

IEEE J. Oceanic Engineering (1)
Geophysical Research Letters (1)

2021:

Continental Shelf Research (1)
J. Marine Science & Engineering (3)
J. Geophysical Research-Oceans (2)

2020:

Estuaries and Coasts (1)
IEEE J. Oceanic Engineering (1)
J. Geophysical Research-Oceans (4)
J. Marine Science & Engineering (4)
Marine Geology (1)

2019:

Continental Shelf Research (1)
J. Geophysical Research-Earth Surface (2)
J. Geophysical Research-Oceans (1)
Ocean Dynamics (1)
Ocean Engineering (1)

2018:

Estuaries and Coasts (4)
Estuarine Coastal & Shelf Science (1)
Marine Geology (1)
Ocean Dynamics (4)

2017:

Estuaries and Coasts (9)
Estuarine Coastal & Shelf Science (1)
IEEE J. Oceanic Engineering (1)
J. Geophysical Research-Oceans (1)
J. Physical Oceanography (1)
Marine Geology (2)
Ocean Dynamics (1)

2016:

Continental Shelf Research (2)
Estuaries and Coasts (15)
Estuarine Coastal & Shelf Science (1)
J. Geophysical Research-Oceans (1)
Limnology & Oceanography: Methods (1)
Ocean Dynamics (1)

2015:

Continental Shelf Research (2) (Awarded Outstanding Reviewer Status by CSR, Feb 2013 to Feb 2015)
Earth Surface Processes & Landforms (1)
Estuaries and Coasts (12)
Estuarine Coastal & Shelf Science (2) (Awarded Outstanding Reviewer Status, Jun 2013 to Jun 2015)
Geo-Marine Letters (1)
J. Geophysical Research-Earth Surface (1)
J. Geophysical Research-Oceans (2)
J. Hydrology (1)

J. Physical Oceanography (1)
Ocean Dynamics (2)
Regional Studies in Marine Science (1)

2014:

Book review for ASCE J. Waterway, Port, Coastal and Ocean Engineering (1)
Continental Shelf Research (2)
Estuaries and Coasts (11)
Estuarine Coastal & Shelf Science (1)
Geophysical Research Letters (1)
Limnology & Oceanography (1)
Limnology & Oceanography: Fluids and Environments (2)
Marine Geology (1)
Ocean Dynamics (1)

2013:

Continental Shelf Research (5) (Awarded CSR Certificate of Excellence in Reviewing)
Estuaries and Coasts (14)
J. Geophysical Research-Oceans (1)
J. Marine Research (1)
J. Physical Oceanography (1)
Limnology & Oceanography (1)
Ocean Dynamics (1)
Springer Encyclopedia of Planetary Landforms (1)

External promotion reviews (Past 10 years)

2020:

External reviewer for colleague's promotion to full professor (2)

2019:

External reviewer for colleague's promotion to full professor (1)

2018:

External reviewer for colleague's promotion to chaired professorship (1)

2016:

External reviewer for colleague's promotion to associate professor (1)

External reviewer for colleague's promotion to full professor (1)

2015:

External reviewer for colleague's promotion to associate professor (2)

External reviewer for colleague's promotion to full professor (2)

2014:

External reviewer for colleague's promotion to chaired professorship (1)

Membership in professional societies

1998-present, Affiliate Member American Society of Civil Engineers

1992-present, Member Coastal Education and Research Foundation

1990-present, Member American Geophysical Union

1990-present, Member Coastal and Estuarine Research Federation

ADVISORY SERVICE ACTIVITY (to regional, state, and local stakeholders)

Membership/key participation in regional/state/local service committees/groups

2020-present, Science Working Group, Mid-Atlantic Coastal Acidification Network (MACAN).

- 2019-2021, Scientific and Technical Advisory Committee Synthesis Team: Quantifying the impacts of past and future climate and eutrophication on the dynamics of dissolved oxygen in the shallow waters of Chesapeake Bay, EPA/NOAA Chesapeake Bay Program.
- 2018-present, Board of Directors, Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS).
- 2018-present, Integrated Trends Analysis Team, EPA/NOAA Chesapeake Bay Program.
- 2018-present, Integrated Monitoring Networks Workgroup, EPA/NOAA Chesapeake Bay Program.
- 2016-present, Academic Member, Modeling Workgroup, EPA/NOAA Chesapeake Bay Program.
- 2019-2020, Strategic Planning Committee, Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS).
- 2016-2019, Steering Committee/Co-Chair, STAC Workgroup/Report on Understanding and Explaining 30+ Years of Water Clarity Trends in the Bay's Tidal Waters, EPA/NOAA Chesapeake Bay Program.
- 2015-2018, STAC Liason, Integrated Trends Analysis Team/Integrated Monitoring Networks Workgroup, EPA/NOAA Chesapeake Bay Program
- 2015-2018, STAC Liason, Scientific Technical Assessment and Reporting Team, EPA/NOAA Chesapeake Bay Program
- 2015-2018, STAC Liason, Water Quality Goal Implementation Team, EPA/NOAA Ches. Bay Program
- 2015-2018, STAC Liason, Watershed Technical Workgroup, EPA/NOAA Chesapeake Bay Program
- 2015-2017, Steering Committee, STAC Workshop on Integrating Monitoring Networks, EPA/NOAA Chesapeake Bay Program.
- 2015-2016, Steering Committee, STAC Workshop on Conowingo Infill Influence on Chesapeake Bay Water Quality, EPA/NOAA Chesapeake Bay Program.
- 2014, Chair, Lower Susquehanna River Watershed Assessment Review Team. Commissioned by the Scientific and Technical Advisory Committee, EPA/NOAA Chesapeake Bay Program.
- 2012-2014, Tidal Monitoring and Analysis Workgroup, EPA/NOAA Chesapeake Bay Program (reformed in 2015 as Integrated Monitoring Networks Workgroup).
- 2011-2018, STAC Liason, Modeling Workgroup, EPA/NOAA Chesapeake Bay Program.
- 2010-2018, Scientific and Technical Advisory Committee, EPA/NOAA Chesapeake Bay Program.
- 2009-2016, Steering Committee, Chesapeake Community Modeling Program, Chesapeake Research Consortium/NOAA Chesapeake Bay Program.
- 2006-2007, Sediment Workgroup Review Panel, EPA Chesapeake Bay Program Nutrient Subcommittee.
- 2006-2007, VIMS Chesapeake Bay Water Quality Initiative Steering Committee
- 2004-2012, Steering Committee/Board, Chesapeake Bay Observing System.
- 2004-present, Participation in VIMS-Industry Partnership
- 2004-2005, co-PI on VIMS FY2004 Water Borne Hazards Initiative
- 2000-2017, Moderator for the Blue Crab Bowl, a state-wide high school academic competition in marine science sponsored by the Consortium for Oceanographic Research and Education.
- 2000-2003, Benthic Processes Expert Team, EPA Chesapeake Bay Program Modeling Subcommittee.
- 2000-2002, Participation in VIMS Coastal Observing System Initiative
- 1998-2003, VIMS Material Flux and Fate Core Program Committee
- 1997-1998, VIMS Ecosystem Modeling Core Program Committee
- 1996-1998, Participation in VIMS CAST initiative
- 1995-1998, Participation in VIMS 3D Model initiative
- 1993-1995, Participation in VIMS Hypoxia initiative

Meetings/activities in support of region/state/local advisory service (Past 5 years)

2022

- Lower Chickahominy Watershed Collaborative Summit: 16 Feb.
- CBP Data Integrity Workgroup: 22 Feb.
- CBP Integrated Trends Analysis Team: 26 Jan, 23 Feb.
- CBP Modeling Workgroup: 5 Jan.
- CBP Nontidal Network Workgroup: 16 Feb, 16 Mar.

CBP Submerged Aquatic Vegetation Workgroup: 14 Mar.
 NOAA, Chesapeake Bay Middle Peninsula Knowledge Hub: 28 Jan.

2021 (All virtual)

Chesapeake Bay Commission Meeting: 6 May.
 CBP Bay Oxygen Research Group: 20 May, 17 June
 CBP Data Integrity Workgroup: 10 Mar, 30 Sep.
 CBP Climate Resiliency Workgroup: 17 May.
 CBP Criteria Assessment Protocol Workgroup: 4 Feb, 14 May, 22 Jul.
 CBP Hypoxia Collaborative Team: 21 May.
 CBP Integrated Trends Analysis Team: 27 Jan, 28 Apr, 28 Jul, 29 Sep, 27 Oct, 19 Nov.
 CBP Modeling Workgroup: 6-7 Jan, 6-7 Apr, 6-7 Jul, 6 Oct.
 CBP Scientific & Technical Advisory Committee: 13 Mar, 12 Sep.
 CBP Scientific Technical Assessment & Reporting Team: 25 Mar, 15 Jun, 22 Jul, 26 Aug, 16 Dec.
 CBP Submerged Aquatic Vegetation Workgroup: 17 Feb.
 CBP Water Quality Goal Implementation Team: 25 Jan, 12 Aug, 27 Sep, 12 Oct.
 Chesapeake Monitoring Cooperative, In Situ Chlorophyll Meeting: 17 Aug.
 Mid-Atlantic Coastal Acidification Network, Science Working Group: 29 Nov.
 Mid-Atlantic Regional Association Coastal Observing System (MARACOOS) Board of Directors / Annual Meeting: 28 Jan, 1 Apr, 12 May, 3 Jun, 21 Jul, 30 Sep.
 NOAA, Chesapeake Bay Middle Peninsula Knowledge Hub: 29 Jun, 7 Oct, 18 Nov ,

2020 (Virtual unless location specified)

CBP Climate Resiliency Workgroup: 28 May.
 CBP Criteria Assessment Protocol Workgroup, 22 Jan (Colonial Beach, VA), 19 Aug, 18 Nov.
 CBP Data Integrity Workgroup: 10 Mar, 2 Dec.
 CBP Dissolved Oxygen in Shallow Waters Synthesis Team: 13-14 Jan (Solomons, MD), 29 Jun, 27 Jul, 31 Aug, 5 Oct, 19 Nov.
 CBP Goal Teams Chairs Meeting: 3 Jun.
 CBP Habitat Goal Implementation Team: 6-7 May.
 CBP Integrated Trends Analysis Team: 26 Feb, 25 Mar, 22 Apr, 27 May, 24 Jun, 22 Jul, 23 Sep, 29 Oct.
 CBP Modeling Workgroup: 7-8 Jan, 4 Feb, 7-8 Apr, 21 May, 7-8 Jul, 10 Sep, 6-7 Oct, 5 Nov.
 CBP Scientific & Technical Advisory Committee: 14 Dec.
 CBP Scientific Technical Assessment & Reporting Team: 23 Apr, 24 Sep.
 CBP Water Quality Goal Implementation Team: 27 Apr.
 Mid-Atlantic Coastal Acidification Network, Science Working Group: 11 May, 12 Jun, 18 Sep, 10 Nov.
 MARACOOS Board of Directors / Business / Annual / Strategic Planning Meetings: 3 Mar, 18 Mar, 26-27 Mar, 1 Apr, 13 Apr, 30 Apr, 14 May, 31 July, 16 Nov.
 NOAA, Chesapeake Bay Middle Peninsula Knowledge Hub: 21 Oct.
 Potomac Basin Comprehensive Plan Virtual Event, held virtually, 14 August.

2019

MARACOOS Board of Directors Fall Meeting, Baltimore, MD, 10-11 October.
 NASA Chesapeake Bay Water Quality Modeling Workshop. Greenbelt, MD, 22 August.
 Virginia Department of Environmental Quality, Buchanan Creek Site Visit, Virginia Beach, VA, 23 May.
 MARACOOS Board of Directors Spring Meeting, Baltimore, MD, 13 May.
 MARACOOS) Annual Meeting, Baltimore, MD, 13-14 May.
 Chesapeake Bay Sentinel Site Cooperative, Marsh Resilience Summit, Williamsburg, VA, 5-6 February.
 Maritime Environmental Resource Center, University of Maryland Center for Environmental Science,
 Workshop on Use of Dredged Material to Protect Low-Lying Areas of Chesapeake Bay, Annapolis, MD, 23-24 January.

2018

MARACOOS Board of Directors Meeting, Linthicum, MD, 19-20 November.

MARACOOS Annual Meeting, Annapolis, MD, 17-18 May.

Moderator for the Blue Crab Bowl, a state-wide high school academic competition in marine science sponsored by the Consortium for Oceanographic Research and Education, Jan-Feb.

2017

CBP Scientific & Technical Advisory Committee, Workshop on Integrating Recent Findings to Explain Water Quality Change: Support for the Mid-Point Assessment and Beyond, Annapolis, MD, 12-13 December.

Coastal Hydrodynamics and Sediment Dynamics lab tour for Sheila Crowley, candidate for 98th district of House of Delegates, Virginia Institute of Marine Science, Gloucester Point, VA, 25 October.

CBP Scientific and Technical Advisory Committee, Quarterly Meeting, Annapolis, MD, 12-13 September.

CBP Scientific and Technical Advisory Committee, Workshop I on Understanding and Explaining 30+ Years of Water Clarity Trends in the Bay's Tidal Waters, UMCES Chesapeake Bay Laboratory, Annapolis, MD, May 2-3 2017.

CBP Scientific and Technical Advisory Committee, Workshop II on Understanding and Explaining 30+ Years of Water Clarity Trends in the Bay's Tidal Waters, UMCES Chesapeake Bay Laboratory, Solomons, MD, 6-7 February 2017.

Moderator for the Blue Crab Bowl, a state-wide high school academic competition in marine science sponsored by the Consortium for Oceanographic Research and Education, Jan-Feb.