



MEETING *the* CHALLENGE

Environmental crises facing
the world today are relentless.

So are **FIU RESEARCHERS**

FIU | FLORIDA
INTERNATIONAL
UNIVERSITY

FROM RIDGE TO REEF, FIU SCIENTISTS ARE *pioneering* CRITICAL ENVIRONMENTAL RESEARCH

Oceans are getting warmer. Storms are more intense. Land temperatures are rising. Glaciers are melting. Droughts are lasting longer. Wildfires are more intense. Species are disappearing from the planet at an astonishing rate.

The planet is changing, and so must our scientific community's response to this new reality. The Institute of Environment at FIU is one of the largest, most impactful institutes of its kind in the world. Our scientists are taking the uncertainty out of long-term sustainability, tackling the issues that devastate ecosystems, disrupt communities and destroy natural resources.

Our Miami location affords our researchers and students unparalleled access to some of the very oceans, waterways, coastlines and ecosystems we are working to save. Our geography and the rich cultural diversity in our city and student populations serve as a source of strength that informs our training of the next generation of professional scientists.

168

Number of affiliated faculty

50+

Number of affiliated
research facilities and labs

200+

Formal international
collaborations and partnerships

1,500+

Number of peer-reviewed
publications since 2010

60+

Countries involved in research

THE FIGHT FOR *clean* WATER

Freshwater is the most important resource on our planet. Our scientists bring together experts from around the world and across diverse fields to identify and address water management, quality and insecurity. Our scientists work from waterways like Biscayne Bay to global locations including Africa. Generations of FIU scientists have collaborated for 40+ years with national, state and local entities to guide the management, restoration and protection of water resources including within Everglades National Park's subtropical wetland ecosystem that spans 1.5 million acres.

Florida Coastal Everglades (FCE) Long Term Ecological Research (LTER) Program

FIU is involved heavily in the world's largest restoration project, providing the science to ensure restoration is successful for people and nature. Since 2000, the program has transformed scientific understanding of coastal ecosystem productivity, particularly how nutrients regulate ecosystem response to disturbances like hurricanes, droughts, cold snaps, shifts in freshwater management and sea level rise.

CREST Center for Aquatic Chemistry and Environment

This NSF Center of Research Excellence in Science and Technology focuses on environmental contamination. Research buoys deployed around South Florida detect and investigate hazards, including the fish kills in Biscayne Bay. Institute of Environment Director Todd Crowl is principal investigator for the NSF-funded CREST CAChe project on aquatic chemistry and contamination.

UNESCO Chair on Sustainable Water Security

This position expands upon experiences gained in water security and sustainability through programs such as GLOWS (Global Water for Sustainability), which was led by FIU and executed in Africa, Latin America, Southeast Asia and the Caucasus.



FIU researchers and students are providing the science needed for improved policy and management decisions to ensure a healthy future for the Florida Everglades.

HEALTHY *oceans*

HEALTHY *planet*

Our scientists conduct groundbreaking scientific research working at scales from microscopic to global. This work has resulted in important contributions to research, management and education that add to the sustainability of our natural and built environments.

Keen on the Keys

The Florida Keys National Marine Sanctuary is home to our one-of-a-kind Aquarius Reef Base 60 feet below the ocean's surface. The world's only undersea research laboratory enables research on coral reefs, ocean acidification, climate change, fisheries and overall ocean health. Innovative education and outreach programs bring science live from Aquarius Reef Base to classrooms around the world, inspiring the next generation of researchers and explorers.

Blue Carbon

One of the world's foremost experts on seagrass ecosystems, James Fourqurean is a lead scientist in the International Blue Carbon Working Group, focused on carbon captured by oceans and coastal ecosystems. Fourqurean helped create a global partnership promoting the development of international conservation solutions.

Global FinPrint

This Paul G. Allen initiative collected data from 58 countries to assess sharks, rays and other marine life on coral reefs. The teams (co-led by College of Arts, Sciences & Education Executive Dean Mike Heithaus) are revealing how sharks and rays affect these vanishing ecosystems and helping countries protect and rebuild their populations.

Sea Level Solutions Center

Part of the Institute of Environment, the center coordinates and engages in local to global solutions-oriented research, education, strategic thinking, communications and outreach by organizing top scientists, educators, students, municipal leaders and policymakers to produce an accurate understanding of impacts of sea level rise and climate change for both the human and natural environments.



An FIU biologist sets up a 360-degree camera off the coast of Bimini to film hammerheads as part of long-standing research on marine predators.

A man wearing a blue FIU baseball cap, sunglasses, a blue puffer jacket over a teal t-shirt, and dark pants stands in a field of dry grass. He is smiling and looking towards the camera. In the background, there is a body of water and a cloudy sky. In the foreground, there are several pieces of gear, including a black backpack and a black case with 'FIU' on it.

FROM THE *land* TO THE *sea*

Institute of Environment scientists tackle global environmental challenges and unite conservation leaders, students and researchers, addressing basic biodiversity science and providing data-driven solutions to the critical concerns driving species extinctions and ecosystem decline.

Unlocking the Arctic's Secrets

For three decades, an international team has collected data for the International Tundra Experiment (ITEX) to answer questions about what's happening to and what the world should expect for the future of the Arctic. Steven Oberbauer has been ITEX North American lead for much of that time.

Curious Crustaceans

Heather Bracken-Grissom is part of a national team studying shrimp that call the deep ocean's underwater volcanos home. Understanding their vision could lead to innovations such as extremely sensitive light receptors and serve as a model for low-light camera systems.

Operation Pangolin

FIU is leading this international collaboration to save the world's most trafficked wild mammal. These evolutionarily distinct animals are in dire need of urgent conservation action as meat trafficking supply chains move an estimated 250,000 pangolins annually out of African and Asian forests. Using interdisciplinary team science, researchers are developing cost-effective solutions to the global pangolin crisis.

Better. Stronger. More Resilient.

Jose Eirin-Lopez and Ph.D. candidate Serena Hackerott, a CREST Center research assistant, are co-leading a project with co-principal investigator Harmony Martell of the University of British Columbia to research innovative ways to make corals more resilient to the changing climate by applying stress-hardening techniques to corals in a lab.



Steven Oberbauer (standing) is training the next generation of professional scientists. Here he is with FIU alumnus Matthew Simon at Toolik Field Station, one of the world's most remote research sites hundreds of miles above the Arctic circle.

INSTITUTE OF *environment*

Our reputation has been forged through innovation and collaboration. Our researchers continue to make significant contributions to environmental research.

FIU is the main research partner for both the Florida Keys National Marine Sanctuary and the Rookery Bay Research Reserve.

We have provided critical data to support the listings of several shark and ray species for protection by the Convention on International Trade in Endangered Species.

Our marine scientists have tagged sperm whales off the coast of Guadeloupe as part of the UN Environment – Caribbean Environmental Programme’s Specially Protected Areas and Wildlife project in support of the Cartagena Convention.

Institute of Environment scientists are members of key local, national and international environmental initiatives:


- Coastal and Estuarine Research Federation
- Global Lake Ecological Research Network
- Florida Blue-Green Algae Task Force
- Miami-Dade County Biscayne Bay Task Force
- Biscayne Bay Health Advisory Board
- International Blue Carbon Policy Working Group
- Science Advisory Committee for Pew Environment’s Global Shark Program
- International Union for Conservation of Nature Cetacean and Shark Specialist groups
- Expert Panel on cetacean bycatch of the International Whaling Commission
- Southeast Regional Climate Change Compact Sea Level Rise Projection Work Group

The Institute is comprised of three major divisions:

- Freshwater Resources
- Coastlines and Oceans
 - Sea Level Solutions Center
- Land and Biodiversity
 - International Center for Tropical Botany at The Kampong
 - Agroecology Program represents terrestrial research and biodiversity projects in any ecosystem.

In addition to the three divisions, the Institute also includes these cross-cutting initiatives:

- Environmental Forensics & Public Health
- Environmental Finance & Risk Management
- Innovation for Sustainable Built Environments

A man in a white t-shirt with a logo is operating a yellow inflatable research boat. The boat is equipped with various scientific instruments, including a GPS, a camera, and a sensor. The boat has "Sea Robotics" and "FIU" logos on it. The background shows a body of water and a cloudy sky.

Research teams comprised of scientists and students are continually collecting real-time data to address dire challenges facing Biscayne Bay, an imperiled marine ecosystem in Miami, Florida.

CRITICAL *support*

FIU scientists are able to conduct consequential research that cuts across disciplines, industries and topics thanks to grant and donor funding.

FUNDING FOR FISCAL YEARS 2012-2022

\$308.5M Federal Government

\$58.8M State & Local Government

\$43.1M Private/Other Sources

\$410M+ Total since fiscal year 2012

While the Institute of Environment conducts the majority of sponsored environmental research at FIU, two additional entities conduct important research in other areas of critical environmental resilience.

FIU Research Centers Focusing on Environmental Resilience Research Fiscal Years 2018-2022

\$93M

Institute of Environment

\$31.3M

Extreme Events Institute/
International Hurricane
Research Center

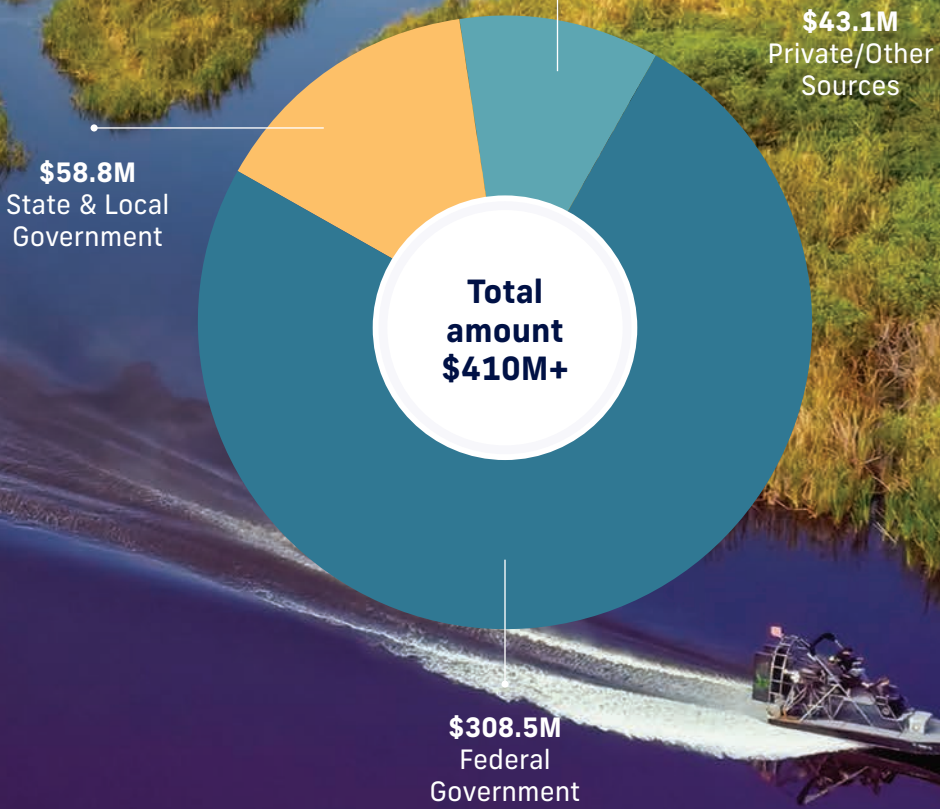
\$36.1M

Applied Research Center

Learn more about
our research at FIU



**SOURCES OF FUNDING
FISCAL YEARS 2012-2022**



MIAMI'S *Carnegie R1* PUBLIC RESEARCH UNIVERSITY

Just 50 years after opening our doors to students, we have become one of the most innovative public universities in the country and a leader in 21st century higher education.

FIU is the fastest-rising university of the past 10 years in *U.S. News & World Report's* public university rankings and has earned additional respected indicators of excellence related to research excellence and student success.

FIU AT A GLANCE

56,000+

Enrolled Students

86%

Minority Student Body

50%

of Student Body is eligible
for Pell Grants

16,500+

Degrees Awarded Annually

290,000+

Alumni



TOP 5

Social Mobility
U.S. News & World Report

TOP 15

Most Innovative
Public Universities
U.S. News & World Report

#32

National Public University
Washington Monthly

REAL IMPACT

\$1 Billion

Sponsored funding research
in the last five years

TOP 10

In the past decade among
public R1 universities for
research expenditure growth

TOP 20

Utility Patents
Public Universities,
Intellectual Property
Owners Association



FIU | FLORIDA
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A UNIVERSITY OF DISTINCTION
IN ENVIRONMENTAL RESILIENCE



Learn more about
our research at FIU