**Project Title:** Here we go again - The fate of *Diadema antillarum* and the Caribbean reefs in the 21st century

**Opportunity Type:** Research Assistant / Biologist Technician

**Position Available:** 09/01/2022

**Duration:** 1 year (position could be extended depending on funds availability)

**Position:** Full time/Hourly (40hrs/week)

**Hourly rate:** $15-$18/hr

**Location:** Florida International University Biscayne Bay Campus

**About position:** We seek a motivated marine scientist with a passion for coral reef ecology and scientific inquiry for a research assistant position in the Santos’ lab to work with Dr. Rolando O. Santos, Dr. W. Ryan James and Dr. Jennifer Rehage. A recent *Diadema antillarum* die-off in Caribbean provides the conditions of a natural removal experiment useful to understand the top-down control exertion of this herbivore, especially by quantifying the spatial arrangement progression of benthic functional groups across urchin abundances. This study aims to assess the impact of the loss of a keystone species on reef community structure and function using innovative spatially explicit tools to quantify the fine-scale spatiotemporal changes in the community structure, the size distribution, and spatial dispersion of coral and algae species on the reefs of Culebra, Puerto Rico, during the initial phase of the *Diadema* die-off in the Caribbean. The research associate will join and manage the laboratory and field operations of this study, which will combine scientific diving, underwater digital orthophotography, population demographic models, and multidimensional statistical techniques to characterize coral reef communities in Culebra.

**Tasks:**

- Collecting underwater digital pictures using SCUBA and specialized DSLR camera rigs.
- Organizing and planning fieldwork trips and travelling to Culebra.
- Creating in the laboratory orthoprojected large-area images (photomosaics) using Structure-from-Motion software (Agisoft Metashape), and other software to extract ecological information from photomosaics (e.g., CPCe, CoralNet, Photoshop, ArcGIS, Viscore, TagLab).
- Identifying and measuring coral reef invertebrate and fish species.
- Data entry and organizing and backing up metadata, raw data, and processed data.
- Analyzing and visualizing data with R.
- Preparing reports and manuscripts.
Qualifications/Desired Skills:

- Master's or Bachelor's degree in marine science
- Experience in conducting ecology fieldwork in marine systems, ideally in coral reef ecosystems
- Experience of research in coral reef ecology
- SCUBA diving qualification and AAUS certification, and boating experience
- Strong quantitative and programming skills (e.g., statistical modeling in R, Google Earth Engine, GIS, and remote sensing software such as ArcGIS and ENVI)
- Good communication skills
- Experience working long hours in the field
- Ability to relate effectively with people of different cultures (interpersonal skills)

About our lab: Our lab in different ways integrates concepts in seascape, trophic, and movement ecology to understand how disturbances and environmental variables drive the spatial patterning of coastal habitats across multiple scales, and how habitat spatial patterning influences marine species distributions, biodiversity patterns, ecosystem services, and human wellbeing. Addressing these knowledge gaps is critical, considering our rapidly changing world. Our lab works across multiple aquatic and coastal ecosystems in a joint effort with the Coastal Fisheries Lab at FIU (http://myweb.fiu.edu/rehagej/). In summary, we are an energetic team of ecologists seeking a deeper and more comprehensive understanding of the linkages between habitat patterns and ecological processes to inform effective management and conservation strategies.

To apply: Please contact Dr. Rolando Santos and Dr. Ryan James at rsantosc@fiu.edu and wjames@fiu.edu. In your email, please tell us about yourself and attach a cover letter (outlining background, expertise, and interests), curriculum vitae, names of at least two references, and other supporting documents (e.g., GPAs, academic record, research experience, publications/presentations & references). If possible, attach all documents as a single PDF file. Please use 'Coral Reef Research Assistant 2022 + your name as the subject line in your email.

About FIU: Florida International University (FIU) is Miami's public research university, focused on student success. According to U.S. News and World Report, FIU has 42 top-50 rankings in the nation among public universities. FIU is an R1 public research university (Doctoral universities – highest research activity), with more than $200 million in annual expenditures. FIU is a member of Florida's State University System, with a highly diverse, vibrant, and growing student body. Our multiple campuses serve over 58,000 students, making FIU the fourth-largest U.S. university and largest majority-minority serving institution in the U.S. The Institute of Environment (https://environment.fiu.edu/about/index.html) is an FIU preeminent program whose mission is to, in collaboration with local and international partners, provide data-driven solutions to society's most significant and urgent challenges.