

Brian Burnel Barnes
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CURRENT POSITION

2014-present Postdoctoral Research Associate, University of South Florida

EDUCATION

- 2009-2013 Ph.D., Marine Science
College of Marine Science (CMS), University of South Florida (USF)
Dissertation title: *The combined effects of light and temperature on coral bleaching: A case study of the Florida Reef Tract using satellite data*
- 2006-2009 M.S., Marine Science
Virginia Institute of Marine Science (VIMS)
School of Marine Science, College of William and Mary
Thesis title: *Interspecific interactions in oyster reef communities: the effect of established fauna on oyster larval recruitment*
- 2001-2004 B.S., Zoology & Psychology, *cum laude*
University of Florida, Gainesville, FL
- 1998-2001 International Baccalaureate Degree
Bartow High School, Bartow, FL

PUBLICATIONS

- BB Barnes**, C Hu, J Cannizzaro, S Craig, P Hallock, D Jones, N Melo, and R Zepp (2014) Estimation of diffuse attenuation of ultraviolet light in optically shallow Florida Keys waters from MODIS measurements. *Remote Sens Environ.* **140**:519-532.
- BB Barnes**, C Hu, K Holecamp, S Blonski, BA Speiring, DA Palandro, and BE Lapointe (2014) Use of Landsat data to track historical water quality changes in Florida Keys marine environments. *Remote Sens Environ.* **140**:485-496.
- C Hu, **BB Barnes**, B Murch, and P Carlson (2014) Satellite-based virtual buoy system (VBS) to monitor coastal water quality. *Opt Eng.* **53**:051402.
- BB Barnes**, C Hu, BA Schaeffer, Z Lee, DA Palandro, and JC Lehrter (2013) MODIS-derived spatiotemporal water clarity patterns in optically shallow Florida Keys waters: a new approach to remove bottom contamination. *Remote Sens. Environ.*, **134**:377-391.

BB Barnes and C Hu, (2013) A hybrid cloud detection algorithm to improve MODIS sea surface temperature data quality and coverage over the Eastern Gulf of Mexico. *IEEE Trans. Geosci. Remote Sens.* **51**:3273-3285.

J Zhao, **BB Barnes**, N Melo, D English, B Lapointe, F Muller-Karger, B Schaeffer and C Hu (2013) Assessment of satellite-derived diffuse attenuation coefficients and euphotic depths in south Florida coastal waters. *Remote Sens Environ.*, **131**:38-50.

D Lirman, S Schopmeyer, D Manzello, LJ Gramer, W Precht, F Muller-Karger, K Banks, **BB Barnes**, *et al.* (2011) Severe 2010 cold-water event caused unprecedented mortality to corals of the Florida Reef Tract and reversed previous survivorship patterns. *PLOS ONE*, I, 6: e23047. doi:10.1371/journal.pone.0023047.

BB Barnes, C Hu, and F Muller-Karger (2011) An Improved High-Resolution SST Climatology to Assess Cold Water Events off Florida, *IEEE Geosci. Remote Sens. Lett.*, **8**:769-773.

BB Barnes, MW Luckenbach, and PR Kingsley-Smith (2010) Oyster Reef Community interactions: the Effect of Resident Fauna on Oyster (*Crassostrea* spp.) Larval Recruitment, *J. Exp. Mar. Biol. Ecol.*, 391:169-177.

RESEARCH EXPERIENCE

Aug 2009 - Dec 2013: **Graduate Research Assistant**

- USF CMS (St. Petersburg, FL)
- Advisor: Dr Chuanmin Hu
- *Remote sensing of coral reef environments*: modified SST cloud filtering algorithms for AVHRR and MODIS; analyzed satellite light products (UV and VIS) to calibrate with *in situ* sensors; currently working on creating attenuation products for Landsat and field collecting data for ground truth
- Deep Water Horizon response: optical search for spilled oil; optical water quality monitoring in Florida Bay and Tampa Bay; **Teaching Assistant**

Aug 2006 - Jan 2009: **Graduate Research Assistant**

- VIMS (Wachapreague, VA, and Gloucester Point, VA)
- Advisor: Dr Mark Luckenbach
- *Oyster reef community interactions*: Designed and implemented experimental methodology; obtained grant funding; trained and supervised interns; analyzed data; presented findings; published manuscript
- Assisted in projects including oyster surveys; seagrass restoration; shark and ray stock assessment; comparative ecology of native and non-native oyster reefs; barrier-island inlet study; shoreline characterization; algal identification

Summer 2006: **Field and Laboratory Technician**

- Old Dominion University (Long Key, FL)
- Supervisor: Dr Mark Butler IV

- Conducted research on spiny lobster disease dynamics, urchin effects on coral bulkheads, reef resident enumeration, and Caribbean monitoring program

FIELD EXPERIENCE

August 2012: Ground truth of satellite attenuation products for Florida Keys (USF, EPA)
 August, October 2011: Florida Keys/Florida Bay water quality monitoring (USF, NOAA)
 April 2011: Ground truth of satellite attenuation products for Florida Keys (USF, EPA)
 April 2011: Establishment of fixed optical monitoring station near Key Largo (USF)
 October 2010: Water quality monitoring and optical profiling in Florida Bay (USF)
 May 2010: Optical search for oil in Gulf of Mexico Loop Current (R/V Bellows, USF)
 May 2010: Monitoring of optical water properties in Tampa Bay (USF)
 July 2007: Field course – Coastal Marine Habitats in North Wales, UK (VIMS)
 2006-2009: **Graduate Research Assistant** – Numerous field projects (VIMS)
 Summer 2006: **Field and Laboratory Technician** – Numerous field projects (ODU)
 Spring 2006: **SEAKEYS intern** – Installation/maintenance of NDBC/SEAKEYS stations
 Summer 2004: Field course – Field Problems in Marine Biology (UF)

PRESENTATIONS

BB Barnes and C Hu (Poster Presentation) “Cross-sensor continuity of satellite derived water clarity in the Gulf of Mexico: insights into temporal aliasing,” 2014 NASA Ocean Color Research Team Meeting, Washington, DC. 6 May 2014.

BB Barnes, C Hu, B Schaeffer, Z Lee, and J Lehrter (Oral and Poster Presentations) “On the challenge of deriving MODIS water clarity products in optically shallow environments: How a new approach can improve coral reef research and monitoring,” 21st Ocean Optics Conference, Glasgow, Scotland, UK. 8 October 2012.

BB Barnes, C Ellis, W Fisher, C Hu, J Lehrter, L McEachron, K O’Keefe, Blake Schaeffer, Bruce Spiering, and L Underwood (Oral Presentation) “Water Clarity Assessment Along the Florida Keys Reef Tract Using Ocean Color Satellite Data,” Florida Keys National Marine Sanctuary Water Quality Protection Program meeting. Key Colony Beach, FL. 26 September 2012.

BB Barnes (Oral Presentation) “Marine Science Research,” Great American Teach-in, Bloomingdale Senior High School, Brandon, FL. 17 November 2011.

BB Barnes, C Hu, D Palandro, J Lehrter, N Melo, B Schaeffer, J Cannizzaro, D English (Oral Presentation) “Light attenuation and optics in the Florida Keys,” NASA grant Principal Investigators Meeting. Pensacola, FL. 3 November 2011.

BB Barnes (Oral Presentation) “Remote sensing applications in the Florida Keys region,” NASA grant Principal Investigators Meeting. Pensacola, FL. 3 November 2011.

- BB Barnes.** (Oral Presentation) “Synoptic Assessment of Water Quality in the Florida Keys: Improving SST Products During Cold Events,” USF Graduate Student Symposium. January 2011.
- BB Barnes, C Hu, and F Muller-Karger.** (Poster Presentation) “An improved high-resolution sea surface temperature climatology to assess cold events in the Florida Keys,” *Linking Science to Management: A Conference and Workshop on the Florida Keys Marine Ecosystem*. Duck Key, Florida, USA. October 2010.
- BB Barnes, MW Luckenbach, and PR Kingsley-Smith.** (Oral Presentation) “Ecological considerations for oyster restoration: interactions between oyster larvae and reef-associated fauna,” *11th International Conference on Shellfish Restoration*. Charleston, South Carolina, USA. November 2008.
- BB Barnes, MW Luckenbach, and PR Kingsley-Smith.** (Oral Presentation) “Interspecific interactions in oyster reef communities: the effect of established epifauna on oyster larval recruitment,” *100th Annual National Shellfisheries Association Meeting*. Providence, Rhode Island, USA. April 2008.
- BB Barnes.** (Oral Presentation) “The effect of established epifauna on oyster larval recruitment,” VIMS Departmental Seminar. March 2008.
- BB Barnes.** (Oral Presentation) “Fouling organisms and oyster larval settlement,” VIMS Departmental Seminar. April 2007.
- NS Levy, **BB Barnes**, and RA Schachar. (Poster Presentation) “GDxVCC for Assessment of Retinal Pathology,” *Association for Research in Vision and Ophthalmology 2005 Annual Meeting*. Fort Lauderdale, FL, USA. May 2005.

COMPETITIVE GRANT/FELLOWSHIP ACQUISITIONS

- 2012 21st Ocean Optics Conference Travel Grant (\$500)
- 2012 USF William and Elsie Knight Endowed Fellowship for Marine Science (\$27,000 annually)
- 2011 USF Jack and Katharine Ann Lake Fellowship in Marine Science (\$13,000)
- 2009 USF Anne and Werner Von Rosenstiel Fellowship (\$9,000)
- 2008 VIMS Eastern Shore Lab Research Grant (\$2,100)
- 2008 VIMS Graduate Student Association Mini-Grant (\$420)
- 2007 VIMS Eastern Shore Lab Research Grant (\$3,400)
- 2007 VIMS Kelley Watson Fellowship (\$18,000)