



DIVISION OF RESEARCH UPDATE



GREGG FIELDS, PH.D.

Vice President for Research

FLORIDA ATLANTIC UNIVERSITY | BOARD OF TRUSTEES MEETING | NOVEMBER 19, 2024



Annual HERD*

RESEARCH EXPENDITURES

FY 23-24

Estimated: **\$83M**

FY 22-23

\$78M

FY 21-22

\$62M

FY 20-21

\$58M

FY 19-20

\$54M

FY 18-19

\$51M

HERD numbers reflect expenditures for Research and Development activities. Research and Development does not include public service grants, outreach programs, curriculum development (unless part of an overall research project), non-research training grants.

*Higher Education Research and Development



Total Research Expenditures



FY 23-24

Estimated: **\$104M**

FY 22-23

\$95M

FY 21-22

\$76M

FY 20-21

\$72M

FY 19-20

\$67M

FY 18-19

\$64M

Total Research Expenditures reflect all Sponsored Research including public service grants, outreach programs, curriculum development, and non-research training grants.



Research Growth

VALUE OF RESEARCH AWARDS RECEIVED



\$10.1M

**COLLEGE OF ENGINEERING
AND COMPUTER SCIENCE**



\$109K

COLLEGE OF BUSINESS



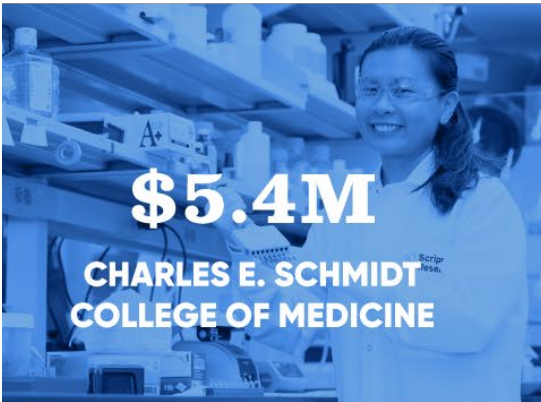
\$639K

**HARRIET L. WILKES
HONORS COLLEGE**



\$5.4M

**CHARLES E. SCHMIDT
COLLEGE OF MEDICINE**



\$8M

COLLEGE OF NURSING



\$7.7M

COLLEGE OF EDUCATION



\$384K

GRADUATE COLLEGE



\$8.5M

**CHARLES E. SCHMIDT
COLLEGE OF SCIENCE**



\$1.4M

**DOROTHY F. SCHMIDT
COLLEGE OF ARTS
AND LETTERS**



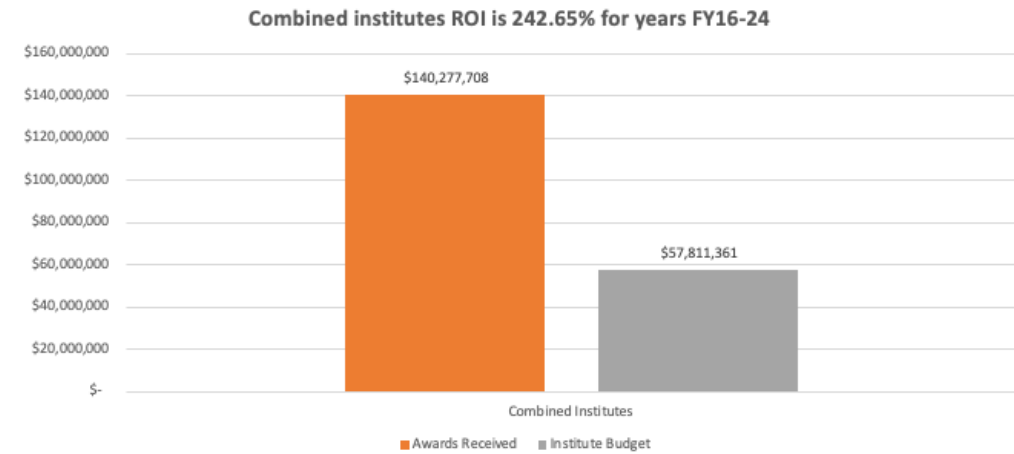
\$1.2M

**COLLEGE OF SOCIAL
WORK AND CRIMINAL
JUSTICE**





Florida Atlantic University Research Institutes



HBOI

Harbor Branch Oceanographic
Institute

**Coastal & Food Security
Environmental Monitoring
Clean Energy**



I-BRAIN

Stiles-Nicholson Brain Institute

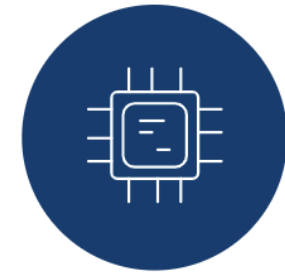
**Human Health:
Neurodegenerative
Diseases; Substance Use,
Abuse and Resiliency**



I-HEALTH

Institute for Human Health
and Disease Intervention

**Human Health: Cancer
Center of Excellence;
Infectious Diseases;
Dementia (Clinical)**



I-SENSE

Institute for Sensing and
Embedded Network Systems
Engineering

**Sensor Systems
Data Science
Applications to AI**

R1 Ready

Florida Atlantic is on the precipice to achieve Carnegie Classification of Institutions of Higher Education's highest and most coveted Very High Research Activity status (R1) for the next adjustment officially announced in early 2025.



2025

Achieving R1 status

The esteemed designation by Carnegie uses benchmarks in research expenditures ($\geq \$50\text{M}/\text{year}$) and doctoral graduates ($\geq 70/\text{year}$). Florida Atlantic transitioning to R1 in 2025 is based on 2022-2023 levels of research expenditures (\$78M) and doctoral graduates (125).

How has FAU approached R1?

- Talent Acquisition: Senior Faculty hires
- Research Acceleration: Institutes
- Infrastructure Expansion: Cutting-edge technology acquisition
- Doctoral Degrees: Additional support for dissertation completion

Why is **R1** a Big Deal?

Of the approximately 5,300 higher education institutions nationwide, less than 3.7% are designated as R1 by Carnegie.

NUMBERS NATIONWIDE

146 **>** **168***
CURRENT 2025

**The Chronicle*

HISPANIC SERVING INSTITUTIONS AND R1 CLASSIFICATION

1 of 6
IN FLORIDA

1 of 20
IN U.S.





The **R1 Status** is coveted by the collegiate world because it ...

Opens doors for major donors and competitive research grants

Draws researchers with a desire to be associated with R1

Attracts additional world-class faculty and students

Boosts national prestige by placing Florida Atlantic in the top tier of universities nationally, creating new opportunities for collaboration

Increases engagement with industry and community partners

Accelerates innovation, entrepreneurship and knowledge creation

Provides robust graduate programs, contributing to a skilled workforce and fostering the next generation of researchers

Benefits students from unique research opportunities, internships and a rich academic environment

Contributes to the ability to address pressing societal issues and advances in health, technology and policy



Grant Awards >\$1M

TOTALS

\$30.5M

7/1/22 – 9/27/24

\$29.98M

10/1/24+

| | | | |
|--------------------------|----------|---|--------------|
| Randy Blakely | SNBI | David and Lynn Nicholson Center for Degenerative Disease Research | \$1.03M |
| Pillar Taylor | SNBI | The Stiles-Nicholson STEM Teacher Academy | \$1.6M |
| Ruth M. Tappen | | In-Vehicle Sensors to Detect Cognitive Change in Older Drivers | \$1.7M |
| Beth King | | Caring-based Community and Academic Relationships for Excellence: Nurse-led Mobile Health Unit | \$2.9M |
| Paul Wills | HBOI | Supplement: USDA-Ensuring a Steady Supply of Warm Water Marine Finfish Seed Stock to Support U.S. Aquaculture Industry FY23 | \$2.13M |
| Elizabeth Villares Sacks | | Wellness Advocates Valuing Educators and Students - WAVES | \$2.21M |
| Michael Twardoski | HBOI | Next generation sensor systems for natural oceanic bioluminescence assessments: PHASE II | \$7.05M |
| Paul Wills | HBOI | Supplement: USDA-Ensuring a Steady Supply of Warm Water Marine Finfish Seed Stock to Support U.S. Aquaculture Industry FY24 | \$2.17M |
| James VanZwieten | | Research, Development and Education to Accelerate the Transition of Marine Energy Technologies to Market | \$4.4M |
| Paul Wills | HBOI | Seedstock improvement to support the U.S. Warm Water Marine Finfish Industry | \$1.8M |
| Lisa Wiese | | Reducing Disparities in Dementia and VCID Outcomes in a Multicultural Rural Population | \$2M |
| Gregg Fields | I-HEALTH | 1. Research University Alzheimer's Research Using Exablate Neuro-focused Ultrasound 2. Broward UP Promise Neighborhoods | \$1.5M \$20M |
| Ayse Torres | | ACCESS-Technology: Advancing Career Choices for Employment Success in Technology | \$10M |



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graph TD
    DOE[DOE] --> FAU[FAU]
    FAU --> CSC[CHILDREN'S SERVICES COUNCIL]
    CSC --> OPM[Overall Project Management]
    CSC --> SM[Subrecipient Management]
    CSC --> R[Research]
    CSC --> YD[Youth Development]
    CSC --> BS[Broward Schools]
    CSC --> TD[Teen Development]
    CSC --> BC[Broward College]
    CSC --> FCD[Family & Community Development]
    OPM --> GS[Governance Structure]
    OPM --> FA[Fiscal Agent]
    OPM --> AS[Admin Staff]
    OPM --> IC[Indirect Costs]
    SM --> GS2[Governance Structure of Subrecipients]
    SM --> AS2[Admin Staff]
    SM --> IC2[Indirect Costs]
    R --> APR[APR/Ad Hoc]
    R --> IRB[IRB]
    R --> RS[Research Staff]
    R --> EE[External Eval]
    R --> NS[Neighborhood Survey]
    R --> CM[Case Management]
    YD --> UL[Urban League]
    YD --> ECP[Early Childhood Partners TBD]
    YD --> RUP[Read UP Partner TBD]
    YD --> YMCA[YMCA]
    YD --> YF[Youth FORCE]
    BS --> DS[Data Sharing]
    BS --> ME[Mathematics, ELA]
    BS --> AE[Adult Education]
    BS --> SA[School Access]
    BS --> TT[Teacher Training]
    BS --> SNT[School Nurse Training]
    TD --> BGC[Boys & Girls Clubs]
    TD --> HANDY[HANDY]
    TD --> PACE[PACE]
    TD --> HU[Hispanic Unity]
    TD --> OIC[OIC]
    BC --> PSWD[Post-Secondary and Workforce Development]
    FCD --> FLIPANY[FLIPANY]
    FCD --> FLITE[FLITE]
    FCD --> UL2[Urban League]
    FCD --> BPHI[BPHI]
    FCD --> DDP[Digital Divide Partner TBD]
    FCD --> NB[Neighborhood Builders ABCD]
    
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DOE

FAU

CHILDREN'S SERVICES COUNCIL

Overall Project Management
Governance Structure
Fiscal Agent
Admin Staff
Indirect Costs

Subrecipient Management
Governance Structure of Subrecipients
Admin Staff
Indirect Costs

Research
APR/Ad Hoc
IRB
Research Staff
External Eval
Neighborhood Survey
Case Management

Youth Development
Urban League
Early Childhood Partners TBD
Read UP Partner TBD
YMCA
Youth FORCE

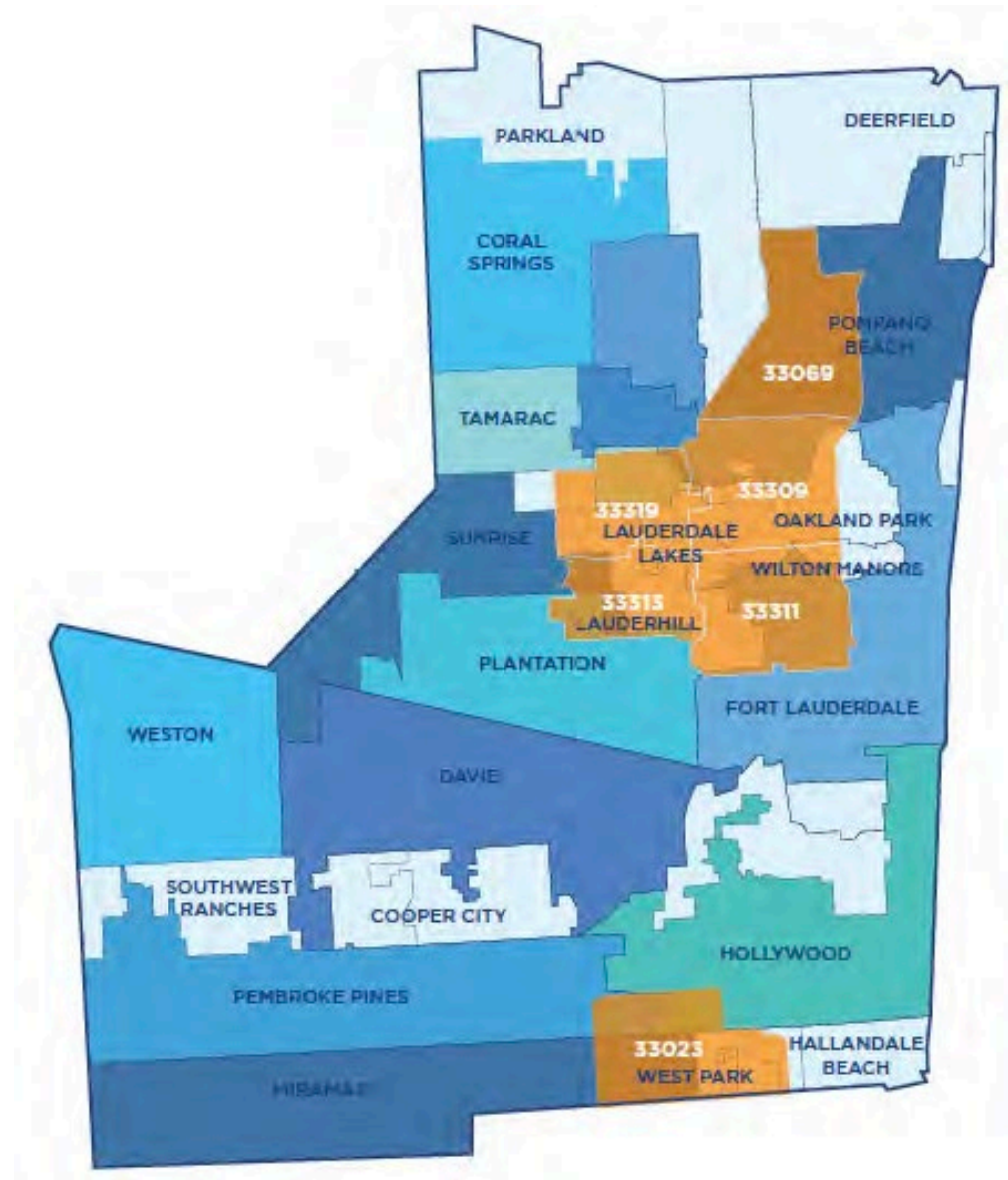
Broward Schools
Data Sharing
Mathematics, ELA
Adult Education
School Access
Teacher Training
School Nurse Training

Teen Development
Boys & Girls Clubs
HANDY
PACE
Hispanic Unity
OIC

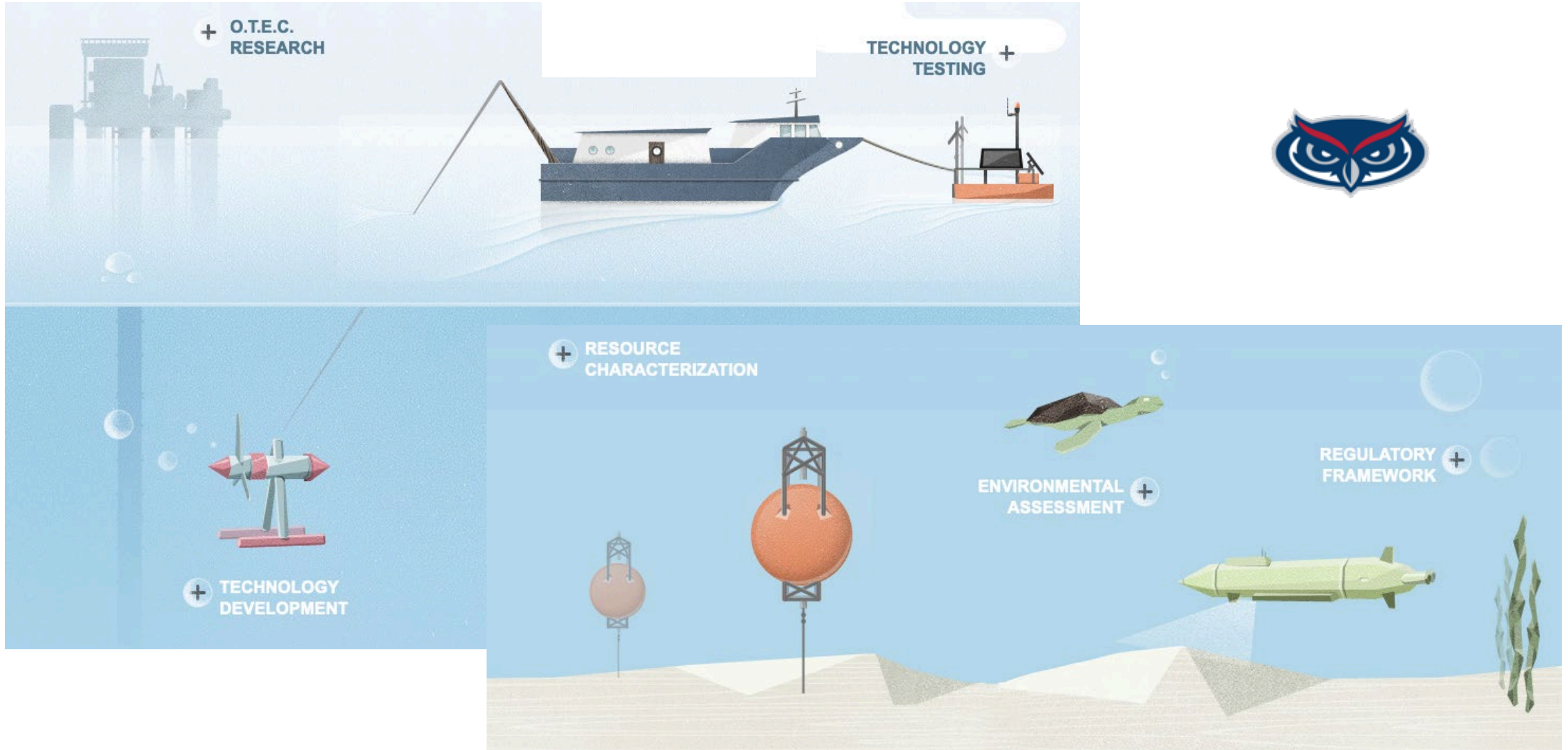
Broward College
Post-Secondary and Workforce Development

Family & Community Development
FLIPANY
FLITE
Urban League
BPHI
Digital Divide Partner TBD
Neighborhood Builders (ABCD)

Community Foundation of Broward (CFoB)
Community/Family Navigators



Southeast National Marine Renewable Energy Center (SNMREC)





Southeast National Marine Renewable Energy Center



IDOM

Designed U.S. turbine test vessel for DOE

- Led by IDOM, to design, build, and own/operate nationally available asset

Working to establish an ocean economy innovation cluster

- Begun feasibility study for grid-connected offshore test facility
- Working with municipalities and industry to establish regional cluster (EDA Tech Hub)
- Continuing to prepare future workforce (NSF REU program)
- Marine energy tech companies and project developers directly funding R&D at FAU
- Integrating with FAU Innovation and Business Development pipeline



DOE EERE Funding and Direction

- Up to \$20M for Water Power Technologies Office infrastructure with direction for establishing an **offshore ocean current test facility**. Just received \$800K as an initial investment.
- Congressional direction to support **foundational research activities** led by universities and other research institutions affiliated with the National Marine Energy Centers (NMECs)



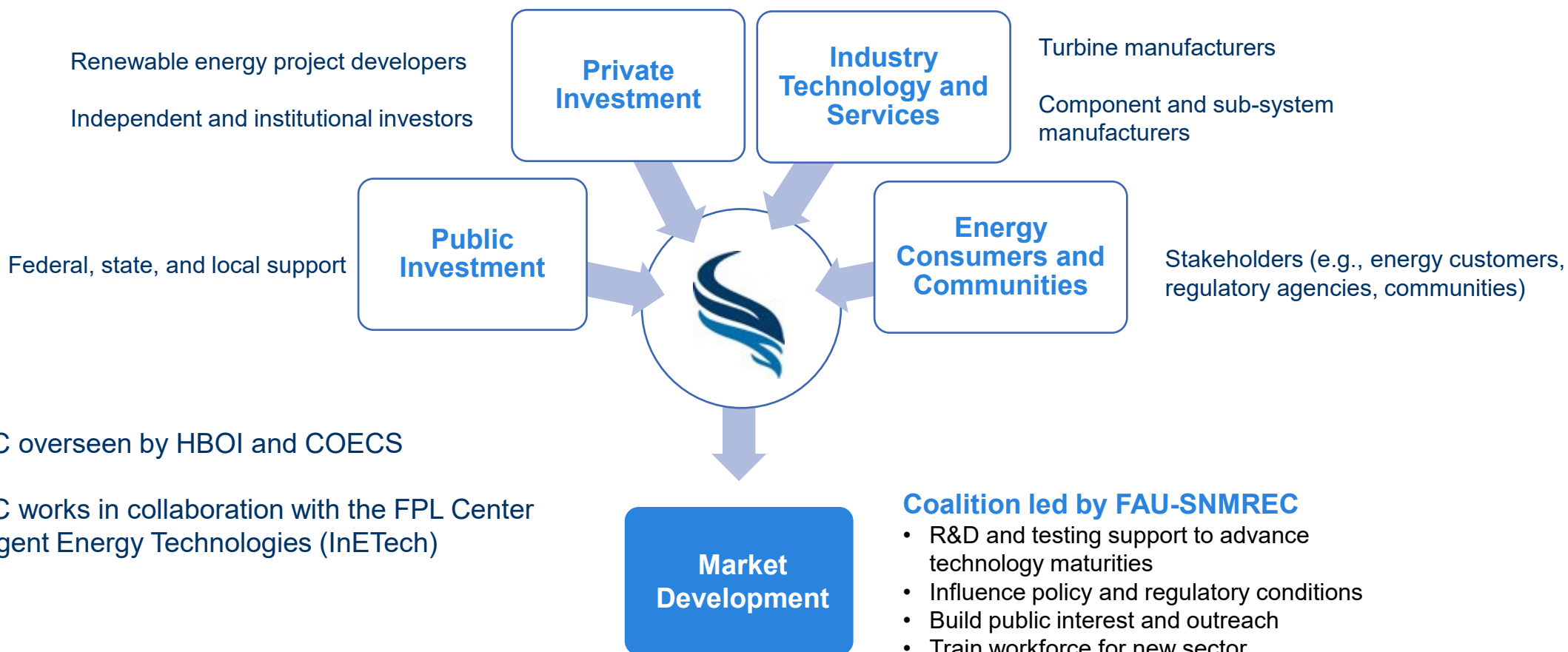
Expanding to serve full U.S. east coast marine energy needs





Southeast National Marine Renewable Energy Center

OFFICE OF OCEAN ECONOMY





Clinical Trial of Magnetic Resonance Guided Focused Ultrasound (MRgFUS) for the Treatment of Alzheimer's Disease

FAU AND INSIGHTEC PARTNER TO TREAT NEUROLOGICAL DISORDERS



The collaboration will advance scientific knowledge about the use of focused ultrasound to treat brain diseases, including Parkinson's disease and Alzheimer's disease.

BY GISELE GALOUSTIAN | 4/28/2023

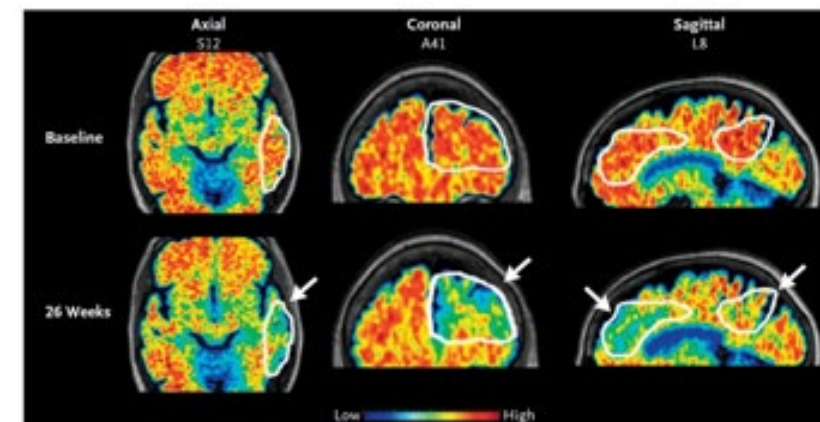
During his trade mission trip to Israel, Florida Gov. Ron DeSantis **announced** a new agreement between **Florida Atlantic University** and **Insightec**, a global health care company headquartered in Haifa, Israel. This agreement will enable FAU and Insightec to collaborate to advance scientific knowledge about the use of focused ultrasound to treat brain diseases, including Parkinson's disease and Alzheimer's disease.

By harnessing acoustic energy, Insightec's innovative technology uses focused ultrasound to treat diseases in different ways. Currently, high intensity focused ultrasound (HIFU) is a United States Food and Drug Administration-approved means of creating lesions that treat Parkinson's disease. More recently, the system has been used under different paradigms to non-invasively modulate and disrupt the blood-brain barrier, a network of blood vessels that plays a key role in keeping harmful substances from reaching the brain. At the same time, the blood-brain barrier also prevents the uptake of most pharmaceuticals, which makes it difficult to treat diseases of the brain. Alzheimer's disease and other neurological diseases may be treated by opening the blood-brain barrier.

FAU, DELRAY MEDICAL CENTER, INSIGHTEC TEAM UP ON GROUNDBREAKING STUDY



Lloyd Zucker, M.D., a board-certified neurosurgeon and medical director of neurosurgery (left); and Hermes Kamimura, M.D., at Delray Medical Center treating the first patient with Insightec's non-invasive focused ultrasound technology. (Photo credit: Delray Medical Center)



FAU MRgFUS “NeuroInnovate” Research and Training Center



Human MRI: GE SIGNA™ Premier, \$4M grant from the Center for Advanced Human Imaging (Boca Raton campus)

Animal FUS: \$0.15M, not applied for yet (Jupiter campus)

Mass spectrometer: Agilent Technologies 1100 Series G1956B, purchased and upgraded by DOR (Jupiter campus)

Human FUS: \$2M Community Project Funding request, US House of Representatives Appropriation Bill 2025 (Boca Raton campus)

Metabolomics NMR: \$2.5M State LBR (Boca Raton campus)

Mass spectrometer: Thermo Scientific Orbitrap Exploris™ 240, \$0.5M grants from BOG and FAU Tech Fee (Jupiter campus)

Animal MRI: \$4M State LBR (Jupiter campus)

Animal fluorescence imager: IVIS Lumina Series 100-240V, upgraded by DOR (Jupiter campus)

Initial Clinical Trial: State of Florida Board of Governors appropriation “Research University Alzheimer’s Research Using Exablate Neuro-focused Ultrasound”



Selective Current MRgFUS Clinical Trials

NCT05857852: Low-Intensity Focused Ultrasound for Cocaine Use Disorder

NCT05879120: Randomized Study of Neo-adjuvant and Adjuvant Pembrolizumab With and Without Targeted Blood Brain Barrier Opening Using Exablate MRI-guided Focused Ultrasound (Exablate MRgFUS) for Recurrent Glioblastoma

NCT03321487: Blood-Brain Barrier Opening Using MR-Guided Focused Ultrasound in Patients With Amyotrophic Lateral Sclerosis

NCT05469009: Safety and Feasibility of Exablate Blood-Brain Barrier Disruption for Mild Cognitive Impairment or Mild Alzheimer's Disease Undergoing Standard of Care Monoclonal Antibody (mAb) Therapy

Current FAU research agreements with Delray Medical Center, West Palm Beach VA Hospital, Memorial Healthcare System, and Broward Health Medical Center

A Pipeline for Growth

INNOVATION AND BUSINESS DEVELOPMENT

IMAGINE

Florida Atlantic Wave
NSF I-Corps at Florida Atlantic
Market Validation Program
Adams Center for Entrepreneurship

BUILD

Office of Technology Development

GROW

Florida Atlantic Tech Runway
Tech Runway Investor Network

EXPAND

Florida SBDC at Florida Atlantic

THRIVE

Strategic Partnerships



Florida Atlantic Tech Runway

ENTREPRENEURS' SUCCESS



\$309.8M

REVENUE GENERATED

\$162.8M

CAPITAL RAISED



980

NEW JOBS CREATED

432

PATENT
APPLICATIONS FILED



423

INTERNSHIPS



*Oct. 2014 –
Sept. 2024

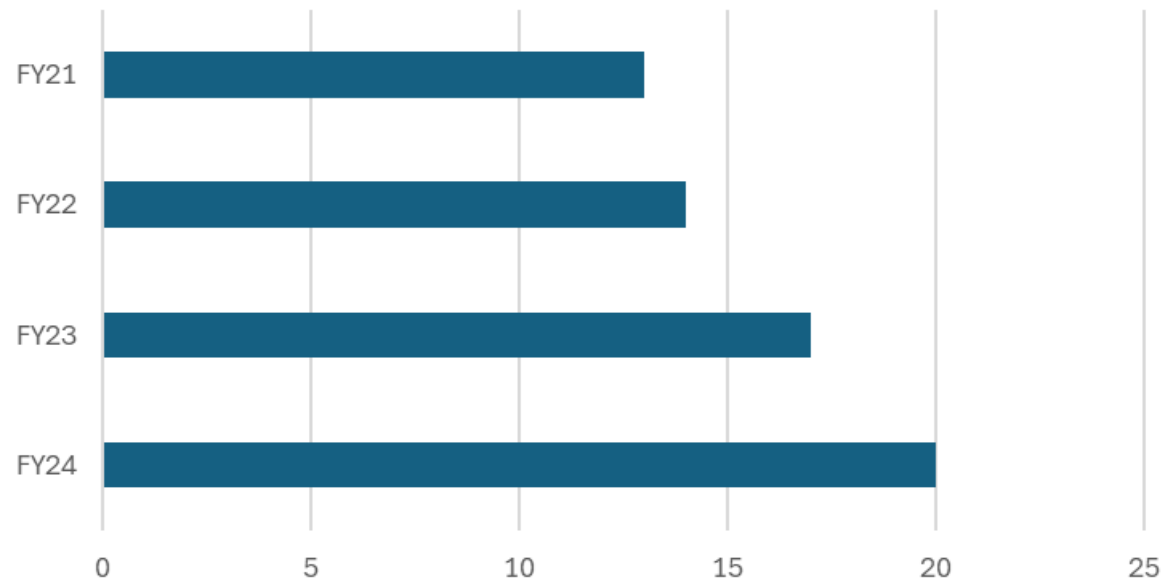


Florida Atlantic Tech Runway

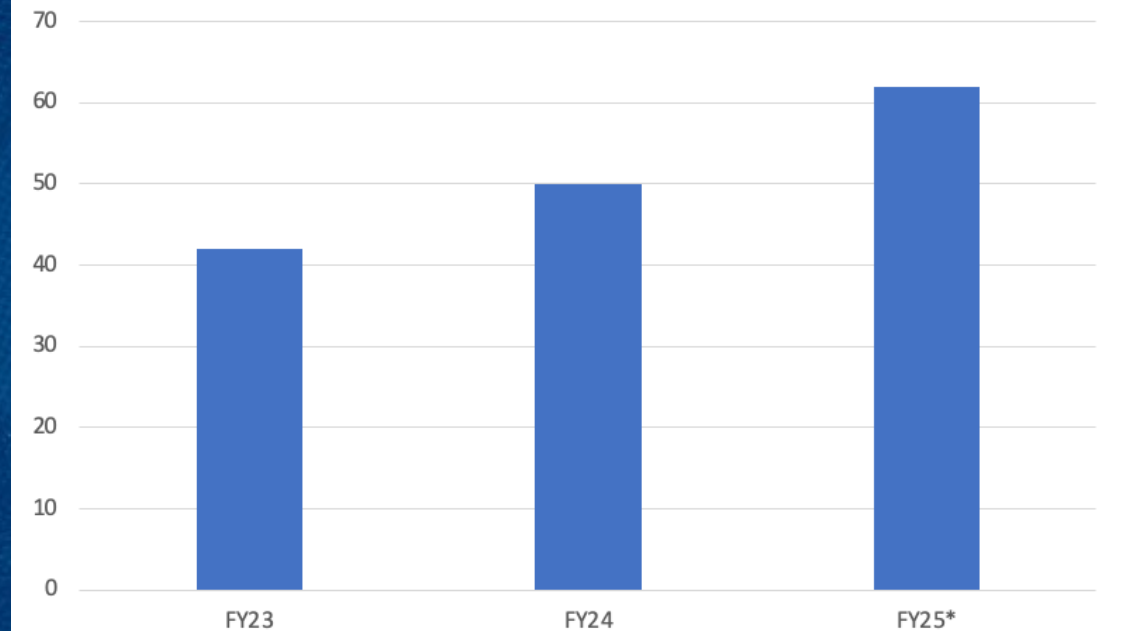
ENTREPRENEURS' SUCCESS



WAVE Student Teams



Job Creation





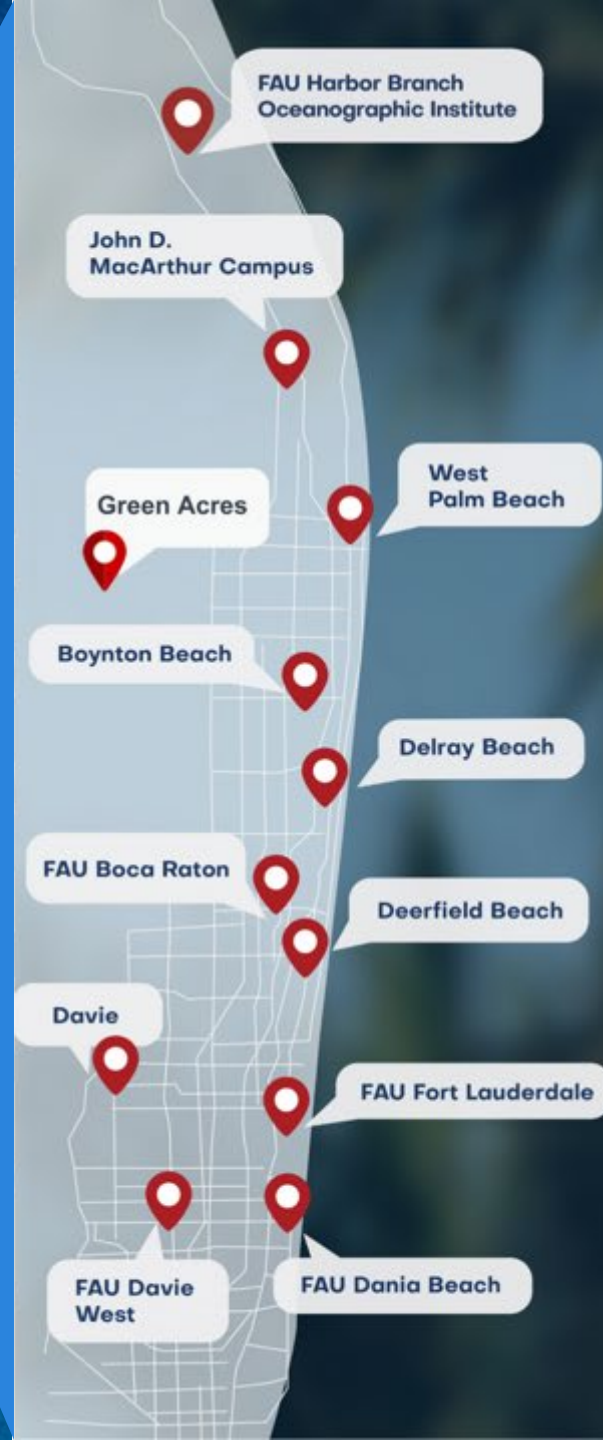
Small Business Development Center (SBDC) at Florida Atlantic

1,645

EXISTING AND
ASPIRING
BUSINESS OWNERS
CONSULTED

\$246.8M

SALES GENERATED



Request for consulting:





Save^{the}Date



RESEARCH RENEWAL

APRIL 23, 2025

9 A.M. – 5 P.M.

EXECUTIVE EDUCATION CENTER BOCA RATON CAMPUS

