

MICHAEL S. FENSTER
CURRICULUM VITAE

Work Address:

Randolph-Macon College
Environmental Studies Program
Ashland, VA 23005-5505
TEL: (804) 752-3745
FAX: (804) 752-4724
E-mail: mfenster@rmc.edu

Home Address:

215 Roslyn Hills Drive
Richmond, VA 23229
TEL: (804) 673-1249
FAX: (804) 673-1249

EDUCATION

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| 1995 | <i>Boston University</i> | Ph.D. | Geology |
| 1986 | <i>University of Mississippi</i> | M.S. | Geology |
| 1982 | <i>University of Mississippi</i> | B.S. | Environmental Geology |

Dissertation: *The Origin and Evolution of the Sand Sheet Facies: Eastern Long Island Sound*

TEACHING EXPERIENCE

2005-present Associate Professor, *Randolph-Macon College*, Department of Physics (Geology) and the Environmental Studies Program

2000-2005 Assistant Professor, *Randolph-Macon College*, Department of Physics (Geology) and the Environmental Studies Program

1998-1999 Visiting Assistant Professor, *Randolph-Macon College*, Environmental Studies Program

1996-1997 Assistant Professor, *Texas Christian University*, Department of Geology and the Environmental Sciences Program

Others: *University of Virginia, Mary Washington College, Bentley College, Salem State College*

TEACHING, ADVISING AND CURRICULUM DEVELOPMENT CONFERENCES & ACTIVITIES

2008 Participant in A *Roundtable on the Future of the Undergraduate STEM Learning Environment*, sponsored by Project Kaleidoscope, Washington, D.C.: A roundtable designed to examine and explore best practices and lessons learned in shaping spaces that work to serve 21st century students and science.

2007 Workshop on *Designing Effective and Innovative Courses in the Geosciences*, sponsored by National Association of Geoscience Teachers and the National Science Foundation, Hamilton College, Clinton, NY

2006-present Serving on Ph.D Committee at George Mason University, Department of Environmental Science and Public Policy: *Geomorphic Mapping and Coastal Morphodynamics of Parramore Island, Virginia from 1852 to 2006: A Tide-Dominated Barrier Island*

2005 Evaluated National ACT Earth Science content knowledge and skills components

TEACHING, ADVISING AND CURRICULUM DEVELOPMENT CONFERENCES & ACTIVITIES (continued)

- 2004 Workshop on *Environmental Studies Programs*, sponsored by the Northeast Environmental Studies Society (NEES), University of Vermont, Burlington, VT
- 2003 *The Advising-Teaching Connection*: National Academic Advising Association's (NACADA) mid-Atlantic regional conference, Pittsburgh, PA
- 2002 *Evaluation of Inquiry-based Instructional Video Modules for Faculty Who Teach Introductory Earth Science Courses*: contact Dr. Dorothy Merritts, Franklin and Marshall College, Lancaster, PA, funded by the National Science Foundation
- 2002 *Development of an Assessment Tool for Use in Introductory and Non-science Major Geoscience Courses*: contact Dr. Julie Libarkin, Harvard-Smithsonian Center for Astrophysics, Science Education Dept., funded by the National Science Foundation
- 2000 Workshop on *Early Career Faculty in the Geosciences: Teaching, Research, and Managing your Career*, sponsored by National Association of Geoscience Teachers and the National Science Foundation, Montana State University, Bozeman, MT
- 1999 Workshop on *Considering Structural and Programmatic Options for Environmental Studies Programs*, Project Kaleidoscope sponsor, Brown University, Providence, RI
- 1999 Workshop on *Environmental Studies/Science in Higher Education*, sponsored by the Northeast Environmental Studies Society (NEES), Keene State College, Keene, NH
- 1998 Workshop on *Innovative Teaching and Course Design in the Geosciences*, sponsored by National Association of Geoscience Teachers and the National Science Foundation, College of William and Mary, Williamsburg, VA

PROFESSIONAL SOCIETIES AND OFFICES

- Editorial Board: Journal of Coastal Research 1996-present
- National Association of Geosciences Teachers (NAGT); Eastern Section NAGT
- Geological Society of America (GSA)
- Northeast Section GSA
- American Geophysical Union
- Estuarine Research Federation
- Society of Economic Paleontologists and Mineralogists (SEPM); Eastern Section
- American Shore and Beach Preservation Association

SELECTED AWARDS AND HONORS

- Finalist for the State Council of Higher Education for Virginia (SCHEV) Outstanding Faculty Award (Top 29 of 96 faculty in the State of Virginia), Fall, 2008
- Randolph-Macon College's Nominee for the State Council of Higher Education for Virginia (SCHEV) Outstanding Faculty Award, Fall, 2007, 2008, 2009
- Recipient of Randolph-Macon College's, United Methodist Church Exemplary Teaching Award, 2008
- Invited to serve on a national panel to assess *the state of the science for assessing and mapping coastal hazards*. Sponsors: Western Carolina University Program for the Study of Developed Shorelines NOAA National Climate Data Center, USGS Coastal & Marine Geology Program, July 23-25, 2007.

SELECTED AWARDS AND HONORS (continued)

- Invited keynote speaker to Coastal Change: Natural and Anthropogenic Process-Response Systems, Northeast Geological Society of America, March 2006.
- Invited to chair technical session: Process-based modeling of coastal responses with emphasis on coastal storms, Geological Society of America, joint NE-SE conference March 2004.
- Best Technical Paper Award, PBS&J Environmental Consulting, for Fenster, M.S., Honeycutt, M.G. and Gowan, C., 2003. Impact of storms on shoreline change along the mid-Atlantic coast, Proceedings of Coastal Sediments '03.
- Editorial Board: Journal of Coastal Research
- Member Sigma Gamma Epsilon, ΣΓΕ• (academic national honorary earth sciences society)
- Recipient of the W.A. Tarr Award (outstanding earth scientist) Gamma Mu Chapter, ΣΓΕ

RESEARCH EXPERIENCE

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| 1995-1996 | Research Scientist (post-doc): <i>Univ. of Virginia</i> , Dept. of Environmental Sciences |
| 1989-1994 | Research Associate: <i>University of Virginia</i> , Department of Environmental Sciences |
| 1986-1989 | Research Assistant: <i>Boston University</i> , Department of Geology |
| 1982-1984 | Research Assistant: <i>U.S. Department of Agriculture</i> , Soil Sedimentation Laboratory |
| 1982-1983 | Research Assistant: <i>Mississippi Minerals Resources Institute</i> |

GRANTS AND CONTRACTS

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| 2009 | National Science Foundation (pending) Interdisciplinary Scholars in Science and Mathematics (co-PI), S-STEM: Scholarships in Science, Technology, Engineering and Math (\$600,000) |
| 2009 | National Science Foundation (pending) Renovation for Interdisciplinary Team Research: Randolph-Macon College's Copley Science Center (co-PI), Academic Research Infrastructure Program: Recovery and Reinvestment (ARI-R ²) (\$9,594,000) |
| 2009 | National Science Foundation (granted) Long-term Ecological Research Supplement Research Opportunity Award: Testing the Conceptual Evolutionary Model of the Impact of Accelerated Sea-level Rise on a Mixed-energy Barrier Coast (\$25,736) |
| 2008 | Virginia Department of Environmental Quality (granted) Bacterial Source Tracking to Identify Sources of E. coli Bacteria in the Mechumps Creek Watershed, Ashland, Virginia (\$1,700) |
| 2008 | National Science Foundation (granted) Acquisition of Side-scan Sonar, Sub-bottom Profiling, and Differential Global Positioning Systems in Support of Coastal and Shallow Marine Research and Teaching Activities (\$181,525) |
| 2008 | National Science Foundation (granted) Long-term Ecological Research Supplement Research Opportunity Award: Controls on Virginia Barrier Island Morphodynamics: Toward a Predictive Model (\$11,886) |
| 2007 | National Science Foundation (granted) Long-term Ecological Research Supplement Research Opportunity Award: (I) The Impact of Sea-level Rise and Coastal Storms on Shoreline Changes and (II) The Sedimentary Character of the Modern-day Virginia Coast Reserve Sand Prism and its Potential Sources (\$24,931) |

GRANTS AND CONTRACTS (continued)

- 2007 Randolph-Macon College Walter Williams Craigie Grant (granted) Sediment Budget Analyses of the Virginia Barrier Islands: Integrating Collaborative Coastal and Marine Research into Teaching and Research Activities at Randolph-Macon College (\$6,465)
- 2007 Randolph-Macon College, Faculty Travel Grant from Armour/Cabell/duPont Funds (granted) The Virginia barrier islands, vulnerable but safe for now?, Geological Society of America, national meeting, May 2003, Denver, CO (\$1,269)
- 2007 National Science Foundation (denied) Acquisition of Side-scan Sonar, Sub-bottom Profiling, and Differential Global Positioning Systems in Support of Coastal and Shallow Marine Research and Teaching Activities (\$189,701)
- 2006 University of Virginia, Long-term Ecological Research Program – National Science Foundation; subcontract (granted) Oceanside Geology of the Virginia Coast Reserve: Past, Present, and Future (\$25,000)
- 2006 U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, Threatened and Endangered Species Program (granted) A Study of the Puritan Tiger Beetle (*Cicindela puritana*) and its Habitat: Implications for Management (\$34,000)
- 2005 National Science Foundation (denied) Acquisition of Side-scan Sonar, Sub-bottom Profiling, and Differential Global Positioning Systems in Support of Coastal and Shallow Marine Research and Teaching Activities (\$197,538)
- 2004 Jessie Ball duPont Fund through the Virginia Foundation for Independent Colleges (granted) Part II: Environmental Initiative; Improving Virginia's Environment: River and Stream Water Quality Assessment (\$3,140)
- 2004 Rashkind Grant (granted) Research investigations in the coastal and marine geological sciences: I. Coastal storms and shoreline dynamics; II. Facies architecture of and modern processes associated with bay head deltas as clues to the geologic origin, development, and maintenance of estuaries: Advancing a working model; III. The origin and evolution of the sand sheet facies in Long Island Sound (\$14,398)
- 2003 U.S. Fish and Wildlife Service (granted) Geologic and hydrologic assessment of the *Cicindela hirticollis abrupta* habitat in the Sacramento River Valley, California; (\$12,000)
- 2003 U.S. Fish and Wildlife Service, Region 5 in collaboration with the Maryland Natural Heritage Program, Department of Natural Resources (grant postponed) Habitat conservation planning assistance grant proposal: Two threatened tiger beetle species in Calvert County, Maryland (\$98,000, 3 years)
- 2003 Randolph-Macon College Walter Williams Craigie Grant (granted) Assessing surficial and morphological changes to giant sand dunes under the sea (\$3,500)
- 2003 Jessie Ball duPont Fund and the Emily S. and Coleman A. Hunter Charitable Trust through the Virginia Foundation for Independent Colleges (granted) Part I: Environmental Initiative; Improving Virginia's Environment: River and Stream Water Quality Assessment (\$3,433.33)
- 2003 Randolph-Macon College, Faculty Travel Grant from Armour/Cabell/duPont Funds (granted) The impact of storms on shoreline change along the mid-Atlantic coast, Coastal Sediments '03, May 2003, Clearwater Beach, FL (\$1,147)
- 2002 Randolph-Macon College Faculty-Student Technology Collaboration ("Tech Buddies") Awards Program (granted) Developing a Geographic Information Systems data base in support of geology and environmental studies courses at Randolph-Macon College (\$4,000)

GRANTS AND CONTRACTS (continued)

- 2002 Randolph-Macon College, Faculty Travel Grant from Armour/Cabell/duPont Funds (granted) The nearshore's response to anthropogenic alterations along the Outer Banks of North Carolina, Assateague Shelf and Shore Workshop, April 2002 (\$378)
- 2002 Randolph-Macon College, Faculty Travel Grant from Armour/Cabell/duPont Funds (granted) The impact of dredge disposal and a terminal groin on the beach and nearshore zones adjacent to Oregon Inlet, North Carolina, U.S.A., International Coastal Conference 2002, University of Ulster, Coleraine, Ireland, March 2002 (\$750)
- 2002 National Council on Undergraduate Research (NCUR), Lancy Initiative (denied) *Growth in Ashland, Virginia: An Interdisciplinary Study* (revised and resubmitted), A collaborative interdisciplinary team consisting of several R-MC faculty proposed to study the effects of local growth across the purviews of several disciplines. Fenster proposed to assess and predict the impact of land use on water quality (\$58,500)
- 2002 U.S. Army Corps of Engineers, Wilmington District (denied) *Sediment compatibility between dredge spoils on Bodie Island and dredge disposal on Pea Island, Outer Banks, NC* (\$15,000)
- 2002 U.S. Army Corps of Engineers, Norfolk and Baltimore Districts (granted) *Impacts of dredge spoil on Northeastern Beach Tiger Beetle and its habitat, Chesapeake Bay* (\$12,000)
- 2001 Randolph-Macon College Walter Williams Craigie Teaching Endowment Grant (granted) Hydrology and Water Resource Research in the Middle East (\$3,500).
- 2001 Mednick Fellowship sponsored by the Virginia Foundation for Independent Colleges (granted) *Water flow and sediment transport processes in the Kennebec River Estuary, Maine* (\$1,600).
- 2001 National Council on Undergraduate Research (NCUR), Lancy Initiative (denied) *Beyond store wars: An interdisciplinary study of growth in Ashland, VA*, A collaborative interdisciplinary team consisting of several R-MC faculty proposed to study the effects of local growth across the purviews of several disciplines. Fenster proposed to assess and predict the impact of land use on water quality (\$55,000).
- 2000 National Science Foundation: Biocomplexity in the Environment (denied) *Biocomplexity in the Chesapeake Bay* (\$99,575)
- 2000 Chesapeake Bay Restoration Fund, Chesapeake Bay Foundation (denied) *Natural beach ecosystem protection and the Federally-threatened beach tiger beetle, Cincindela dorsalis dorsalis* (\$24,915)
- 1999 Randolph-Macon College, Faculty Travel Grant from Armour/Cabell/duPont Funds (granted) *The grand finale: Sand sheet development from the reworking of a large marine delta at the mouth of the Connecticut River*, Geol. Society of America, NE Section, March 1999 (\$921)
- 1997 TCU Research and Creative Activities Fund Grant (granted) *Water flow and sediment transport patterns in the Kennebec River Estuary, Maine* (\$3,465)
- 1996 U.S. Army Corps of Engineers, Coastal Engineering Research Center, Field Research Facility (granted) *Quantitative analysis of profile changes along the islands adjacent to Oregon Inlet, North Carolina: Part I, 1991-1996* (\$28,823)
- 1996 National Undersea Research Program, National Oceanographic and Atmospheric Administration (denied) *The kinematics of giant sand waves in eastern Long Island Sound: Investigating decadal-scale sedimentological processes and responses* (\$47,437)
- 1995 Federal Emergency Management Agency, National Shoreline Mapping Program (granted) *Mapping erosion hazard areas in the city of Virginia Beach*, (\$26,996)

GRANTS AND CONTRACTS (continued)

- 1994 U.S. Army Corps of Engineers, Coastal Engineering Research Center, Field Research Facility (granted), *Investigation of profile changes along the Outer Banks, North Carolina* (\$10,621)
- 1994 U.S. Army Corps of Engineers, Wilmington District (granted) *Evaluation of the vulnerability of the proposed transportation corridor on the Outer Banks of North Carolina to erosion and storm surge*, co-principal investigator (\$80,000)
- 1994 U.S. Army Corps of Engineers, Coastal Engineering Research Center, Waterways Experiment Station (denied), *Stochastic modeling to determine the magnitude and spatial extent of tidal inlets on adjacent barrier shorelines* (\$86,286)
- 1993 Federal Emergency Management Agency, National Shoreline Mapping Program (granted) *Erosion studies to support of National Flood Insurance Program* (\$64,084)

PUBLICATIONS**Refereed Scientific Articles**

- Fenster, M.S. and McKay, M.T., in review. Enhanced Learning through Changing Perspective in a Coastal Geology Course: Telescopic Course Design and Culminating Examination in a High-winged Aircraft. *Journal of Geoscience Education*.
- FitzGerald, D.M., Fenster, M.S., Buynevich, I.V., and Argow, B.A., 2008. Coastal impacts due to sea-level rise. *Annual Review of Earth and Planetary Sciences*, v. 36, p. 601-647.
- Fenster, M.S. and Hayden, B.P., 2007. Ecotone displacement trends on a highly dynamic barrier island: Hog Island, Virginia. *Estuaries and Coasts*, v. 30, no. 6, p. 978-989.
- Fenster, M.S., Knisley, C.B., Reed, C.T.*, 2006. Habitat preference and the effects of beach nourishment on the federally-threatened Northeastern Beach Tiger Beetle, *Cicindela dorsalis dorsalis*: western shore, Chesapeake Bay, Virginia, *Journal of Coastal Research*, v. 22, no. 5, p. 1133-1144.
- Fenster, M.S. and Knisley, C.B., 2006. Impact of dams on point bar habitat: A case for the extirpation of the Sacramento Valley Tiger Beetle: *C. hirticollis abrupta*. *River Research and Applications*, v. 22, no. 8, p. 881-904.
- Fenster, M.S., FitzGerald, D.M., and Moore, M.S. *, 2006. Assessing decadal scale changes to a giant sand wave field in Eastern Long Island Sound, *Geology*, v. 34, no. 2, 89-92.
- Knisley, C.B. and Fenster, M.S., 2006, Apparent extinction of the tiger beetle, *Cicindela hirticollis abrupta*. *Coleopterists Bulletin*, v. 59, no. 4, p. 451-458.
- Fenster, M.S., FitzGerald, D.M., Belknap, D.F., Knisley, B.A.*, Gontz, A.M., Buynevich, I.V., 2005. Controls on estuarine morphodynamics: A case study in the central basin of the Kennebec River estuary, Maine, USA.; In: FitzGerald, D.M. and Knight, J., eds; *High Resolution Morphodynamics and Sedimentary Evolution of Estuaries*, Elsevier Publishers, p. 173-194.
- FitzGerald, D.M., Buynevich, I.V., Fenster, M.S., Kelley, J.T., and Belknap, D.F., 2005. Contribution of coarse-grained sediment to the nearshore and inner shelf by large estuaries: New England, USA.; In: FitzGerald, D.M. and Knight, J., eds; *High Resolution Morphodynamics and Sedimentary Evolution of Estuaries*, Elsevier Publishers, p. 195-213.
- Fenster, Michael S., 2005. Setbacks. *Encyclopedia of Coastal Science*, Kluwer Academic Publishers, *Encyclopedia of Earth Sciences Series*, p. 863-866.

PUBLICATIONS: Refereed Scientific Articles (continued)

- Fenster, Michael S., 2005. Offshore Sand Sheets. Encyclopedia of Coastal Science, Kluwer Academic Publishers, *Encyclopedia of Earth Sciences Series*, p. 739-745.
- Fenster, M.S., Honeycutt, M.G. and Gowan, C., 2003. Impact of storms on shoreline change along the mid-Atlantic coast, Proceedings of Coastal Sediments '03, on CD ROM.
- FitzGerald, D.M., Buyenvich, I., Davis, R.A., Jr., and Fenster, M.S., 2002. New England tidal inlets with special reference to riverine associated inlet systems, *Geomorphology*, v. 48, 179-208.
- Fenster, M.S., FitzGerald, D.M., Kelley, J.T., Belknap, D., Buynevich, I.V., and Dickson, M., 2001. Net ebb sediment transport in a rock-bound, meso-tidal estuary during spring freshet conditions: Kennebec River Estuary, Maine, U.S.A., *Geological Society of America Bulletin*, v. 113, no. 12, 1522-1531.
- Fenster, M.S., Dolan, R., Morton, R.A., 2001. Coastal storms and shoreline change: signal or noise? *Journal of Coastal Research*, v. 17, no. 3, 714-720.
- Fenster, M.S., 2000. A jigsaw exercise in classification of coasts. *Journal of Geoscience Education*, v. 48, no. 5, p. 579.
- FitzGerald, D.M., Buyenvich, I., Fenster, M.S., and McKinlay, P.A., 2000. Sand dynamics at the mouth of a rock-bound, tide-dominated estuary. *Sedimentary Geology*, v. 131, p. 25-49.
- Fenster, M.S. and Dolan, R., 1999. Mapping erosion hazard areas in the City of Virginia Beach, *Journal of Coastal Research*, Special Issue 28, p. 58-68.
- Fenster, M.S. and FitzGerald, D., 1996. Morphodynamics, stratigraphy, and sediment transport patterns in the Kennebec River Estuary, Maine, U.S.A., *Sedimentary Geology*, v. 107, no. 1-2, p. 99-120.
- Fenster, M.S. and Dolan, R., 1996. Assessing the impact of tidal inlets on adjacent barrier island shorelines, *Journal of Coastal Research*, v. 12, no. 1, p. 294-310.
- Fenster, M.S. and Dolan, R., 1994. Large-scale reversals in shoreline trends along the U.S. mid-Atlantic coast, *Geology*, v. 22, no. 6, p. 543-546.
- Fenster, M.S. and Dolan, R., 1993. Historical shoreline trends along the Outer Banks, North Carolina: Processes and responses, *Journal of Coastal Research*, v. 9, no. 1, p. 172-188.
- Fenster, M.S., Dolan, R., and Elder, J., 1993. A new method for predicting shoreline positions from historical data, *Journal of Coastal Research*, v. 9, no. 1, p. 147-171.
- Dolan, R., Fenster, M.S., and Holme, S., 1992. Spatial analysis of shoreline recession and accretion, *Journal of Coastal Research*, v. 8, no. 2, p. 263-285.
- Dolan, R., Fenster, M.S., and Holme, S., 1991. Temporal analysis of shoreline recession and accretion, *Journal of Coastal Research*, v. 7, no. 3, p. 723-744.
- Dolan, R., Fenster, M.S., and Holme, S., 1990. Erosion of U.S. shorelines. *Geotimes*, v. 35, no. 6, p. 22-24.
- Fenster, M.S., FitzGerald, D.M., Bohlen, W.F., Lewis, R.S., and Baldwin, C.T., 1990. Stability of giant sand waves in Eastern Long Island Sound. *Marine Geology*, v.91, p. 207-225.
- Caldwell, D.W., FitzGerald, D.M., and Fenster, M.S., 1989. Origin and sedimentation of Maine lakes with emphasis on lake-outlet deltas. In: Tucker, R.D. and Marvinney, R.G. (eds.), *Geology of Maine*, Maine Geological Survey, Augusta, Maine, v. 5, p. 97-108.

Selected Scientific Articles Submitted or in Progress

Fenster, M.S., Moore, L.J., Gontz, A.M., Brenner, O., Wilkins, C., Patsch, K., in prep. The influence of the nearshore geologic framework on the morphodynamics of the northern Virginia barrier islands. To be submitted to: *Journal of Coastal Research*.

Fenster, M.S., Dolan, R., and Jones-Smith, J., in prep. Sediment budget analysis for the Virginia barrier islands including longshore and cross-shore sources and sinks. To be submitted to: *Journal of Coastal Research*.

Fenster, M.S., Dolan, R., Morton, R.A., in prep. Reply to Douglas, B.C., Crowell, M., and Honeycutt, M.G.: Coastal storms and shoreline change: signal or noise? To be submitted to: *Journal of Coastal Research*, v. 17, no. 3, 714-720.

Fenster, M.S. and Miller, H.C., in prep. Beach and nearshore profile changes at Oregon Inlet, NC. To be submitted to: *Coastal Engineering*

Fenster, M.S. and FitzGerald, D.M., in prep. The origin and evolution of the sand sheet and ridge facies: Long Island Sound, U.S.A., To be submitted to: *Journal of Geology*

Edited Publications

Fenster, M.S., 1998. *The Compass Sigma Gamma Epsilon*: Journal of the Earth Sciences, Special Issue: Texas Christian University, Department of Geology (editor), v. 74, nos. 2-4, pp. 33-140.

Other Publications

Fenster, M.S. and Dolan, R., 1993. A new method of investigating temporal and large-scale spatial shoreline trends. In: List, J.H. (ed.) *Large-Scale Coastal Behavior '93*. U.S. Geological Survey Open-File Report 93-381, p. 56-57.

Dolan, R. and Fenster, M.S., 1993. Measurement of shoreline erosion, *Proceedings of the Hilton Head Island, South Carolina U.S.A. International Symposium*, v. 1, p. 190-197.

Fenster, M.S. and Dolan, R., 1993. Identifying hot spots of erosion and accretion, *Proceedings of the Hilton Head Island, South Carolina U.S.A. International Symposium*, v. 1, p. 199-211.

Scully, M.*, Fenster, M.S., and Dolan, R., 1993. Predicting future shoreline positions: Case study of Hog Island, Virginia, *Virginia Coast Reserve Long-Term Ecological Research Program Collected Works*, v. III, p. 74-78.

Watkins, D.*, Fenster, M.S., and Dolan, R., 1993. A new method for modeling historical shoreline movement: Case study of Hog Island, Virginia, *Virginia Coast Reserve Long-Term Ecological Research Program Collected Works*, v. III, p. 70-73.

Dolan, R., Fenster, M., and Holme, S., 1991. Everything you always wanted to know about the erosion of the U.S. shorelines, *Proceedings of the American Coastal Society*, p. 20-26.

*primary author = undergraduate student

SCIENTIFIC PRESENTATIONS

- Fenster, M.S. and Dolan, R., 2009. Morphodynamics and sediment sources and sinks along the Virginia barrier islands. Northeastern Geological Society of America Meeting, Portland, ME, 22-24 March, 2009.
- Fenster, M.S., Dolan, R., and Jones-Smith, J., 2008. What grain size distributions reveal about sediment sources and sinks for the Virginia barrier islands. Southeast Geological Society of America Meeting, Charlotte, NC, 10-11 April 2008.
- Berry, R. and Fenster, M.S., 2008. Concept sketching in field notebooks as a pedagogical approach to enhancing observation, scientific, and drawing skills for undergraduate college students: Examples from the pristine Virginia barrier islands. Southeast Geological Society of America Meeting, Charlotte, NC, 10-11 April 2008.
- Kachuba, G. and Fenster, M.S., 2008. Surf's up: But does it bring sand from offshore to eastern Virginia's barrier islands? Southeast Geological Society of America Meeting, Charlotte, NC, 10-11 April 2008.
- Fenster, M.S., González, M., Dolan, R. and Medina, R., 2007. The Virginia barrier islands, vulnerable, but safe for now? Well, almost. (invited) *In: Abstracts, National Geological Society of America Meeting, Denver, CO, GSA Abstracts with Programs, v. 39, no. 6, p. 242.*
- Fenster, M.S., 2007. Storm Impact and Recovery Assessment through Shoreline Change Analyses. National workshop: *The state of the science for assessing and mapping coastal hazards.* (invited) Sponsors: Western Carolina University Program for the Study of Developed Shorelines NOAA National Climate Data Center, USGS Coastal & Marine Geology Program, July 23-25, 2007.
- Fenster, M.S., 2006. What shoreline change data reveal about coastal process-response systems. Special symposium: Coastal Change: Natural and Anthropogenic Process-Response Systems (invited keynote speaker) *In: Abstracts, Geological Society of America Northeastern Meeting, Harrisonburg, PA, GSA Abstracts with Programs, v. 38, no. 2, p. 6.*
- Fleming, H.M.*, Fenster, M.S., FitzGerald, D.M., October 2005. Potomac River Estuary: Bedload Sediment Source or Sink? 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA., Program with Conference Abstracts, p. 63
- Fenster, M.S. and Honeycutt, M.G., 2004. Deciphering the influence of storms on the historical shoreline record. Abstracts, Geological Society of America Northeastern-Southeastern Meeting, Washington, D.C., GSA Abstracts with Programs, v. 36, no. 2, p. 107.
- Moore, M.* and Fenster, M.S., 2004. Assessing long-term changes to a giant sand wave field in eastern Long Island Sound, U.S.A. Abstracts, Geological Society of America Northeastern-Southeastern Meeting, Washington, D.C., GSA Abstracts with Programs, v. 36, no. 2, p. 87.
- Honeycutt, M.G., Fenster, M.S. and Morton, R.A., 2003. Identifying and Interpreting Spatial Variability in Long-Term and Storm-Induced Shoreline Change: Interplay of Process, Response, and the Historical Record; Coastal Erosion Technical Conference, Texas General Land Office, Galveston, TX.
- Fenster, M.S., Honeycutt, M.G., and Gowan, C., 2003. The impact of storms on shoreline change along the mid-Atlantic coast, Coastal Sediments '03, Clearwater Beach, FL.
- Fenster, M.S., Honeycutt, M.G., and Gowan, C., 2003. When, where and how do coastal storms impact shoreline positions and shoreline migration rates? Assateague Shelf and Shore Workshop, Johns Hopkins University, Environmental Center, Washington, D.C.

SCIENTIFIC PRESENTATIONS (continued)

- Reed, C.T.*, Fenster, M.S., Knisley, C.B., 2003. Habitat delineation and the effects of beach nourishment on the distribution and abundance of the Northeastern Beach Tiger Beetle along western Chesapeake Bay beaches. Assateague Shelf and Shore Workshop, Johns Hopkins University, Environmental Center, Washington, D.C.
- Fenster, M.S. and Knisley, C.B., Oct., 2002. Beaches, beetles, and renourishment in the Chesapeake Bay, Virginia Shore and Beach Preservation Association, Virginia Institute of Marine Sciences, Gloucester, VA.
- Shifflett, S.A.*, Fenster, M.S. and Knisley, C.B., accepted; did not attend due to insufficient funding. The impact of anthropogenic alterations on a federally threatened Northeastern Tiger Beetle along Chesapeake Bay beaches, U.S.A. International Coastal Conference 2002, University of Ulster, Coleraine, Ireland, March 2002.
- Fenster, M.S., Miller, H.C. and Dolan, R., accepted; did not attend due to insufficient funding. The impact of dredge disposal and a terminal groin on the beach and nearshore zones adjacent to Oregon Inlet, North Carolina, U.S.A. International Coastal Conference 2002, University of Ulster, Coleraine, Ireland, 2002.
- Shifflett, S.A.*, Fenster, M.S. and Knisley, C.B., accepted; conference postponed until April 2003; The impact of beach nourishment on a federally-threatened Northeastern Tiger Beetle at Smith Point Beach, Chesapeake Bay. Assateague Shelf and Shore Workshop, Johns Hopkins University.
- Fenster, M.S., Miller, H.C. and Dolan, R., accepted; conference postponed until April 2003. The nearshore's response to anthropogenic alterations along the Outer Banks of North Carolina. Assateague Shelf and Shore Workshop, Johns Hopkins University.
- Fenster, M.S. and Dolan, R., 2001. Using shoreline change analyses to assess chronic erosion and the impact of beach nourishment at Virginia Beach, Virginia, Assateague Shelf and Shore Workshop, Virginia Institute of Marine Sciences.
- FitzGerald, D.M., Buynevich, I, and Fenster, M.S., 2001. Coarse-grained sediment contribution to the nearshore and inner shelf by large fluvial-estuarine systems, New England. American Geophysical Union, Chapman Conference on the Formation of Sedimentary Strata on Continental Margins, Ponce, Puerto Rico (Chuck Nittrouer and James Austin, eds.)
- In Session on America's Coastal Crisis—Providing the Geoscience Information Needed to Conserve and Protect Coastal Resources (Quaternary Geology and Geomorphology Division):
- Fenster, M.S. and Miller, H.C., 2001. Beach and nearshore profiles at Oregon Inlet, NC: A case for equilibrium profiles. Abstracts, Geological Society of America Annual Meeting, Boston, MA, v. 33, no. 6, A41.
- Shifflett, S.A.*, Fenster, M.S., and Knisley, C.B., 2001. A threatened species of northeastern tiger beetle, *Cincindela dorsalis dorsalis* as an indicator of beach health. Abstracts, Geological Society of America Annual Meeting, Boston, MA, v. 33, no. 6, A102.
- In Session on High-Resolution Investigations of the Morphodynamics and Sedimentary Evolution of Estuaries:
- FitzGerald, D.M., Buynevich, I.V, and Fenster, M.S., 2001. Contributions of coarse-grained sediment to the nearshore and inner shelf by large estuaries: New England, USA, Abstracts, Geological Society of America Annual Meeting, Boston, MA, v. 33, no. 6, A273.
- Knisley, B.A.*, Fenster, M.S., FitzGerald, D.M., Belknap, D.F., Buynevich, I.V., Gontz, A.M., and Kelley, J.T., 2001. Controls on estuarine morphodynamics: A case study on Merrymeeting Bay, Kennebec River estuary, Maine. Abstracts, Geological Society of America Annual Meeting, Boston, MA, v. 33, no. 6, A273.

SCIENTIFIC PRESENTATIONS (continued)

- Fenster, M.S., Dolan, R., Morton, R.A., 2000. Storms and shoreline change: signal or noise? *26th Annual Assateague Shelf and Shore Workshop*, Coastal Carolina University, Conway, SC
- Fenster, M.S., FitzGerald, D.M., and Lewis, R.S., 1999. The grand finale: sand sheet development from the reworking of a large marine delta at the mouth of the Connecticut River. Special symposium: History of the Connecticut River valley since deglaciation (invited). In: *Geol. Soc. of America, Abst. with Programs*, v. 31, no. 2, p. A-15.
- FitzGerald, D.M., Buyenvich, I., Davis, R.A., Jr., and Fenster, M.S., 1999. New England tidal inlets with emphasis on those associated with river systems. *Binghampton Conference Geomorphology Series*.
- Fenster, M.S., 1996. Non-linear trend delineation of ecotones. Ecological Society of America and American Statistical Association, invited May 1996, *Ecological Resource Monitoring: Change and Trend Detection Workshop*
- Fenster, M.S. and Dolan, R., 1995. Storm controls on coastal land loss. In: *Geol. Soc. of America, Abst. with Programs*, v.27, no. 6; press release requested.
- Fenster, M.S., Friedrichs, C., and FitzGerald, D.M., 1995. Holocene tidal dynamics within Long Island Sound and the evolution of the tide-dominated sand sheet facies. In: *Geol. Soc. of America, Abst. with Programs*, v. 27, no. 1, p. 43.
- Fenster, M.S. and Dolan, R., 1993. A new method of investigating temporal and large-scale spatial shoreline trends, *Large-Scale Coastal Behavior: An Int'l Symposium on Quantitative Approaches to the Understanding and Prediction of Large-scale Coastal Evolution*, St. Petersburg, FL.
- Dolan, R. and Fenster, M.S., 1993. Measurement of shoreline erosion, *Proceedings of the Hilton Head Island, South Carolina U.S.A. International Symposium*, v. 1, 190-197.
- Fenster, M.S. and Dolan, R., 1993. Identifying hot spots of erosion and accretion, *Proceedings of the Hilton Head Island, South Carolina U.S.A. International Symposium*, v. 1, 199-211.
- Scully, M., Fenster, M.S., and Dolan, R., 1993. Predicting future shoreline positions: Case study of Hog Island, Virginia, *19th Annual Assateague Shelf and Shore Workshop*, University of Maryland, Calvert Marine Museum, Solomons, MD.
- Watkins, D., Fenster, M.S., and Dolan, R., 1993. A new method for modeling historical shoreline movement: Results from the mid-Atlantic coast and a case study of Hog Island, Virginia, *19th Annual Assateague Shelf and Shore Workshop*, University of MD, Calvert Marine Museum, Solomons, MD.
- Fenster, M.S. and Dolan, R., 1992. Predicting shoreline positions from historical data: Case study on Pea Island, NC. *18th Annual Assateague Shelf and Shore Workshop*, Coastal Engineering Research Center, Field Research Facility, Duck, NC.
- Fenster, M.S., FitzGerald, D.M. and Lewis, R.S., 1991. Holocene history of eastern Long Island Sound. *17th Annual Assateague Shelf and Shore Workshop*, Virginia Institute of Marine Science, Gloucester Point, VA.
- Dolan, R. and Fenster, R., 1990. Design and development of an erosion information system-What kind of data is needed? Session 4: A National Perspective to Shoreline Erosion, *Delineation of Erosion Hazard Shorelands Workshop Series*, Cleveland, OH, 21-23 June 1990, v. 5, p. 18-19.
- Dolan, R. and Fenster, M., 1990. Evaluation of historical erosion rates; data requirements. In: *Middle Atlantic Coastal Conference '90*, Ocean City, MD, v. 1, p. 11.

SCIENTIFIC PRESENTATIONS (continued)

- Fenster, M.S. and Holme, S., 1990. Temporal and spatial sampling requirements for estimating shoreline rates of change. *16th Annual Assateague Shelf and Shore Workshop*, New Jersey Marine Sciences Institute, Sandy Hook, NJ.
- Fenster, M.S., FitzGerald, D.M. and Lewis, R.S., 1990. Seismic facies of Holocene sediments in Eastern Long Island Sound. In: *Geol. Soc. of America, Abst. with Programs*, v. 22, no. 1, p. 22.
- Fenster, M.S., FitzGerald, D.M., Bohlen, W.F., Lewis, R.S., and Baldwin, C.T., 1989. Morphodynamics of large bedforms in tide-dominated Long Island Sound. *Second Int'l Research Symposium on Clastic Tidal Deposits*, Calgary, Alberta, Canada, p. 19.
- Fenster, M.S., FitzGerald, D.M., Lewis, R.S., Freile, D., and Baldwin, C.T., 1988. Sand wave morphology and bedform migration in eastern Long Island Sound. In: *Geol. Soc. of America, Abst. with Programs*, v. 20, no. 1, p. 18.
- Fenster, M.S., FitzGerald, D.M., and Baldwin, C.T., 1987. Bedform hierarchy of the lower Kennebec River Estuary, Maine. In *Geol. Soc. of America, Abst. with Programs*, v. 19, no.1, p. 13.
- FitzGerald, D.M., Fink Jr., L.K., Fenster, M.S., Baldwin, C.T., and Goldschmidt, P., 1986. Processes in the mouth of a tidally dominated estuary: Kennebec River, Maine. In: *Hydrodynamics and Sediment Dynamics of Tidal Inlets, Abst. with Programs*, an International Symposium, Woods Hole, MA.

INVITED LECTURES / FIELD TRIP LEADER ACTIVITIES

- 20,000 kHz Under the Sea: Using geophysics in the geologic marine environment, American Society for Nondestructive Testing, Mechanicsville, VA, March 2008.
- Oceanside Geology Status Report, All-scientists meeting of the Long-term Ecological Research Program of the Virginia Coast Reserve, University of Virginia's Anheuser Busch Coastal Research Center, Oyster, VA, January, 2007
- Invited to serve on a national panel to assess *the state of the science for assessing and mapping coastal hazards*. Sponsors: Western Carolina University Program for the Study of Developed Shorelines NOAA National Climate Data Center, USGS Coastal & Marine Geology Program, July 23-25, 2007.
- University of Virginia, Department of Environmental Sciences' Coastal Processes class (upper-level undergraduate and graduate students) invited lecture February 2007: *Tidal Inlets*.
- University of Virginia, Department of Environmental Sciences' Coastal Processes class (upper-level undergraduate and graduate students) invited February 2007 to lead field trip to Virginia Beach, Cape Henry and Sandbridge.
- University of Virginia, Department of Environmental Sciences' Seminar Series invited November 2006. *Anthropogenic impacts on two rare tiger beetle species: (1) Beach nourishment improves the habitat of the Northeastern Tiger Beetle along the Chesapeake Bay and (2) Impact of dams on point bar habitat causes extirpation of the Sacramento Valley Tiger Beetle.*
- Geological Society of America Northeastern Meeting, Harrisonburg, PA, invited key note speaker March 2006. *What shoreline change data reveal about coastal process-response systems*. Special symposium: Coastal Change: Natural and Anthropogenic Process-Response Systems.
- University of Vienna, Vienna, Austria, Department of Geological Sciences invited April 2005. *Coastal and Estuarine Geological Research: Examples from the U.S. Atlantic Seaboard.*
- Richmond Museum of Science; Lunch Break Science, invited October 2004, *Here today, here tomorrow? The impact of storms on beaches and implications for coastal management.*

- Randolph-Macon College Faculty-Staff Luncheon, invited October 2002, *Geographic Information Systems and the Tech Buddy Program*
- Holy Comforter Episcopal Church, Richmond, VA, invited April 2002, *Wal-Mart in Ashland, Stewardship of Creation and A Biblical Land Ethic*
- University of Richmond, Mathematics Club, invited February 2002, *The Intersection of Beaches and Mathematics*
- Assateague Shelf and Shore Workshop, invited March 2001 to lead field trip to Virginia Beach, Cape Henry and Sandbridge, VA for conference attendees at the Virginia Institute of Marine Sciences, Gloucester Point, VA (produced a 60 page field trip guidebook)
- Richmond Gem and Mineral Society, invited June 2000, *Microscopic Minerals as Geologic Tools and Other Assorted Time-Transgressive Tid-bits*
- United States Geological Survey, Water Resources Division-Richmond, invited April 2000, *Teaching Hydrology to Environmental Studies Majors at a Small, Private Liberal Arts College*
- University of North Carolina-Wilmington, invited February 1999, *Linking Shoreline Responses with Coastal Processes: The Impact of Coastal Storms on Shoreline Trends, Implications for Coastal Management*
- Field trip leader to Cape Henry for Penrose Conference: Joint meeting of the Geological Society of America and the Ecological Society of America, invited May 1998, *Field Trip to Cape Henry, Virginia: Linking Temporal and Spatial Scales of Change*
- Richmond Gem and Mineral Society, invited March 1998, *Humans, Nature, and Minerals in Our Coastal and Marine Environment*
- Ecological Society of America and American Statistical Assoc., invited May 1996, Ecological Resource Monitoring: Change and Trend Detection Workshop, *Non-linear Trend Delineation of Ecotones*
- U.S. Corps of Engineers Waterways Experiment Station, invited Apr 1996, seminar on *Use of Principal Component Analysis in Investigating Spatial and Temporal Variability in Onshore and Nearshore Profiles*
- Environmental Studies Program, Randolph-Macon College, Sep 1995, *Environmental Issues in the Coastal Zone: A Look at Geological Processes and Responses*
- Department of Geography and Environmental Engineering, West Point Military Academy, Oct 1994, *Earth's Water Resources: Problems of Quantity and Quality*
- Mathematics Club, University of Virginia, Oct 1993, *Shorelines are Not Lines*
- Environmental Literacy Lecture Series, University of Virginia, Sep 1991, *The Dynamic Earth System*
- School of Architecture, University of Virginia, Jan 1991, *The Earth as a Machine*
- North Shore Rock and Mineral Club, Nov 1988, *Giant Piles of Minerals, 60 Ft High Off the Sea Floor*

TECHNICAL REPORTS

- *Combating Beach Erosion at Mosquito Point, Rappahannock River, Virginia*
- *Locating Point and Non-Point Sources of Escherichia coli in the Mechumps Creek Watershed, Hanover County, Virginia*
- *Geologic and Hydrologic Assessment of the Cicindela hirticollis abrupta Habitat in the Sacramento River Valley, California*

TECHNICAL REPORTS (continued)

- *Assessment of Coastal Engineering Structures in the Dubai Municipality of U.A.E.*
- *Assessment of Dare County, NC Beach Nourishment Project*
- *Coastal Erosion on the North Shore of Long Island and Asharoken Beach*
- *The Impact of Dredge Disposal and a Terminal Groin on the Beach and Nearshore Zones Adjacent to Oregon Inlet, North Carolina*
- *Determination of Statistically Valid and Representative Counties for the NFIRA Analysis of Coastal Erosion Hazards*
- *Summary of Results of the 2001-2002 Monitoring Program of Hopper Dredge Disposal, Oregon Inlet and Pea Island, North Carolina*
- *Oliver Creek Watershed: Geological and Hydrological Investigations of Proposed Lakes*
- *Project Summary Report: Data Update of the Coastal Erosion Information System*
- *Guidelines and Specifications for Analyses of Shoreline Rate-of-Change Data*
- *Coastal Erosion Information System User's Manual*
- *Gravel Stability Study for the Boston, Massachusetts Logan Airport Runway Extensions*
- *Wave Run-up Calculations and Study of Profile Changes at Runway 33L, Logan Airport*
- *Wave Energy Calculations and Wave Refraction Analysis for Spectacle Island Boston Harbor*
- *Project Summary Report: Guidelines and Specifications for Erosion Studies*