



VI-EPSCoR Site Visit



Ridge to Reef (R2R):
Processes and Interdependent
Drivers of Small Island
Resilience

Award No. OIA-1946412



Overview

United States Virgin Islands

- St. Thomas, St. Croix, St. John and Water Island
- *Population of 87,146 - 48.6% males and 51.4% females of which 71.4 % are Black

University of the Virgin Islands

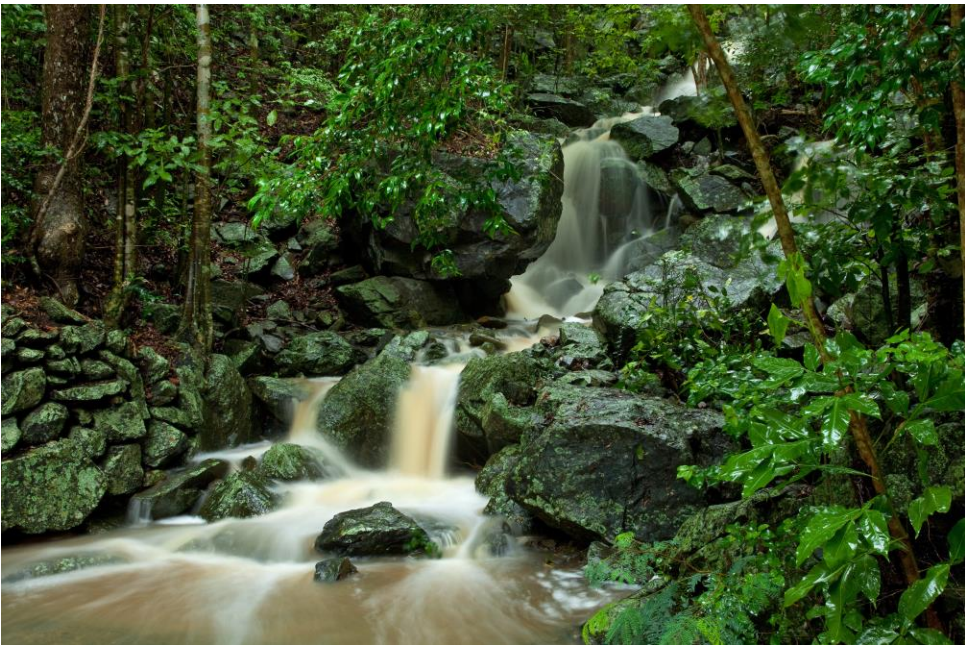
- Founded in 1962, HBCU, and Land Grant Institution
- 99 undergraduate and graduate degree programs, six colleges and schools
- Two Campuses: Orville E. Kean Campus - St. Thomas & Albert A. Sheen Campus - St. Croix
- Student population 1,665 – 26% males and 74% females of which 67% are Black and 12% are Hispanic Latino

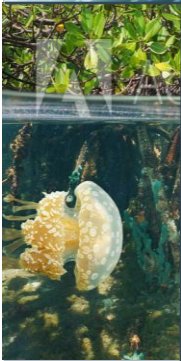
*2020 US Census Data



USVI TRACK 1 AWARD HISTORY

RII Four Award No. OIA-1946412
Ridge to Reef: Processes and
Interdependent Drivers of Small
Island Resilience (2020-2025) \$20M



	Mare Nostrum Caribbean	RII Three Award No. OIA-1355437 Mare Nostrum Caribbean: Stewardship through Strategic Research and Workforce Development (2014-2019) \$20M
	Integrated Caribbean Coastal Ecosystems	RII Two Award No. OIA-0814417 Integrated Caribbean Coastal Ecosystems (2008- 2013) \$11M
	Biocomplexity of Caribbean Coral Reefs	RII One Award No. OIA-0346483 Biocomplexity of Caribbean Coral Reefs (2004-2008) \$4.5M

Outline of Project Overview and Summary

Project Overview

- Overview of Territory and UVI
- History of NSF-EPSCoR support to the VI
- What is R2R? Hypotheses, Goals, Mission, and Vision
- Introduction of the VI-EPSCoR Team
- Organization Chart
- Budget & Cost Share
- Overview of research themes and supporting elements
- Challenges
- Terms and Conditions
- Collaborations and Partnerships
- Infrastructure Investments
- Research Interdependencies

Project Summary

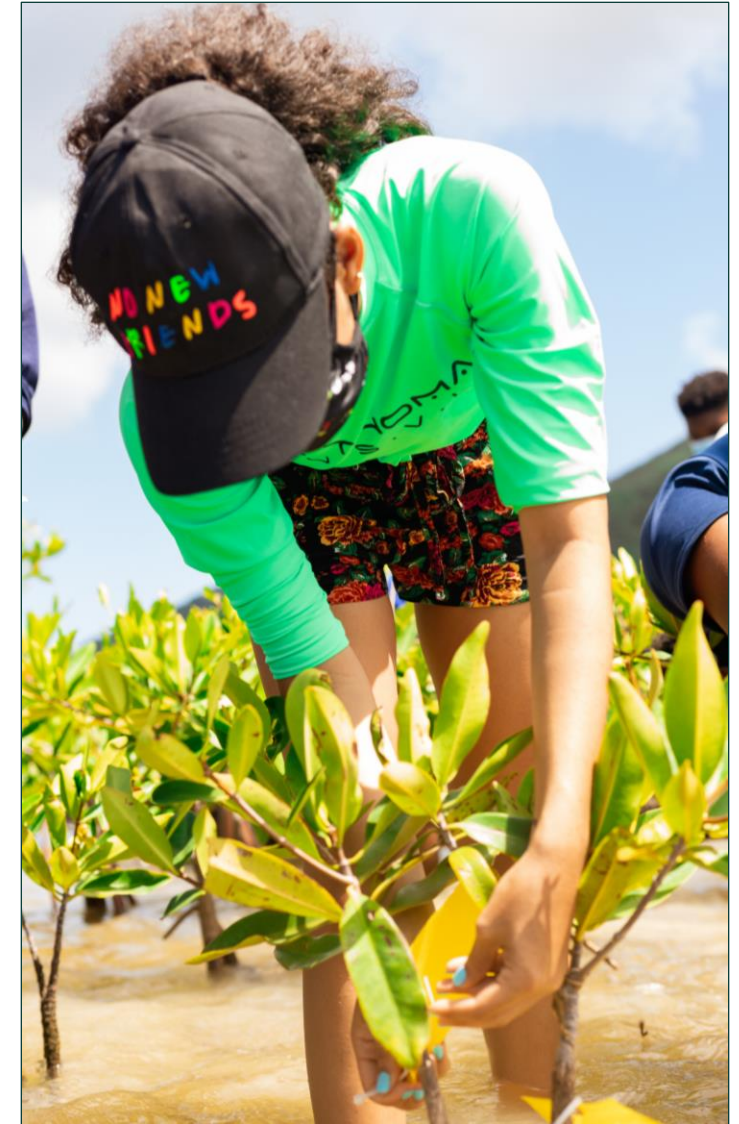
- Broader Impacts and Intellectual Merit
- Sustainability
- R2R Highlights
- Post Doc Mentoring
- Broadening Participation & Diversity Efforts





Rationale and Strategy for our R2R Project

- Importance of the Caribbean Sea and its associated coastal ecosystems.
- USVI is a small island territory under threat from climate change and other hazards.
- The future of VI's social-ecological systems is in large part dependent on the local community to manage these resources.
- Improving scientific skills and educational levels of the USVI workforce via STEM education will be the key to sustainability for the Territory.



R2R is Guided by 4 Hypotheses

Hypothesis I	USVI Marine ecosystem resilience
Hypothesis II	Decreasing ecosystem resilience
Hypothesis III	Species diversity and ecological restoration
Hypothesis IV	Community exposure to local resilience-themed activities



Research Areas



Watershed Monitoring
and Land Use



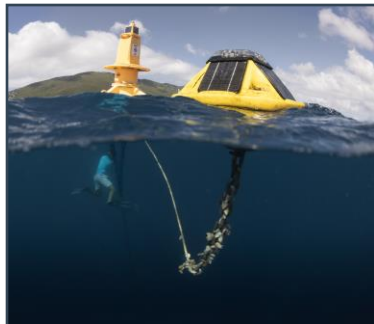
Mangroves Ecosystem
Function & Recovery and
Mangrove Restoration



Emerging Areas of
Research



Fish Ecology



Oceanography



Marine Disease
and Resilience



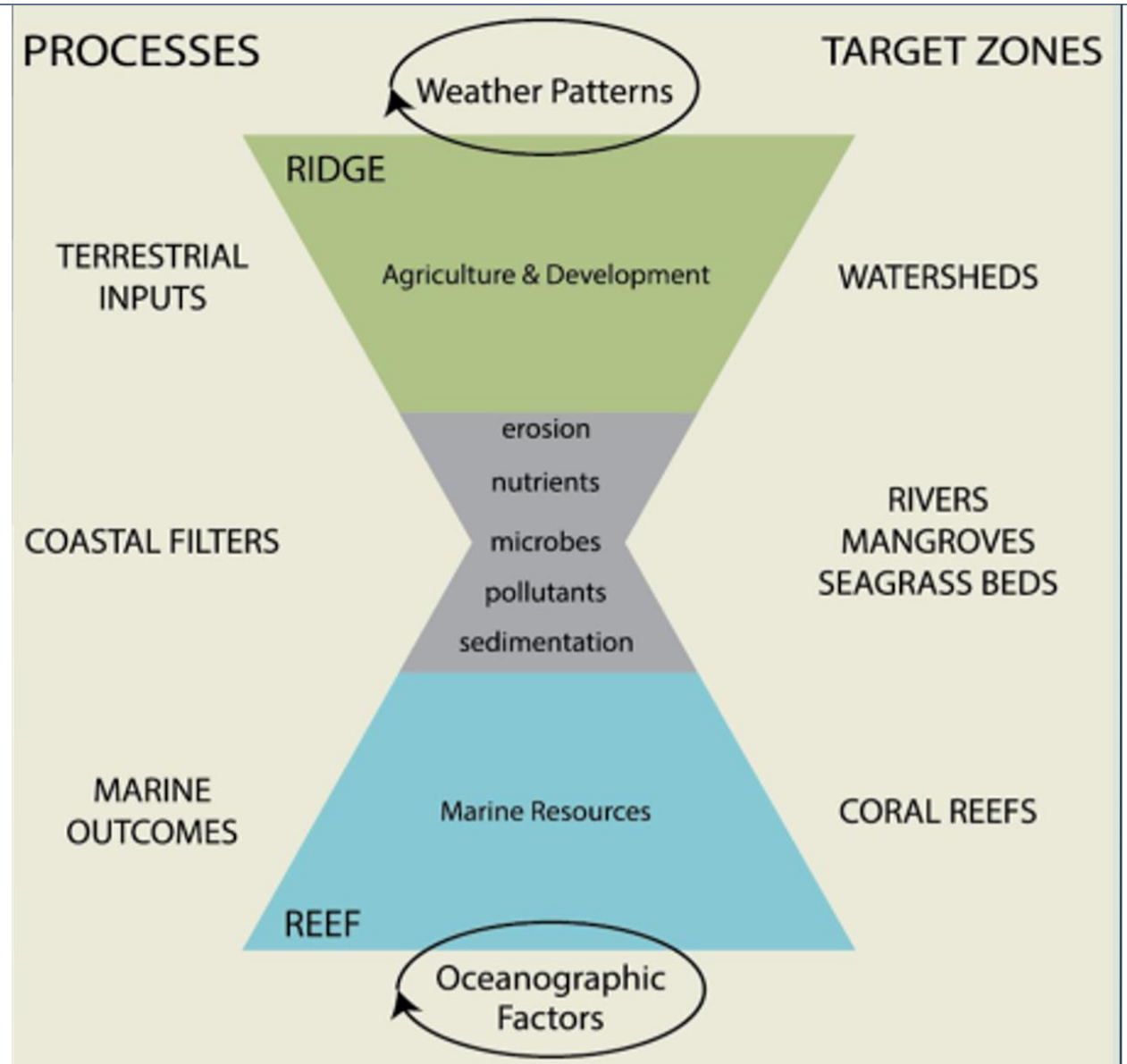
Coral Reef Resilience



Education and Workforce
Development

Overarching Goals

- Determining the impact of environmental inputs on coral reef resilience.
- Mitigating the impacts of terrestrial pollutants in coastal and marine ecosystems.
- Advancing the science of restoration in coral reef, mangrove, and seagrass habitats.
- Developing culturally and place-based STEM curriculum for VI students.





Vision and Mission of R2R

The **Vision** of the R2R project is to improve our understanding of the drivers, processes interdependencies and consequences of ecological change stemming from natural and anthropogenic disruptions in Caribbean coastal and marine ecosystems.

Our **Mission** is to advance science-informed knowledge that guides managers, researchers and communities to more effectively manage the VI's natural resources while we adapt to the impacts of Climate Change

Marine and Environmental Sciences Lead Researchers



DR. RICK NEMETH,
CO-PI, FISH ECOLOGY LEAD



DR. TYLER SMITH,
CO-PI, CORAL
REEF RESILIENCE &
OCEANOGRAPHY LEAD



DR. MARILYN BRANDT,
MARINE DISEASE &
RESTORATION LEAD



DR. PAUL JOBSIS,
EMERGING AREAS:
MOVEMENT ECOLOGY LEAD



DR. KRISTIN WILSON GRIMES,
MANGROVE ECOSYSTEM
FUNCTION, RECOVERY &
RESTORATION LEAD



DAVID HENSLEY,
WATERSHED
TERRESTRIAL MONITORING
& LAND USE LEAD



DR. EDWIN CRUZ RIVERA,
EMERGING AREAS,
SEAGRASS, ECOLOGY LEAD



DR. GREGORY GUANNEL,
EMERGING AREAS:
SHORELINE RESPONSE LEAD

Education & Workforce Development Lead Researchers

Teacher Professional
Development and
Mentoring &
Infrastructure



DR. NADIA MONROSE MILLS,
TEACHER PROFESSIONAL
DEVELOPMENT



JOSEPH SQUILLACE,
TEACHER PROFESSIONAL
DEVELOPMENT, ST. CROIX



DR. VERLEEN MCSWEEN-
MISSOLE,
MENTORING AND
INFRASTRUCTURE

Undergraduate
Education
Research



DR. MICHELE GUANNEL,
UNDERGRADUATE EDUCATION
RESEARCH LEAD



DR. MOLLY PERRY,
SOCIAL SCIENCE 100 LEAD

Informal Learning



JARVON STOUT,
COMMUNITY
ENGAGEMENT SPECIALIST,
ST. THOMAS / ST. JOHN DISTRICT



KAI NIELSEN,
COMMUNITY
ENGAGEMENT SPECIALIST,
ST. CROIX DISTRICT

Ridge To Reef Project Administration



KELLY HARRIGAN,
ASSISTANT DIRECTOR/PA



KAISHA PRENTICE,
DIRECTOR OF BUDGET &
PROJECT ADMINISTRATION



ELISA BRYAN,
COMMUNICATION SPECIALIST



RESA BERKELEY,
DATA SPECIALIST II



TRAVIS HAMLIN,
DATA MANAGER



RHONDA TONGE,
RESEARCH GRANTS
COORDINATOR



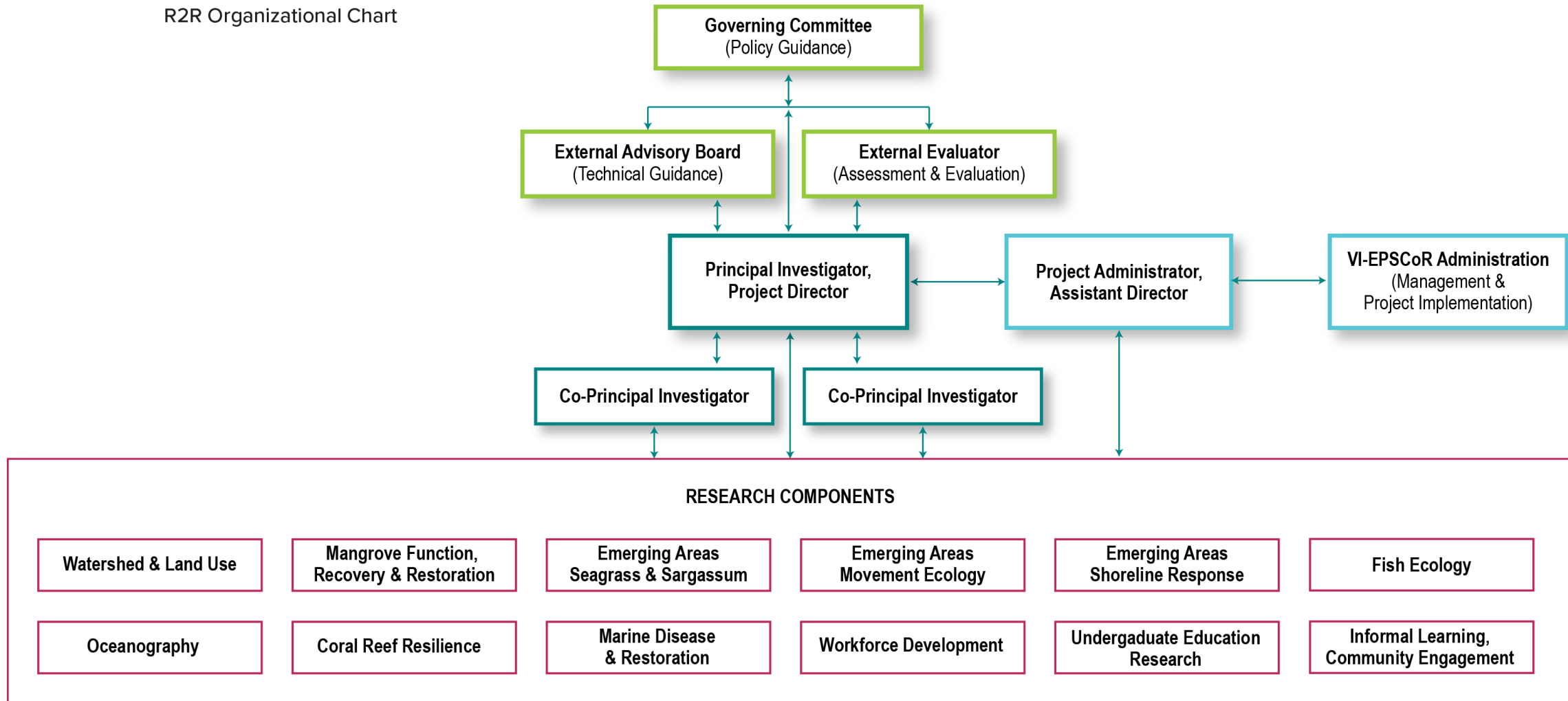
TRACELYN OTTO,
ADMINISTRATIVE
ASSISTANT II



JULENE DORSETT
ADMINISTRATIVE
SPECIALIST I

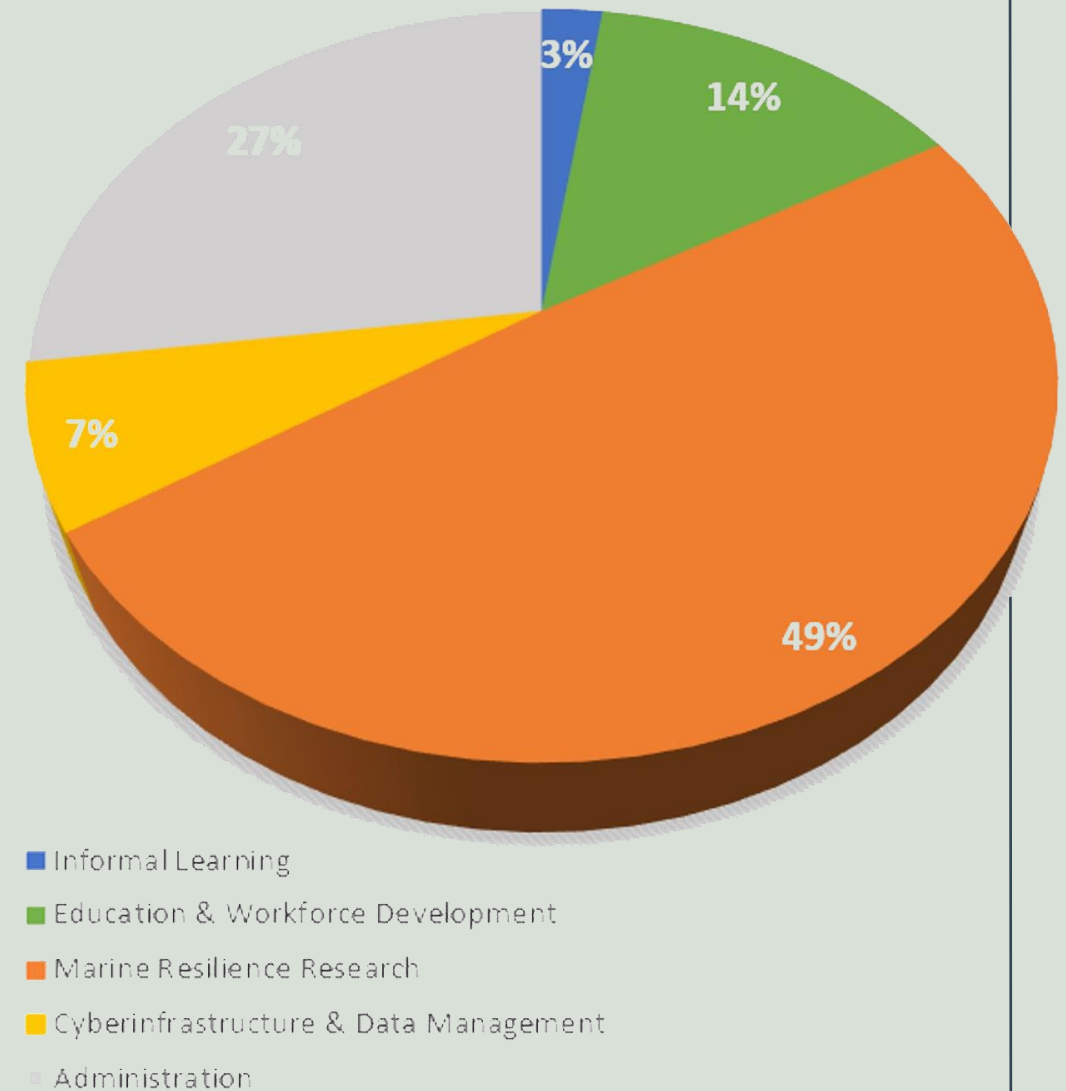


R2R Organizational Chart



Project Budget

- Marine Resilience Research: \$9,842,043
- Administration: \$5,437,522
- Education & Workforce Development: \$2,855,919
- Cyberinfrastructure & Data Management: \$1,402,016
- Informal Learning: \$462,500



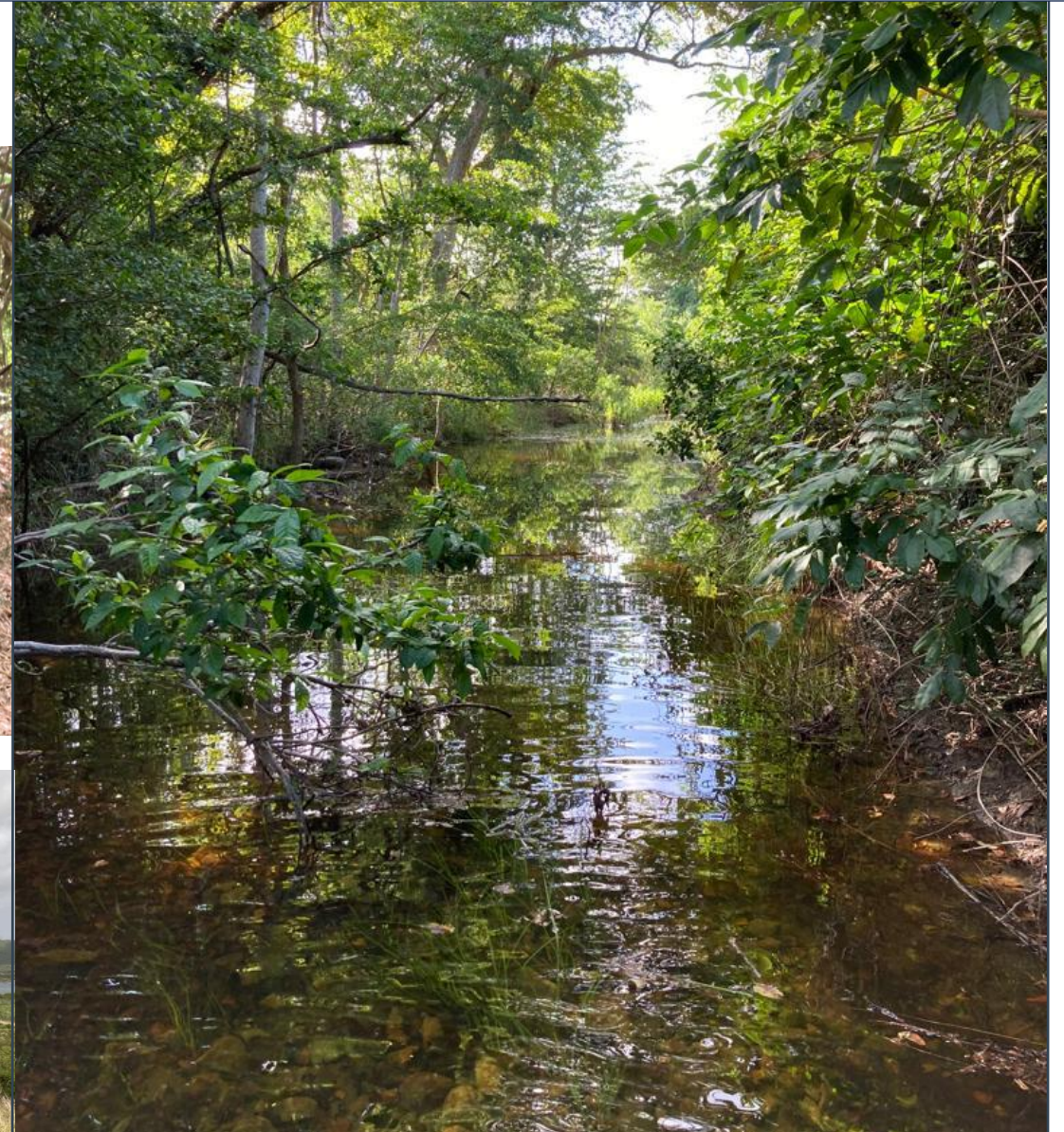
Cost Sharing

Leveraged through in-kind
and cash contributions from these sources:

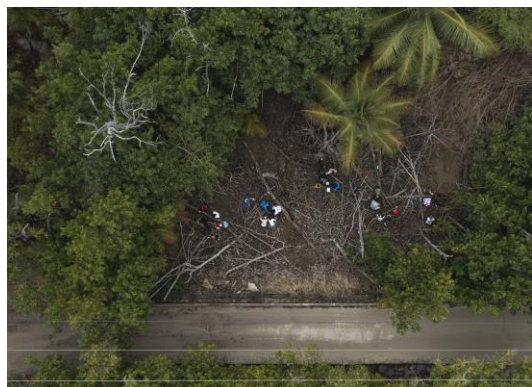
- The University of the Virgin Islands -**\$1.5M**
 - Information Services & Institutional Assessment
 - Institutional Advancement
- The USVI Legislature -**\$322K**
- Private businesses and foundations -**\$145K**



Watershed Monitoring & Land Use

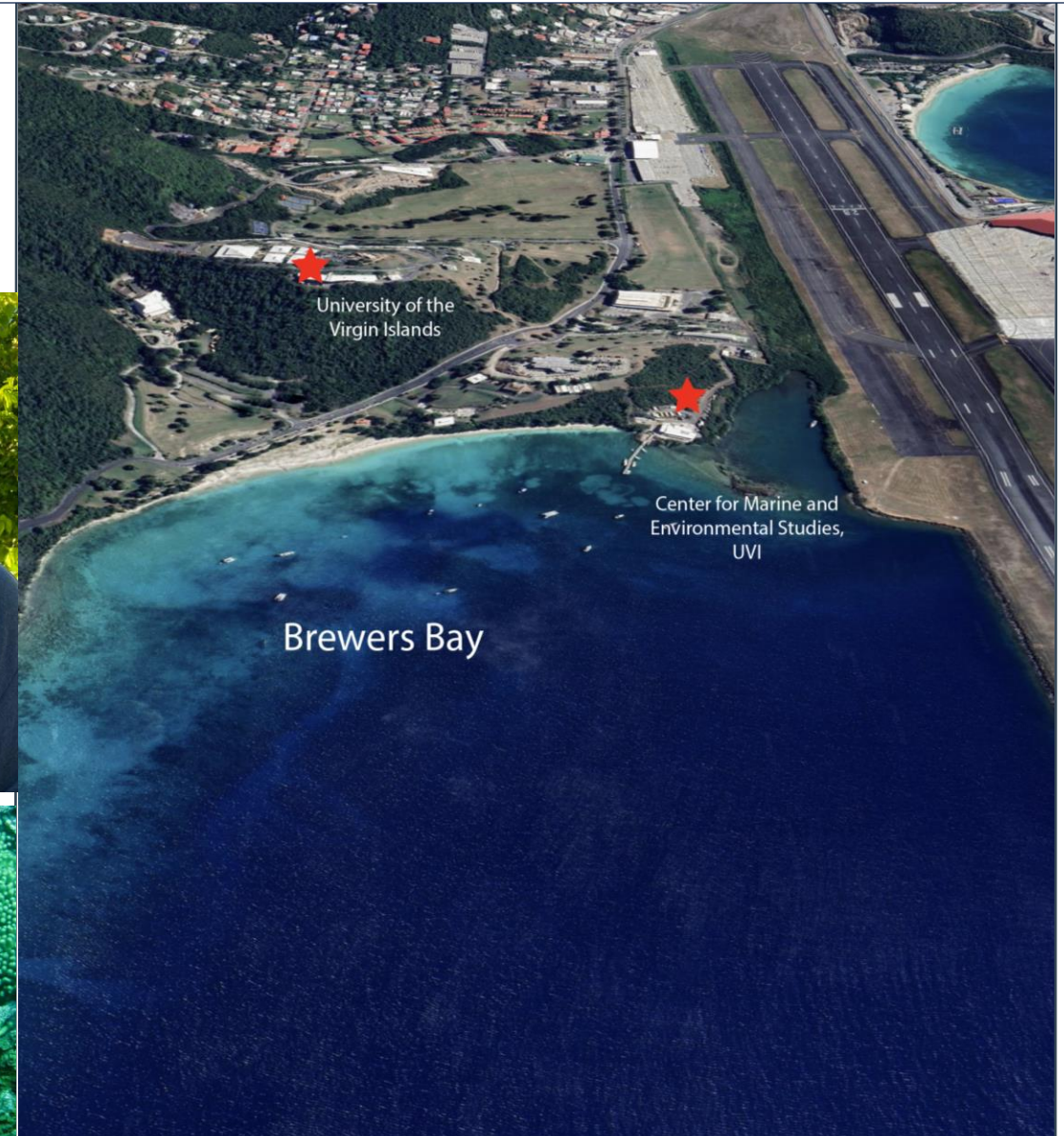


Mangrove Ecosystem Function, Recovery & Restoration



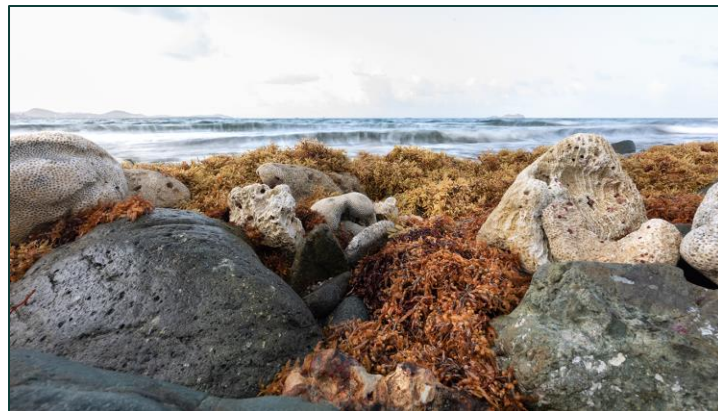
Emerging Research Areas

MOVEMENT ECOLOGY:
Animal movement in a changing
marine environment



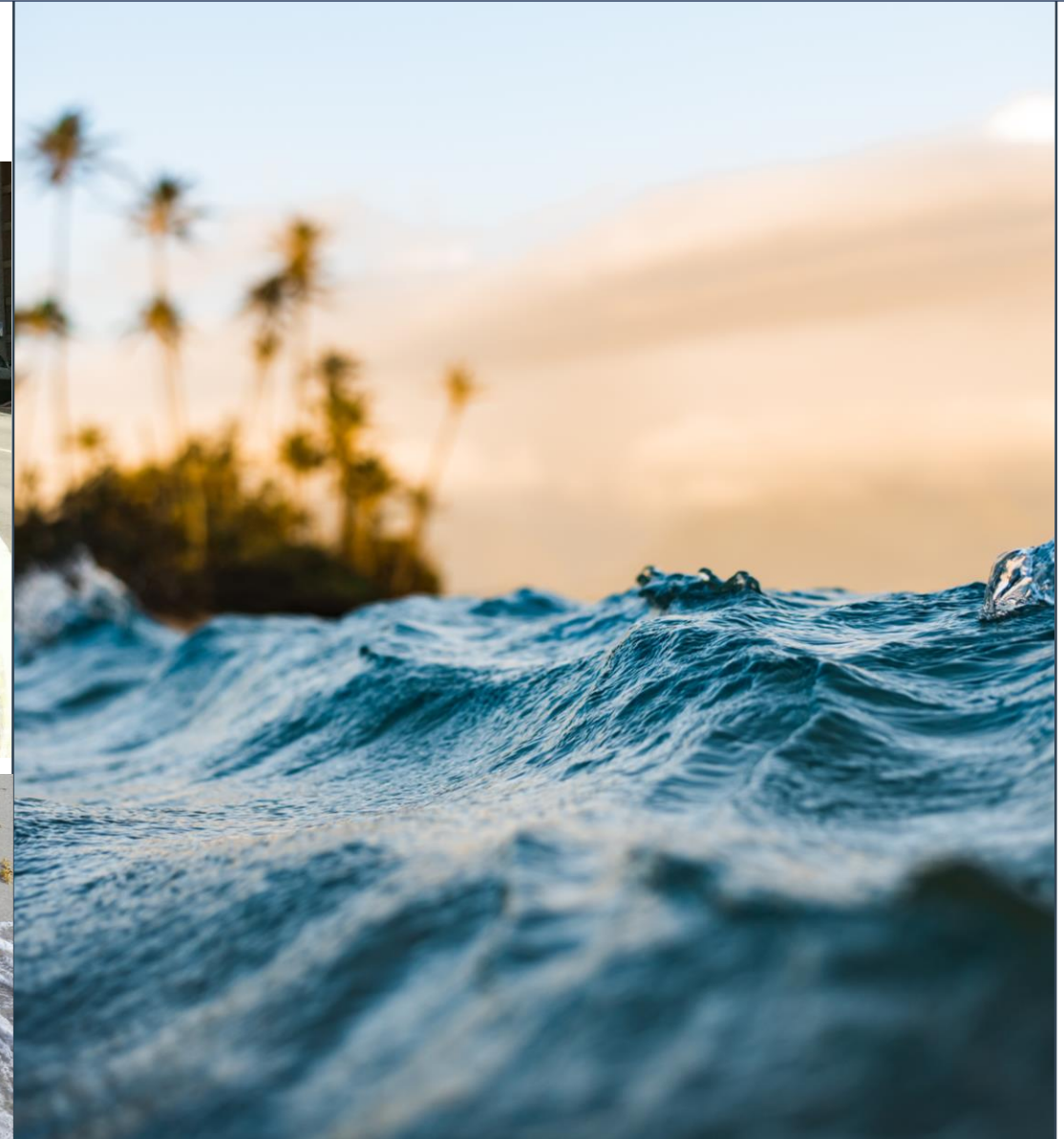
Emerging Research Areas

SEAGRASS AND
SARGASSUM ECOLOGY

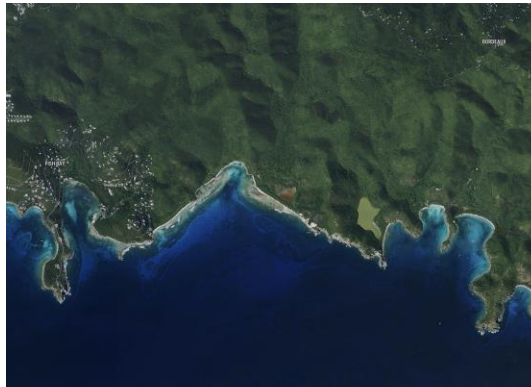
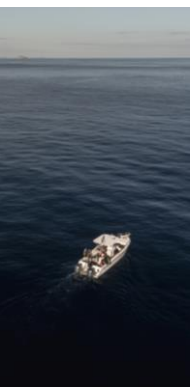
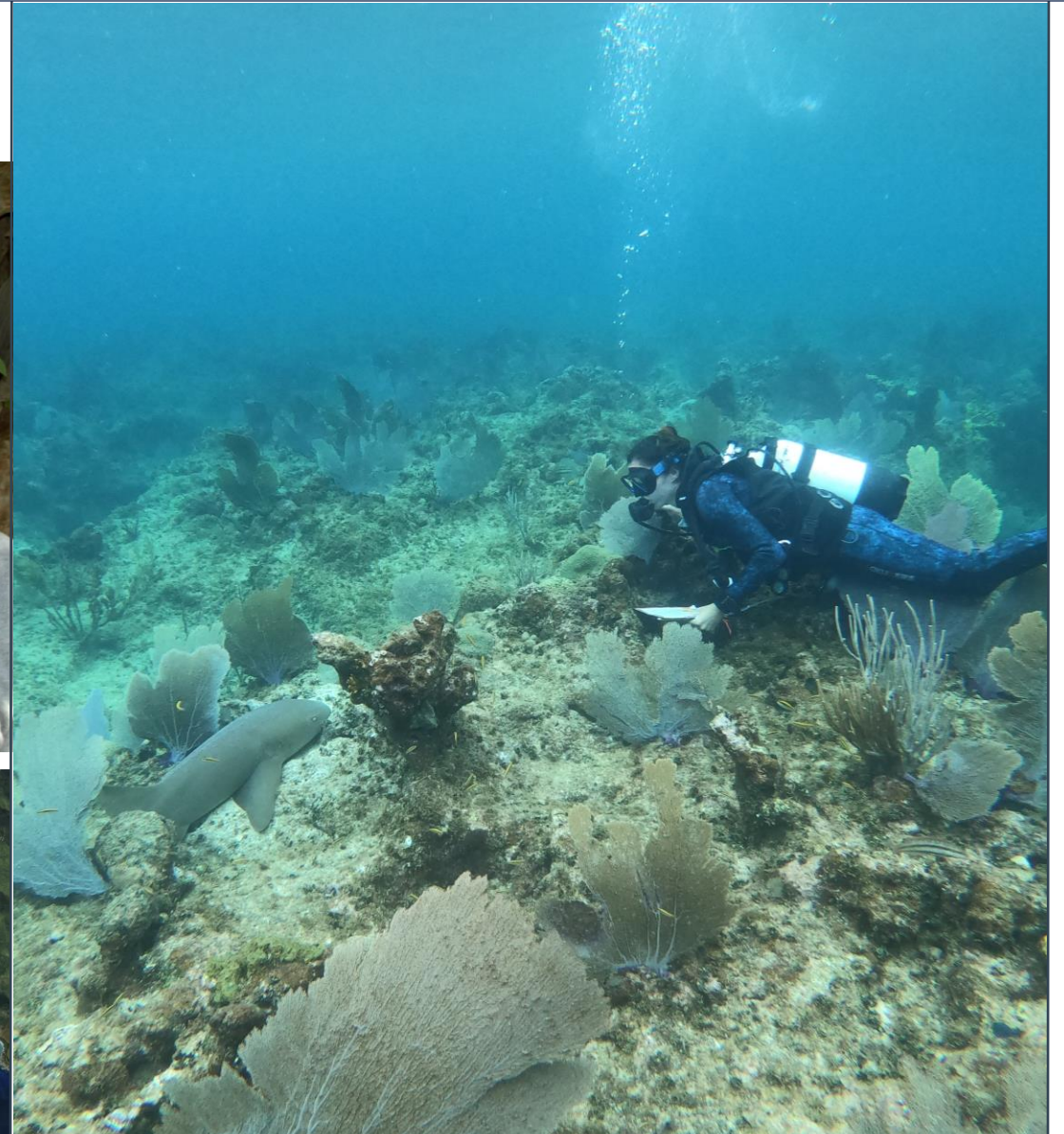


Emerging Research Areas

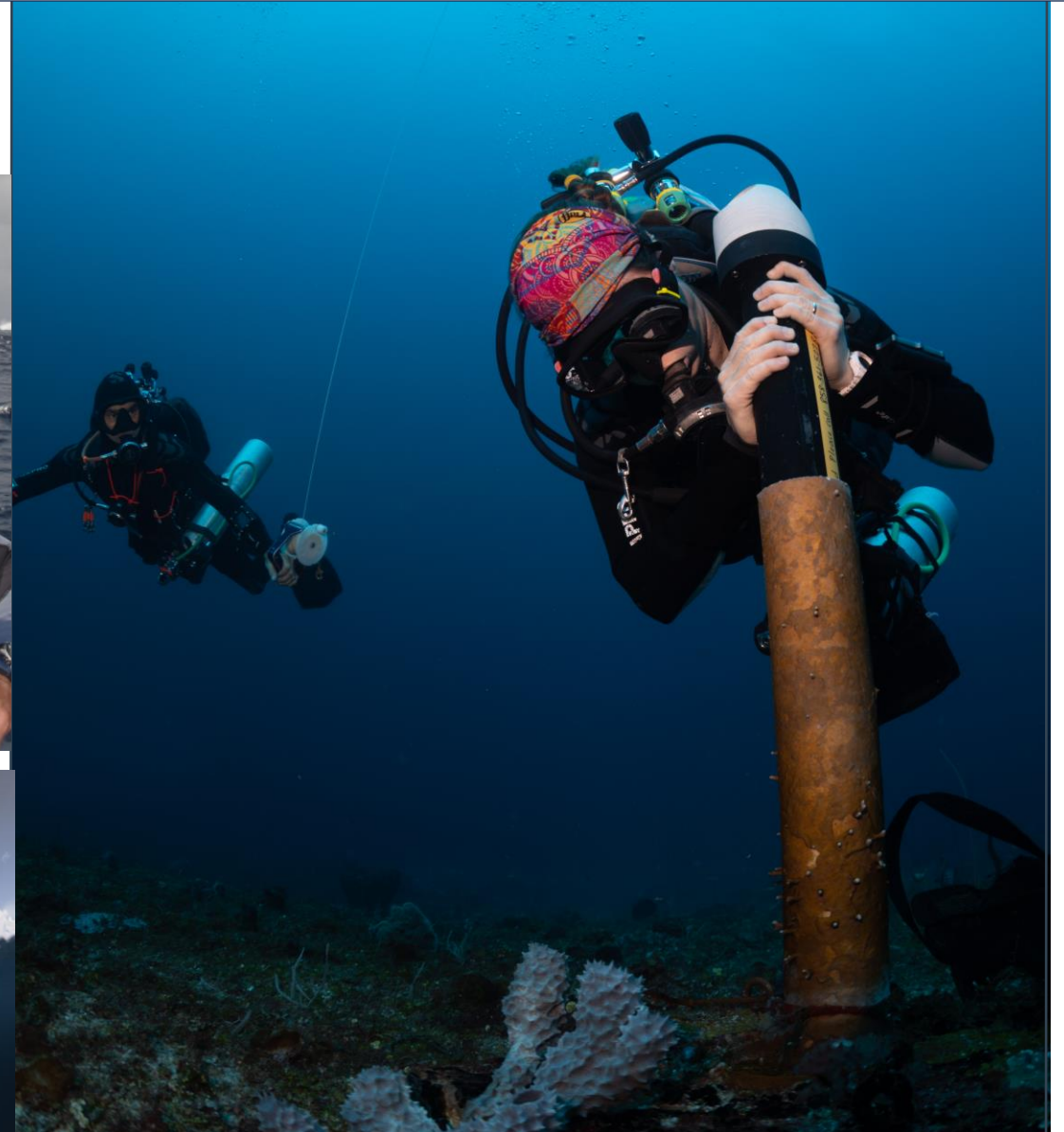
SHORELINE RESPONSE



Fish Ecology



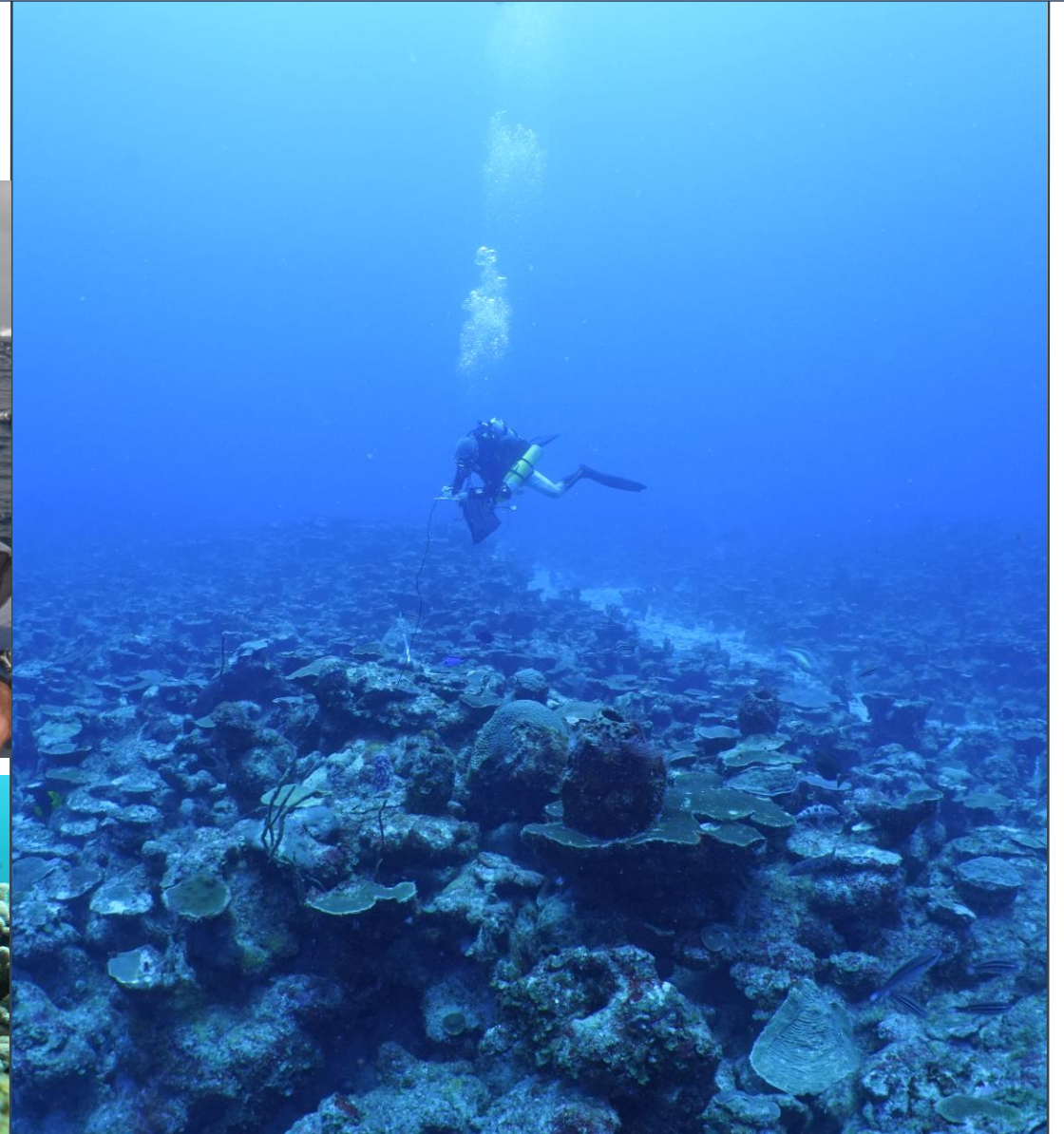
Oceanography



Marine Disease And Restoration



Coral Reef Resilience



Teacher Professional Development & Mentoring And Research Infrastructure



Undergraduate Education Research



Informal Learning, Communication And Dissemination





Challenges:

- Slow pace of getting our infrastructure/facilities operational
- Hiring and Retention





Terms and Conditions

- Hires
- Preparing students for the job market/ advanced education
- Management plan
- Collaboration plan



Collaborations and Partnerships



Collaborations and Partnerships



The Ocean Can Be Your Lab Too!



Smithsonian



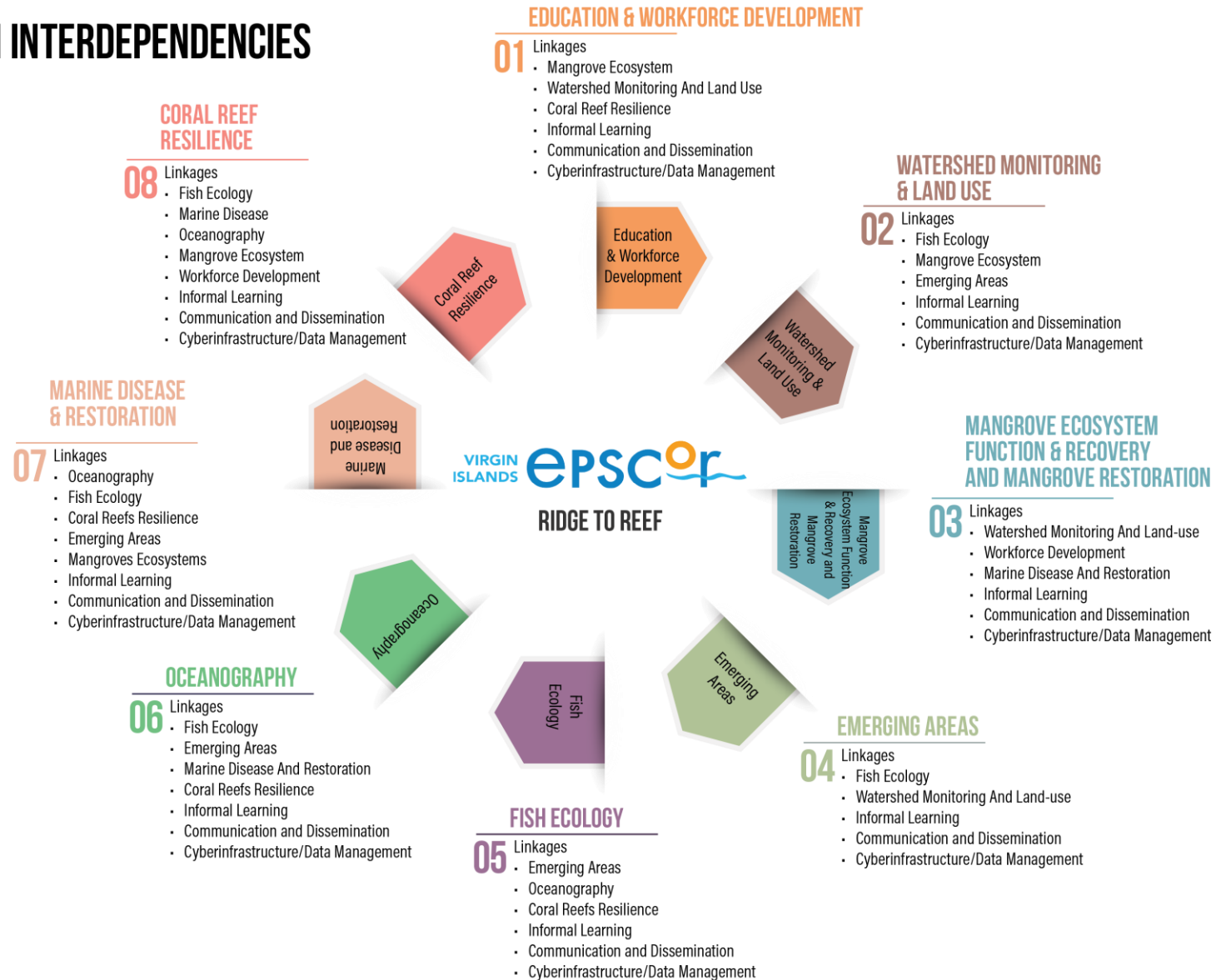
Infrastructure Investments



McLean Marine Science Center is nearly ready for occupancy
CMES Annex, home to EAL is open and occupied –
critical source of office space
Cyberinfrastructure has \$3.68M in new funding



RESEARCH INTERDEPENDENCIES





Thank you!

Dr. Kim Waddell

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