

**COLLEGE OF WILLIAM & MARY**  
*Curriculum Vitae Standard Format*

**PERSONAL INFORMATION**

1. Name: Courtney Kay Harris Date: August 9, 2021  
Office Address: Virginia Institute of Marine Science  
College of William & Mary  
PO Box 1346  
Gloucester Point, VA 23062  
Office Phone: 804/684-7194  
Home Address: 104 Three Point Court  
Yorktown, VA 23692  
Email: ckharris@vims.edu
2. Position: Professor and Department Chair  
Department of Physical Sciences  
School of Marine Science

**3. EDUCATION**

- Ph.D., 1999; M.S., 1994. University of Virginia College of Arts and Sciences,  
Department of Environmental Sciences, Charlottesville, VA.  
M.S., 1987: University of California, Berkeley, CA. School of Engineering. Operations  
Research.  
B.S., 1986: University of Virginia, Charlottesville, VA. School of Engineering and  
Applied Sciences. Applied Mathematics.

**4. ACADEMIC POSITIONS**

- 2020 – present: Chair, Department of Physical Sciences, Virginia Institute of Marine  
Sciences, William & Mary.  
2014 – present: Professor, School of Marine Sciences, Virginia Institute of Marine  
Sciences, William & Mary.  
2007 – 2014: Associate Professor, School of Marine Sciences, Virginia Institute of  
Marine Sciences, William & Mary.  
2007 – 2010: Alumni Memorial Distinguished Term Associate Professor, School of  
Marine Sciences, Virginia Institute of Marine Sciences, William &  
Mary.  
2001 – 2007: Assistant Professor, School of Marine Sciences, Virginia Institute of  
Marine Sciences, William & Mary.  
1999 – 2001: U.S. Geological Survey, Postdoctoral Fellow. Woods Hole Field Center,  
Woods Hole, MA.

**5. HONORS, PRIZES AND AWARDS**

- 2014 Outstanding Contribution in Reviewing, *Continental Shelf Research*.  
2013 Excellence in Reviewing, *Continental Shelf Research*.  
2012 Plumeri Award for Faculty Excellence, College of William & Mary.  
2007—2010 Alumni Memorial Term Distinguished Associate Professorship.

1999—2001	U.S. Geological Survey Postdoctoral Fellowship Award.
1996	NASA Global Climate Change Fellow.
1990—1994	Dupont Fellowship, University of Virginia.
1984	Inducted into Tau Beta Pi, the Engineering Honor Society.
1982—1986	Phillip Morris Scholarship.

## 6. CONTRIBUTIONS TO THE EDUCATIONAL PROGRAM

### 6a. Courses taught

#### Instructor or co-instructor (Enrollment in parenthesis; includes audits)

Spring 2021:	MS490 Independent Study Research (1).
Fall 2020:	MS554 Principles of Numerical Computing, co-taught with H. Wang (3). MS490 Independent Study Research (1 for credit, 1 audit).
Spring 2020:	MS698-04 Numerical Sediment Transport Models (4 for credit, 3 audits).
Fall 2019:	MS553 Benthic Boundary Layers and Sediment Transport (4 for credit; 2 audits).
Spring 2019:	MS698-03 Implementation and Analysis of a Hydrodynamic Coastal Model (8 for credit; 3 audits).
Fall 2018:	MS554 Principles of Numerical Computing, co-taught with H. Wang (6).
Fall 2017:	MS554 Principles of Numerical Computing, co-taught with H. Wang (7).
Spring 2017:	MS698 Numerical Sediment Transport Models (3 for credit, 4 audits). MS522 Principles of Marine Geology (7 for credit)
Spring 2016:	MS554 Principles of Numerical Computing, co-taught with H. Wang (3). MS553 Benthic Boundary Layers and Sediment Transport (5).
Spring 2015:	MS698-12 Numerical Sediment Transport Models (2 for credit, 1 audit).
Fall 2014:	MS554 Principles of Numerical Computing, co-taught with H. Wang (5).
Spring 2014:	MS698-03 Implementing a Hydrodynamic Ocean Model (5 for credit, 6 audits). MS522 Principles of Marine Geology (3 for credit).
Spring 2013:	MS554 Principles of Numerical Computing, co-taught with H. Wang (3 for credit, 1 audit).
Fall 2012:	MS698 Numerical Models of Coastal Sediment Transport (4 for credit, 1 audit).
Spring 2012:	MS554 Principles of Numerical Computing, co-taught with H. Wang (3 for credit, 4 audits).
Spring 2011:	MS554 Principles of Numerical Computing, co-taught with H. Wang (2 for credit, 3 audits).
Fall 2010:	MS553 Benthic Boundary Layers and Sediment Transport (6 for credit, 2 audits)
Spring 2010:	MS554 Principles of Numerical Computing, co-taught with H. Wang (4).
Fall 2009:	MS698-04 Numerical Models of Coastal Transport (11).
Spring 2009:	MS554 Principles of Numerical Computing, co-taught with H. Wang (8).
Spring 2008:	MS502 Coastal and Estuarine Processes (22) MS520 Princ. of Coastal & Estuarine Physical Oceanography (8).
Spring 2007:	MS502 Coastal and Estuarine Processes (16). MS554 Principles of Numerical Computing, co-taught with H. Wang (3).

- Fall 2006: MS553 Benthic Boundary Layers and Sediment Transport (7).  
 Spring 2005: MS520 Princ. of Coastal & Estuarine Physical Oceanography (9).  
 Fall 2004: MS553 Benthic Boundary Layers and Sediment Transport (9).  
 MS554 Principles of Numerical Computing, co-taught with H. Wang (3)  
 Spring 2004: MS698-03 Numerical Sediment Transport (4).  
 Fall 2003: MS554 Principles of Numerical Computing, co-taught with H. Wang (6).  
 Spring 2003: MS698-03 Sediment Transport in Marine Environments (8).  
 Spring 2002: MS698-18 Interdisciplinary Estuarine Hydrodynamic Models (5).  
 MS520 Princ. of Coastal & Estuarine Physical Oceanography (7).  
 Fall 2001: MS554 Principles of Numerical Computing, co-taught with H. Wang (3).

#### Guest Lecturer

- MS501 – Physical Oceanography, Guest Lecture titled “Numerical Models in Coastal Systems (Physical Oceanography)”. Delivered lecture in Fall, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015; and Spring 2017, 2018, 2019, 2021.  
 MS698 – Biogeochemistry of Marine Sediments, Guest lecture and computer lab exercise titled “Modeling Seabed Processes”. Delivered lecture in April, 2013.

### **6.b. Students mentored**

#### 6.b.1. Major advisor at VIMS

- Graduated 2021. Matthew Fair, M.S. “Sediment transport and trapping on the Ayeyarwady-Martaban continental shelf”.  
 Graduated 2020. Danielle Tarpley, Ph.D. (Co-advised with Carl Friedrichs) “Temporal variability in cohesive sediment dynamics in a partially mixed estuary, the York River estuary, Virginia, USA: A numerical study developed from observations.”  
 Graduated 2017. Julia M. Moriarty, Ph.D. (co-advised with Marjy Friedrichs) “The role of seabed resuspension on oxygen and nutrient dynamics in coastal systems: A numerical modeling study.”  
 Graduated 2014. Justin Birchler, M.S. “Sediment deposition and reworking: A modeling study using isotopically tagged sediment classes”. Now at: US Geological Survey, Saint Petersburg, Florida.  
 Graduated, 2012, Julia Moriarty, M.S. from SMS/VIMS. “Transport and fate of sediment on the Waipaoa River continental shelf: Implications for the formation and reworking of flood deposits”.  
 Graduated, 2010, Aaron Bever, Ph.D. “Integrating space- and time-scales of sediment-transport for Poverty Bay, New Zealand”. Now at Anchor QEA, San Francisco, California.  
 Graduated, 2009. Yanxia (Peony or Amy) Ma, Ph.D. “Continental shelf sediment transport and depositional processes on an energetic, active margin: the Waiapu River shelf, New Zealand”. Now at Louisiana State University, Baton Rouge.  
 Graduated 2008. J. Paul Rinehimer, M.S. “Sediment transport and erodibility in the York River estuary: a model study”. Now at West Consultants, Tacoma, Washington.  
 Graduated 2007. Tara Kniskern, Ph.D. (co-advised with Steve Kuehl). “Shelf sediment dispersal mechanisms and deposition on the Waiapu River shelf, New Zealand”.  
 Graduated 2006. Aaron Bever, M.S. “Physical processes behind delta propagation and flood layer dynamics: Po River, Italy”.

2019 – 2021. Elisa Aitoro, M.S. student. Leave of absence beginning 6/2021.

***Student Awards:***

**Julia Moriarty:** East Asian Pacific Study Institute (EAPSI) Fellowship, National Science Foundation (NSF), June – August, 2013. John and Marilyn Zeigler Student Achievement Award, VIMS, May, 2013. Best poster, Gordon Conference for Coastal Modeling, June, 2015. Krone Award, Intercoh Meeting, Leuven, Belgium, September, 2015. Best poster award, AGU Fall Meeting, San Francisco, CA, December, 2016. Community Surface Dynamics Modeling System (CSDMS) Student Modeler Award, May, 2017. Now at: University of Colorado, Boulder.

**6.b.2. Student committee service (at VIMS unless otherwise noted)**

- Graduated 2021. Evan Flynn. M.S. “Sediment and terrestrial organic carbon budgets for the offshore Ayeyarwady Delta, Myanmar: Establishing a baseline for future change”. Advisor: S. Kuehl.
- Graduated 2021. Cristin Wright. M.S. “Controls on estuarine sediment bed erodibility: insights from the York River estuary”. Advisors: G. Massey and C. Friedrichs.
- Graduated 2021. Jessica Turner. Ph.D. “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”, Advisors: C. Friedrichs and M. Friedrichs.
- Graduated 2021. Haixing Wang. Ph.D. “Impact of Canyon Upwelling and Downwelling in the Mid-Atlantic Bight”, Advisor: D. Gong.
- Graduated 2020. Kelsey Fall. Ph.D. “Influence of suspended particle size and composition on particle image processing, estuarine floc fractal properties, and resulting estuarine light attenuation”. Advisor: C. Friedrichs.
- Graduated 2019. Jongwi Chang. M.S. at Inha University, Seoul, South Korea. “Investigation of sediment transport mechanism in the Anthropocene Nakdong Estuary using ROMS”. Advisor: G.-H. Lee.
- Graduated 2018. Fei Da, M.S. “Impacts of direct atmospheric nitrogen deposition and coastal nitrogen fluxes on Chesapeake hypoxia”. Advisor: M. Friedrichs.
- Graduated 2017. Elisabeth Clyne, M.S. “Assessment of the high-resolution sediment gravity flow record in Prince William Sound, Alaska”. Advisor: S. Kuehl.
- Graduated 2016. Joshua Stone, Ph.D. “Population dynamics of gelatinous zooplankton in the Chesapeake Bay and Sargasso Sea, and effects on carbon export”. Advisor: D. Steinberg.
- Graduated 2015. Andrew Fallon. M.S. “Cyclical hotspot erosion on a stable barrier island and environmental impact on the housing market”. Advisor: C. Hein.
- Graduated 2015. Nicole Marshall, M.S. “Signature of recent sediment accumulating in Prince William Sound, Alaska: A record of storms, earthquakes, and seasonal inputs”. Advisor: S. Kuehl.
- Graduated 2013. Lindsey Kraatz, Ph.D. “Acoustic and sedimentological investigations of seabed conditions and related bio-physio-geological parameters in a tidally energetic, fine-grained environment: York River Estuary, Virginia”. Advisor: C. Friedrichs.

- Graduated 2013. Yongjian Xiao, Ph.D. "A biogeochemical data assimilative modeling study in the mid-Atlantic bight". Advisor: M. Friedrichs.
- Graduated 2013. Grace Cartwright, Ph.D. "Applications of acoustics and optics for the characterization of suspended particulate matter within an estuarine observing system". Advisor: C. Friedrichs.
- Graduated 2012. Kelsey Fall, M.S. "Relationships among fine sediment settling and suspension, bed erodibility, and particle type in the York River estuary, Virginia". Co-Advisors: C. Friedrichs and M. Friedrichs.
- Graduated 2012. Natalia Blackburn, M.S. "Seed burial in the seagrass *zostera marina*: The role of infauna". Advisor: J. Orth.
- Graduated 2012. Lila Rose, Ph.D. "Poverty Shelf, New Zealand from the Holocene to present: Stratigraphic development and event layer preservation in response to sediment supply, tectonics and climate". Advisor: S. Kuehl.
- Graduated 2011. Robin F.D. Wilson, M.S. at Dalhousie University, Halifax, Canada. "Comparative assessment of a two-layered and multi-layered sediment model". Advisor: K. Fennel.
- Graduated 2010. S. Jarrell Smith, Ph.D. "Fine Sediment Dynamics in Dredge Plumes". Advisor: C. Friedrichs.
- Graduated 2010. Tara Scott, Ph.D. "Accounting for undesirable outputs in productivity measurements: Application to the California-Oregon drift gillnet fishery". Advisor: J. Kirkley.
- Graduated 2010. David Elliott, Ph.D. "Copepod carcasses, mortality and population dynamics in the tributaries of the lower Chesapeake Bay". Advisor: K. Tang.
- Graduated 2010. David Rudders, Ph.D. "Incorporating industry-based dredge surveys into the assessment of sea scallops, *Placopecten magellanicus*". Advisor: W. DuPaul.
- Graduated 2009. Justine Woodward, M.S. "Investigating the relationships between recruitment indices and estimates of adult abundance for striped bass, weakfish, and Atlantic croaker". Advisors: M. Fabrizio and R. Latour.
- Graduated 2008. Lila Rose, M.S. "Recent sedimentation patterns and facies distribution on the Waipaoa River, NZ". Advisor: S. Kuehl.
- Graduated 2007. Jennifer Miselis, Ph.D. "Nearshore Morphology and Lithology: Links to Framework Geology and Shoreline Change". Advisor: J. McNinch.
- Graduated 2006. Todd Gedamke, Ph.D. "Developing a Stock Assessment for the Barndoor Skate (*Dipturus laevis*) in the Northeast United States". Advisors: W. DuPaul, J. Hoenig, and J. Musick.
- Graduated 2005. Lisa Addington, M.S. "Distinguishing Sediment Transport Modes to the Outer-Shelf off the Waipu River, New Zealand". Advisor: S. Kuehl.
- Graduated 2005. John Walter, Ph.D. "Incorporating Aspects of Space into Stock Assessments of Several Marine Species". Advisor: J. Hoenig.
- Graduated 2004. Heidi Romine, M.S. "Documenting the suspended sediment and bottom sediment dynamics of a two estuarine turbidity maximum system using  $^7\text{Be}$  and  $^{234}\text{Th}$ ." Co-Advisors: S. Kuehl and C. Friedrichs.
- 2016 – present. David Perkey. Ph.D. Candidate. Advisor: C. Friedrichs.
- 2017 – present. Justin Shawler. Ph.D Candidate. Advisor: C. Hein.

High School Internship Mentoring

- 2018, Mentor to Ethan Strader, for the Governors School for Science and Technology Mentorship Program.
- 2017 – 2018, Mentor to Jeffrey Cho, for the Governors School for Science and Technology Mentorship Program. Project titled “Analysis of waves in the northern Andaman Sea”.
- 2014, Mentor to Jessica Sydnor, from Poquoson High School, VIMS / NASA Governors School Summer Internship.

Undergraduate Mentoring

- 2020 – 2021, Jacob Wacht, William & Mary Physics Department, Senior Thesis. “Characterization of water column structure in the northern Andaman Sea, Myanmar based on field data collected in December 2017”.
- Summer 2019, Mentor to Jacob Wacht (co-advised with Linlin Cui), from William & Mary, in the William & Mary SMS/VIMS Summer Internship Program.
- Summer 2017, Mentor to Noa Randall (co-advised with Danielle Tarpley), from Smith College, in the William & Mary SMS/VIMS Summer Internship Program.
- Summer 2011, Mentor to Daniel O’Hara (co-advised with Dr. Tara Kniskern), from Indiana University of Pennsylvania, in the College of William and Mary SMS/VIMS Summer Internship Program. Now pursuing a Ph.D. at University of Oregon (2018).
- Summer 2008, Mentor to Julia Moriarty (co-advised with Dr. Tara Kniskern), from University of Chicago, in the College of William and Mary SMS/VIMS Summer Internship Program. Now a Mendenhall Post-Doc at the U.S. Geological Survey (2018).
- Summer 2007, Mentor to Maggie Simon, from Haverford College in the College of William and Mary SMS/VIMS Summer Internship Program.
- Summer 2003, Mentor to Jennifer Foley, from Marietta College in the College of William and Mary SMS/VIMS Summer Internship Program. Pursued graduate degree in Geology from East Carolina University.

Visiting Graduate Students

- 2021 – present, Host to Xiaomei Xu, Ph.D. student from Nanjing University, Shanghai, China.
- 2019 – 2020, Host to Chenghao Wang, Ph.D. student from Ocean University of China, Qingdao, China.
- 2017, Host to Jongwi Chang, M.S. student from Inha University, Seoul, Korea.
- 2017, Host to Adonis Gallentes, Ph.D. student from Inha University, Seoul, Korea.
- 2015, Host to Salik Rosing, Ph.D. student from University of Copenhagen, Denmark.

Post-doctoral Mentoring

- 2019 – 2021, Linlin Cui, VIMS.
- 2007, and 2010 – 2013, Tara Kniskern, VIMS. Awards: NSF Margins Post-doctoral Fellowship, 2010 – 2012.
- 2007 – 2008, Kehui (Kevin) Xu, SMS/VIMS. Now at Louisiana State University, Baton Rouge.

2003, David Fugate, SMS/VIMS. Now at Florida Gulf Coast University, Fort Myers.

## 7. FELLOWSHIPS AND GRANTS

### 7.a. All fellowships, grants, contracts, etc., awarded by outside agencies.

Collaborative research: Sediment geochemical control on ocean acidification and carbon budget in a river dominated shelf system. LSU: K. Maiti (lead PI); VIMS: C.K. Harris (VIMS co-PI); U. Delaware: W.-J. Cai (U.D. co-PI). Funded by National Science Foundation (OCE – 1756576) for March 1, 2018 – February 28, 2021 (VIMS portion \$199,955).

Consortium for Simulation of Oil-Microbial Interactions in the Ocean (CSOMIO). Florida State U.: E. Chassignet (PI; Consortium Director), S. Morey, M. Stukel, O. Mason, D. Dukhovskoy; VIMS: C.K. Harris (lead co-PI from VIMS); Texas A&M: R. Hetland, K. Thyng; U. Maryland Center for Environmental Science: V. Coles; U. Delaware: T. Hsu; HR Wallingford: A. Manning. Funded by Gulf of Mexico Research Institute (GoMRI) for January 1, 2018 – December 31, 2019, with no-cost extension to June 30, 2020. GoMRI Award R01983. (VIMS portion \$168,184)

Collaborative research: Fate of Irrawaddy and Salween River sediment: Relative importance of oceanographic and tectonic controls. S. Kuehl (PI), C. Harris (co-PI) and P. Liu (NCSU, co-PI). Funded by National Science Foundation (OCE – 1737221) for August 15, 2017 – July 31, 2019, with no-cost extension to July 31, 2020. (\$308,695).

Peer Review of Modeling Activities in connection with Combined Sewer Overflow (“CSO”) Long Term Control Planning (“LTCP”) and Superfund Work with respect to the Newtown Creek LTCP. C. Harris (Consultant). Subcontract via Hazen and Sawyer for the City of New York Department of Environmental Protection. March, 2016 – October, 2017. (\$40,000).

Interactions of physics, inorganic sediment, and organic matter in determining suspended particle properties, sediment settling and water clarity in estuarine and coastal waters. C. Friedrichs (PI) and C. Harris (co-PIs). Funded by National Science Foundation (OCE-1459708) for April 15, 2015 – March 30, 2020. (\$691,150).

NGOMEX - Mechanisms Controlling Hypoxia: Supplemental Funding for Research Assistant. VIMS: C. Harris (VIMS lead), TAMU: S. DiMarco (PI), R. Hetland; K. Xu (LSU); K. Fennel (Dalhousie). Funded by National Oceanic and Atmospheric Administration for July 1, 2014 – June 30, 2015; with no-cost extension until 2017 (VIMS Portion is \$ 33,994.00, supplement of \$15,000 added to this in Summer, 2014).

Predictive Models Technical Advisory Committee (PM-TAC) Member. C.K. Harris (PI). Funded as a Cooperative Endeavor Agreement with the Water Institute of the Gulf. June 1, 2013 – September 30, 2016. (\$32,800).

Shelf-slope sediment exchange in the northern Gulf of Mexico: application of numerical models for extreme events. H. Arango (Rutgers U., PI), C. Harris (VIMS co-PI), E. Meiburg (UCSB), J. Syvitski (U. Colorado). Funded by Bureau of Ocean Energy Management (BOEM). October, 2011 – September, 2014. (\$220,625.00; VIMS portion plus supplement of \$5,000 added summer, 2014). No-cost extension to August, 2015.

- Improved observation, analysis and modeling of fine sediment dynamics in turbid, biologically active coastal environments. C. Friedrichs (PI), M. Friedrichs and C. Harris (co-PIs). Funded by National Science Foundation (OCE-1061781) for April 1, 2011 – April 1, 2014. (\$644,025).
- A Super-regional Testbed to Improve Models of Environmental Processes on the U.S. Atlantic and Gulf of Mexico. C. Friedrichs (VIMS PI), Co-PIs: J.X. Shen, M.A. Friedrichs, C.K. Harris, and H.V. Wang. Funded by the National Oceanic and Atmospheric Administration for June 1, 2010 – May 31, 2011. (VIMS portion is \$879,717).
- MARGINS Post-Doctoral Fellowship: Investigating sediment dynamics on the Waipaoa River shelf, New Zealand: creating a framework to predict preservation on continental margins. C. Harris (PI), T. Kniskern (VIMS, co-PI). Funded by National Science Foundation (OCE-0948319) for April, 2010 – March, 2012. (\$228,641).
- Collaborative Research: Formation, Reworking and Accumulation of Sedimentary Deposits, Waipaoa River Shelf, New Zealand. J.P. Walsh (PI), R. Corbett (ECU), C. Harris (VIMS co-PI), A. Ogston (U.W. co-PI), and A. Orpin (NIWA co-PI). Funded by National Science Foundation (OCE-0841049) for April, 2009 – May, 2012. (\$947,180; VIMS portion is \$164,023).
- NGOMEX 2009 - Mechanisms Controlling Hypoxia: Integrated Causal Modeling. VIMS: C. Harris (VIMS lead), D. Forrest; TAMU: T. Bianchi, P. Chapman, S. DiMarco (PI), N. Guinasso, R. Hetland, J. Morse; ALSO: A. Quigg (TAMU-G lead); M. Dagg (LUMCON lead); N. Walker (LSU lead); K. Xu (CCU lead); K. Fennel (Dalhousie lead). Funded by National Oceanic and Atmospheric Administration (NA09NOS4780231) for September 1, 2009 – August 31, 2014 (VIMS Portion is \$158,000; with a supplement of \$48,994). No-cost extension through August, 2016.
- 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). C. Friedrichs (PI), Co-PIs: R. Diaz, C.K. Harris, S. Kuehl, L. Schaffner; Co-PI at UMCES: L. Sanford. Funded by National Science Foundation for January 1, 2009 – December 31, 2011. (\$388,000).
- Dispersal of Fine Sediment in the Coastal Ocean: Sensitivity to Aggregation and Stratification. C.K. Harris (PI). Funded by the Office of Naval Research Coastal Geosciences Program for January 1, 2007 – March 31, 2009 (\$134,482).
- NGOMEX 2006 - Mechanisms Controlling Hypoxia: Real-time Observations. VIMS PI: C.K. Harris, S. DiMarco (TAMU PI), P. Chapman (LSU PI), R. Hetland (TAMU), N.L. Guinasso (TAMU), G. Rowe (TAMU-Galveston), N. Walker (LSU), E. D'Sa (LSU), K. Fennel (Dalhousie PI). Funded by National Oceanic and Atmospheric Administration for August 1, 2005 – July 31, 2008 (\$501,000, VIMS Portion is \$19,000).
- 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. C. Friedrichs (PI), Co-PIs: R. Diaz, C.K. Harris, S. Kuehl, L. Schaffner; Co-PI at UMCES: L. Sanford. Funded by National Science Foundation (OCE-0536572) for January 1, 2006 – January 1, 2009. (\$1,947,000).



- MARGINS Source to Sink: Collaborative research on shoreline progradation and sediment exchange between the coastal plain and inner shelf, Waipaoa Sedimentary System. J. McNinch (PI) and C.K. Harris (Co-PI). J. Swenson (Co-PI at U. Minnesota, Duluth). Funded by National Science Foundation (OCE-0504690) for May 1, 2005 – May 1, 2008. (\$522,700).
- Numerical modeling of estuarine turbidity maximum -- representation of bottom boundary layer and turbulence mixing within the Chesapeake Bay model. H. Wang (PI) and C.K. Harris (Co-PI). Funded by the Maryland Department of the Environment for February 1, 2004 – June 31, 2007 (\$149,600).
- Suspended sediment and sea bed modification driven by energetic waves and a strong coastal current. C.K. Harris (PI). Funded for February 1, 2004 – September 1, 2006 by the Office of Naval Research Physical Oceanography Program (\$67,600).
- Comparison of present day and historical dispersal patterns in the western Adriatic. C.K. Harris (PI). Funded by the Office of Naval Research Coastal Geosciences Program for March 15, 2004 – September 1, 2006 (\$97,900).
- Sediment dispersal off a high-yield river: observations and modeling of gravity-driven transport and deposition. S.A. Kuehl, C.T. Friedrichs, C.K. Harris, J.E. McNinch, and L.D. Wright (Co-PIs). Funded by the National Science Foundation (OCE-0326831) for August, 2003 – July, 2006 (\$647,000).
- An integrated observational, modeling, and information networking system in support of marine operations in bays, ports, and harbors: a lower Chesapeake Bay pilot study. L.D. Wright, J. Brubaker, C. Friedrichs, C. Harris, J. Shen, and H. Wang (Co-PIs). Funded for July 1, 2003 – June 30, 2004 by the U.S. Coast Guard Research and Development Center (\$250,000).
- Planning for a national community sediment transport model. C. Sherwood, R.W. Geyer (PIs). H. Arango, A.F. Blumberg, B.P. Butman, S.M. Glenn, T.F. Gross, J. Hamrick, C.K. Harris, P.L. Shrestha, R.P. Signell (Co-PIs). Funded for August, 2001 – July, 2002 by National Oceanographic Partnership Program (NOPP), cost-shared through U.S. Geological Survey.
- Sediment redistribution and seabed modifications in the western Adriatic. C.K. Harris (PI). Funded for October, 2001 – September, 2003 by the Office of Naval Research Coastal Geosciences Program (\$100,000).
- Quantitative shelf sediment transport. C.K. Harris (PI). Funded for July, 2001 – June, 2004 by the U.S. Geological Survey (\$66,000).
- Three-dimensional modeling of sediment trapping and dispersal on river-influenced continental shelves. C.K. Harris (PI). Funded for October, 2000 – September, 2001 by the Office of Naval Research Coastal Geosciences Program (\$20,000).

## 8. RESEARCH

### 8.a. Refereed publications in periodicals, chapters in books, law review articles, and conference proceedings. (Harris students and post-docs italicized)

- Cui, L., C.K. Harris, and D.R. Tarpley. 2021. Formation of Oil – Particle – Aggregates: Numerical model formulation and calibration. *Frontiers in Marine Science*, 8:629476. doi: 10.3389/fmars.2021.629476.
- Dukhovskoy, D.S., S.L. Morey, E.P. Chassignet, X. Chen, V.J. Coles, L. Cui, C.K. Harris, R. Hetland, A. Manning, M. Stukel, K. Thyng, J. Wang. 2021. Overview

- of the CSOMIO coupled ocean-oil-sediment-biology model. *Frontiers in Marine Science*, 8:629299. doi: 10.3389/fmars.2021.629299.
- Moriarty, J.M., M.A.M. Friedrichs, and C.K. Harris. 2021 Seabed resuspension in the Chesapeake Bay: Implications for biogeochemical cycling and hypoxia. *Estuaries and Coasts* **44**, 103–122. <https://doi.org/10.1007/s12237-020-00763-8>
- Chang, J., G-H. Lee, C.K. Harris, Y. Song, S. Figueroa, N. Schieder, and K. Lagamayo. 2020. Sediment transport mechanisms in altered depositional environments of the Anthropocene Nakdong Estuary: A numerical modeling study. *Marine Geology*, 430, p.106364.
- Harris, C.K., J. Syvitski, H.G. Arango, E.H. Meiburg, S. Cohen, C.J. Jenkins, J.J. Birchler, E.W.H. Hutton, T.A. Kniskern, S. Radhakrishnan, G. Auad. 2020. Data-driven, multi-model workflow suggests strong influence from hurricanes on the generation of turbidity currents in the Gulf of Mexico. *Journal of Marine Science and Engineering (JMSE)*, 8: 586, <https://doi.org/10.3390/jmse8080586>.
- Wang, C., Z. Liu, C.K. Harris, X. Wu, H. Wang, C. Bian, N. Bi, H. Duan, J. Xu. 2020. The impact of winter storms on sediment transport through a narrow strait, Bohai, China, *Journal of Geophysical Research – Oceans*. <https://doi.org/10.1029/2020JC016069>.
- Liu, J.P., S.A. Kuehl, A.C. Pierce, J. Williams, N.E. Blair, C.K. Harris, D. Wa Aung, Y.Y. Aye. 2020. Fate of Ayeyarwady and Thanlwin Rivers sediments in the Andaman Sea and Bay of Bengal. *Marine Geology*. <https://doi.org/10.1016/j.margeo.2020.106137>.
- Tarpley, D.R., 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 (JMSE)*; 7: 334; doi:10.3390/jmse7100334.
- Kuehl, S.A., J. Williams, J.P. Liu, C. Harris, D.W. Aung, D. Tarpley, M. Goodwyn, and Y.Y. Aye. 2019. Sediment dispersal and accumulation off the Ayeyarwady delta – Tectonic and oceanographic controls. *Marine Geology*. 417: <https://doi.org/10.1016/j.margeo.2019.106000>
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#### 8.c. Edited volumes.

- 12th International Conference on Cohesive Sediment Transport in Gainesville, Florida, USA, 21–24 October, 2013. 2015. Topical Collection in *Ocean Dynamics*: Volume 65, various issues; Guest editors: L. Sanford (Managing editor), **C.K. Harris**, E. Haytor. Topical Collection on the; Papers published in 2015.
- Formation and preservation of sedimentary strata from coastal events: Insights from measurements and modeling. 2014. Special Issue of *Continental Shelf Research*: Volume 86; Guest editors: R. Corbett (Managing editor), **C.K. Harris**, A. Ogston, A. Orpin, J.P. Walsh.

#### 8.d. Articles published in non-refereed conference proceedings.

- Tarpley, D., K. Fall, C.K. Harris, C.T. Friedrichs*. Including cohesive sediment processes in the Community Sediment Transport Modeling System (CSTMS) for the York River estuary, Virginia. Poster presented at the Mid-Atlantic Bight Physical Oceanography Meeting (MABPOM), VIMS, Gloucester Point, VA, October, 2014.
- Moriarty, J.M., and C.K. Harris*. Resuspension and sediment bed oxygen consumption: developing and testing a coupled model. Poster presented at the Mid-Atlantic Bight Physical Oceanography Meeting (MABPOM), VIMS, Gloucester Point, VA, October, 2014.
- Harris, C.K.** Sediment dispersal in the western Adriatic: bed limits to resuspension. COMDELTA: Open Conference on COMparing Mediterranean and Black Sea ProDELTA. Aix-en-Provence, France, October, 2003.
- Harris, C.K.** Circulation in the Hudson shelf valley: interannual variability. Mid-Atlantic Bight Physical Oceanography Meeting (MABPOM). Old Dominion University, Norfolk, VA. October, 2002.
- Harris, C.K., D.E. Drake, and P.L. Wiberg**. Redistribution of sediment on the continental shelf off of the Eel River, northern California. Poster presented at the

- AGU Chapman Conference on the Formation of Sedimentary Strata on Continental Margins, Ponce, Puerto Rico. June, 2001.
- Buchholtz ten Brink, M.R., B. Butman, **C.K. Harris**, E.L. Mccray, and W.C. Schwab. Sediment dynamics and contaminant accumulation in New York Bight. Seventh Federal Interagency Sedimentation Conference, Reno, Nevada, 2:63—65. March, 2001.
- Geyer, W.R, **C.K. Harris**, and P. Traykovski. Three-dimensional modeling of sediment dispersal on the Eel River shelf during flood events. Poster presented at the Chapman Conference on the Formation of Sedimentary Strata on Continental Margins, Ponce, Puerto Rico. June, 2001.

8.e. Invited scholarly papers and talks

*Outside VIMS/SMS (Harris students and post-docs italicized)*

- Harris, C.K. 2020.** Source-to-sink sediment dispersal offshore of large deltas: Insights from numerical models for the Po, Mississippi, and Ayeyarwady Rivers. World Large River and Delta Systems Source-to-Sink Online Talk Series, organized by J.P. Liu, November 20, 2020.
- Harris, C.K.,** C.R. Sherwood, A. Aretxabaleta, and *D.R. Tarpley*. 2019. Cohesive and Mixed Sediment Transport Processes in ROMS, CSDMS (Community Surface Dynamics Modeling System), Fall 2019 Webinar Series, November 18, 2019.
- Harris, C.K.** 2019. Sediment transport in coastal environments: Advances in numerical modeling and applications to interdisciplinary problems. Asian Sedimentary Continuum: Toward a Global Perspective. Workshop held at Xiamen University, October 11 – 12, 2019. Xiamen, China.
- Harris, C.K.,** *D.J. Tarpley, and J.M. Moriarty*. 2019. Sediment transport models in estuarine settings and applications to interdisciplinary problems. Keynote speaker: Spring meeting of the Atlantic Estuarine Research Society (AERS), April 4 – 6, 2019, Woodbridge, VA.
- Harris, C.K.,** *M.J. Fair, and D.J. Tarpley*. 2019. Fate of riverine sediment in the northern Andaman Sea: Numerical modeling and water column observations. From Rivers to Ocean – An International Workshop on the Ayeyarwady Delta. University of Yangon, Yangon, Myanmar, January 15, 2019.
- Kuehl, S., J. Williams, J.P. Liu, D.W. Aung and **C.K. Harris**. 2019. Oceanographic and tectonic controls on sediment dispersal and carbon burial off the Ayeyarwady River. From Rivers to Ocean – An International Workshop on the Ayeyarwady Delta. University of Yangon, Yangon, Myanmar, January 15, 2019.
- Moriarty, J.M. C.K. Harris;* M.A.M. Friedrichs. 2018. Role of resuspension events on oxygen and nitrogen dynamics in coastal environments. *EOS, Transactions of the American Geophysical Union Fall Meeting Supplement*, Abstract B52B-01, EP24C-02, December 10 – 14, 2017, Washington, D.C.
- Harris, C.K.;** *D. Tarpley;* C.T. Friedrichs; K. Fall; G. Massey. 2017. Feedbacks between cohesive sediment processes and hydrodynamics in estuaries with a case study from the York River, Virginia. *EOS, Transactions of the American Geophysical Union Fall Meeting Supplement*, Abstract EP24C-02, December 11 – 15, 2017, New Orleans, LA.

- Harris, C.K.;** *J.M. Moriarty*; and C.T. Friedrichs. 2017. The role of particulate gravity currents on continental shelf sediment fluxes and fate for the Waipaoa shelf, New Zealand: a Numerical modeling study. UTAM / AMERIMECH Symposium on Gravity Currents. Santa Barbara, CA September 25 – 28, 2017.
- Harris, C.K.** Fate of Ayeyarwady and Than Lwin River sediment in the northern Andaman Sea: Numerical modeling plans. Yangon University, Department of Geology; Yangon, Myanmar; September 7, 2017.
- Harris, C.K.** Fate of Ayeyarwady and Than Lwin River sediment in the northern Andaman Sea: Numerical modeling plans. Mawlamyine University, Mawlamyine, Myanmar; September 9, 2017.
- Harris, C.K.;** T.A. Kniskern, and H. Arango. 2017. Delivery of sediment to the continental slope via plume transport and storm resuspension: numerical modeling for the northern Gulf of Mexico. Bureau of Ocean and Energy Management (BOEM) Information Transfer Meeting (ITM), Session on Applied Physical Sciences in the Gulf of Mexico Environment. New Orleans, LA, August 24, 2017.
- Harris, C.K.;** *J.M. Moriarty*; and *D. Tarpley*. 2017. Advances in community sediment transport models: Including cohesive processes and biogeochemistry. Geosciences Department Seminar; Virginia Tech, April 7, 2017, Blacksburg, VA.
- Syvitski, J.P., H. Arango, **C.K. Harris**, E.H. Meiburg, C.J. Jenkins, G. Auad, E. Hutton, T.A. Kniskern, and S. Radhakrishnan. 2016. From DNS to RANS: A multi-model workflow to understand the influence of hurricanes on generating turbidity currents in the Gulf of Mexico. *EOS, Transactions of the American Geophysical Union Fall Meeting Supplement*, Abstract 51C – 01, December 12 – 16, 2016, San Francisco, CA.
- Syvitski, J.P.M.; H.G. Arango, **C.K. Harris**, E.H. Meiburg, C.H. Jenkins, E.W.H. Hutton, G. Auad, F. Xing. 2016. Modeling of sediment transport in the Gulf of Mexico due to the influence of hurricanes. Keynote Speech delivered at the Second Conference on Forward Modelling of Sedimentary Systems from Desert to Deep Marine Depositional Systems. Sponsored by the European Association of Geoscientists and Engineers, April, 2016, Trondheim, Norway.
- Syvitski, J.P.M., H.G. Arango, **C.K. Harris**, E.H. Meiburg, C. Jenkins, E.W.H. Hutton, and G. Auad. 2015. Influence of hurricanes on generating turbidity currents in the Gulf of Mexico. Invited Keynote at the 2<sup>nd</sup> Xiamen Symposium on Marine Environmental Sciences Source to Sink Workshop, Jan 7-9, 2015, Xiamen China.
- Harris, C.K.** Sediment dynamics of the Waipaoa continental shelf, New Zealand: Insights from process studies. Institute for Marine Science (IMS), University of North Carolina, Chapel Hill. Morehead City, NC. November 6, 2014.
- Harris, C.K.** Sediment dynamics of the Waipaoa continental shelf, New Zealand: Insights from numerical models. Institute of Marine and Coastal Studies (IMCS), Rutgers University, New Brunswick, NJ. November 3, 2014.
- Harris, C.K.** Regional Ocean Modeling System (ROMS) for the non-specialist (ROMS – LITE). Clinic Speaker at Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting, University of Colorado, Boulder, CO, May, 2014.



- Harris, C.K.** Sediment model update: Coupling sediment transport and biogeochemistry for the Mechanisms Controlling Hypoxia project. Mechanisms Controlling Hypoxia (MCH) PI Meeting, Gloucester Point, VA, September, 2013.
- Harris, C.K.** Linking sediment transport processes and biogeochemistry with application to the Louisiana continental shelf. Keynote Speaker at Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting, University of Colorado, Boulder, CO, March, 2013.
- Harris, C.K.** Recent enhancements to sediment transport models: adding geochemistry and temporal changes to sediment erodibility. Department of Marine, Earth & Atmospheric Sciences Seminar, North Carolina State University, Raleigh, N.C., October, 2012.
- Harris, C.K.** Recent enhancements to sediment transport models: adding geochemistry and temporal changes to sediment erodibility. Department of Oceanography Seminar, Dalhousie University, Halifax, Nova Scotia, April, 2012.
- Harris, C.K.** Sediment modeling for Mechanisms Controlling Hypoxia (MCH). MCH All-Hands Meeting, College Station, Texas, January, 2012.
- Harris, C.K., H. Arango, J. Syvitski, E. Meiburg.** Shelf-slope sediment exchange in the northern Gulf of Mexico: Application of numerical models for extreme events. Post-Award Meeting, Bureau of Ocean and Energy Management (BOEM), Herndon, VA, September 30, 2011.
- Harris, C.K.** Coupling sediment transport and biological processes within a numerical ocean model. Gordon Research Conference on Ocean Modeling. June 26 – July 1, 2011, Mount Holyoke College, MA.
- Harris, C.K.** Linking sediment processes and biogeochemistry within the Regional Ocean Modeling System. SURA Testbed Shelf Hypoxia Face-to-Face Meeting, March 3-4, 2011, Washington, DC.
- Harris, C.K.** Sediment dispersal offshore of small mountainous rivers: Insights from numerical models. Source to sink: Triggers on the inner shelf. Invited talk presented at the AGU Chapman Conference on Source to Sink Systems around the World and Through Time, Oxnard, CA, January 24 – 27, 2011.
- Harris, C.K., C. Friedrichs, J.P. Rinehimer, and C.R. Sherwood.** Sediment trapping and effective settling velocity in a partially mixed estuary: a modeling study of the York River estuary, Virginia. Invited, *EOS, Transactions of the American Geophysical Union Ocean Sciences Meeting Supplement*, Abstract GO33A-07, February 24, 2010, Portland, OR.
- Harris, C.K., J.P. Rinehimer, and C.R. Sherwood.** Erodibility and sediment trapping in a partially mixed estuary: a modeling study of the York River estuary, Virginia. Invited seminar, Old Dominion University, Department of Ocean, Earth & Atmospheric Sciences, October, 8 2009.
- Harris, C.K. and K. Xu.** Numerical modeling for MCH: Linking sediment to transport and biogeochemistry in the Northern Gulf of Mexico. Mechanisms Controlling Hypoxia (MCH) All-Hands Meeting, College Station, TX, May, 2009.
- Harris, C.K. and K. Xu.** Northern Gulf of Mexico: Linking sediment and biological processes within the Regional Ocean Modeling System (ROMS). Invited talk presented at the ROMS User Group Meeting, Sydney, Australia, April, 2009.

- Harris, C.K.** Sediment transport offshore of the North Island, New Zealand: Coherence, suspensions, and gravity flows. Invited talk presented at the Margins Source-to-Sink Synthesis and Integration Workshop, Gisborne, NZ, April, 2009.
- Harris, C.K.,** C.R. Sherwood, R.P. Signell, *A.J. Bever*, and J.C. Warner. ROMS / CSTMS Used to Study Sediment Dispersal in the Northwestern Adriatic Sea. Invited talk to the Community Sediment Transport Modeling, Applications Working Group. Woods Hole, MA, February 11, 2009 (via WebEX).
- Harris, C.K.** Sediment bed limits to erosion: non-cohesive sediments. Invited talk at the meeting of the Community Sediment Transport Modeling committee, Woods Hole, MA, May 22, 2007.
- Harris, C.K.** Sediment dispersal and deposition in the Adriatic Sea: numerical model results and comparison to field data. Invited talk to Office of Naval Research Progress Review: Southeast Region, Tallahassee, FL May 3, 2007.
- Harris, C.K.** Sediment dispersal and deposition in the Adriatic Sea: numerical model results and comparison to field data. Invited seminar to East Carolina University, February 16, 2007.
- Harris, C.K.** Sediment dispersal and deposition in the Adriatic Sea: numerical model results and comparison to field data. Invited seminar to the Texas A&M University Oceanography Department, College Station TX, February 2, 2007.
- Harris, C.K.** Processes controlling sediment transport in the coastal ocean. Invited seminar to the Texas A&M University Oceanography Department, College Station, TX, February 1, 2007.
- Harris, C.K.** Processes controlling sediment transport in the coastal ocean. Invited seminar to the Texas A&M University Marine Studies Department, Galveston, TX, January 31, 2007.
- Harris, C.K.** Sediment dispersal and deposition in the Adriatic Sea: numerical model results and comparison to field data. Invited seminar to Institute of Marine and Coastal Studies (IMCS), Rutgers University, New Brunswick, NJ. October 9, 2006.
- Harris, C.K.** Sediment Dispersal and Trapping in Poverty Bay, New Zealand over Multiple Timescales. Invited talk presented at the Margins Source-to-Sink Theoretical and Experimental Institute (TEI), northern California, September, 2006.
- Harris, C.K.** Three-dimensional numerical modeling of sediment dispersal in the Adriatic Sea. Seminar presented to the High Performance Computing Group, College of William and Mary. Williamsburg, VA. November, 2005.
- Harris, C.K.** Dispersal of fluvial sediment in the Adriatic Sea. Seminar presented to the Center for Coastal Physical Oceanography, Old Dominion University, Norfolk, VA. March, 2005.
- Harris, C.K.** Models, measurements and mud: geological and physical oceanography in the coastal ocean. Eastern Regional Meeting of the National Science Teachers' Association, Richmond, VA, December, 2004.
- Harris, C.K.** Flood dispersal and deposition on the northern California shelf by near-bed sediment flows and oceanographic transport. Seminar presented to the Louisiana State University Department of Oceanography and Coastal Sciences, Baton Rouge, LA, November, 2004.

- Harris, C.K.** Quantifying sediment dispersal: examples from northern California and the Adriatic Sea. Office of Naval Research Site Visit, St. Petersburg, Florida, April, 2004.
- Harris, C.K.** Sediment redistribution and seabed modifications in the western Adriatic. Naval Research Laboratory Seminar, Monterey, CA, March, 2003.
- Harris, C.K.** Contaminant transport offshore of New York / New Jersey: mud, models and measurements. University of Virginia, Department of Environmental Sciences Undergraduate Seminar Series. Charlottesville, VA. November, 2002.
- Harris, C.K., B. Butman, and P. Traykovski.** Winter-time sediment transport in the Hudson shelf valley. North Carolina State University Department of Marine, Environmental, and Atmospheric Sciences (MEAS) Seminar. Raleigh, NC. March, 2002.
- Harris, C.K.** NOPP / USGS Coastal Community Sediment-Transport Model: Report to the NSF Margins Source-to-Sink Community Sediment Modeling Workshop. Boulder, CO. February, 2002.
- Harris, C.K., W.R. Geyer, and P. Traykovski.** Flood layer formation on the northern California shelf by near-bed gravitational sediment flows and oceanographic transport. *EOS, Transactions, American Geophysical Union, 83(4):* Ocean Sciences Meeting Supplement, Abstract *OS22K-02*. Invited. Honolulu, HI. February, 2002.
- Harris, C.K.** Winter-time sediment transport in the Hudson shelf valley. Rutgers University, Institute of Marine and Coastal Sciences Seminar. East Brunswick, NJ. November, 2001.
- Harris, C.K.** Flood layer formation on the northern California shelf: oceanographic transport and near-bed gravitational flows. University of Maryland Center for Environmental Science, Horn Point Laboratory Seminar. Cambridge, MD. October, 2001.
- Harris, C.K.** Sediment transport in the vicinity of the Hudson shelf valley. Department Seminar, Department of Geological Sciences, University of South Carolina, Columbia, SC. February, 2000.
- Harris, C.K.** Sediment reworking on shelves: the importance of sediment availability and waves. *Presented at:* Coastal Ocean Fluid Dynamics Lab Seminar, Woods Hole Oceanographic Institute, Woods Hole, MA. October, 1999. Department Seminar, Department of Geological Sciences, University of South Carolina, Columbia, SC, November, 1999. Department Seminar, Geology Department, Boston College, Boston, MA, December, 1999.
- Harris, C.K.** Circulation and sediment transport in the vicinity of the Hudson shelf valley. U.S. Geological Survey, Woods Hole Field Center Branch Meeting. Woods Hole, MA. December, 1999.
- Harris, C.K.** The importance of advection and flux divergence in the transport and redistribution of continental shelf sediments. *Presented at:* Department Seminar, Department of Environmental Sciences, University of Virginia, Charlottesville, VA. April, 1998. Branch seminar; US Geological Survey Woods. Menlo Park, CA. June, 1998. Branch seminar; US Geological Survey Woods Hole Field Center, Woods Hole, MA. June, 1998.

Wiberg, P.L. and **C.K. Harris**. Bed reworking and p,p'-DDE desorption during resuspension events on the Palos Verdes shelf: a modeling approach. *EOS, Transactions of American Geophysical Union*. 76(3):OS37. Invited. AGU/ASLO Ocean Sciences Meeting, San Diego, CA. February 1996.

*Within VIMS / SMS (Harris students and post-docs italicized)*

*Aitoro, E.* and **C.K. Harris**. 2021. Sediment Induced Stratification in the Northern Gulf of Mexico. Department of Physical Sciences Seminar, March 25, 2021.

*Fair, M.J.*, and **C.K. Harris**. 2020. Spatial variability of oceanographic energy and sediment dispersal / trapping on the Ayeyarwady continental shelf. Department of Physical Sciences Seminar, March 26, 2020.

*Cui, L.*, and **C.K. Harris**, *E. Aitoro*, *W.-J. Cai*, and *K. Maiti*. 2020. Numerical modeling of the impact of sediment driven processes on bottom water chemistry over the Louisiana continental shelf. Department of Physical Sciences Seminar, February 27, 2020.

*Kuehl, S.* and **C.K. Harris**. 2019. Amazing adventure on the Ayeyarwady: First peek at the world's last unstudied major river delta. Department of Physical Sciences Seminar. February 21, 2019.

**Tarpley, D.T.**, *C.K. Harris*, and *C.T. Friedrichs*, 2018. Controls on suspended particle properties and water clarity along a partially-mixed estuary, York River, Virginia. Department of Physical Sciences Seminar. February 22, 2018.

**Harris, C.K.**; *J.M. Moriarty*; and *C.T. Friedrichs*. 2017. The role of particulate gravity currents on continental shelf sediment fluxes and fate for the Waipaoa shelf, New Zealand: a Numerical modeling study. Department of Physical Sciences Seminar. November 16, 2017.

**Harris, C.K.**; *J.M. Moriarty*; and *D. Tarpley*. 2017. Advances in community sediment transport models: Including cohesive processes and biogeochemistry. Department of Physical Sciences Seminar. April 6, 2017.

**Harris, C.K.** Coupling sediment transport and biogeochemistry within the Community Sediment Transport Modeling System. Department of Physical Sciences Seminar. September 5, 2013.

**Harris, C.K.** Efforts to couple sediment transport and biological processes within a numerical ocean model. Department of Physical Sciences Seminar. September 15, 2011.

**Harris, C.K.** Mud and models in the coastal ocean: Why, what, and how? Seminar Series for the Research Experience for Undergraduates (REU) Summer Internship Program (SIP). July, 2011.

**Harris, C.K.**, *J.J. Birchler*, *J.P. Rinehimer*, *C.R. Sherwood*, and *L. Sanford*. Sediment transport models: putting sediment into biology, and biology into sediment. Chesapeake Bay Modeling Forum, VIMS, Gloucester Point, VA. May, 2011.

**Harris, C.K.**, *J.P. Rinehimer*, and *C.R. Sherwood*. Erodibility and sediment trapping in a partially mixed estuary: a modeling study of the York River estuary, Virginia. Department of Physical Sciences Seminar, VIMS, Gloucester Point, VA. October, 2009.

- Harris, C.K.** Mud, Measurements, and Models: Sediment Transport in the Coastal Ocean. VIMS Eastern Shore Lab (ESL) Public Lecture Series Wachapreague, VA. December, 2007
- Harris, C.K.** Mud, Measurements, and Models: Sediment Transport in the Coastal Ocean. Department of Physical Sciences Seminar, VIMS, Gloucester Point, VA. December, 2007.
- Harris, C.K.** and J.E. McNinch. Sediment dispersal and trapping in Poverty Bay, New Zealand over multiple timescales. Department of Physical Sciences Seminar, VIMS, Gloucester Point, VA. October, 2006
- Harris, C.K.** Dispersal of fluvial sediment in the Adriatic Sea. Department of Physical Sciences Seminar, VIMS, Gloucester Point, VA. April, 2005.
- Harris, C.K.** Sources and dispersal of sediment in the western Adriatic. Department of Physical Sciences Seminar, VIMS, Gloucester Point, VA. April, 2003.
- Harris, C.K.** Mud, models, and measurements: Continental shelf sediment transport. Seminar Series for the Research Experience for Undergraduates (REU) Summer Internship Program (SIP). June, 2003.
- Harris, C.K.** Winter-time sediment transport in the Hudson shelf valley. Department of Physical Sciences Seminar, VIMS, Gloucester Point, VA. September, 2001.
- Harris, C.K.** Feedbacks between sediment resuspension and seabed texture on continental shelves. Virginia Institute of Marine Science Seminar. Gloucester Point, VA. April, 2000.

8.f. Contributed scholarly papers and talks. (Harris students and post-docs italicized)

- Tarpley, D.T., C.K. Harris, and C.T. Friedrichs.* 2020. Processes impacting floc size over a tidal cycle in a partially-mixed, idealized estuary: a numerical study. Talk presented at the Chesapeake Research Symposium, virtual meeting, June 8, 2020.
- Cui, L., Harris, C.K., and D.R. Tarpley.* 2020. Formation and fate of oil particle aggregates in the Gulf of Mexico continental shelf: Numerical modeling. Gulf of Mexico Oil Spill and Ecosystem Science (GoMOSES) Conference, Tampa, Florida, February 5, 2020.
- Morey, S., E. Chassignet, D. Dukhovskoy, C.K. Harris, V. Coles, M. Stukel, R. Hetland, K. Thyng, T-J. Hsu, A. Manning, O. Mason, L. Ye, L. Cui, J. Chen and J. Wang.* 2020. A coupled modeling system for simulating oil-biological-sediment interactions in the ocean. Gulf of Mexico Oil Spill and Ecosystem Science (GoMOSES) Conference, Tampa, Florida, February 5, 2020.
- Chang, J., G.-H. Lee, C.K. Harris, Y. Song.* 2020. Investigation of sediment transport mechanism in the Anthropocene Nakdong Estuary using ROMS. Abstract OS12-A009 at the 17th Annual Meeting of the Asian Oceania Geoscience Association (AOGS), June 28 – July 4, 2020, Hongchoen, South Korea. (Meeting Cancelled because of Covid Pandemic).
- Fair, M.J., C.K. Harris.* 2019. Tidal and wave spatial variability in the Andaman Sea and Gulf of Martaban: Numerical modeling results. Poster presented at the Asian Sedimentary Continuum: Toward a Global Perspective. Workshop held at Xiamen University, October 11 – 12, 2019. Xiamen, China. 2019.
- Cui, L., C.K. Harris, and D.R. Tarpley.* 2019. Estimating the impact of oil on flocculation processes with a new parameterized sediment model. Poster

- presented at the Community Surface Dynamics Modeling System (CSDMS) All – Hands Meeting, Boulder, CO, May, 2019.
- Fair, M.J., C.K. Harris.* 2019. Waves on the Irrawaddy and Martaban continental shelf: preliminary results from a numerical model. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All – Hands Meeting, Boulder, CO, May, 2019.
- Harris, C.K., D.R. Tarpley,** 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 and Ecosystem Science (GoMOSES) Conference, New Orleans, LA, February 6, 2019.
- Morey, S., E. Chassignet, D. Dukhovskoy, M. Stukel, O. Mason, **C.K. Harris,** V. Coles, R. Hetland, K. Thyng, T-J. Hsu, L. Ye, and A. Manning. 2019. Development of a coupled modeling system for simulating oil-microbial-sediment interactions in the ocean. Gulf of Mexico Oil Spill and Ecosystem Science (GoMOSES) Conference, New Orleans, LA, February 6, 2019.
- Fair, M.J., C.K. Harris,* and *D.R. Tarpley.* 2019. Waves on the Irrawaddy and Martaban continental shelf: preliminary results from a numerical model. Poster presented at From Rivers to Ocean – An International Workshop on the Ayeyarwady Delta. University of Yangon, Yangon, Myanmar, January 15, 2019.
- Harris, C.K.** 2019. Roundtable discussion of marine geology curricula at Myanmar Universities with examples from University of Washington, North Carolina State University, and Virginia Institute of Marine Science. An International Workshop on the Ayeyarwady Delta; University of Yangon, Myanmar, January 15, 2019.
- Harris, C.K.** 2019. Numerical modeling approaches for sediment transport studies, Part 1: Introduction to sediment models. Lecture presented at From Rivers to Ocean – An International Workshop on the Ayeyarwady Delta; University of Yangon, Myanmar, January 16, 2019.
- Harris, C.K.** 2019. Numerical modeling approaches for sediment transport studies, Part 2: Case studies. Lecture presented at From Rivers to Ocean – An International Workshop on the Ayeyarwady Delta; University of Yangon, Myanmar, January 16, 2019.
- Harris, C.K.** 2019. Observational techniques in coastal and marine sediment transport. Lecture presented at From Rivers to Ocean – An International Workshop on the Ayeyarwady Delta; University of Yangon, Myanmar, January 17, 2019.
- Tarpley, D.T., C.K. Harris,* and C.T. Friedrichs. 2018. Temporal variability in sediment suspension and sediment-induced stratification related to freshwater discharge in the York River estuary, Virginia, USA. Talk presented at the Chesapeake Community Research and Modeling Symposium, Annapolis, MD, June 14, 2018.
- Moriarty, J.M., M.A.M. Friedrichs,* and **C.K. Harris\***. 2018. Effects of seabed resuspension on primary productivity and remineralization in Chesapeake Bay. Talk presented at the Chesapeake Community Research and Modeling Symposium, Annapolis, MD, June 14, 2018. (\*presenting author).
- Birchler, J.J., C.K. Harris\*,* T.A. Kniskern, and C.R. Sherwood. 2018. Numerical model of geochronological tracers for deposition and reworking applied to the Mississippi subaqueous delta. International Coastal Symposium, Busan, Republic of Korea, May 16, 2018. (\*presenting author).

- Chang, J., G.-H. Lee, C.K. Harris. 2018, ROMS study on increased sedimentation in the altered Nakdong estuary. Abstract OS08-A019 at the at the 15th Annual Meeting of the Asian Oceana Geoscience Association (AOGS), July 28 – August 2, 2018, Singapore.
- Cho, J., J. Chang, **C.K. Harris**, and G.-h. Lee. 2018. Comparison of ROMS and EFDC sediment transport models of the altered Nakdong River Estuary, Korea. Poster presented at the International Coastal Symposium, May 16, 2018, Busan, Republic of Korea.
- Harris, C.K. and *D.R. Tarpley*. Using available numerical modeling data to explore the fate of riverine sediment in the northern Andaman Sea. Workshop presented to visiting delegation of scientists from University of Yangon, and Mawlamyine University, Myanmar. April 30, 2018.
- Harris, C.K. Computer analysis introduction. Workshop presented on three days to visiting delegation of scientists from University of Yangon, and Mawlamyine University, Myanmar. April 30 – May 2, 2018.
- Sherwood, C.R., A.L. Aretxabaleta, **C.K. Harris**, *J.P. Rinehimer*, and R. Verney. Cohesive and mixed sediment in the Regional Ocean Modeling System (ROMS). Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2017.
- Tarpley, D.R.N.*, **C.K. Harris**, C.T. Friedrichs, and C.R. Sherwood. Flocculation and bed consolidation in a partially-mixed estuary: an idealized numerical sediment transport model. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2017.
- Harris, C.K.**, *J.J. Birchler*, and T.A. Kniskern. Radioisotopic tracers within a sediment transport model: exploration of test cases. Chesapeake Modeling Symposium, 2016 (ChesMS16). June 1 – 2, 2016, Williamsburg, VA.
- Moriarty, J.M.*, **C.K. Harris**, and M.A.M. Friedrichs. The roles of resuspension and redistribution on nutrient cycling in coastal environments: Results from a coupled hydrodynamic – sediment transport – biogeochemical numerical model. Chesapeake Modeling Symposium, 2016 (ChesMS16). June 1 – 2, 2016, Williamsburg, VA.
- Tarpley, D.*, **C.K. Harris**, and C.T. Friedrichs. Comparison of modeled and observed patterns of bed erodibility in the York River estuary, Virginia, over varying time scales. Chesapeake Modeling Symposium, 2016 (ChesMS16). June 1 – 2, 2016, Williamsburg, VA.
- Kniskern, T.A.*, **C.K. Harris**, H. Arango. Delivery of sediment to the continental slope via plume delivery and storm resuspension: Numerical modeling for the northern Gulf of Mexico. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2016.
- Moriarty, J.M.*, **C.K. Harris** and M.A.M. Friedrichs. The roles of resuspension and redistribution on nutrient cycling in the northern Gulf of Mexico: Results from a coupled hydrodynamic-sediment transport – biogeochemical numerical model. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2016.
- Tarpley, D.*, **C.K. Harris**, and C.T. Friedrichs. Consolidation and stratification within a muddy, partially mixed estuary: A comparison between idealized and realistic

- models for sediment transport in the York River Estuary, Virginia. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2016.
- Tarpley, D., C.K. Harris, and C.T. Friedrichs.* Examining spring-neap cycle variation in bed erodibility in the York River estuary, VA: a numerical study. York River Research Symposium. Gloucester Point, VA. March 30, 2016.
- Moriarty, J.M. and C.K. Harris.* Seabed resuspension and biogeochemistry: A coupled model for seabed-water column fluxes in coastal environments. Virginia Institute of Marine Science 75<sup>th</sup> Anniversary Symposium. Gloucester Point, VA. October 10, 2015.
- Moriarty, J.M. and C.K. Harris.* Resuspension and sediment oxygen consumption: Developing and testing a coupled model. Gordon Research Conference on Coastal Ocean Modeling; Biddeford, ME; June 7 – 12, 2015. (Poster was one of four recognized with "*Gordon Research Conferences [in] Coastal Ocean Modeling recognize the outstanding poster presentation by Julia Moriarty to the furtherance of knowledge on the frontiers of science*".)
- Kniskern, T.A., C.K. Harris, H. Arango and D.R. Forrest.* Storm-driven delivery of sediment to the continental slope: Numerical modeling for the northern Gulf of Mexico. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2015.
- Rosing, S.A., C.J. Bjerrum, K. Anderskov, C.K. Harris.* Sediment deposition in the Cretaceous North Sea. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2015.
- Tarpley, D., C.K. Harris, C.T. Friedrichs, and K.A. Fall.* Including fine – grained sediment processes within numerical representations of a partially – mixed estuary, the York River, Virginia, USA. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2015.
- Harris, C.K.** Idealized ROMS test cases for coupling within the Community Surface Dynamics Modeling System. Talk presented at the ChesMS14 (Chesapeake Modeling Symposium, 2014); Annapolis, MD; May 28, 2014.
- Kniskern, T.A., C.K. Harris, and J.J. Birchler.* Advances in sediment-transport modeling offshore of a fluvial source. Poster presented at the ChesMS14 (Chesapeake Modeling Symposium, 2014); Annapolis, MD; May 28, 2014.
- Moriarty, J.M., C.K. Harris, C. Rabouille, F. Toussaint.* Resuspension and Sediment Bed Oxygen Consumption: Developing and Testing a Coupled Model. Talk presented at the ChesMS14 (Chesapeake Modeling Symposium, 2014); Annapolis, MD; May 28, 2014.
- Kniskern, T.A., C.K. Harris, and J.J. Birchler.* Advances in sediment-transport modeling offshore of a fluvial source. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2014.
- Moriarty, J.M., C.K. Harris, C.T. Friedrichs, and M.G. Hadfield.* Buoyant and gravity-driven transport on the Waipaoa Shelf. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting; Boulder, CO; May 2014.



- Harris, C.K.** Coupling sediment transport and biogeochemistry within the Community Sediment Transport Modeling System. Talk presented at “Linking Hydrodynamic and Ecological Models in Estuaries: a Workshop to Discuss Recent Advances and Approaches; Woods Hole, MA; September 10 – 11, 2013.
- Harris, C.K., J.P. Rinehimer,** and C.R. Sherwood. Feedback between sediment trapping and erodibility in a partially mixed estuary: A three-dimensional coupled sediment – hydrodynamic model for the York River, VA. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting, Boulder, CO, October 29, 2011.
- Harris, C.K., J.J. Birchler, J.P. Rinehimer,** C.R. Sherwood, and L. Sanford. Sediment transport models: putting sediment into biology, and biology into sediment. Poster presented at the Chesapeake Hydrodynamic Workshop, Edgewater, MD, June 9 – 10, 2011.
- Bever, A.J.* and **C.K. Harris.** The influence of the geometry of Poverty Bay on sediment deposition, dispersal, and sorting within the Waipaoa Sedimentary System, New Zealand: numerical model investigations comparing present-day, 2 kya, and 7 kya configurations. Poster presented at the AGU Chapman Conference on Source to Sink Systems around the World and Through Time, Oxnard, CA, January 24 – 27, 2011.
- Moriarty, J.M.* and **C.K. Harris.** Wave- and Current- Induced Bed Stress on the Waipaoa Shelf, New Zealand: Variations in Time and Space. Poster presented at the AGU Chapman Conference on Source to Sink Systems around the World and Through Time, Oxnard, CA, January 24 – 27, 2011.
- Bever, A.J., C.K. Harris,* and J. Swenson. Dispersal basin geometry influences sediment deposition, shoreline progradation rates, and grain size segregation: A case study of Poverty Bay, New Zealand. AAPG Annual Convention and Exhibition; New Orleans, LA, April 11 – 14, 2010 .
- Bever, A.J.* and **C.K. Harris.** Variations in sediment-transport between different dispersal basin geometries: A case study of Poverty Bay, New Zealand. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting, San Antonio, TX, October 14 – 17, 2010.
- Harris, C.K., K. Xu, C. Sherwood, K. Fennel, R. Hetland.** Coupling sediment dynamics and biogeochemical models within ROMS with application to the Louisiana – Texas shelf. Poster presented at the Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting, San Antonio, TX, October 14 – 17, 2010.
- Harris, C.K., J.P. Rinehimer, C. Sherwood,** and L. Sanford. Representation of mud within a three-dimensional hydrodynamic and sediment model for the York River. Chesapeake Modeling Symposium 2010, Annapolis, MD, May 10 – 11, 2010.
- Bever, A.J, C.K. Harris* and J.E. McNinch. Integrating space- and time-scales for sediment transport for Poverty Bay, New Zealand and the nearfield continental shelf. Poster presented at the Margins Source-to-Sink Synthesis and Integration Workshop, Gisborne, NZ, April, 2009.
- Bever, A.J,* and **C.K. Harris.** Integrating space- and time-scales for sediment transport for Poverty Bay, New Zealand and the nearfield continental shelf. Poster presented at the ROMS User Group Meeting, Sydney, Australia, April, 2009.

- Harris, C.K.** and A.J. Bever. Representation of near-bed sediment gravity flows within the Regional Ocean Modeling System (ROMS). Poster presented at the ROMS / TOMS User Group Workshop, Los Angeles, CA, October, 2007.
- Harris, C.K., A. Bever, C.R. Sherwood, and R.P. Signell.** Sediment resuspension in the Adriatic Sea: sensitivity of model calculations to sediment bed properties. Poster presented at the EuroSTRATAFORM Annual Meeting, Salamanca, Spain, October, 2005.
- Sherwood, C.R., **C.K. Harris**, A. Ogston, R.P. Signell, J.C. Warner, R.A. Wheatcroft, and P.L. Wiberg. Sediment Transport along the Apennine margin. Presented at the EuroSTRATAFORM Annual Meeting, Salamanca, Spain, October, 2005.
- Harris, C.K., P. Traykovski, and W.R. Geyer.** Flood layer formation on the northern California shelf by near-bed gravitational flows and oceanographic transport. Poster presented at *Sediment transport and accumulation on continental margins: A Tribute to Dr. Richard W. Sternberg*. September, 2004. Friday Harbor, Washington.
- Harris, C.K., C.R. Sherwood, A. Bever, and R.P. Signell.** Sediment dispersal mechanisms within the Adriatic Sea: recent advances from the EuroStrataform Program. ADRIA02/03 Meeting, Venice, Italy, June, 2004.
- Harris, C.K.** Sediment Dispersal in the Western Adriatic: Bed Limits to Resuspension. Plenary Session at the ComDELTA Meeting, Aix en Provence, France, October, 2003.
- Harris, C.K.** Dispersal of sediment in the western Adriatic: fall of 2002. Coastal Ocean Fluid Dynamics Lab Seminar, Woods Hole Oceanographic Institute, Woods Hole, MA. August, 2003.
- Harris, C.K.** Dispersal of Po River sediment in the western Adriatic: three-dimensional transport model. Plenary Session at the Annual Meeting of EuroSTRATAFORM, PROMESS, and EuroDelta programs. Winchester, U.K. September, 2002.
- Harris, C.K.** Sediment redistribution and seabed modifications in the western Adriatic with lessons from northern California. ADRIA02/03 Meeting. La Spezia, Italy. April, 2002.
- Harris, C.K.** Sediment transport and circulation near the Hudson shelf valley: winter 2000 field experiment. Coastal Ocean Fluid Dynamics Lab Seminar. Woods Hole Oceanographic Institute, Woods Hole, MA. January, 2001.
- 8.j. Unrefereed publications not listed above. (Harris students, post-docs italicized)  
 Dukhovskoy, D., **C. Harris**, L. Cui, V. Coles, J. Wang, X. Chen, S. Morey, E. Chassignet, K. Thyng and R. Hetland. 2021. Dataset for: Development of the CSOMIO coupled ocean-oil-sediment-biology model. Distributed by: Gulf of Mexico Research Initiative Information and Data Cooperative (GRIIDC), Harte Research Institute, Texas A&M University–Corpus Christi.  
<https://doi.org/10.7266/JYQJVN6N>.
- Kuehl, S. and **C.K. Harris**. 2020. Fate of Ayeyarwady and Thanlwin River sediment: relative importance of oceanographic and tectonic controls - Associated dataset". William & Mary. <https://doi.org/10.25773/g7zk-sg96>.

- Moriarty, J.*; M.A.M. Friedrichs; and **C.K. Harris**. 2020. A model archive for a coupled hydrodynamic-sediment transport-biogeochemistry model for the Chesapeake Bay, USA. <https://doi.org/10.25773/hamz-zc50>.
- Tarpley, D.R.N.*, **C.K. Harris**, and C. Friedrichs. 2019. A model archive for simulations in a partially-mixed idealized estuary using the COAWST system: Model code and output). <https://doi.org/10.25773/86rw-6393>.
- Moriarty, J.M.*, C.K. Harris, M.A.M. Friedrichs, K. Fennel, and K. Xu. 2018. A model archive for a coupled hydrodynamic-sediment transport-biogeochemistry model for the northern Gulf of Mexico, USA. <https://doi.org/10.21220/rb78-k115>.
- Birchler, J.J.*, **C.K. Harris**, and T.A. Kniskern, 2018. A model archive for a numerical model of geochronological tracers for sediment deposition and reworking applied to the Mississippi subaqueous delta. Virginia Institute of Marine Science, College of William and Mary. <https://doi.org/10.21220/V5D45C>.
- Moriarty, J. M.*, **C.K. Harris**, K. Fennel, K. Xu, C. Rabouille, and M.A.M. Friedrichs, 2017. A model archive for a coupled hydrodynamic-sediment transport-biogeochemistry model for the Rhône River sub-aqueous delta, France. Virginia Institute of Marine Science, College of William and Mary. <https://doi.org/10.21220/V53P4Q>.
- Moriarty, J.*, **C.K. Harris**, and M.G. Hadfield, 2016. A hydrodynamic – sediment transport numerical model for the Waipaoa shelf, New Zealand: Model archive. Virginia Institute of Marine Science, College of William & Mary. <http://doi.org/10.21220/V5159T>.
- Walsh, J.P, D.R. Corbett, **C.K. Harris**, A.S. Ogston, and A.R. Orpin, 2015. Sediment gravity flows and variability in sedimentation: Key insights from the Waipoa River continental shelf (New Zealand). *GeoPrism Science Nugget, National Science Foundation*.
- Harris, C.K.**, *J.P. Rinehimer*, and S.-C. Kim. 2010. Representation of Bed Stresses within a Model of Chesapeake Bay. *Special Report in Applied Marine Science and Ocean Engineering, No. 424*. Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, Virginia.
- Harris, C.K.**, C.R. Sherwood, R.P. Signell, *A.J. Bever*, and J.C. Warner. 2009. ROMS / CSTMS Used to Study Sediment Dispersal in the Northwestern Adriatic Sea. Contribution to the Community Sediment Transport Modeling, Applications Working Group WIKI. ([www.cstms.org](http://www.cstms.org)).
- Butman, B., P.S. Alexander, **C.K. Harris**, P.A. Traykovski, M.B. tenBrink, F.S. Lightsom, and M.A. Martini. 2002. Oceanographic Observations in the Hudson Shelf Valley, December 1999 – April, 2000: Data Report. *U.S. Geological Survey Open File Report 02-217*.
- 8.k. Research reports from grants or contract work. (*Harris students italicized*)
- Harris, C.K.** and C.T. Friedrichs. 2021. Final Report for “Interactions of Estuarine Physics, Sediment, and Organic Matter in Determining Suspended Particle Properties, Their Spatial and Temporal Distribution, and Resulting Water Clarity”, Project OCE- 1459708, National Science Foundation, 24 pp.
- Blumberg, A.F., S.C. Chapra, and **C.K. Harris**. 2017. Newtown Creek LTCP and preliminary superfund modeling peer – review panel final report. Submitted to

- the New York City Department of Environmental Protection Long Term CSO Control Plan (LTCP). June 28, 2017. 12 pp.
- DiMarco, S.F., with contributions from others, including R. Hetland, K. Fennel, **C.K. Harris**. 2017. NGOMEX 2009: Mechanisms controlling hypoxia on the Louisiana shelf: Integrated causal modeling. Final report submitted to National Oceanic and Atmospheric Administration (NOAA), Grant number NA09NOS4780208. 180 pp.
- Callaway, J., S. Hagan, **C. Harris**, W. Kimmerer, and M. Waldon. 2016. Predictive Models Technical Advisory Committee (PM-TAC) Final Report. Submitted to the Modeling Decision Team, Louisiana Coastal Protection and Restoration Authority and the Water Institute of the Gulf. 19 pp.
- Arango, H.G., D.J. Robertson, **C.K. Harris**, *J.J. Birchler*, T.A. Kniskern, J.P.M. Syvitski, C.J. Jenkins, E. Hutton, E. H. Meiburg, and S. Radhakrishnan. 2016. Final Report: Shelf – slope sediment exchange in the northern Gulf of Mexico: Application of numerical models for extreme events. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Headquarters, Sterling, VA. OCS Study BOEM 2016-038. 116 pp.
- Arango, H.G., D.J. Robertson, **C.K. Harris**, *J.J. Birchler*, T.A. Kniskern, J.P.M. Syvitski, C.J. Jenkins, E. Hutton, E. H. Meiburg, and S. Radhakrishnan. 2016. Technical Summary: Shelf – slope sediment exchange in the northern Gulf of Mexico: Application of numerical models for extreme events. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Headquarters, Sterling, VA. OCS Study BOEM 2016-038. 4 pp.
- Arango, H., **C.K. Harris**, J. Syvitski, and E. Meiberg. 2012 – 2014. Mid-term reports: Shelf – slope sediment exchange in the northern Gulf of Mexico: Application of numerical models for extreme events. Reports to BOEM (Bureau of Ocean Energy Management), April, 2012; September, 2012, April, 2013, September, 2013; April, 2014; October, 2014.
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- Harris, C.K.** 2007. Comparison of present day and historical dispersal patterns in the western Adriatic. Final report to the Office of Naval Research for Award Number N00014-04-1-0378.
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8.n. Work in progress or submitted: (*Harris students and post-docs italicized*):

Marshall, N.R., S.A. Kuehl, **C.K. Harris**, E.J. Miller, T.M. Dellapenna. In Prep. Seasonal wave-induced shelf sediment resuspension and sedimentation at Hinchinbrook Entrance, Alaska. Submission planned to *Continental Shelf Research*.

8.o. Other scholarly activity, including papers presented at professional meetings and publications of abstracts.

*Abstracts (Harris students and post-docs italicized).*

- Flynn, E., S.A. Kuehl, P. Liu, J.R. Williams, and **C.K. Harris**. 2020. Deriving sediment and terrestrial organic carbon budgets for the offshore Ayeyarwady River Delta, Myanmar. Transactions of the American Geophysical Union Fall Meeting Supplement, Abstract EP049-06, December, 2020, Virtual.
- Chang, J., G.-H. Lee, **C.K. Harris**. 2020. Relative contribution of dam construction and land reclamation to geomorphological change in the Nakdong Estuary. Presented at the 2020 Ocean Sciences Meeting, February 16 – 21, 2020, San Diego, California.
- Cui, L.*, **C.K. Harris**, E. Aitoro, K. Maiti, and W.-J. Cai. 2020. Numerical modeling of the impact of sediment driven processes on bottom water chemistry over the Louisiana continental shelf. Presented at the 2020 Ocean Sciences Meeting, February 16 – 21, 2020, San Diego, California.
- Fair, M.J.*, **C.K. Harris**, S.A. Kuehl, P. Liu and *D. Tarpley*. 2020. Spatial variability of oceanographic energy and sediment dispersal and trapping on the Ayeyarwady continental shelf. Presented at the 2020 Ocean Sciences Meeting, February 16 – 21, 2020, San Diego, California.
- Harris, C.K.**, *L. Cui*, and D.S. Dukhovskoy. 2020. Oil particle aggregation model for the Gulf of Mexico continental shelf: Scenario testing. Presented at the 2020 Ocean Sciences Meeting, February 16 – 21, 2020, San Diego, California.
- Liu, P., S.A. Kuehl, A.C. Pierce, J.R. Williams, N.E. Blair, C.K. Harris, D.W. Aung. 2020. Fate of Ayeyarwady (Irrawaddy) and Thanlwin (Salween) Rivers sediments in the Andaman Sea and Bay of Bengal. Presented at the 2020 Ocean Sciences Meeting, February 16 – 21, 2020, San Diego, California.

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- Harris, C.K.** 2018. Numerical modeling to explore the fate of riverine sediment in the northern Andaman Sea, Abstract MG44B-0375. Presented at the 2018 Ocean Sciences Meeting, February 12 – 16, Portland, Oregon.
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- Tarpley, D., **C.K. Harris**, C.T. Friedrichs. 2016. Evaluating the effects of cohesive processes on sediment distribution in an idealized, partially-mixed estuary using a numerical model. *EOS, Transactions of the American Geophysical Union Ocean Sciences Meeting Supplement*, Abstract MG14A-1895; February 22 – 26, 2016, New Orleans, LA.
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- Moriarty, J.M., C.K. Harris, C.T. Friedrichs, and M. Hadfield.* 2013. Gravity – driven transport on the Waipaoa River continental shelf, NZ. *Coastal and Estuarine Research Federation*, San Diego, CA, November 6, 2013.
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- Walsh, J.P., D.R. Corbett, R. Hale, **C.K. Harris**, *J. Kiker, J. Moriarty, C. Nittrouer, A. Ogston, A. Orpin, D. Young.* 2012. Emplacement, character, and preservation of

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- Simon, M.W., J.P. Rinehimer, and **C.K. Harris**. 2008. Seasonal sediment erodibility and tidal effects in an idealized numerical model of the York River estuary; *EOS, Transactions of the American Geophysical Union Ocean Sciences Meeting Supplement*, Abstract O26-877, Orlando, FL.
- Xu, K, **C.K. Harris**, R.D. Hetland, and J. Kaihatu. 2008. Sediment transport from the Mississippi and Atchafalaya Rivers to the Louisiana /Texas shelf; *EOS, Transactions of the American Geophysical Union Ocean Sciences Meeting Supplement*, Abstract O54-1168, Orlando, FL.
- Rinehimer, J.P., **C.K. Harris**, C.R. Sherwood, and L. Sanford. 2007. Including a simple bed consolidation model in a three-dimensional numerical model of estuarine sediment transport. *Tenth International Conference on Estuarine and Coastal Modeling*, Newport, RI, November, 2007.
- Xu, K, **C.K. Harris**, R.D. Hetland, and J. Kaihatu. 2007. Towards a sediment transport model of the Louisiana /Texas shelf; *Estuarine Research Federation*, Providence, RI, November, 2007.
- Ahlgren S., P.D. Bauman, R.J. Dillon, N. Gallagher, M.E. Jamison, A.C. King, J. Lee, K.A. Siwicke, J.C. Borgeld and S.A. Goldthwait, **C.K. Harris**, and R.A. Wheatcroft. 2006. Flood Deposition Analysis of Northern California's Eel River (Flood- DANCER). *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS23B-1660, San Francisco, CA.
- Bever, A.J., **C.K. Harris**, and J.E. McNinch. 2006. Sediment dispersal in modern and mid-Holocene basins: implications for shoreline progradation and sediment bypassing, Poverty Bay, New Zealand. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS23B-1647, San Francisco, CA.

- Harris, C.K.**, J.E. McNinch, and *A.J. Bever*. 2006. Sediment dispersal and trapping within Poverty Bay, offshore of the Waipaoa River, New Zealand. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS23B-1646, San Francisco, CA.
- Hawley, N., A.H. Clites, and **C.K. Harris**. 2006. Model studies of sediment transport and bed reworking in the Laurentian Great Lakes. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS31A-1616, San Francisco, CA.
- Kim, S.-C., C. Cerco, J. Gailiani, **C.K. Harris**, and *J.P. Rinehimer*. 2006. Perspective of sediment transport within a water quality modeling framework for the Chesapeake Bay. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS31A-1615, San Francisco, CA.
- Kniskern, T.A.*, **C.K. Harris**, and S. Kuehl. 2006. Flood sediment dispersal and deposition on the Waiapu River shelf, East Cape, New Zealand. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS12A-02, San Francisco, CA.
- Wolinsky, M.A., J.C. Swenson, *A.J. Bever*, and **C.K. Harris**. 2006. Late Holocene shoreline dynamics and sediment partitioning in the Waipaoa sedimentary system, New Zealand. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 87(52), Abstract OS23B-1645, San Francisco, CA.
- Sherwood, C.R. L. Sanford, A. Blumberg, **C.K. Harris**, J.C. Warner, R.P. Signell. 2006. Cohesive sediment algorithms in ROMS and sediment test cases. Abstract submitted to the 2006 ROMS/TOMS European Workshop, November, 2006, Madrid, Spain.
- Bever, A.J.* and **C.K. Harris**. 2006. Sediment Transport off the Po River: A Model – Data Comparison. Physics of Estuaries and Coastal Seas (PECS), Astoria, OR, September, 2006.
- Bever, A.J.*, **C.K. Harris**, C.R. Sherwood, and R.P. Signell. 2006. Dominant wind regimes and their impacts on nearfield deltaic sediment dynamics: Po River, Italy. *EOS, Transactions of the American Geophysical Union, Ocean Science Meeting Supplement*, 87(36), Abstract OS16A-35, Honolulu, HI, February, 2006.
- Harris, C.K.** and J. McNinch. 2006. The potential for sediment resuspension and dispersal within Poverty Bay, offshore of the Waipaoa River, New Zealand. *EOS, Transactions of the American Geophysical Union, Ocean Science Meeting Supplement*, 87(36), Abstract OS16A-12. Honolulu, HI, February, 2006.
- Kniskern, T.A.*, **C.K. Harris**, and S.A. Kuehl. 2006. Sediment deposition on the Waiapu River shelf, N.Z., implications for sediment transport mechanisms and event preservation. *EOS, Transactions of the American Geophysical Union, Ocean Science Meeting Supplement*, 87(36), Abstract OS11L-04. Honolulu, HI, February, 2006.
- Harris, C.K.** and *J.P. Rinehimer*. 2005. Chesapeake Bay bottom boundary layer: roughness and shear stresses. *Estuarine Research Federation*. Norfolk, VA, October, 2005.
- Harris, C.K.**, R.P. Signell, C.R. Sherwood, and *A. Bever*. 2004. Dispersal of fluvial sediment in the Adriatic Sea, Italy. *EOS, Transactions of the American*

- Geophysical Union, Fall Meeting Supplement*, 85(47), Abstract OS11D—07, San Francisco, CA December 2004.
- Harris, C.K.** 2004. Sediment dispersal in the Adriatic Sea: response to variations in sea level. *32<sup>nd</sup> International Geological Congress*. Florence, Italy, August, 2004.
- Sherwood, C.R., **C.K. Harris**, and R.P. Signell. 2004. Modeling sedimentary dynamics and the formation of Holocene continental margin deposits in the western Adriatic Sea. *32<sup>nd</sup> International Geological Congress*. Florence, Italy, August, 2004.
- Harris, C.K.**, C.R. Sherwood, and R.P. Signell. 2004. Sediment dispersal mechanisms within the Adriatic Sea: insights from the EuroStrataform Program. *EOS, Transactions of the American Geophysical Union, Ocean Sciences Meeting Supplement*, 84(52), Abstract OS52E—07, Portland, OR, January, 2004.
- Harris, C.K.**, P. Traykovski, and W.R. Geyer. 2003. Accounting for a near-bed turbid layer in a three dimensional sediment transport model with application to the Eel River shelf, northern California, *Eighth International Conference on Estuarine and Coastal Modeling*, Monterey, CA, November, 2003.
- Harris, C.K.**, C.R. Sherwood, E. Mullenbach, and J.D. Pullen. 2003. Dispersal of sediment in the western Adriatic during energetic wintertime forcing. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 84(46), Abstract OS52A-0900, San Francisco, CA December 2003.
- Harris, C.K.**, C.R. Sherwood, J.C. Warner, and P.L. Wiberg. 2003. Sediment bed limits to resuspension and transport with application for the north-western Adriatic. *InterCoh abstracts*, November 2003, Gloucester Point, VA.
- Harris, C.K.**, J.D. Pullen, R.P. Signell, and J.D. Doyle. 2003. Sources and dispersal of sediment in the western Adriatic. *Geophysical Research Abstracts: Vol. 5*, 11235. AGU EGU Joint Session, Nice, France.
- Buchholtz ten Brink, M. B. Butman, M. Bothner, L. Poppe, R.W. Murray, J. Varekamp, E. Thomas, E.L. Mccray, **C.K. Harris**, and R.P. Signell. 2002. Fate and Impact of Contaminants in Sediments of the NE United States. *Eos, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 83(47), Abstract OS21D-06, San Francisco, CA, December, 2002.
- Harris, C.K.** and B. Butman. 2002. Sediment redistribution in the New York bight: influence of wind-forced currents, energetic waves, and topography. *EOS, Transactions of the American Geophysical Union, Ocean Sciences Meeting Supplement*, 83(4), Abstract OS12B-154. Honolulu, HI. February, 2002.
- Harris, C.K.**, B. Butman, P. Traykovski, and M.B. ten Brink. Winter-time sediment transport in the Hudson Shelf Valley. *Eos, Transactions of the American Geophysical Union, Spring Meeting Supplement*, 82(20):S232. Boston, MA. May, 2001.
- Traykovski, P., **C.K. Harris**, B. Butman, and Buchholtz ten Brink, M.R. 2001. Erosion of fine-grained sediment in the Hudson Shelf Valley offshore of New York. *Eos, Transactions of the American Geophysical Union, Spring Meeting Supplement*, 82(20):S229. Boston, MA. May, 2001.
- Harris, C.K.**, W.R. Geyer, and R.P. Signell. Dispersal of flood sediment by oceanographic currents and energetic waves. *EOS, Transactions of the American Geophysical Union, Ocean Sciences Meeting Supplement* 80(49):OS281. San Antonio, Texas. February, 2000.

- Harris, C.K.** and R.P. Signell. 1999. Circulation and sediment transport in the vicinity of the Hudson Shelf Valley. *Sixth International Conference on Estuarine and Coastal Modeling*, New Orleans, LA. November, 1999.
- Signell, R.P. and **C.K. Harris**. 1999. Modeling sand-bank formation around a tidal headland. *Estuarine and Coastal Modeling. Sixth International Conference on Estuarine and Coastal Modeling*, New Orleans, LA. November, 1999.
- Harris, C.K.** and P.L. Wiberg. The effect of bottom boundary layer resuspension on the emplacement and modification of event beds on the Eel river shelf, northern California. *EOS, Transactions of the American Geophysical Union, Ocean Sciences Meeting Supplement*, 79(1):OS17. San Diego, CA. February, 1998.
- Harris, C.K.** and P.L. Wiberg. The significance of flux divergence and advection in shelf sedimentation patterns. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 79(45):F473. San Francisco, CA. December, 1998.
- Wiberg, P.L., **C.K. Harris**, and D.A. Cacchione. Comparison of sediment transporting events on the Eel and Russian River shelves. *EOS, Transactions of the American Geophysical Union, Ocean Sciences Meeting Supplement*, 79(1):OS16. San Diego, CA. February, 1998.
- Harris, C.K.** and P.L. Wiberg. Wave and current climatology of near-bed flow for the Palos Verdes shelf with application to sediment transport. *EOS, Transactions of American Geophysical Union. Ocean Sciences Meeting Supplement*, 76(3):OS49. San Diego, CA. February, 1996.
- Noble, M.A., **C.K. Harris**, P.L. Wiberg, and C. Sherwood. Statistical characterizations of current and wave patterns on the southern California shelf off Palos Verdes for use in sediment-transport models. *EOS, Transactions of American Geophysical Union. Ocean Sciences Meeting Supplement* 76(3):OS49. February, 1996.
- Harris, C.K.** and P.L. Wiberg. Ripple geometry in wave dominated environments. *EOS, Transactions of the American Geophysical Union, Fall Meeting Supplement*, 72(44):245. San Francisco, CA. December, 1991.

## 9. PROFESSIONAL SERVICE

### 9.a. College Wide Committee Service

- William & Mary Supervisors and Managers Forums (as Department Chair): 2020 – present.
- William & Mary Faculty Compensation Board: VIMS Alternate, 2020 – present.
- William & Mary Faculty Compensation Board: VIMS Representative, 2017 – 2020.
- William & Mary Faculty Assembly: VIMS Representative, 2013 – 2017.
- William & Mary Academic Affairs Committee: VIMS Representative, 2013 – 2017.
- William & Mary Executive Committee of the Faculty Assembly: VIMS Representative, 2016 – 2017.
- William & Mary Liaison Committee of the Faculty Assembly: VIMS Representative, 2016 – 2017.
- William & Mary / VIMS Undergraduate Minor Advisory Committee: Representative: 2013 – 2017.
- William & Mary COPAR (Committee on Planning and Resources): VIMS Representative, 2013 – 2016.



William & Mary FUPC (Faculty University Priorities Committee): VIMS Representative, 2013 – 2015.

#### 9.b. SMS / VIMS Governance

Department of Physical Sciences Chair, 2020 – present.

Department of Physical Sciences Vice Chair; 2020.

Estuarine Processes Strategic Planning Committee: Member, 2021.

Staff Salary Competitiveness Strategic Planning Committee: Member, 2021.

High Performance Computing Committee: Member, ~2012 – present.

Emergency Management Team (expanded for COVID response): Member, 2020 – present.

VIMS Administrative Council; Member, 2020 – present.

VIMS Department Chair & Center Directors Committee; Member, 2020 – present.

VIMS Space and Facilities Planning Committee; Member, 2020 – present.

VIMS Supervisor for (\* = beginning July 2020): L. Cui (2019 – 2021), E. Canuel\*, D. Gong\*, S. Hardaway\*, A. Hardison\*, Cy. Harris\*, C. Hein\*, V. Johnson\*, M. Kirwan\*, S. Kuehl\*, P. Mazzini\*, W. Reay\* (co-supervisor), J. Shen\*, H. Wang\*, J. Zhang\* (co-supervisor).

Admissions Committee: Department Alternate, 2004 – 2006; 2018 – 2019.

Search committee member for Coastal Physical Oceanographer Faculty position, 2018 – 2019.

Academic Council: Task force on forms, 2019; Academic Council Chair, 2013 – 2017; Secretary, 2011 – 2013; Department Representative, 2010 – 2013.

Search committee member for Quantitative Faculty position, 2017 – 2018.

Search committee chair for Post-doc hire, 2017 – 2018 (Hired Dr. Linlin Cui).

Faculty Council: Ex-Officio from Academic Council, 2013 – 2017; Department Alternate, 2002 – 2004.

Provost's Leadership Initiative. Participant, Spring Semester, 2017.

Strategic Planning: Education Working Group. 2014.

Committee to Oversee Three-Year Review of Associate Dean of Academic Studies Linda Schaffner. 2014. Representative.

Examination Moderator. 2012 – 2017. Number of exams moderated:

2013: 4 (Students: Gervassi, Chia-Yu Wu, Chia-Yu Wu, Luek).

2014: 2 (Students: A. Johnson; X. Shen).

2015: 3 (Students: I. Irby; A. Johnson; X. Shen).

2016: 3 (Students: Z. Luo; B. Marcek; C. Martinez)

Administrative Council; Ex-Officio from Academic Council, 2013 – 2017.

Quantitative Skills Committee; 2010 – 2013: Department Representative.

Elections and Nominations Committee; Department Representative, 2005 – 2013.

Parking Committee; Department Representative, 2004 – 2013.

Search committee chair for position of Assistant Professor of Physical Oceanography, Department of Physical Sciences. 2011 – 2012.

Search Committee for position of Associate Dean of Academic Studies, 2010.

Academic Status and Degrees Committee (AS & DC): Department Representative, 2004 – 2010; Committee Chair, 2006 – 2010.

Library Advisory Committee: Department Representative, 2003 – 2009.

Committee to recommend a Chancellor Professor, 2009.  
 Search Committee for Virginia SeaGrant Assistant Director of Research, 2009.  
 Search Committee for Virginia SeaGrant Director, 2007.  
 Search Committee for ITNS Research Computing Specialist, 2007.  
 Information Technology Infrastructure Project Committee; Member, 2004 – 2007.  
 Best Student Paper Committee: Department Representative, 2004 – 2006.  
 VIMS / SMS Seminar Committee: Department Representative, 2001—2005; Co-Chair,  
 2002 – 2005.

9.c. Editorial board services, review panels, program reviews, national or international research programs.

*Editorial Boards:*

Associate Editor, *Estuarine Coastal and Shelf Science*, Elsevier, 2013 – 2021.  
 Editorial Advisory Committee, *Continental Shelf Research*, 2004—present.

*Review panels:*

National Science Foundation PREEVENTS (Prediction of and Resilience against Extreme Events) Program. Proposal Review Virtual Panel Member. February, 2019.  
 National Science Foundation ANS (Arctic Natural Sciences) Program. Proposal Review Virtual Panel Member. May, 2019.  
 National Academy of Sciences: Understanding Gulf Ocean Systems (UGOS) Proposal Peer Review Panel Member. Washington, D.C., August, 2018.  
 RESTORE Act Center of Excellence for Louisiana. External Review Board Panel Member. Baton Rouge, LA, April, 2017  
 National Science Foundation Marine Geology and Geophysics Program. Proposal Review Panel Member. Arlington, VA, May, 2015.  
 National Science Foundation Marine Geology and Geophysics Program. Proposal Review Panel Member. Arlington, VA, May, 2013.  
 Hudson River Foundation Proposal Review Panel Member. New York, NY, February, 2011.  
 National Science Foundation CTS (Chemical and Transport Systems) Geophysical and Computational Program. Proposal Review Panel Member. Virtual Panel, February, 2008.  
 National Science Foundation Marine Geology and Geophysics Program. Proposal Review Panel Member. Arlington, VA, November, 2006.  
 National Science Foundation CTS (Chemical and Transport Systems) Environmental Fluid Mechanics and Coastal Engineering Program. Proposal Review Panel Member. Arlington, VA, April, 2006.  
 National Science Foundation OCE – Physical Oceanography Program. Proposal Review Panel Member. Arlington, VA, November, 2003.

*Program Reviews and National or International Research Programs:*

Community Surface Dynamics Modeling System (CSDMS) NSF program.

Member of (1) Marine Working Group, and (2) Chesapeake Bay Focus Research Group, 2007 – present. Chair of Marine Working Group, 2012 – 2020.

Tsunami Sedimentology and its Role in Hazard Awareness, Preparedness, Assessment and Mitigation. Workshop participant, and contributor to report. Funded by National Science Foundation. San Francisco, CA. December 1 – 3, 2011.

AGU Chapman Conference on Source to Sink Systems around the World and Through Time. Meeting participant, Oxnard, CA. January 24 – 27, 2011.

Community Surface Dynamics Modeling System (CSDMS) All-Hands Meeting 2010: Modeling for Environmental Change; Workshop participant. Sponsored by CSDMS. San Antonio, TX. October 14 – 17, 2010.

Margins Source-to-Sink Synthesis and Integration Workshop participant. Gisborne, New Zealand. April 5 – 9, 2009.

Community Sediment Dynamics Modeling System (CSDMS): Marine Working Group Workshop participant. Sponsored by CSDMS. Charlottesville, VA, February 24 – 15, 2009.

Community Sediment Dynamics Modeling System (CSDMS): Chesapeake Focus Research Group meeting participant. Sponsored by CSDMS. Gloucester Point, VA, November 10, 2009.

MARGINS Source-to-Sink Theoretical and Experimental Institute (TEI) participant. Northern California, September 17 – 22, 2006.

Community Sediment Dynamics Modeling System Workshop participant. Sponsored by National Science Foundation. Minneapolis, MN, May 7–9, 2004.

MARGINS Source – to – Sink Workshop Participant. Waipaoa Study Area, North Island, NZ. May, 2003.

MARGINS Community Sediment Modeling Workshop participant. Sponsored by National Science Foundation. Boulder, CO, February 20 – 22, 2002.

AGU Chapman Conference on the Formation of Sedimentary Strata on Continental Margins; meeting participant, Ponce, Puerto Rico. June, 2001.

MARGINS Source – to – Sink Planning Workshop participant, Sponsored by National Science Foundation. South Lake Tahoe, CA. October, 2000.

MARGINS Source – to – Sink Planning Workshop participant, Sponsored by NSF. Lake Quinalt, WA. September 11–15, 1999.

*Proposal Reviews:*

2021: Natural Environment Research Council (NERC, UK): Fellowship review. National Science Foundation (1 from OCE – MGG).

2020: National Science Foundation (2 from OCE – Physical; 1 from EAR). NWO (Dutch Research Counsel): 1.

2019: National Science Foundation (24 total: 6 from PREEVENTS; 15 from ANS; 1 from OCE-PO, 1 from OCE-Chemical, and 1 from EAR).

2018: National Science Foundation (5 proposals: 3 in EAR-Geomorphology and Land Use Dynamics, 1 in OCE-MGG, and 1 in OCE-PO)

National Academy of Sciences: Understanding Gulf Ocean Systems (31 proposals, lead or secondary reviewer on 9).

- 2017: National Science Foundation (1 in OCE-PO, 1 in OCE-Ocean Tech).  
RESTORE Act Center of Excellence for Louisiana (12).
- 2016: National Science Foundation (1 in OCE-PO.)  
Louisiana Board of Regents' Pilot Funding for New Research (Pfund) (1).  
Gulf Research Program – Coastal Community Planning and Response (1).
- 2015: National Science Foundation (25: 2 in OCE-PO, 23 in OCE-MGG)  
Oregon Sea Grant (1).
- 2014: National Science Foundation (1: 1 in OCE-OTIC).  
Louisiana Board of Regents' Pilot Funding for New Research (Pfund) (1).
- 2013: National Science Foundation (1: 1 in OCE-PO).
- 2013: Hudson River Foundation (1).  
National Science Foundation (20: 3 in OCE-PO, 17 in OCE-MG&G).
- 2012: National Science Foundation (2: 1 in GLD-EAR, 1 in OCE).  
Hudson River Foundation (9 pre-proposals).
- 2011: Hudson River Foundation (19).  
National Science Foundation (3 in OCE).
- 2010: National Oceanographic and Atmospheric Administration Coastal Hypoxia  
Research Program (NOAA CHRP) (1).  
National Science Foundation (2 in OCE).
- 2009: National Science Foundation (2 in OCE).  
New Hampshire Sea Grant (1).
- 2008: National Science Foundation (15: 6 in OCE; 9 in CTS).
- 2007: National Science Foundation (4: 3 in OCE; 1 in IIS).  
Department of Energy National Institute for Climatic Change Research (DOE  
NICCR) (1).  
Ohio Sea Grant (1).
- 2006: National Science Foundation (38: 30 in OCE; 1 in EAR; 7 in CTS).  
Washington Sea Grant (1).  
National Oceanographic and Atmospheric Administration Coastal Hypoxia  
Research Program (NOAA CHRP) (1).
- 2005: National Science Foundation (8).
- 2004: National Science Foundation (3).  
SERDP (1).  
Petroleum Research Fund ACS (1).
- 2003: National Science Foundation (21).
- 2002: National Science Foundation (1).  
South Carolina DoD / EPSCoR (1).
- 2000: South Carolina Sea Grant (1).

*Journal Article Editorial Work as Guest or Associate Editor:*

- 2021: *Estuarine, Coastal, and Shelf Science* (2).  
2020: *Estuarine, Coastal, and Shelf Science* (3).  
2019: *Estuarine, Coastal, and Shelf Science* (3).  
2018: *Estuarine, Coastal, and Shelf Science* (3).  
2017: *Estuarine, Coastal, and Shelf Science* (5).  
2016: *Estuarine, Coastal, and Shelf Science* (9).

- 2015: *Estuarine, Coastal, and Shelf Science* (9).  
*Ocean Dynamics* (4).
- 2014: *Continental Shelf Research* (2).  
*Estuarine, Coastal, and Shelf Science* (8).  
*Ocean Dynamics* (4).
- 2013: *Continental Shelf Research* (1).  
*Estuarine, Coastal, and Shelf Science* (1).

*Journal Article Reviews:*

- 2021: *Global and Planetary Change* (1).
- 2020: *Continental Shelf Research* (3).  
*Estuaries and Coasts* (1).  
*Estuarine, Coastal and Shelf Science* (2).  
*Journal of Geophysical Research – Oceans* (2).
- 2019: *Estuarine, Coastal, and Shelf Science* (1).  
*Journal of Geophysical Research* (3).
- 2018: *Continental Shelf Research* (1).  
*Estuarine, Coastal, and Shelf Science* (1).  
*Geophysical Research Letters* (1).
- 2017: *Continental Shelf Research* (2).  
*Journal of Coastal Research* (2).
- 2016: *Continental Shelf Research* (2).  
*Journal of Geophysical Research – Earth System* (2).  
*Estuaries and Coasts* (2).
- 2015: *Marine Geology* (2).  
*Continental Shelf Research* (1).
- 2014: *Estuarine, Coastal, and Shelf Science* (2).  
*Continental Shelf Research* (1).  
*Ocean Science Discussions* (1).  
*Journal of Geophysical Research – Oceans* (2).
- 2013: *Deep – Sea Research* (2).  
*Continental Shelf Research* (2).
- 2012: *Journal of Geophysical Research – Oceans* (1)  
*Journal of Marine Systems* (1)  
*Estuarine Coastal Modeling Conference Proceedings* (2).  
*Journal of the American Water Resources Association* (1).  
*Ocean Dynamics* (1).
- 2011: *Continental Shelf Research* (4).  
*Journal of Geophysical Research – Oceans* (4).
- 2010: *Continental Shelf Research* (4).  
*Journal of Geophysical Research – Oceans* (2).  
*Ocean Dynamics* (1).
- 2009: *Continental Shelf Research* (3).  
*Journal of Geophysical Research – Oceans* (4).  
*Ocean Dynamics* (1).  
*Marine Geology* (1).

- 2008: *Continental Shelf Research* (1).  
*Estuarine and Coastal Modeling Conference Proceedings* (1).
- 2007: *Continental Shelf Research* (3).  
*Geology* (1).  
*Limnology and Oceanography* (1).
- 2006: *Continental Shelf Research* (5).  
*Journal of Geophysical Research – Earth Surface* (1).  
*Computers and Geosciences* (1).
- 2005: *InterCoh volume, Elsevier Science Publishing* (2).  
*Continental Shelf Research* (5).  
*Journal of Geophysical Research – Oceans* (1).
- 2004: *InterCoh volume, Elsevier Science Publishing* (2).  
*Journal of Geophysical Research – Oceans* (4).  
*Continental Shelf Research* (1).  
*Estuarine and Coastal Modeling Conference Proceedings* (2).
- 2003: *Journal of Geophysical Research – Oceans* (1).  
*Estuarine, Coastal, and Shelf Science* (1).  
*Continental-Margin Sedimentation: Transport to Sequence*, C. Nittrouer, et al. (editors), (1 chapter).
- 2002: *Estuarine, Coastal, and Shelf Science* (1).  
*Continental Shelf Research* (1).
- 2001: *Estuaries* (1).  
*Continental Shelf Research* (1).  
*Journal of Coastal Research* (1).

*Promotion Reviews:*

- 2021: Promotion for Full Professor package for another university.
- 2019: Tenure package for another university.
- 2018: Tenure package for another university.
- 2017: Promotion to Full Professor package for another university.
- 2014: Tenure package for another university.

9.d Service to Professional Societies

*Meeting Administration.*

- 2020 – present. Co-chair of Participant Experience – Wellness Subcommittee for the Coastal and Estuarine Research Federation meeting planned for November, 2021.
- 2020 – present. Session proposed (with C. Palinkas and J. Obelcz) for Coastal and Estuarine Research Federation meeting planned for November, 2021.
- 2019 – 2020. Primary convener (with C. Palinkas and J. Jurisa), “Physical transport and depositional process studies in the Chesapeake Bay, tributaries, and marshes” at ChesCRS (Chesapeake Community Research Symposium), held virtually, May 8, 2020.
- 2019 – 2020. Primary convener (with A. Ogston, D.R. Corbett, and G.-H. Lee), “Sediment delivery, transport, and deposition in marine and lacustrine environments” at the AGU / ASLO Ocean Sciences Meeting, San Diego, California, February, 2020.

- 2018 – 2019. Co-convenor (with K. Xu, M. Miner, and D. Wallace), “Coastal sediment transport processes”, at the Coastal and Estuarine Research Federation, Mobile, AL, November 3 – 7, 2019.
- 2012 – 2020. Planning committee for Community Surface Dynamics Modeling Systems (CSDMS) Annual All – Hands Meetings, Boulder Colorado, May 2013, May 2014, May 2015, May 2016, May 2017, May 2018, May 2019, May 2020.
2018. Primary convener (with A. Ogston and A. Licht, University of Washington; and S. Kuehl, VIMS), “From the eastern Tibetan Plateau to the Andaman Sea: The Ayeyarwady and Thanlwin River source to sink system posters” at the AGU Fall Meeting, Washington, D.C., December, 2018.
- 2017 – 2018. Planning committee, Chesapeake Research and Modeling Symposium June, 2018.
2018. Session chair for Coastal Geology Session, International Coastal Symposium, Busan, Republic of Korea, May 16, 2018.
- 2017 – 2018. Convener (with Guan-hong Lee and J.P. Walsh) Sediment Delivery, Transport, and Deposition in Coastal Aquatic Environment, AGU/ASLO Ocean Science Meeting, Portland, OR, February, 2018.
- 2016 – 2017. Session Chair and Discussion Leader, Coastal Sediment Transport Processes, Gordon Research Conference on Coastal Ocean Dynamics, University of New England, Biddeford ME, June, 2017.
2016. Lead convener (with R. Hood, UMCES; B. Murray, Duke University; and P. Wiberg, UVA), “Bridging boundaries in surface dynamics of estuarine, coastal, and marine systems using models, laboratory studies, and observations I, II, and III” at the AGU Fall Meeting, San Francisco, CA, December, 2016.
- 2015 – 2016. Planning committee, Chesapeake Modeling Symposium 2016 (ChesMS-16), June, 2016.
- 2015 – 2016. Selection committee, Chesapeake Guardian Award.
- 2015 – 2016. Lead convener (with seven co-conveners) “Sediment dynamics in coastal settings: Observations and modeling of sediment transport, morphology, and change on event to decadal time scales” at AGU/ASLO Ocean Science Meeting, New Orleans, LA, February 2016.
- 2013 – 2014. Planning committee, Chesapeake Modeling Symposium 2014 (ChesMS-14), Annapolis, MD, May, 2014; Williamsburg, VA May 2016.
2014. Session co-chair (with R. Hood, UMCES; L. Lanerolle, NOAA). Successes and Strategies for Model Coupling for the Chesapeake and Related Systems. Chesapeake Modeling Symposium 2014 (ChesMS-14), Annapolis, MD, May, 2014.
2014. Session co-chair (with B. Clark, C. Palinkas, UMCES). Sediment process studies in the Chesapeake Bay, its tributaries, and marshes; Chesapeake Research and Modeling Symposium 2018, Annapolis, MD, June, 2018.
- 2013 – 2014. Co-convenor (with N. Hawley, NOAA; and K. Xu, LSU) “Sediment processes: transport and deposition in lakes, estuaries, coastal bays, and continental shelves”, at AGU/ASLO Ocean Science Meeting, Honolulu, Hawaii, February, 2014.
2013. Coastal and Estuarine Research Federation Meeting, San Diego, CA, November, 2013. (1) Session Chair SCI-064, “Hydrodynamics and sediment dynamics in

- estuaries and coastal seas” (with A. ValleLevinson, T. Dellapenna, C. Friedrichs, C. Pattiaratchi, H. Schuttelaars, A. Souza, P. MacCready, and B. Chant). (2) Judge for Best Student Presentation (judged five presentations and posters).
- 2012 – 2013. Host committee member, InterCoh Meeting, Gainesville, FL, October, 2013.
- 2011 – 2012. Planning committee, Chesapeake Modeling Symposium 2012 (ChesMS-12), Annapolis, MD, May, 2012.
2012. Session co-chair (with C. Sherwood, US Geological Survey), Sediment Dynamics Models for Chesapeake Bay, its Tributaries and Marshes, Chesapeake Modeling Symposium 2012 (ChesMS-12), Annapolis, MD, May, 2012.
- 2011 – 2012. Co-convenor (with N. Hawley, NOAA; and L. Sanford, UMCES) “Sediment processes: transport and deposition in lakes, estuaries, coastal bays, and continental shelves”, at AGU/ASLO Ocean Science Meeting, Salt Lake City, Utah, February, 2012.
- 2009 – 2010. Member of Program Committee. AGU/ASLO Ocean Science Meeting, Portland, Oregon, February, 2010.
- 2009 – 2010. Co-convenor (with N. Hawley, NOAA; and L. Sanford, UMCES) “GO04 Sediment processes I – III: transport and deposition in lakes, estuaries, coastal bays, and continental shelves”, at AGU/ASLO Ocean Science Meeting, Portland, Oregon, February, 2010.
- 2007 – 2008. Co-convenor (with N. Hawley, NOAA; and L. Sanford, UMCES) “OS O54 Sediment transport in lakes, estuaries, and shallow shelves”, at AGU/ASLO Ocean Science Meeting, Orlando, Florida, March, 2008.
2002. Co-convenor (with C. Sherwood, U.S. Geological Survey) “OS21 Application and Assessment of Coastal Sediment Transport Models, Sessions I, II, and III” at AGU/ASLO Ocean Sciences Meeting, Honolulu, HI, February. 2002.
2002. Co-Convenor (with C.R. Sherwood, U.S. Geological Survey, and W.R. Geyer, Woods Hole Oceanographic Institution): Toward a Community Coastal Sediment-Transport Model Town Meeting. Sponsored by National Ocean Partnership Program (NOPP). Honolulu HI, February 13, 2002.
2002. Co-Convenor (with C.R. Sherwood, U.S. Geological Survey; and W.R. Geyer, Woods Hole Oceanographic Institution). Building a Community System for Coastal Sediment-Transport Modeling. Sponsored by National Ocean Partnership Program (NOPP). Williamsburg, VA, September 30 – October 2, 2002.
2000. Co-Convenor (with R.P. Signell, C.R. Sherwood, U.S. Geological Survey; and W.R. Geyer, Woods Hole Oceanographic Institution): Community Sediment Transport Workshop; sponsored by U.S. Geological Survey, Woods Hole, MA, June 20—21, 2000.

## **10. ADVISORY SERVICE TO VIMS MANDATE**

### 10.a. Service to state agencies

Comments to the Virginia Marine Resources Commission (VMRC) on the Virginia Offshore Wind Technology Advancement Project (VOWTAP). February 2015.

### 10.c. Service to industry.

December 2019: co-Hosted a workshop: "Fugro Virtual Introductory Workshop" to showcase employment opportunities to VIMS & W&M students.



2020: Discussion with state and industry regarding offshore wind resources.  
 VIMS / William and Mary – Industry partnership committee participant. 2004—2005, 2007, 2009. Intermittent attendance at bi-monthly meetings, and presented material at two meetings.

10.d. Regional, national or international management commissions or programs.

State of Louisiana 2023 Master Plan - Predictive Models Technical Advisory Committee (PM-TAC). Committee Member. 2019 – present.

Chesapeake Bay program modeling in 2025 and beyond: A proactive visioning workshop. A Scientific and Technical Advisory Committee (STAC) workshop invited participant, Shepherdstown, WV, January 17 – 19, 2018.

Comments on Information Requirements for a Renewable Energy Construction and Operations Plan (COP) for the Bureau of Ocean and Energy Management (BOEM). Drafted comments regarding Sediment Mobility Studies Fall, 2014.

Hampton Roads Sanitation District: Comment on plans to modify Yorktown outfall. 2014 – 2015.

State of Louisiana 2017 Master Plan - Predictive Models Technical Advisory Committee (PM-TAC). Committee Member. 2013 – 2016.

Chesapeake Community Modeling Project (CCMP). Member of Steering Committee. 2011 – 2020.

STAC Tidal Sediments mini-workshop, invited participant, Annapolis, MD, May 28-29, 2009.

Consulted on numerical modeling activities with NOAA Great Lakes Experimental Research Lab (GLERL) scientist N. Hawley, 2006, 2008 – 2009; research product: Hawley et al. (2009).

Chesapeake Bay Program Modeling Subcommittee Quarterly Meeting Participant: January, 2004; April, 2004; January, 2005; January 2006; April, 2006; July 2006; October, 2006. Annapolis, MD. Presented material at these meetings. Also attended other Quarterly Meetings either in person or via conference call.

External Reviewer; Beta Test for Operational Capability of the Littoral Sediment Optics Model (LSOM) for the Naval Research Laboratory. February – August, 2003.

10.e. Public Outreach

Speaker for BSA Troop 205, for Environmental Science Merit Badge. Harris helped lead “Oil Spill in a Bucket” activity and gave a short talk about the Deepwater Horizon event. About 7 middle school and high school girls participated, Yorktown, VA, September 30, 2019.

VIMS Marine Science Day: May, 2004; May, 2011, May 2013, Harris Lab worked with C. Friedrichs’ lab to organize a display May, 2019.

Guest Speaker, May 13, 2019. Coastal geology and oceanography of Virginia and their impact on some local issues. Ford’s Colony Trailblazer Club Meeting, Williamsburg, VA. About 40 members.

Career Day Speaker, May 10, 2019. Marine science; Dare Elementary School, Yorktown VA. Spoke to about 175 children, grades K – 5.

Facilitator for “Let’s clean up an oil spill”, May 5, 2019. Girl Scout Troop 1288, Yorktown, VA.

- Panelist. December 4, 2018. York County Extend Center, 5th grade class. Yorktown, VA.
- Guest Speaker, November 13, 2018. Waves, tides, and currents: What's pushing the water around in Virginia's Coast? Master Naturalists of Northumberland County. Northumberland County, VA.
- Career Day Speaker, May 4, 2018. Marine science; Dare Elementary School, Yorktown VA. Spoke to about 175 children, grades K – 5.
- Guest Speaker, April 24, 2018. What shaped Virginia's coastal waters; Waller Mill Elementary School, fifth grade, Williamsburg, VA.
- Guest Reader. February 26, 2018. Chesapeake Bay A,B,Cs, read to fourth grade class, Dare Elementary School, Yorktown, VA 23692.
- Facilitator, August 1, 2017. Dirty Water + Sand and Gravel = Clean Water. Filtering lab for Grace Episcopal Day School Summer Vacation Bible School, Yorktown, VA.
- Scientist Chaperone, May 2017. Canoeing field trip on Back Creek, with sixth grade science classes from York Middle School, Yorktown, VA.
- Guest Speaker, November 3, 2016. Waves, tides, and currents: What's pushing the water around in Virginia's coastal waters; Windsor Elementary School, fifth grade, Windsor, VA.
- Career Day Speaker, March 30, 2016. Marine geology: Playing with mud at the beach; Yorktown Elementary School, Yorktown, VA. Spoke to about 175 children, grades 1 – 5.
- Lecture, June 5, 2015. Numerical modeling at VIMS: Some applications for sediment transport; Visiting summer undergraduate students from the University of North Carolina Coastal Studies Institute.
- Guest Speaker, April 24, 2015. Waves, tides, and currents: What's pushing the water around in Virginia's coastal waters; Dutrow Elementary, fifth grade, Newport News, VA.
- Guest Speaker, October 28, 2014. Chesapeake Bay time machine: Meteors, ice, flooding and your bay; York County Schools Extend Center, fourth grade class, Yorktown, VA.
- Expert Speaker on Hurricanes. October 2013. Lego – Robotics Club, Midlothian, VA.
- Virtual Scientist in the Classroom. December 18, 2012. Topic: Computer Modeling in Oceanography. Spoke via web-camera to a fifth grade classroom from Henrico County, VA.
- Interviewed by Steve Glazier, TV-3, Winchester, VA. June 4, 2010. Topic: Potential Oil Spill Risks and Impacts within Virginia Waters.
- Seminar Speaker to VIMS Eastern Shore Lab (ESL) Public Lecture Series, December, 2007.
- American Geophysical Union's representative at the Eastern Regional Meeting of the National Science Teachers' Association, Richmond VA, December, 2004.
- VIMS Marine Science Day Presenter: May, 2004; May, 2011, May 2013, Harris Lab organized a display May, 2015.
- Blue Crab Bowl Science Judge: February, 2003; February, 2005; February, 2007.