

CURRICULUM VITAE - Matthew C. Schwartz

University of West Florida
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Education

University of Delaware, College of Marine Studies, 2002 - Ph.D. (Marine Studies-Oceanography). Dissertation title: Submarine groundwater discharge in the Delaware Estuary: an assessment from excess radon-222.

College of William and Mary, 1993 - B.S. (Geology)

Professional Experience

Associate Professor. University of West Florida, Department of Environmental Studies. Pensacola, Florida. 2010-present.

Assistant Professor. University of West Florida, Department of Environmental Studies. Pensacola, Florida. 2005-2010.

Postdoctoral Research Fellow. University of Edinburgh, School of Geosciences. Edinburgh, Scotland. 2002-2005.

National Science Foundation AIRE (Awards for the Integration of Research and Education) Fellow in Geology. Colby College, Waterville, ME. 2001-2002.

Graduate Student and research assistant. University of Delaware, College of Marine Studies, Lewes, DE. 1996-2001.

Geologist, Brown and Root Environmental, Tallahassee, FL. 1993-1996.

Academic Awards and Fellowships

Frances Severance Academic Council Award for the best thesis or dissertation (Oceanography). University of Delaware, College of Marine Studies. 2002.

U.S. Environmental Protection Agency STAR (Science To Achieve Results) Fellowship, 1998-2001.

Courses taught

- Sampling and Analysis in Environmental Science (EVS6196C),
- Basic Hydrology (GEO4280/L)
- Biogeochemistry (GLY4244/5266)*
- Environmental Geology (GLY3031)
- Geochemistry (GLY4240/5246)*
- Natural Disasters (GLY 4990/5990)*
- Physical Geology (GLY2010/L)
- Senior Seminar (GEO4332)
- Special Topics: (EVR6930)
 - Estuarine Processes*
 - Methods and Techniques in Estuarine Science*
- online courses:
 - Chemical Oceanography (OCC4050)
 - Geological Oceanography* (OCG4050)
 - Global Biogeochemical Cycles (OCC4415)
 - Physical Oceanography (OCP 4002)

*-new course

Professional Memberships

- American Society of Limnology and Oceanography (ASLO),
- American Geophysical Union (AGU),
- Geological Society of America (GSA),
- National Association of Geoscience Teachers (NAGT)
- Air and Waste Management Association (AWMA)

Publications

Sharp, J.H., K. Yoshiyama, A.E. Parker, **M.C. Schwartz**, S.E. Curless, A.Y. Bearegard, J.E. Ossolinski, A.R. Davis (2009). The Chemistry of the Delaware Estuary: Seasonal and Spatial Trends and Correlations. *Estuaries and Coasts*.

Law, G.T.W., G.L. Cowie, E. Breuer, **M.C. Schwartz**, S.M. Harvey, C. Woulds, T.M. Shimmiel, G.B. Shimmiel, and K.A. Doig. (in press). Rates and regulation of microbially-mediated aerobic and anaerobic carbon oxidation reactions in continental margin sediments from the northeastern Arabian Sea (Pakistan margin) *in* Indian Ocean Biogeochemical Processes and Ecological Variability (eds: Jerry D. Wiggert, Raleigh R. Hood, S. Wajih A. Naqvi, Kenneth H. Brink and Sharon L. Smith). American Geophysical Union Geophysical Monograph Series (American Geophysical Union, Washington, D. C.).

Schwartz, M.C., C. Woulds, and G. L. Cowie (2009). Sedimentary denitrification rates across the Arabian Sea oxygen minimum zone. *Deep Sea Research Part II: Topical Studies in Oceanography* 56 (6-7): 324-332.

Publications (cont.)

- Woulds, C., **M.C. Schwartz**, T. Brand, G. Cowie, and G. Law (2009). Porewater nutrient concentrations and benthic nutrient fluxes across the Pakistan Margin OMZ. Deep Sea Research Part II: Topical Studies in Oceanography 56 (6-7): 333-346.
- Breuer, E., G. Law, C. Woulds, G. Cowie, G. Shimmield O. Peppe, **M. Schwartz**, and S. Mckinlay (2009). Sedimentary oxygen consumption and microdistribution at sitee across the Arabian Sea oxygen minimum zone (Pakistan Margin). Deep Sea Research Part II: Topical Studies in Oceanography 56 (6-7): 296-304.
- Andersson, J.H., C. Woulds, **M. Schwartz**, G. L. Cowie, L. A. Levin, K. Soetaert, and J. J. Middelburg. 2008. Short-term fate of phytodetritus across the Arabian Sea Oxygen Minimum Zone. Biogeosciences, 5, 43-53 2008. www.biogeosciences.net/5/43/2008/
- Schwartz, M.C.**, J. Smith, C. Woulds, and G. Cowie, (pending). Using laboratory incubations with regulated oxygen concentrations to measure biogeochemical fluxes in benthic incubations. In revision for submission to Journal of Experimental Marine Biology and Ecology.
- Woulds, Clare, Greg L. Cowie, Lisa A. Levin, Johan H. Andersson, Jack J. Middelburg, Sandra Vandewiele, Peter A. Lamont, Kate E. Larkin, Andrew J. Gooday, Stefanie Schumacher, Christine Whitcraft, Rachel M. Jeffreys, and **Matthew Schwartz**, 2007. Oxygen as a control on sea floor biological communities and their roles in sedimentary carbon cycling. Limnology and Oceanography 52: 1698-1709.
- Schwartz, M.C.** 2004. Coastal Nutrient Inputs from Groundwater: Case Studies from the East Coast of the United States in P. Wassman and K. Olli [eds.], Drainage Basin Inputs and Eutrophication: an Integrated Approach. pp. 50-60. <http://lepo.it.da.ut.ee/~olli/eutr/Eutrophication.pdf>.
- Schwartz, M. C.**, 2003. Significant Groundwater Input to a Coastal Plain Estuary: Assessment from Excess Radon. Estuarine, Coastal and Shelf Science 56: 31-42.

External Funding (Awarded and Sought)

- August 2009. National Park Service. (PI: Matthew Schwartz). Gulf Islands National Seashore Seagrass water quality monitoring project. **\$16,486.50. FUNDING AWARDED.**
- March 2009. Florida Sea Grant. (PI: Matthew Schwartz; co-PIs Wade Jeffrey and Allison Beauregard). A geospatial assessment of land-use effects on population dynamics of *K. brevis* in coastal embayments in northwest Florida. \$200,000. SUBMISSION OF FULL PROPOSAL INVITED. DECLINED.

Funding, Awarded and Sought (cont)

- April 2008. NSF Academic Technology in Education (co-PIs: Allison Beauregard and Matthew Schwartz). Using GIS with real-time water quality assessment to guide scientific inquiry and learning in a community college environmental studies program. **\$148,909. FUNDING AWARDED**
- July 2008. NSF GK-12. (co-PIs: Jaromy Kuhl, Matthew Schwartz, and Carol Briscoe). Coastal Investigations through Space and Time: A Geospatial and Historical Examination of Pensacola's Near-shore Environment. \$2,894,993. DECLINED
- January 2008. Florida Sea Grant Pilot Funding Program (co-PIs: Matthew Schwartz and Wade Jeffrey). Preliminary data analysis to test land-use influence on red tide in Choctawhatchee Bay. **\$3,500. FUNDING AWARDED.**
- November 2007. NSF RIDGE 2000 Guest Lecture Series [Allison Beauregard (OWC) and Matthew Schwartz]. Travel costs and access to distinguished lecturer, Dr. Julie Huber. **~\$2,000. AWARDED**
- October 2007. EPA ECOHAB (Ecology and Oceanography of Harmful Algal Booms.). (co-PIs: Matthew Schwartz and Wade Jeffrey). A focused assessment of land-use effects on *K. brevis* dynamics. \$476,325. DECLINED
- August 2007. NSF Chemical Oceanography. (co-PIs: Jane Caffrey, Matthew Schwartz, and Joe Lepo). RUI: Assessing the effects of submarine groundwater discharge on denitrification and anammox in estuarine sediments. \$913,230. DECLINED
- June 2007. NSF Division of Graduate Education. (co-PIs: Jaromy Kuhl, Matthew Schwartz, David Stout). Coastal Investigations through Space and Time: A Geospatial and Historical Examination of Pensacola's Near-shore Environment. \$2,999,861. DECLINED
- February 2007. Florida Sea Grant. (Matthew Schwartz). Assessing the seasonal variability of submarine groundwater discharge's biogeochemical impact on northwest Florida estuaries. \$182,908. DECLINED
- September 2006. NOAA Coastal Hypoxia Research Program (co-PIs: Jane Caffrey, Richard Snyder, Matthew Schwartz). Natural and anthropogenic factors influencing hypoxia in a Gulf of Mexico estuary, Pensacola Bay. DECLINED
- August 2006. NSF Chemical Oceanography. (co-PIs: Jane Caffrey, Matthew Schwartz, David Kirchman, Barbara Campbell). Collaborative Research - RUI: Assessing the effects of groundwater discharge on benthic denitrification in permeable estuarine sediments. \$657,490. DECLINED

Funding, Awarded and Sought (cont)

July 2006. USEPA Statistical Analyses of Geospatial Data Regarding Coral Condition and Possible Natural and Anthropogenic Causes. (co-PIs: Matthew Schwartz, Stuart Hamilton, Chris Houser, Allison Beauregard, Zhiyong Hu. DECLINED.

January 2006. NSF Chemistry. (co-PIs: Tara Sirvent, Wade Jeffrey, Theodore Fox, Pamela Vaughan, Matthew Schwartz). Acquisition of a LC-MS/MS for and cross-disciplinary research and training at the University of West Florida. \$483,622. DECLINED

Conference Presentations

Choctawhatchee Estuary Symposium. Oral Presentation (lead author; co-author, Allison Beauregard). Using GIS with Real-time Water Quality Assessment to Guide Scientific Inquiry and Learning in a Community College Environmental Studies Program. April 2010

Choctawhatchee Estuary Symposium. Oral Presentation (co-author; lead author, Allison Beauregard). Assessing spatial and temporal variability of nutrients in western Choctawhatchee Bay. April 2010.

Choctawhatchee Estuary Symposium. Poster Presentation (co-author with Allison Beauregard and Samantha Sementilli). Shifting Phytoplankton Communities in Two Adjacent Bayous of Western Choctawhatchee Bay. April 2010.

Choctawhatchee Estuary Symposium. Poster Presentation (co-author with Alexander MAestre; lead author Alison McDowell). April 2010.

Geological Society of America. Poster Presentation (co-author with Dr. Allison Beauregard). Community College-University Research Partnership: One Project, Parallel Goals. October 2009.

Choctawhatchee Estuary Symposium. Poster Presentation (co-author; lead author Alison McDowell). A comparison of nutrient regimes and hydrologic fluxes in two bayous of Western Choctawhatchee Bay. May 2009

Choctawhatchee Estuary Symposium. Poster Presentation (co-author; lead author Jennifer Chastain). Spatial Variability of Phytoplankton and Nutrients in Choctawhatchee Bay. May 2009

UWF SEASTARS 2009. Poster presentation (Lead author: Yamini Amin; co-author Matthew Schwartz). A temporal and spatial analysis of phytoplankton community structure and abundance in Choctawhatchee Bay and Pensacola Bay estuaries. April 2009.

Conference Presentations (cont.)

Choctawhatchee Estuary Symposium. Oral Presentation (lead author; co-author, Wade Jeffrey). Assessing Spatial and Temporal Variability of Red Tide in Western Choctawhatchee Bay. June 2008.

Choctawhatchee Estuary Symposium. Poster Presentation (Lead author: Jennifer Chastain; co-author Matthew Schwartz). Spatial Variability of Phytoplankton and Nutrient Distributions in Choctawhatchee Bay. June 2008.

UWF SEASTARS 2008. Poster presentation (Lead author: Jennifer Chastain; co-author Matthew Schwartz). Spatial Variability of Phytoplankton and Nutrient Distributions in Choctawhatchee Bay. April 2008. **Earned Environmental Studies Departmental Award**

UWF SEASTARS 2008. Poster presentation (Lead author: Jonathan Stewart; co-author Matthew Schwartz). Submarine Groundwater Discharge to a Pensacola, FL, Bayou: Implications for Contaminant Transfer and Nutrient Loading. April 2008. **Earned CAS Dean's Award for Excellence**

AGU/ASLO Ocean Science Meeting (Orlando, FL). Oral Presentation (Lead author; co-author Brandon Jarvis). Effects of Organic Carbon Loading on Coupled Nitrification/Denitrification in Estuarine Sediments. March 2008

AGU/ASLO Ocean Science Meeting (Orlando, FL). Poster Presentation (Lead author: Jonathan Stewart; co-authors: Joseph Beutler and Matthew Schwartz). Urban Submarine Groundwater Discharge to a Pensacola, FL, Bayou: Implications for Contaminant Transfer and Nutrient Loading. March 2008

Northwest Florida Environmental Research Symposium. Submarine groundwater discharge in northwest Florida: geochemical and environmental implications. Oral presentation. October 2007.

University and Community Service Presentations

Northwest Florida State College Science Fridays. Invited Oral Presentation. Research under the ocean: using DSV *Alvin* to explore hydrothermal vents. January 2010.

Fort Walton Beach Yacht Club. Oral Presentation. Oceanographic research under the ocean: DSV *ALVIN*. September 2009.

UWF Math Colloquium Series. Oral Presentation. Biogeochemistry of Estuaries. February 2009.

UWF CUTLA Faculty Friday workshop: Techniques for Enhancing Online Teaching and Learning. Oral Presentation. February 2009

University and Community Service Presentations (cont.)

Pine Forest High School (Kevin Turner). Environmental Studies at University of West Florida. January 2009.

UWF CUTLA Mini-Conference on Best Practices for Student Engagement in Face-to-Face and Online Courses. Oral Presentation . October 2008.

Earth Day 2008 Environmental Symposium. Oral Presentation. The State of Global Water Resources. April 2008

UWF Math Colloquium Series. Oral Presentation. Oceanographic Research on, in and under the Ocean: Oceanographic Research and DSV ALVIN. March 2008.

UWF Biology Seminar Series. Invited oral seminar How a geochemical oceanographer became interested in microbial ecology. August 2007

USEPA Gulf Ecology Division (Gulf Breeze, FL). Invited oral presentation (sole author): Using laboratory incubations to assess the benthic biogeochemistry of submarine groundwater discharge to the coastal ocean: new work at UWF. November 2005.

Theses and Dissertations Directed

- Active Graduate Students
 - Friedrich Langerfeld, UWF Environmental Science (chairperson)
 - Michael Koban, UWF Environmental Science (chairperson)
 - Thesis proposal approved
 - Dawn Prince, UWF Environmental Science (chairperson)
 - Thesis proposal approved
 - Alison McDowell, UWF Environmental Science (chairperson)
 - Thesis proposal approved
 - Jennifer Chastain, UWF Environmental Science (chairperson)
 - Thesis proposal defended
 - Stuart Hamilton, University of Southern Mississippi
 - Dissertation proposal approved

- Completed Master's Students
 - Michael Somerville, UWF Environmental Science; thesis defended spring 2009
 - Kristal Walsh, UWF Environmental Science; thesis defended fall 2007
 - Brandon Jarvis, UWF Environmental Science (chairperson); thesis defended spring 2007
 - Jonathan Oravetz, UWF Environmental Science; thesis defended fall 2006

Theses and Dissertations Directed (cont)

- Undergraduate Honors Students
 - Rachel Pryor (2008)
 - Christina Genualdi (2008)

University Service Activities

- CAS Council (August 2007-present)
 - **CAS Council Chairperson** for 2009-10
 - 2007 Curriculum and Planning Committee, **Chairperson**
 - 2008 Curriculum and Planning Committee, **Chairperson**
 - CAS Steering Committee
 - CAS Leadership
- UWF ITS Program Review Team
- UWF Biology Program Review Team
- Peer mentoring for Dr. Jason Ortegren: 2009-10
- UWF Property Survey Board (July 2007-present)
- Environmental Conservation and Beautification Committee (June 2007-present)
- Marine Services Committee, regular member (2010-present)
 - *ex-officio* member (2006-2010)
- UWF SEASTARS Advisory Board: 2007, 2008, 2009 **Chairperson**
- UWF Search committees
 - Dive Safety Officer (Marine Services) (April 2010)
 - Biogeochemistry (Biology) (2008)
 - Aquatic Botany faculty (Biology); search suspended
 - Geologist/geographer (Environmental Studies) (December 2007)
 - GIS Data Analyst (GIS GeoData center/Environmental Studies) (December 2007)
 - **Chairperson** - Environmental Health and Safety Director (Spring 2006)

Community Service Activities

May 2010. MKEI Choctawhatchee Estuary Family Festival. Led environmental field trips and assisted with event planning, setup, and execution.

January 2010-current. Board of Directors for Emerald Coastkeepers.

November 2008-May 2009. Advisory Board Member for Mattie Kelly Environmental Institute Scientific Symposium and Family Festival

October 2008. Panel Member in 2008 UWF CUTLA Fall Mini-conference on Best Practices for Student Engagement in Face-to-Face and Online courses: Engaging Students in Online Courses (with Dr. Dave Dawson and Dr. Melanie Sutton).

August 2008. Reviewed online academic exercises as part of the Florida Distance Learning Consortium's Orange Grove digital repository program (<http://www.theorangegrove.org/>)

Community Service Activities (cont.)

April 2008. Assisted UWF Archaeology Institute (Drs. John Bratten and Gregory Cook) with environmental sediment sampling plan for compliance with FDEP regulations

April 2008. Co-hosted NSF RIDGE2000 Distinguished Lecture Series presentation: Dr. Julie Huber, "Microbial Ecology of Subseafloor Crustal Communities".

March 2008. Attended CUTLA Faculty Friday program "Online, but not Isolated"

Perform technical reviews for National Science Foundation, South Carolina Sea Grant, Environmental Protection Agency, *Nature Geoscience*, *Journal of Geoscience Education*, *Journal of Environmental Radioactivity*, *Biogeochemistry*, and others.

Air and Waste Management Board of Directors, Coastal Plains Chapter (2005-present)
Scholarship chairperson (2007-present)

Completed UWF Argo A.D.V.I.S.E program (spring 2007)

Professional Development and Experience

Panel member for National Science Foundation Advanced Technological Education program. Washington, DC. October 2009

Participant in LADDER-3 cruise aboard RV *Atlantis*. Investigation of hydrothermal vent ecology and current turbulence dynamics in eastern tropical north Pacific. November-December 2007.

Conducted multiple shipboard and in situ experiments assessing benthic flux of gases, nutrients, and trace metals across sediment-water interface of Arabian Sea oxygen minimum zone during two RRS Charles Darwin cruises (April-June 2003 and September-October 2003) and fieldwork in Loch Etive, Scotland (June-July 2004). University of Edinburgh. 2003-2005.

Participated in development of scientific research goals and experimental protocols for assessing biogeochemical fluxes across the sediment-water interface of Arabian Sea oxygen minimum zone. University of Edinburgh. 2002-2005.

Coordinated and performed design and construction of experimental and analytical equipment (including shipboard sediment-water column incubation rig, oxystat system, gas chromatograph and gas extraction rig) for use on Arabian Sea research cruises and general use thereafter. University of Edinburgh. 2002-2005.

Developed and taught undergraduate Geology courses: Natural Hazards (GE 197j) lecture and laboratory (January 2002) and Oceanography (GE 171) lecture (Spring 2002). Colby College, Waterville, ME. 2001-2002.

Professional Experience (cont.)

Designed and constructed course web pages to disseminate information related to Natural Hazards and Oceanography courses (online lectures, syllabi, assignments, and content-related links). 2002.

Organized and coordinated the Third Annual Colby Undergraduate Research Symposium, a multi-division research fair that encompassed 20 academic departments and over 500 students. Colby College, Waterville, ME. May 2002.

Designed and developed laboratories for Environmental Geology, Natural Hazards, and Paleoclimatology undergraduate Geology courses. Colby College, Waterville, ME. 2001-2002.

Served as Chief Scientist on UNOLS cruise aboard the R/V Cape Henlopen. (PI: J. Sharp). Supervised all research efforts performed by 12-member scientific party during three-day cruise devoted to three separate research efforts (mesocosm incubations, salinity gradient profiling of biogeochemical parameters, water column and sediment excess radon assessment) in the Delaware Estuary. March 2000.

Participated in thirteen (13) UNOLS research cruises (PIs: T. Church, J. Scudlark, and J. Sharp). Supervised sampling activities and schedule. Collected water and sediment samples. Performed biogeochemical analyses on water samples. Collected and analyzed water and sediment samples for radon and radium activities. R/V Cape Henlopen. 1996-2001.

Participated in Sediment Biogeochemistry field course (benthic chamber use and technology) at Wrigley Island Environmental Station (instructor: Dr. William Berelson, University of Southern California). 1998.

Coordinated, planned, and led two to three day-long educational field trip for six to eight middle school classes per year. Recruited and oriented up to 12 graduate student volunteer assistants. Milton Middle School, Milton, DE. 1998-2000.

Designed and implemented laboratory outreach educational presentations and activities for general, nonscientific audience at Coast Day, University of Delaware, College of Marine Studies, Lewes DE. 1996-2000.

Managed projects related to assessment and remediation of soil and groundwater contamination at private and federal project sites, including coordinating and leading field efforts and data analysis/presentation. Oak Ridge, TN, and Tallahassee, FL. 1991-1996. <http://uwf.edu/environmental/>