

# Bret D. Jarrett, Ph.D.

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## EDUCATION:

BACHELOR OF SCIENCE; GEOLOGY

*Graduated 1992*

Florida State University, Tallahassee, FL

MASTER OF SCIENCE; MARINE SCIENCE

*Graduated 1995*

University of North Carolina at Chapel Hill, Chapel Hill, NC

DOCTOR OF PHILOSOPHY; MARINE SCIENCE

*Graduated 2003*

University of South Florida, St. Petersburg, FL

## EXPERIENCE:

COASTAL CAROLINA UNIVERSITY, Conway, SC

DEPARTMENT OF MARINE SCIENCE

*Fall 2019-Present*

### **Visiting Assistant Professor**

- Visiting, fulltime academic faculty position as Visiting Assistant Professor of Marine Science
- Instructed lecture and laboratory courses in Marine Science and Marine Geology
- *Supervisor: Dr. Craig Gilman*

COASTAL CAROLINA UNIVERSITY, Conway, SC

DEPARTMENT OF MARINE SCIENCE

*Fall 2018-Spring 2019*

### **Teaching Associate**

- Fulltime academic faculty position as Teaching Associate of Marine Science
- Instructed lecture and laboratory courses in Marine Science and Marine Geology
- *Supervisor: Dr. Jane Guentzel*

COASTAL CAROLINA UNIVERSITY, Conway, SC  
DEPARTMENT OF MARINE SCIENCE  
*Fall 2017-Spring 2018*

**Visiting Assistant Professor**

- Visiting, fulltime academic faculty position as Visiting Assistant Professor of Marine Science
- Instructed lecture and laboratory courses in Marine Science and Marine Geology
- *Supervisor: Dr. Jane Guentzel*

N.S. NETTLES & ASSOCIATES, INC., Palm Harbor, FL  
*Summer 2006-Summer 2017*

**Senior Geologist/Marine Scientist**

- Geophysics, Marine Science, Coastal Modeling, Hydrogeology
- Project Manager for Subsidence Investigations
- Acquire and interpret data and write reports for sinkhole investigations, geotechnical studies, marine geological studies, and EIA's
- Manage large datasets and personnel working on marine and terrestrial geologic projects
- Acquisition, processing, interpretation of Multi-Electrode Electrical Resistivity data (SuperSting system)
- Acquisition, processing, interpretation of Multi Channel Analysis of Surface Waves data
- Acquisition, processing, interpretation of high-frequency Ground Penetrating Radar data
- Acquisition, processing, interpretation of high-frequency Sub-Bottom Profiler data
- Collection and interpretation of Cone Penetrometer Test data
- Collection and interpretation of Standard Penetrating Test boring data
- Collection and interpretation of Continuous Rock Core data
- Laboratory sedimentological and microscopic analysis of sediments and rock
- Collection of bathymetric, water level, current data, and weather station data for input to coastal hydrodynamic model simulations
- Construct and run hydrodynamic models for circulation, sediment transport, and storm surge analysis
- Supervise monitor well and production well construction for hydrogeologic studies
- Regular attendance and presentation of papers at national and international conferences

- *President: Sandy Nettles*

UNIVERSITY OF SOUTH FLORIDA, St. Petersburg, FL  
COLLEGE OF MARINE SCIENCE  
*Summer 2005-Spring 2006 (June-May)*

**Research Scientist**

- Post-doctoral appointment with funding from The Harte Research Institute for Gulf of Mexico Studies, the Florida Institute of Oceanography, and the State of Florida
- Collection and analysis of geophysical and sediment-rock data from the west Florida shelf
- Collection and analysis of geophysical and sediment data from the Ten Thousand Islands (southwest Florida)
- *Supervisor: Dr. Stan Locker*

COLBY COLLEGE, Waterville, ME  
DEPARTMENT OF GEOLOGY  
*Spring 2005 (February-May)*

**Visiting Assistant Professor**

- Temporary, fulltime academic faculty position as Visiting Assistant Professor of Geology
- Instructed courses in Oceanography, Marine Geology, and Marine Geology laboratory
- *Supervisor: Dr. Bob Gastaldo*

UNIVERSITY OF SOUTH FLORIDA, St. Petersburg, FL  
COLLEGE OF MARINE SCIENCE  
*Summer-Fall 2004 (July-December)*

**Research Scientist**

- Post-doctoral appointment with funding from the U.S. Geological Survey, St. Petersburg, FL
- Analysis and publication of results of marine geological research on the southwest Florida shelf
- *Supervisor: Dr. Al Hine*

U.S. COAST GUARD ACADEMY, New London, CT  
MARINE AND ENVIRONMENTAL SCIENCES  
*Spring 2004 (January-May)*

**Lecturer**

- Temporary, fulltime academic faculty position (sabbatical replacement) as Lecturer in Marine Science
- Instructed two lecture and laboratory sections of Marine Geology course
- *Supervisor: CAPT Mike Alfultis, Ph.D.*

UNIVERSITY OF SOUTH FLORIDA, St. Petersburg, FL  
COLLEGE OF MARINE SCIENCE  
*1995-2003*

**Ph.D. Candidate**

- Developed conceptual facies model to explain facies distribution patterns of late Quaternary carbonate sediments on the southwest Florida platform
- Used geophysical techniques (seismic reflection, side-scan sonar, multibeam sonar), ROV, manned submersible, SCUBA, dredging techniques, and satellite oceanography to map and interpret shallow and deep-water coral reef communities, lithified paleoshorelines, and lowstand shoreline sediments on the southwest Florida platform
- Used light microscopy to determine composition and diagenetic history of surface sediments and rocks on the southwest Florida platform
- Participated on 17 research cruises (seven as Chief Scientist)
- Co-authored four grant proposals to fund Dissertation research
- Participated as co-Chief Scientist on Pulley Ridge leg of the 2000 Sustainable Seas Expedition with Dr. Sylvia Earle (Explorer-In-Residence, National Geographic Society)
- Co-led geological field trips to San Salvador and Andros Island, Bahamas
- Participated on field trip to northwestern Cuba to study Mesozoic and Cenozoic carbonate rocks
- Led summer field trips to barrier islands of west-central Florida and instructed labs for Pinellas County middle school students and teachers (Oceanography Camp for Girls)
- Co-led summer field trips to Florida Keys for at-risk minority students in Pinellas County (Project Tampa Bay)
- Educated the public on marine science matters through employment at Pier Aquarium, St. Petersburg, FL (1995-1996)
- Phi Kappa Phi Honor Society – USF Chapter 126

- Participated in NOVA technology workshop at University of Arkansas designed to educate and train junior college and university faculty in the application and teaching of data visualization and computer animation technologies to enhance Earth System Science education

#### **Teaching Assistant**

- Geological Oceanography (with lab)

UNIVERSITY OF NORTH CAROLINA, Chapel Hill, NC  
CURRICULUM IN MARINE SCIENCE  
*1992-1995*

#### **M.S. Candidate**

- Interpreted the stratigraphy and diagenetic history of lithified late Quaternary reef and eolian facies from northern Great Bahama Bank
- Used SCUBA to collect rock cores on northern Great Bahama Bank with hydraulic rotary coring drill rig
- Used light microscopy and scanning electron microscopy to interpret carbonate cement fabrics and diagenetic history of late Quaternary rocks
- Used energy dispersive x-ray analysis to determine elemental composition of carbonate cements
- Conducted field work in San Salvador and Eleuthera Island, Bahamas comparing diagenetic cement characteristics of sub-aerial eolian deposits with submerged counterparts
- Co-led two geological field trips to San Salvador Island, Bahamas

#### **Teaching Assistant**

- Geological Oceanography (with lab)
- Geology of Bahamas course

#### **EQUIPMENT USED IN MARINE RESEARCH:**

- Boomer seismic reflection systems (Huntec, Geopulse)
- Side-scan sonar (EG&G 260)
- Multibeam sonar (Simrad EM 3000)
- Chirp sonar (Edge Tech)
- QTC bathymetry and bottom classification sonar (Questar Tangent)
- Continuous Resistivity Profiling
- Multi-Electrode Electrical Resistivity
- Stratabox Sub-Bottom Profiler

- ADCP current profilers
- Hobo water level sensors
- ROV data acquisition (Phantom S2)
- Seafloor dredging operations
- SCUBA (NAUI)
- Vibracoring
- Piston Coring
- Gravity Coring
- Rotary Coring with tripod and impact wrench

#### **COMPUTER SKILLS:**

- Windows and Mac OS platforms
- Triton-Elics Delph Seismic acquisition and processing
- Triton-Elics Isis Sonar acquisition
- Simrad EM 3000 acquisition
- Adobe Photoshop, Illustrator, Acrobat
- Canvas
- Surfer
- Didger
- Primer
- SMS Surface Water Modeling System
- Radan GPR software
- GPS Pathfinder Office
- SonarWizMap
- Surfseis
- EarthImager 2D
- Geometrics seismic data acquisition and processing
- Microsoft Office applications
- SMS Modeling software

#### **PUBLICATIONS:**

- Hine, A.C., Halley, R.B., Locker, S.D., Jarrett, B.D., Jaap, W.C., Mallinson, D.J., Ciembronowicz, K.T., Ogden, N.B., Donahue, B.T., and Naar, D.F., 2008, Coral reefs, present and past, on the west Florida shelf and platform margin, *In*, Riegl, B.M., and Dodge, R.E. (eds.): *Coral Reefs of the USA*, p. 127-173.
- Locker, S.D., and Jarrett, B.D., 2006, Benthic habitat mapping in Pumpkin Bay, Florida: Establishing baseline conditions prior to Picayune Strand restoration: *Final Report to South Florida Water Management District, Purchase Order PC P50220*, 55 pp.

- Halley, R.B., Culter, J.K., Ritchie, K.B., Earle, S.A., Guggenheim, D.E., Ciembronowicz, K.T., Hine, A.C., Jarrett, B.D., Locker, S.D., and Jaap, W.C., 2006, Pulley reef: a deep photosynthetic coral reef on the West Florida Shelf, USA: *Coral Reefs*, v. 25, p. 228.
- Cross, V.A., Twichell, D.C., Halley, R.B., Ciembronowicz, K.T., Jarrett, B.D., Hammar-Klose, E.S., Hine, A.C., Locker, S.D., and Naar, D.F., 2005, GIS compilation of data collected from the Pulley Ridge deep coral reef region: *U.S. Geological Survey Open-File Report 2005-1089*, DVD-ROM.
- Jarrett, B.D., Hine, A.C., Halley, R.B., Naar, D.F., Locker, S.D., Neumann, A.C., Twichell, D., Hu, C., Donahue, B.T., Jaap, W.C., Palandro, D., and Ciembronowicz, K., 2005, Strange bedfellows – a deep-water hermatypic coral reef superimposed on a drowned barrier island; southern Pulley Ridge, SW Florida platform margin: *Marine Geology*, v. 214, p. 295-307.
- Hine, A.C., Jarrett, B.D., Halley, R.B., Locker, S.D., Mallinson, D.J., Naar, D.F., Donahue, B.T., Weaver, D., and Shinn, E.A., 2004, New geologic themes emerging from west Florida outer shelf studies: *Geological Society of America Abstracts with Programs*, Denver, CO, v. 36, no. 5.
- Halley, R.B., Hine, A.C., Jarrett, B.D., Twichell, D.C., Naar, D.F., and Dennis, G.D., 2004, Pulley Ridge: The US's deepest hermatypic coral reef?: *Geological Society of America Abstracts with Programs*, Denver, CO, v. 36, no. 5.
- Jarrett, B.D., 2003, Late Quaternary carbonate sediments and facies distribution patterns across a ramp to rim transition: A new conceptual model for the southwest Florida platform: *Ph.D. Dissertation*, University of South Florida, St. Petersburg, FL, 354 pp.
- Naar, D.F., Donahue, B.T., Berman, G., McIntyre, M., Saleem, S., Reynolds, B.J., Jarrett, B.D., and Ciembronowicz, K., 2003, Multibeam sonar surveys of sedimentary bedform migration in Egmont Channel, Tampa Bay, and other surveys of sedimentary bedforms, limestone ledges, and real and artificial reefs surrounding Florida, the Bahamas, and America Samoa: *The Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes*, Abstracts, Clearwater Beach, FL, p. 197.

- Halley, R.B., Garrison, V.E., Ciembronowicz, K.T., Edwards, R., Hine, A.C., Jarrett, B.D., Locker, S.D., Naar, D.F., Donahue, B., Jaap, W.C., Mead, G., Earle, S., Dennis, G.D., and Twichell, D.C., 2003, Pulley Ridge-The US's deepest coral reef?: *Joint Conference on the Science and Restoration of the Greater Everglades and Florida Bay Ecosystem from Kissimmee to the Keys*, GEER Program and Abstracts, Palm Harbor, FL, p. 238-240.
- Jarrett, B.D., Hine, A.C., Neumann, A.C., Naar, D., Locker, S.D., Mallinson, D.J., and Jaap, W., 2000, Deep biostromes at Pulley Ridge; southwest Florida carbonate platform: *EOS Transactions*, American Geophysical Union, v. 81, no. 48, p. F737.
- Jarrett, B.D., Hine, A.C., Neumann, A.C., Naar, D., Locker, S.D., Mallinson, D.J., and Jaap, W., 2000, Deep biostromes at Pulley Ridge; southwest Florida carbonate platform: *Proceedings of the American Academy of Underwater Sciences Nineteenth Annual Scientific Diving Symposium*, St. Pete Beach, FL.
- Jaap, W., Mallinson, D.J., Hine, A.C., Hallock, P., Wheaton, J., and Jarrett, B.D., 2000, Geological and biological characteristics of the Dry Tortugas, Pulley Ridge, and the Florida Middle Ground: *Gulf of Mexico Symposium*, Mobile, AL.
- Jarrett, B.D., Hine, A.C., Neumann, A.C., and Naar, D.F., 1999, "Give-up" late Quaternary reefs west of the Florida Keys: *EOS Transactions*, American Geophysical Union, v. 80, no. 46, p. F498.
- Jarrett, B.D., Hine, A.C., Locker, S.D., and Mallinson, D.J., 1998, The ramp to rim transition on the south Florida carbonate margin: *Geological Society of America Abstracts with Programs*, Toronto, Canada, v. 30, p. A228.
- Jarrett, B.D., 1995, The diagenetic history of submarine Holocene and Pleistocene rock cores from northern Great Bahama Bank and emergent counterparts: *M.S. Thesis*, University of North Carolina at Chapel Hill, Chapel Hill, NC, 181 pp.
- Jarrett, B.D., Boss, S.K., Neumann, A.C., and Rasmussen, K.A., 1994, Carbonate cements: Applications for environmental interpretation; Implications for eolianite preservation: *Geological Society of America Abstracts with Programs*, Seattle, WA, v. 26, p. 495.



## **PROFESSIONAL MEMBERSHIPS:**

- Geological Society of America
- American Geophysical Union
- American Society of Civil Engineers
- Caribbean Water & Wastewater Association
- Environmental & Engineering Geophysical Society
- National Ground Water Association

## **OTHER:**

Widespread scientific and media response to Jarrett et al. (2005) publication of Dissertation research on the geology of Pulley Ridge (SW Florida margin) and the capping deep-water hermatypic reef community proposed to be the deepest of its kind in U.S. waters

- Three articles on Pulley Ridge published in St. Petersburg Times
- Articles picked up nationally by hundreds of media outlets including print, television, and radio (e.g., CNN, Washington Post, ABC News, FOX News, MSNBC, CBS News, LA Times, Miami Herald, Chicago Tribune, NPR) as well as by many international media outlets
- Conducted two radio interviews about Pulley Ridge including a phone interview with the NPR affiliate out of Naples-Ft. Myers
- Twice interviewed and spotlighted by local FOX news television station in segments broadcast on evening news
- Discovery resulted in funding by The Harte Research Institute for Gulf of Mexico Studies of a multi-ship research effort to Pulley Ridge in summer 2005 involving personnel from Harte Research Institute (Texas A&M University, Corpus Christi), University of South Florida, Florida Institute of Oceanography, U.S. Geological Survey, National Geographic Society, Florida Keys National Marine Sanctuary, and Mote Marine Laboratory
- Pulley Ridge specifically cited as a 2006 program priority for proposals submitted to NOAA's long-term coral reef ecosystems studies (CRES)

Primary contributor (data synthesis and writing) to hundreds of Final Reports for geological and marine science investigations during tenure at N.S. Nettles & Associates, Inc.