

Sarah Ellen Krejci

Assistant Professor, Biology and Integrated Environmental Science

Joint Appointment, Department of Natural Sciences & Integrated Environmental Science

Bethune-Cookman University

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HIGHLIGHTS

- Research: I examine the effects of anthropogenic impacts and natural disturbance, such as hurricanes and algal blooms, on the ecology and behavior of marine zooplankton, syngnathids, and seagrass
- **Deans Award recipient 2018** in appreciation for tireless efforts to mentor and educate the students of the College of Science, Engineering, and Mathematics
- Local Arrangements Chair, Florida Academy of Sciences and Florida Junior Academy of Sciences Annual meetings at Bethune-Cookman University in March and April 2020-2021
- Education Coordinator NOAA CCME grant at Bethune-Cookman University
- Significant experience mentoring undergraduate research projects
- Significant teaching experience
- Online Certified Teacher and online course development
- Innovative course design using science of learning principles and student-centered learning style
- Experienced and comfortable in course sizes ranging from 1-100+ students
- Multiple coordinator positions for course organization among sections

EDUCATION

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| 2017 | Bethune-Cookman University, Daytona Beach, FL. (postdoc; coastal ecology) |
| 2012 | Florida Institute of Technology, Melbourne, FL. Oceanography Ph.D., |
| 2007 | Florida Institute of Technology, Melbourne, FL. Marine Biology MS |
| 2004 | Roger Williams University, Bristol, RI. Marine Biology BSc, Minor History |

PROFESSIONAL POSITIONS

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| 2016-current | Assistant Professor , Biology and Integrated Environmental Science
Bethune-Cookman University, Daytona Beach, FL. |
| 2013-2016 | Post-Doctoral Fellow , Integrated Environmental Science
Bethune-Cookman University, Daytona Beach, FL. |

- 2013-2016 **Adjunct Instructor**, Natural Sciences
Bethune-Cookman University, Daytona Beach, FL.
- 2012-2013 **Benthic Ecology Consultant**, Florida Tech Consulting, Melbourne, FL.
- 2007-2012 **Teaching Assistant**, Department of Marine and Environmental Systems
Florida Institute of Technology, Melbourne, FL.
- 2009-2010 **Regulatory Science Intern**, St Johns River Water Management District
Palm Bay, FL
- 2004-2007 **Teaching Assistant**, Department of Biological Sciences
Florida Institute of Technology, Melbourne, FL.

PUBLICATIONS

1. Cho, J., M. White, B. Tanner, **S. Krejci**, J. Calderon, D. Rojas-Torres, J. Williams, C. Jacoby. (2020) “Chapter 2: Physical Setting of the Halifax River and its watershed”. In: “The Halifax River Urban Watershed: A Holistic Approach to Sustainability.” Bethune Cookman University. 136 pg.
2. R. Abate and **S.E. Krejci**. (2015) “Climate Change Impacts on Ocean and Coastal Law”, Climate Change Impacts on Ocean and Coastal Law: U.S. and International Perspectives. *Oxford University Press*. 699 pg.
3. **Krejci, S.** 2012. Habitat Preferences and the effects of seagrass density on population demographics and feeding ecology of pipefish in the Indian River Lagoon, FL. Dissertation. Florida Institute of Technology, Melbourne, FL.
4. **Jones, S.** 2007. Variations in feeding kinematics of western Atlantic seahorses. Florida Institute of Technology, Melbourne, FL.

MANUSCRIPTS IN PREPARATION

1. **Sarah Krejci**, Jehmia Williams, D.S. Rojas-Torres, and Juan Calderon. Determining spatial and temporal water quality changes in the Halifax River Lagoon (HRL), FL (Intended journal: Journal of Hydrology)
2. **Sarah Krejci**, Shirma Ramroop-Butts, and Arletha McSwain. Assessing the Impacts of OER on Student Academic Achievement and Student Satisfaction in Biology and Environmental Science Courses. (Intended journal: Online Learning Consortium)
3. **Sarah Krejci**, Shirma Ramroop-Butts, and Raphael Isokpehi. Improving scientific visual literacy in non-major Environmental Science students. (Intended journal: undetermined)

ONGOING RESEARCH PROJECTS

- 2020 Impacts of ocean acidification on the ossification and survival of the Dwarf Seahorse, *Hippocampus zosterae*
- 2020 Improving laboratory growth rates of Florida stony corals for restoration

2019 Feeding preferences of syngnathids on benthic and pelagic copepods
 2019 Spatial and temporal patterns in water quality within the Halifax River Lagoon, FL
 2019 Improving scientific visual literacy in non-major Introduction to Environmental Science courses
 2019 Utilizing argument-driven inquiry with scaffolding to improve socioscientific argumentation in undergraduate students
 2018-2020 Determining the impacts of dragline ditch restoration on zooplankton density and diversity in Gamble Rogers State Park, FL
 2018-19 Impacts of superbooms on zooplankton in the Indian River Lagoon, FL
 2018-19 Seasonal variations in zooplankton in the Halifax River Lagoon, FL
 2018-2019 Measuring the impacts of Open Education Resources on student performance in non-major Environmental Science courses

FUNDING

2020	NSF-Rapid, Co-PI RAPID: Educational Interventions for Undergraduate Students and Informal Learners for Robust Learning of COVID-19 Knowledge	\$200,000
2020	Faculty SEED Grant-P.I.	\$5,000
2019	Contract FDEP and FWC Zooplankton monitoring	\$2,500
2018	Center for Transdisciplinary Research Pilot Award	\$15,000
2018	C.U.R.E. Research Program, Mentor and Student Support-P.I.	\$6,500
2017	Faculty SEED Grant-P.I.	\$2,998

TEACHING EXPERIENCE

2020 **Instructor and Instructional Designer, COVID-19 Data Investigations Experience for Educators**, Bethune-Cookman University

- Online course; Developed, tested, and instructed 4-week program for educators around the world
- Developed all video lectures
- Developed online homework assignments, Canvas LMS

2020 **Instructor, Environmental Restoration**, Bethune-Cookman University

- Graduate course; Incorporated a semester long seminar series open to the campus and public featuring guest speakers from the State of Florida,
- Developed all lecture and laboratory exercises
- Developed online homework assignments, Canvas LMS

2020 **Instructor, Research Methods Lecture and Lab**, Bethune-Cookman University

- Utilizing educational interventions on argumentation, ethics,
- Developed all lecture and laboratory exercises

- Developed online homework assignments, Canvas LMS

2019 **Instructor, General Ecology Lecture and Lab**, Bethune-Cookman University

- Developed all lecture and laboratory exercises
- Developed online homework assignments, Canvas LMS

2017-2019 **Instructor, Introduction to Environmental Science**, Bethune-Cookman University

- Face to face and online instruction
- Developed all lectures and course exercises
- Serve as coordinator of 13 sections and 8 faculty members
- Wrote online homework assignments for all chapters in two LMSs
- Coordinating a course redesign
- Selected as researcher for Open Education Resources, Affordable Learning Solutions Pilot Grant- identified OER to apply to course redesign, measuring student performance outcomes; manuscript in development
- Developed a scientific visual literacy intervention, manuscript completed
- Developed and piloted two socioscientific argumentation modules

2019 **Instructor, Environmental Microbiology Lecture and Lab**, Bethune-Cookman University

- Developed all lecture and laboratory exercises
- Developed online homework assignments
- Collaborated with Department of Environmental Protection Tomoka Marsh Aquatic Preserve for collaborative course projects

2018 **Instructor, Marine Biology Lecture and Lab**, Bethune-Cookman University

- Selected book and wrote course syllabus for approval by Undergraduate Curriculum Committee
- Developed all lecture and laboratory exercises
- Developed course objectives and assessment method
- Collaborated with Department of Environmental Protection Tomoka Marsh Aquatic Preserve for collaborative course projects

2016-2018 **Instructor, Principles of Biology I Lecture and Lab**, Bethune-Cookman University

- Developed all lectures, course exercises, and course schedule during transition to new text book
- Wrote online homework assignments for all chapters in LMS
- Wrote, Co-wrote and/or edited all laboratory exercises
- Serve as coordinator of 6 laboratory sections and 5 faculty members

2016-2018 **Instructor, Research**, Bethune-Cookman University

- Mentor 1-2 students per semester on independent undergraduate research projects

- Course design includes: literature reading lessons, literature searches, proposal writing, experimental design, research, statistics, report writing, abstract submission, and presentations at scientific conferences

2013-2017 **Instructor, Introduction to Biology**, Bethune-Cookman University

- Face to face and online instruction
- Developed all lectures, course exercises, and course schedule during transition to two new text books, added publisher software
- Wrote online homework assignments for all chapters in Learning Management System
- Served intermittently as coordinator of approximately 10 sections and 5 faculty members

2012 **Instructor, Mitigation and Restoration of Coastal Ecosystems**, Florida Tech

- Instruction of graduate and undergraduate students
- Supervised and organized student restoration projects in collaboration with the Department of Environmental Protection Aquatic Preserve Office
- Course designed by Dr. Elizabeth Irlandi-Hyatt

2009-2012 **Teaching Assistant, Marine Field Projects**, Florida Tech

- Served as P.I. for student fieldwork on offshore research vessels: R/V Thunderforce and R/V Weatherbird II
- Performed CTD casts, snorkeling, onboard water quality data collection, sea state observations, offshore plankton tows, side scan sonar
- Assisted with buoy deployment, remotely operated and autonomous vehicle deployment, weather balloon deployment and data analysis
- Mentored students on experimental design

2008-2012 **Teaching Assistant, Biological Oceanography Lab**, Florida Tech

- Wrote, co-wrote and/or edited all laboratory exercises

2007-2012 **Teaching Assistant, Introduction to Oceanography**, Florida Tech

- Pontoon captain; Performed weekly water quality analysis of local water on pontoon boat
- Instructed students on Indian River Lagoon ecology and water quality trends, field equipment usage, plankton tows, and data graphing in excel

STUDENT SUPERVISION

2020 Jennifer Spain, Faculty Advisor

M.S. Environmental Science, Bethune-Cookman University; *Determining recruitment patterns on oyster reef cores and oyster bags*

2018 Shan Guruvadoo, Committee Member

M.S. Environmental Science, Bethune-Cookman University; *Investigating causes of changing tidal range and timing in U.S. harbors*

2014 Joe White, Committee member

M.S. Environmental Science, Bethune-Cookman University; *Testing seagrass restoration techniques for use in the Indian River Lagoon, FL*

PROFESSIONAL SERVICE

Workshop Presenter, B-CU Faculty Institute, January 2020

Coordinator, ES 130 Introduction to Environmental Science

Florida Academy of Sciences, Local Arrangements Chair for hosting annual meeting at Bethune-Cookman University 2019-2021

Benthic survey workshop, Bethune-Cookman University and Siena Heights University, MI

Zooplankton workshop, Bethune-Cookman University and Union University, TN

Coastal Research Workshop Organizer, Bethune-Cookman University, Stetson University and Ormond Beach Environmental Discovery Center

REU Faculty Mentor, Bethune-Cookman University

Reviewer for Journal of Environmental Biology of Fishes and Journal of the World Aquaculture Society

General Education Committee Member

Supervisor of Aquatic Research Laboratory, Bethune-Cookman University, secured funding for and developed space; train and supervise students in laboratory and field research methods; coordinate space use with multiple professors

Seahorse care consultant, Marine Discovery Center, New Smyrna Beach, FL

RECENT PROFESSIONAL DEVELOPMENT

Completed Carnegie Mellon University Summer LearnLab OLI track. July 27-31st 2020.

Certificate of completion, "General Education: Where Do We From Here?"

Certificate of completion, "Deepening Learning Through Active and Engaging Classroom Experiences"

Certificate of completion, "It's not the app it's the application"

Certificate of completion, "Cross Discipline Socioscientific Issues and Perspective Taking"

Certificate of completion, "Bricks, Clicks and Teacher Tricks to engage Gen. Z"

Certificate of completion, Diversity and Inclusion Workshop

Certificate of completion, Publication Workshop

Certified Online Instructor, training in Quality Matters

Presented, Online Learning Consortium at Gaylord Rockies Resort, Denver, CO April 2nd-5th, 2019

Organized faculty development trainin on Canvas, August 2019

PRESENTATIONS

Invited presentations

- 2020 **S.E. Krejci.** July Expert Panel: HBCUs as a Strategic Resource to Advance Diversity in STEM. July 20. STEM for All Multiplex.
<https://multiplex.videohall.com/pages/july2020webinar>
- 2018 **S.E. Krejci.** Climate change impacts on marine and coastal environments. FAMU college of Law. Orlando, FL
- 2018 **S.E. Krejci.** Meet the Plankton Workshop. City Island Library, Daytona Beach, FL.
- 2018 **S.E. Krejci.** Climate change impacts on marine and coastal environments. Community Unitarian Universalist Church. New Smyrna Beach, FL.
- 2014 **S.E. Krejci,** Seahorse research in the Indian River Lagoon. Presentation. Marine Discovery Center. New Smyrna Beach, FL. Nov. 2014.

Conferences

S. Krejci. 2020. Scientific Visual Literacy. Carnegie Mellon University Summer LearnLab. July 31st.
<https://youtu.be/obsHVW2bOq8>

S. Krejci, R. Isokpehi, S. Ramroop-Butts, M. Reiter, A. George, Y. Kim, A. Ho, H. Torres, and A. McSwain. 2020. A collaborative course redesign approach for non-major Environmental Science incorporating Open Educational Resources (OER). USDLA Conference. July 15.

S. Krejci, R. Isokpehi, S. Ramroop-Butts, M. Reiter, A. George, Y. Kim, A. Ho, H. Torres, and A. McSwain. 2020. A collaborative course redesign approach for non-major Environmental Science incorporating Open Educational Resources (OER). OLC Innovate. June 15-26.

S. Krejci, H. Torres, and R. Isokpehi. 2020. Investigating the Effects of Socioscientific Argumentation Development on Students Academic Success. 2020 STEM for ALL Video Showcase. May 5-12th.
<https://videohall.com/p/1764>

S. Krejci, R. Isokpehi, S. Ramroop-Butts, M. Reiter, A. George, Y. Kim, A. Ho, H. Torres, and A. McSwain. 2020. A collaborative course redesign approach for non-major Environmental Science incorporating Open Educational Resources (OER). Faculty Institute. Bethune-Cookman University January 8th.

S. Krejci, H. Torres, and R. Isokpehi. 2020. Improving socioscientific argumentation and academic success in nonmajor Environmental Science. Faculty Institute. Bethune-Cookman University January 8th.

Jehmia Williams, Juan Calderon, and **Sarah Krejci.** 2019. Determining spatial and temporal water quality changes in the Halifax River Lagoon (HRL), FL. ShORE Symposium. November 29. Brannon Civic Center, New Smyrna Beach, Florida. November 15th, 3rd place oral presentation, Jehmia Williams

Alyssa Stubbs, J. Jefferson and **Sarah Krejci.** 2019. Benthic and pelagic copepod feeding preferences of dwarf seahorses, *Hippocampus zosterae*. ShORE Symposium. November 29. Brannon Civic Center, New Smyrna Beach, Florida. November 15th.

Mary Abu Safieh, Gabrielle Watkins, **Sarah Krejci**, Juan Calderon. 2019. Machine Learning Applied for Environmental Preservation. IRLRI TechCon2019. Florida Institute of Technology Melbourne, FL. Friday, September 27th

Jonathan Johnson and **Sarah Krejci**. 2019. Effects of Superbloom conditions on the density of zooplankton in the Indian River Lagoon, FL. Florida Academy of Sciences March 8-9, 2019. Florida Institute of Technology, Melbourne, FL * Award for Outstanding Undergraduate Student Oral Presentation, Jonathan Johnson

Lakean McGregor and **Sarah Krejci**. 2019. Examining zooplankton diversity and relative abundance related to abiotic conditions in the Halifax River Lagoon, FL. March 8-9, 2019. Florida Academy of Sciences March 8-9, 2019. Florida Institute of Technology, Melbourne, FL * Honorable Mention Undergraduate Student Oral Presentation, Lakean McGregor

Jehmia Williams, Juan Calderon, and **Sarah Krejci**. 2019. Determining spatial and temporal water quality changes in the Halifax River Lagoon (HRL), FL. Florida Academy of Sciences March 8-9, 2019. Florida Institute of Technology, Melbourne, FL * Award for Outstanding Undergraduate Student Poster Presentation, Jehmia Williams

Alyssa Stubbs, Vikash Bislam, and **Sarah Krejci**. 2019. Feeding Selectivity of juvenile seahorses on wild zooplankton during early development. Florida Academy of Sciences March 8-9, 2019. Florida Institute of Technology, Melbourne, FL * Honorable Mention Undergraduate Student Poster Presentation, Alyssa Stubbs and Vikash Bislam

Sarah Krejci, Shirma Ramroop-Butts, and Arletha McSwain. Assessing the Impacts of OER on Student Academic Achievement and Student Satisfaction in Biology and Environmental Science Courses. Online Learning Consortium: Innovate. April 2-5th, 2019. Denver, CO

Jonathan Johnson and **Sarah Krejci**. Effects of Super Bloom Conditions on the Density of Zooplankton in the Indian River Lagoon, FL. SHORE Symposium. November 29. Brannon Civic Center, New Smyrna Beach, Florida, 2nd place oral presentation

Lakean McGregor and **Sarah Krejci**. Examining Zooplankton Diversity and Relative Abundance Related to Abiotic Conditions in the Halifax River Lagoon, FL. November 29. Brannon Civic Center, New Smyrna Beach, Florida, 3rd place oral presentation

TiGara Smith, **Sarah Krejci**, and Jimmy Jones. 2018. Modeling the effects of salinity on copepod populations. Summer Undergraduate Capstone conference. August 6-9th Mathematical Biosciences Institute. Ohio State University. Columbus, OH *Fully funded trip award to TiGara Smith

Kailey Richard, Jehmia Williams, and **Sarah Krejci**. 2018. Hurricane Irma Impacts on zooplankton relative abundance and diversity in the Halifax River Lagoon. Shore Symposium. December 1st Brannon Civic Center, New Smyrna Beach, Florida *1st place student presentation award, Kailey Richard

Jehmia Williams, Kailey Richard, and **Sarah Krejci**. 2018. Hurricane Irma Impacts on zooplankton relative abundance and diversity in the Halifax River Lagoon. Florida Academy of Sciences March 9-10, 2018. Barry University, Miami Shores, FL *Honorable mention for student presentation, Jehmia Williams