

Greater Fort Lauderdale

2024 STATE OF TECH REPORT

by South Florida TechGateway



WORK IN THE CLOUD.
LIVE IN THE SUN™

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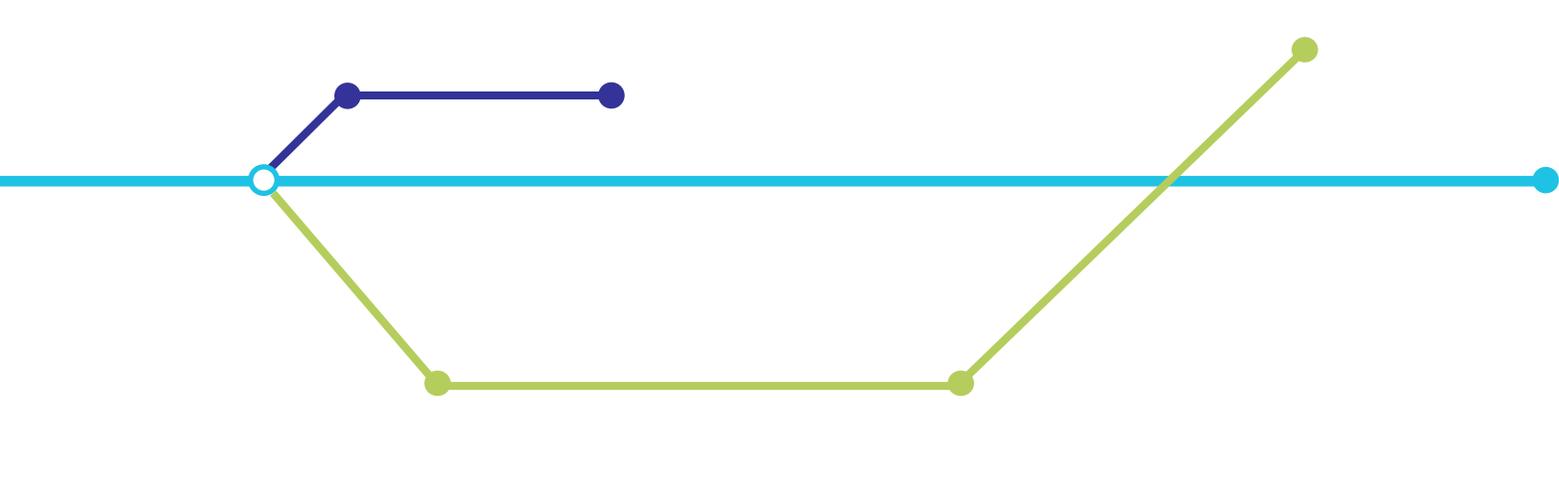
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On the cover: Photo location provided by The Guy Harvey Oceanographic Research Center.

Right: A view of the New River and downtown Fort Lauderdale.





LETTER FROM THE TECHGATEWAY FOUNDER, CHAIR AND FACILITATOR

BY BEN WESLEY, DAVID CODDINGTON, AND RANDEE DEICH

For a destination historically known for sun, sand and surf, Greater Fort Lauderdale has more recently made a name for itself as a destination in “the cloud.”

Its market-changing and innovative entrepreneurship and technological advancement changed everything from connected computing (Citrix) to workforce management (UKG), construction project tracking (eBuilder), even the online sale of pet supplies (Chewy).

Today, Broward County and South Florida have returned to the region’s roots, building a reputation surrounding the relationship between cities and the blue/green environment. As climate change challenges society to rethink that relationship, companies across Greater Fort Lauderdale are helping lead that mission.

This issue of the State of Technology Report, presented by South Florida TechGateway, examines some of the companies whose innovations are exploring ways to mitigate the impacts of a changing environment, and the institutions helping those and other startup and growth-stage companies thrive in a competitive marketplace.

Greater Fort Lauderdale has created a nurturing home for startup and growth-stage companies, whether they’re in traditional IT or the resilience /

sustainability sectors. In fact, with a host of marine-focused institutions, those in the “blue/green” sector are at home along our coast. In this issue, we explore the companies that are hoping to improve the marine, coastal and built environments, and those institutions helping them achieve their goals.

Along with such institutions as the Nova Southeastern University Alan B. Levan | NSU Broward Center of Innovation; FAU Tech Runway at Florida Atlantic University; the Broward College Entrepreneurial Experience(BCEX); and the Venture Mentoring Team (The VMT): Greater Fort Lauderdale is home to a network of organizations whose mission it is to help tech entrepreneurs thrive, including those exploring sustainable and resilient solutions.

From the downtown central business district, to thriving submarkets along the coast to the edge of the Everglades, we’ve seen dramatic growth among long-time partners and new arrivals alike.

We know innovation means growth in Broward County. In its 2023 fiscal year, the Greater Fort



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External Affairs
Manager at Florida
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Chair of The South
Florida TechGateway



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Senior Vice President of
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TechGateway



RANDEE DEICH

Director of Talent
Attraction and
Education, Greater Fort
Lauderdale Alliance and
Facilitator of The South
Florida TechGateway



The New River is a primary artery of Greater Fort Lauderdale's marine economy.

Lauderdale Alliance assisted more than 150 companies, including 103 local businesses, resulting in 250 retained jobs. Of 13 companies establishing new or expanding existing operations here, total capital investment is more than \$169.78 million. Those companies will create a total of 1,059 new direct jobs over the next three years.

In South Florida, the commitment to environmental stewardship is not just a practice; it's a principle that's shaping our sustainable future. At the South Florida TechGateway, eco-friendly initiatives are not just plans on paper; they are actions that define our path forward.

Our region is a beacon of innovation, where clean energy and conservation initiatives are pivotal elements that underscore our commitment to a brighter, more sustainable future. We're building more than an energy infrastructure; we're crafting a sustainable energy landscape — and seascape —

that's resilient, forward-thinking, and ready to meet the challenges of tomorrow.

Collaboration is essential for innovation. Our partnerships in technology and sustainability go beyond mutual benefits; they're focused on building a future where technology and sustainability work together, leading to meaningful change and shared success.

Speaking of partners, this Report was created with the support of our partners — the Greater Fort Lauderdale Alliance's CEO Council, Nova Southeastern University, the Broward Workshop, FPL and Wells Fargo.

For years, Greater Fort Lauderdale has lived by the motto, "Work in the Cloud. Live in the Sun.™" Only now, our entrepreneurs are bringing those innovations to the marine and built environments, creating solutions suited to deliver a more sustainable and resilient world.

LETTER FROM THE EDITOR



Students from Nova Southeastern University conduct a class on a dock

BY JEFF ZBAR

If technologists, scientists and innovators were to scout a prime location to take on a changing climate, they could find no better place than Greater Fort Lauderdale.

Flanked by water and steeped in a history of market-changing technological advancements and capital investment that touch every part of daily life, the region has proven itself primed to tackle the next great opportunity: seeking solutions in sustainability and resilience to address a changing environment.

Along with the technology, innovation and venture communities that have made Greater Fort Lauderdale and South Florida a high-tech hotbed, the latest ventures exploring clean, yet “blue/green” solutions seek to bring solutions to a changing world.

This issue of the 2024 State of Technology Report by South Florida TechGateway is exploring local advancements meant to address global needs. Such an examination must look toward the past to see future opportunities more clearly, says Erick

Strati, South Florida Commercial Banking Market Executive with Wells Fargo. Greater Fort Lauderdale has become a leader in stability and resilience, given its past and focus on the future.

Hurricane Andrew in 1992 drove advancements in construction materials and engineering, along with designated land development and resilient practices now used statewide. Such thinking “continues to position Broward County with the ability to sustain its growth into the future,” he says.

“Our future is further contingent on our work and commitment to ocean resilience,” Strati says. “Greater Fort Lauderdale works closely with university and independent researchers on protecting the marine environment and our relationship to it.”

BUILDING UPON A TECH LEGACY

Such progress is often built upon the legacy of those who came before. That legacy runs deep



here. Over 30 years ago, startup technology firm Citrix Systems set up shop in Fort Lauderdale, and in time, changed the state of global enterprise technology. It also became the foundation upon which the city's and region's technology ecosystem was built.

In the years to come, it was followed by such successes as HR management services provider, Ultimate Kronos Group (UKG), pet supply retailer Chewy, and construction management platform eBuilder, each with respective exits valued at \$11 billion, \$3.5 billion and \$500 million. Even Citrix, founded by an executive who was on the Boca Raton team that created the first IBM PC, in 2022 was acquired for \$16.5 billion.

Meanwhile, other names known in consumer and business circles include SiriusXM, Magic Leap, Stryker, Future Tech Enterprise, Inc., and TradeStation. From the workplace to construction, health care to fintech, augmented reality to satellite driven audio entertainment, Greater Fort Lauderdale's tech sector touches users across the country and around the world.

The county now holds a new place in the dialogue — as the center-stage for the growing and vital exploration of solutions in pursuit of environmental sustainability and resiliency.

Others have taken notice. In 2023, the U.S. Department of Commerce's Economic Development Administration designated the Climate Ready Tech Hub one of 31 Tech Hubs around the country. The designation elevates and accelerates South Florida's advances in climate action and resiliency, and makes available millions of dollars in potential funding. "The Tech Hubs Program is a federal economic development initiative designed to drive regional technology and innovation-led growth by strengthening capacity to manufacture, commercialize, and deploy key climate technologies," partner Miami-Dade County wrote in an announcement. Partners included Broward, Miami-Dade and Palm Beach counties, and other organizations.

Already a number of companies are delivering solutions addressing such issues as warming seas, rising tides and coastal erosion, carbon capture and reduction — companies such as 1Print, Carbon Limit, Kind Designs, Smart Seawall Technologies, Sail Plan, Greener Processes, Bond Energy, Flood Sense and SBD_Automate.

On its list of 2023 "Startups to Watch," the *South Florida Business Journal* cited several companies from Greater Fort Lauderdale and southern Palm Beach county, including clean-tech startup Blue Frontier; water- and ethanol-based fuel solution maker MayMaan Research; EpiPaws; Zulu Pods; TicketRev; Digibee; and FloSpine, which is headquartered at the Research Park at Florida Atlantic in Boca Raton.

The Research Park at Florida Atlantic has been home to a number of

Resilient Tech Drives Manufacturing

Manufacturing is big business in Greater Fort Lauderdale. Sustainable manufacturing promises to drive even more business.

The state's manufacturing GDP outpaced many industries like construction and agriculture and also now rivals tourism, says Matthew Rocco, President of the South Florida Manufacturers Association. South Florida is home to 6,000 manufacturing companies employing 100,000 at an average salary of \$70,000. Its contribution to the South Florida GDP tops \$9.4 billion.

In terms of resiliency and sustainability in the sector, some companies are moving toward "eco" manufacturing, Rocco says. BioDiesel Las Americas is a biodiesel manufacturer; Weedoo Workboats is a leading manufacturer of environmental workboats and amphibious work equipment to clean the environment.

Steel fabricators are participating in recycling programs. Green initiatives have captured manufacturers' attention, Rocco says. "Many participate and look at that as part of a strategy."



The South Florida region is experiencing increased investments in renewable energy, improvements in energy efficiency, sustainable agricultural practices, conservation efforts, development of green technologies, sustainable fisheries and aquaculture, responsible tourism, marine conservation initiatives, and the development of ocean-based renewable energy.

— JOHN G. WENSVEEN, Chief Innovation Officer, Nova Southeastern University

heralded successes, and it continues to support the sustainable development of the regional economy, including those organizations seeking to serve the Everglades, ocean and freshwater.

“Our investment in the growth of ventures to support and strengthen these invaluable assets and resources continues to grow,” said Andrew Duffell, the park’s president and CEO. “Ventures related to remediation, drug discovery and sustainable marine activity are collaborating with leading researchers and students from Florida Atlantic to find solutions and growth opportunities every day.”

A GROWING PRESENCE

South Florida has long been called the “gateway to the Americas.” Its location and familiarity across the hemisphere has lured numerous businesses, including those accessing MI1, the massive South Florida-based “Network Access Point” that serves as one of the world’s largest Internet exchange points and data centers. Thousands of entrepreneurs arrived here during the pandemic, seeking the state’s low-tax, high quality of life index.

Inventors, investors, collaborators and the creative class have descended upon Greater Fort Lauderdale. Between news of the latest advancements, continued investments, and a highly collaborative community, the market has earned respect among its peers, says John G. Wensveen, chief innovation officer with Nova Southeastern University and executive director of the Alan B. Levan | NSU Broward Center of Innovation.

The blue/green economy is the natural next wave of innovation, he says. Given South Florida’s geographic location surrounded by water, he’s

witnessing increased focus on the blue economy, and The Levan Center of Innovation is being contacted by entrepreneurs focused on maritime technology advancements and blue biotech.

“The South Florida region is experiencing increased investments in renewable energy, improvements in energy efficiency, sustainable agricultural practices, conservation efforts, development of green technologies, sustainable fisheries and aquaculture, responsible tourism, marine conservation initiatives, and the development of ocean-based renewable energy,” he says.

Instead of seeing challenges, Katherine O’Fallon sees opportunities. As executive director with the Marine Research Hub, O’Fallon is helping connect the dots of Florida’s blue economy to be resilient and sustainable. With investment potential topping \$3 trillion and 40 million jobs worldwide in the coming decades, according to a report from Morgan Stanley, pursuit of sustainable and resilient solutions creates “an opportunity to make money and take care of the environment at the same time,” she says.

“It’s no longer separate ends of the spectrum,” she says. “These are great problems that also are creating our next workforce.”

The result is a wave of ground-breaking sustainable and resilient solutions at home among the region’s technology, innovation and venture sectors. Together, they advance Greater Fort Lauderdale’s and South Florida’s place as home to the latest solutions for a changing world.



All articles by Jeff Zbar. The freelance business and marketing writer can be reached at jeff@jeffzbar.com.

Numbers Tell Technology's Tale

Greater Fort Lauderdale's technology, innovation and capital marketplace continues to be a dynamic and disruptive ecosystem. The numbers tell the tale. It's driving billions of dollars in transactions and economic activity, and further solidifying the county's and the South Florida region's place on the global tech landscape. Now, with greater attention placed on resilience, sustainability and the "blue/green" sector, the energy, enthusiasm and economics truly tell the region's tale.



The Intracoastal in Fort Lauderdale.

U.S. & STATE INVESTMENT

More than **\$221B** capital invested in the U.S. in 2023.

Ranked #6, with **\$6.6B** capital invested in Florida in 2023.

Ranked #5, with **772** deals in Florida in 2023.

SOUTH FLORIDA METRO INVESTMENT

\$3.8B invested in the region, or more than 58% of the total invested in the state of Florida.

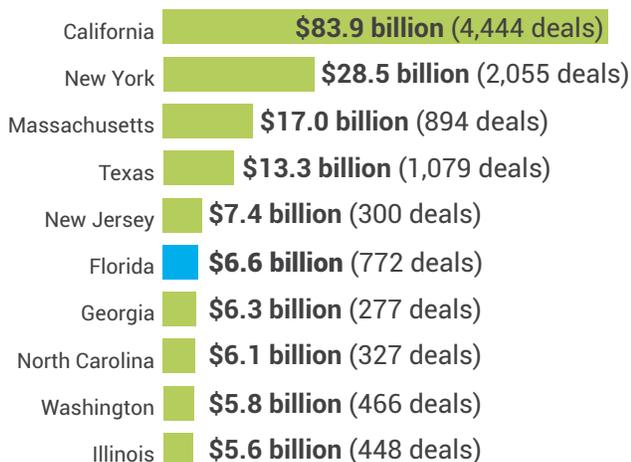
Ranked #1, based on capital invested, with

460 deals across the tri-county region (Broward, Miami-Dade and Palm Beach counties)

The area's capital investment is **2.6x** larger than the amount invested in the Tampa-St. Petersburg-Clearwater metro – the second largest metro area in the state.

STATES WITH HIGHEST CAPITAL INVESTMENT*

Ranked by capital invested (2023)



FLORIDA METROS WITH HIGHEST CAPITAL INVESTMENT*

Ranked by capital invested (2023)



*Capital raised through/counts of Venture Capital, PE Growth/Expansion and Equity Crowdfunding rounds

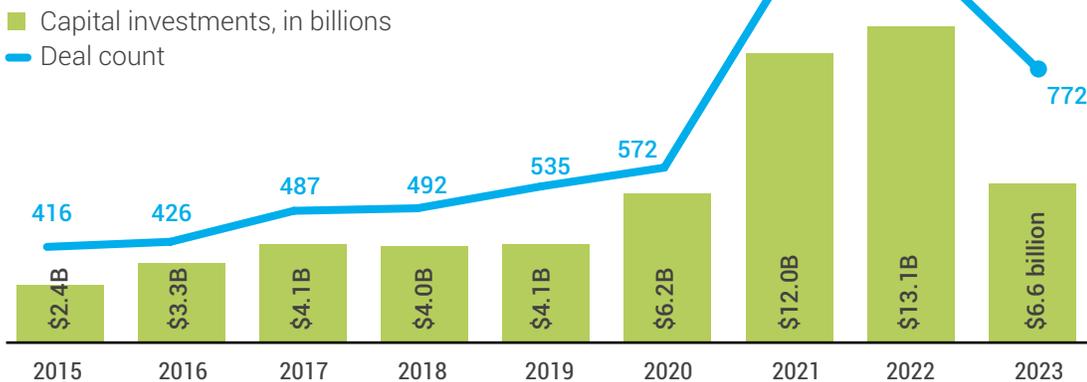
Source: PitchBook Data, Inc. data as of 01/19/2024, GFLA Research

CAPITAL INVESTMENTS TRENDS

CAPITAL INVESTMENT AND TOTAL DEALS, FLORIDA

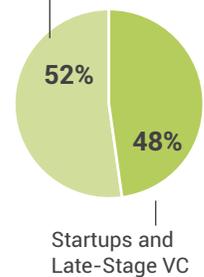
In 2023, Venture Capital investment overall decreased \$33.6 billion or 29% in the U.S., going from \$308B in 2022 down to \$221B in 2023. Compared to 2019, pre-pandemic investment, Florida's capital investment increased \$2.46B or 60% from \$4.1B to \$6.6B, growing faster than the U.S. growth of 18%.

DEAL ACTIVITY¹ FOR FLORIDA BY YEAR



2023 FLORIDA CAPITAL INVESTMENT

PE Growth/Expansion deals

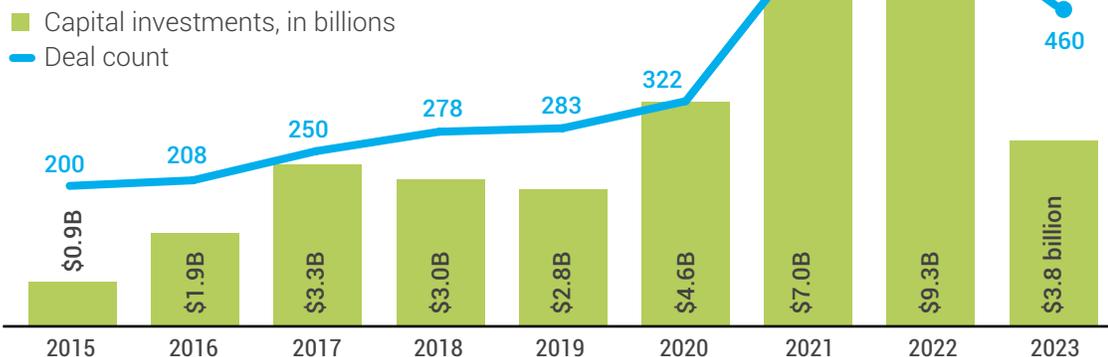


In 2023, Private Equity Growth/Expansion investment represented 52% of the total investment in the state of Florida, an 18 percentage points growth compared to the previous year share.

CAPITAL INVESTMENT AND DEALS, SOUTH FLORIDA

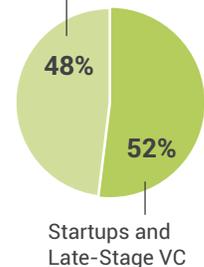
In 2023, Venture Capital investment in South Florida experienced a decline but exceeded pre-pandemic figures by more than \$1 billion or 36%. South Florida remains the #1 metro in the state with \$3.8 billion invested accounting for more than 58% of the total capital invested in Florida in 2023.

DEAL ACTIVITY¹ FOR SOUTH FLORIDA BY YEAR



2023 SOUTH FLORIDA CAPITAL INVESTMENT

PE Growth/Expansion deals



Although startups and Late-Stage VC still represent the majority of the total capital investment in South Florida, the Private Equity Growth/Expansion investment share increased year over year 18 percentage points going from 29% to 48% share in 2023.

¹Capital raised through/counts of Venture Capital, PE Growth/Expansion and Equity Crowdfunding rounds
Source: PitchBook Data, Inc. data as of 01/19/2024, GFLA Research

TOP BROWARD COUNTY DEALS AND EXITS BASED ON CAPITAL INVESTED

TOP DEALS¹ IN BROWARD COUNTY, FL IN 2023

COMPANIES	LAST FINANCING DATE	LAST FINANCING SIZE (USD M)	LAST FINANCING DEAL TYPE	HQ LOCATION	INDUSTRY/VERTICAL
Virgin Voyages	08-Sep-2023	550.00	PE Growth/Expansion	Plantation, FL	Cruise Lines
ClassWallet	14-Mar-2023	95.00	PE Growth/Expansion	Hollywood, FL	FinTech
Digibee	30-May-2023	61.88	Later Stage VC	Weston, FL	Business/Productivity Software
EnergyX	11-Apr-2023	50.00	Later Stage VC	Fort Lauderdale, FL	Energy Exploration
MayMaan	02-May-2023	30.00	Later Stage VC	Hollywood, FL	Oil
CarePredict	12-Jul-2023	28.91	Later Stage VC	Plantation, FL	AI & Machine Learning, HealthTech
SellersFi	13-Dec-2023	28.00	Later Stage VC	Weston, FL	AI & Machine Learning, FinTech
Syncromune	06-Oct-2023	20.00	Early Stage VC	Fort Lauderdale, FL	Life Sciences, Oncology
CoinRoutes	28-Mar-2023	16.00	Later Stage VC	Plantation, FL	AI & Machine Learning, FinTech
FIT:MATCH.ai	01-Aug-2023	12.26	Later Stage VC	Fort Lauderdale, FL	3D Printing, AI & Machine Learning, Augmented Reality
Intracare Health Services	21-Feb-2023	10.50	Early Stage VC	Deerfield Beach, FL	HealthTech
RockED	21-Dec-2023	10.00	Early Stage VC	Fort Lauderdale, FL	EdTech
Hyperion Surgical	20-Nov-2023	9.02	Early Stage VC	Fort Lauderdale, FL	Other Commercial Products
Gemini Sports Analytics	16-Oct-2023	9.00	Early Stage VC	Pompano Beach, FL	AI & Machine Learning, Big Data
MyBundle.TV	08-Aug-2023	7.91	Seed Round	Fort Lauderdale, FL	SaaS
SailPlan	10-Oct-2023	7.50	Early Stage VC	Fort Lauderdale, FL	Big Data, Marine
Clayful	11-Aug-2023	7.00	Seed Round	Davie, FL	Digital Health, EdTech, HealthTech
GBI	02-Oct-2023	5.00	PE Growth/Expansion	Plantation, FL	Life Sciences, Biotechnology
InNeuroCo	28-Sep-2023	3.95	Later Stage VC	Pembroke Pines, FL	Surgical Devices, Healthcare
SupplyCaddy	02-Mar-2023	3.21	Seed Round	Coral Springs, FL	CleanTech
Deinde Medical	09-Nov-2023	3.05	Early Stage VC	Miramar, FL	Pharmaceuticals, Biotechnology
Doroni	11-Dec-2023	2.86	Equity Crowdfunding	Pompano Beach, FL	Technology - Air Transportation
Finanex	11-Aug-2023	2.00	Early Stage VC	Hollywood, FL	FinTech
Duke & Dame	05-Apr-2023	1.90	Seed Round	Pembroke Pines, FL	Beverages

TOP EXITS² IN BROWARD COUNTY, FL IN 2023

COMPANIES	EXIT DATE	EXIT SIZE (USD M)	EXIT TYPE	CITY	INDUSTRY/VERTICAL
AutoNation Mobile Service	26-Jan-2023	191.00	Merger/Acquisition	Fort Lauderdale	Automotive
MGO Global	13-Jan-2023	58.45	IPO	Fort Lauderdale	Media and Information Services
Playmaker (Movies, Music and Entertainment)	03-Jul-2023	54.00	Merger/Acquisition	Deerfield Beach	Movies, Music and Entertainment

*As of 01/19/2024

¹By capital raised through Venture Capital, PE Growth/Expansion and Equity Crowdfunding rounds

²Exits from Venture Capital, PE Growth/Expansion and Equity Crowdfunding rounds, by exit size

ELEVATING ENTREPRENEURIAL RESOURCES



No entrepreneur works alone. Technology, education and venture partners across Greater Fort Lauderdale make sure of that. Organizations across the county and region host numerous events that encourage partnership, collaboration, learning and networking to help entrepreneurs with startup, growth and mature companies alike thrive in the technology space. The following list includes many of the area's leading events:

South Florida TechGateway

As a collaborative initiative between Broward County Public Schools and the Greater Fort Lauderdale Alliance, TechGateway Day encourages middle and high school students to consider careers in technology. This annual event connects them with local industry leaders, emphasizing the critical role these businesses play in our future and prompting students to explore technology-related careers in our region.

TechGateway.org is a comprehensive hub for emerging talent, simplifying the job search with the Dynamic TechGateway Map. This feature displays tech companies in South Florida, providing direct links to career opportunities through clickable company logos. This efficient approach saves time and enhances user engagement by connecting job seekers directly with potential employers, significantly improving the chances of finding the ideal job.

Florida Atlantic Tech Runway®

This public-private partnership serves as a hub to accelerate technology development and incubate startup companies, with mentoring, introductions to early-stage capital, grants and seed funding.

- **The Annual Maverick Reception** celebrates graduates of the FAU Tech Runway program, as well as area leaders who have made a difference in the local innovation community.
- **Florida Atlantic Innovation Awards** is

hosted by Tech Runway, Adams Center for Entrepreneurship, and Florida Atlantic Wave. It includes an exhibition of area tech innovators, and celebrates and recognizes achievements of community innovators, entrepreneurs, and collaborators shaping our industry, including winners of the pitch competition.

Alan B. Levan | NSU Broward Center of Innovation

A public-private partnership between Nova Southeastern University and Broward County. The World's First Theme Park for Entrepreneurs™ supports entrepreneurs from birth of an idea through successful exit or global expansion. The Levan Center of Innovation hosts several events throughout the year that are open to the public including: Accelerate Pitch Night, TechXchange, South Florida Resources for Startups and Small Business Workshop, Military Veterans Growth Program Pitch Night, Franchising and Business Acquisition Workshop, South Florida Space Day, South Florida Innovation Day, Orbit Innovation Awards.

Broward College

Broward College Entrepreneurial Experience (BCEx) helps students, faculty and staff turn their ideas into reality through an accelerator, innovation, and seed funding ecosystem, as well as strong business partnerships and robust incubator programs, says Dr. Steven Tinsley, Vice President, Workforce Education and Strategic Partnerships, Broward College

The CIO Council of South Florida

The CIO Council of South Florida is a thought



leadership organization offers networking, advocacy and events to inspire and support current and future senior technology executives. Member events and programs include:

- **The State of the CIO** professional networking and industry insight sharing event for future tech innovators.
- **Roundtable events** exploring such tech topics as Future IT Org Vision and How CIOs Become Board Members
- **The CIOC Scholarship fund** empowers high-achieving high school students passionate about pursuing STEM-related education in Florida schools.

The South Florida Tech Hub

This nonprofit membership is helping to build “tech hub.” Events include:

- **TECHpalooza** is an interactive technology conference featuring speakers around the most requested topics, interactive exhibits and some of the most innovative companies exhibiting their tech.
- **Higher Education Conference** brings together higher education and industry partners in the South Florida technology community.
- **SoFlo DevCon** at Nova Southeastern University in Davie is part of a month of innovation-focused conferences and events from Miami to Palm Beach.

The Fort Lauderdale Tech Meetup

This meetup — held the second Tuesday of every month — gathers startup founders, investors, mentors and tech leaders to network and conduct business. In its first year, the meetup hosted over 2,000 guests, with sponsors such as Tesla, Delta Air Lines and Dell Technologies. Julia Lucidi, CEO of Founder Tactics, the organizing company and host, seeks to strengthen the Fort Lauderdale tech community and build relationships that will drive growth and development. To learn more visit: www.foundertactics.com

Venture Mentoring Team (VMT)

The 501c3 Educational Not for Profit is an elite, nationwide group of over 250 mentors including industry veterans, successful entrepreneurs, and academic professionals selected through a stringent vetting process — and each brings a unique experiences and an altruistic commitment to guiding entrepreneurs. They undergo a specialized training program that equips them with essential mentorship skills, such as active listening, ethical guidance, effective questioning, and constructive feedback, ensuring they can adeptly support the unique needs of startups and small businesses. VMT accepts mentor and startup applications only through university and community partner referrals.

Founding Blue

Founding Blue is a monthly meetup hosted by Jacob Ruytenbeek, founder and CEO of marine tech innovator SailPlan, featuring panels, discussions and networking with South Florida founders, investors, and tech professionals

Global Ventures Community Open House

Global Ventures Community Open House hosted at the Research Park at Florida Atlantic brings the community together with entrepreneurs to discover what they're working on and build new relationships and awareness to our programs.

Research Park At Florida Atlantic

The Research Park at Florida Atlantic is home to technology companies and research-based organizations working with researchers and students of Florida Atlantic University. The Research Park at FAU hosts Global Ventures, an award-winning international soft-landing center and incubator for second-stage technology companies and Florida Atlantic TechRunway, a hub to accelerate technology development and incubate startup companies. The Research Park at FAU is a 70-acre destination for R&D companies to thrive, established in 1985, it is widely regarded as South Florida's laboratory for new entrepreneurial ideas and technologies.

EDUCATIONAL RESOURCES



FPL's 35 Mules innovation hub provides early-stage startups with the expertise, technology and mentors to help them succeed.

Unique Spaces for Startup Success

When Florida Power & Light Company (FPL) 35 Mules Innovation Hub (35Mules.com) welcomed its third cohort of startups, the entrepreneurs revealed the next generation of energy innovations shining bright in South Florida.

Concepts included a creator of universal EV charging stations, a building decarbonizer, AI that quickly and accurately locates lightning-initiated wildfires and powerline damages, a solution that converts organic and plastic waste into green hydrogen, even a concept that will electrify the next generation of aircraft for safer takeoff and landings.

Each will receive the support of NextEra Energy subject-matter experts, Fortune 500 executive coaching, a tailored business curriculum, a \$100,000 no-equity cash grant and dedicated, rent-free workspace.

"We selected these startups because of their remarkable technologies, strong leadership qualities and capacity to grow significantly," said Cathy Chambers, Director of FPL's Office of Economic Development, "all of which allow them to greatly benefit from 35 Mules."



Broward County's higher education institutions play an integral role in fostering ingenuity and tech innovation, and we are all in – providing the resources, support, and mentorship necessary for ideas to take shape and launch. Through strong business partnerships and robust incubator programs like the Broward College Entrepreneurial Experience (BCEx), Broward College is uniquely positioned to help meet the evolving demands of the workforce and prepare tech innovators for long-term success that will continue to benefit the Greater Fort Lauderdale community for decades to come."



– DR. STEVEN TINSLEY, Vice President,
Workforce Education and Strategic Partnerships, Broward College

South Florida Named National Tech Hub for Resilience

Last October, the South Florida Climate Resilience Tech Hub earned the unique distinction of being designated by the U.S. Department of Commerce's Economic Development Administration (EDA) as one of 31 Tech Hubs in the country.

The designation reflects combined efforts from across the region to promote advancements in climate action and resiliency, and it potentially makes available millions of dollars in federal funding to spur regional technology and innovation-led growth focused on the development, manufacturing, commercialization, and deployment of critical climate-focused technologies.

According to a release from lead applicant Miami-Dade County, the South Florida Climate Ready Tech Hub, as part of the South Florida Regional Planning Council, brings together local governments, businesses, universities and organizations. Along with the ongoing support of South Florida's TechGateway, they include the Southeast Florida Regional Climate Compact, Broward County (Greater Fort Lauderdale), Monroe County, Palm Beach County, Florida Atlantic University, Florida International University, Nova Southeastern



Researchers work in a lab at the NSU Halmos College of Arts and Sciences

University, University of Miami, Miami Dade College, Florida Memorial University, Northeastern University (Miami), Florida Power & Light, Beacon Council, eMerge Americas, Greater Fort Lauderdale Alliance, Marine Research Hub, Miami-Dade Innovation Authority, and CareerSource, among others.

The application was backed by many from South Florida's Congressional delegation, including Broward Rep. Jared Moskowitz, Senator Marco Rubio, and others.

EDUCATIONAL RESOURCES



Seahive modules deployed at Wahoo Bay in Pompano Beach.

Making the Sea the Classroom

Educators from across Greater Fort Lauderdale and South Florida are collaborating to learn – and share – innovations designed to improve the zone where land meets sea.

One example is Shipwreck Park and its Wahoo Bay initiative. Co-founded by Rob Wyre around a decade ago, the effort seeks to bring understanding of the seas into people’s everyday lives. The “park” includes a number of ships sunk to become artificial reefs for divers and anglers, as well as art and increasingly, scientific discovery.

To open its mission of “art, conservation and

education” to an even wider audience, the complex works with area educators from Broward County Public Schools to universities to ensure students of all ages are either learning or helping the environment.

In collaboration with the City of Pompano Beach’s Parks and Recreation Department, the park is an immersive experience where “green/gray” – or nature and concrete – innovations literally are taking root in the battle against storm damage and coastal erosion. Working with the University of Miami associate professor of engineering Landolf Rhode-Barbarigos, they have installed the SEAHIVE perforated, hexagonal concrete units that together,



NSU never works in isolation. The South Florida academic community is one of the most vibrant in the U.S. and is a particularly well-defined hub for marine research.

— HOLLY LYNN BAUMGARTNER, Dean, Halmos College of Arts and Sciences, Nova Southeastern University

dissipate strong waves and allow for mangrove and marine life growth. These could be the model for marine, estuarine and coastal protection worldwide.

The park also is working with a network of sensors that collect and share weather and water quality data on a website being developed by partner Florida Atlantic University's College of Engineering and Computer Science, as well as its Alexander D. Henderson University School, a public elementary and middle school on FAU's Boca Raton campus. FAU's project leverages off-the-shelf hardware and open-source software to rapidly prototype ocean Internet of Things (IoT) systems and buoy-based mesh wireless networks for marine data acquisition.

When students visit the park, it goes from a "fun, field trip experience" to a scientific lesson plan, Wyre said. "They better understand the issues we're all facing today and perhaps provide them with the tools they need to take it to the next step."

Researchers here are working with next-generation scientists to tackle climate change, resilience or sustainability, said Holly Lynn Baumgartner, dean and professor with the Halmos College of Arts and Sciences and The Guy Harvey Oceanographic Research Center.

With coral reefs being officially designated as national infrastructure and a key part of the nation's coastal protection and security, as well as an economic hinge-pin of the blue economy, the Halmos College has reinvigorated the National Coral Reef Institute (NCRI). Additionally, the Guy Harvey Research Institute and the Save Our Seas Shark Research Center are dedicated to the conservation of some of the ocean's most charismatic species — sharks and billfishes, Baumgartner said.



An NSU researcher at work off the coast of Fort Lauderdale

NSU also is involved with the DEEPEND/RESTORE Consortium, a 47-member, 11-institution research program funded by NOAA's RESTORE Science Program. This project aims to identify and quantify long-term trends in the fishes, shrimps, and cephalopods of the Gulf of Mexico, helping improve ongoing resource management.

Across the community, researchers are collaborating today on tomorrow's solutions.

"NSU provides a cradle-to-PhD pathway for all-encompassing education," said Baumgartner, noting that NSU's University School grade school students are learning about environmental issues discovered by NSU and its fellow research institutions. "NSU never works in isolation. The South Florida academic community is one of the most vibrant in the U.S. and is a particularly well-defined hub for marine research. NSU is part of an active and innovative web of academics that collaborate across the institutions for the betterment of research and humanity."

SNAPSHOTS IN SUSTAINABILITY

Greater Fort Lauderdale has long been home to sun, surf and tech. Now, area tech innovators are delivering solutions to help the region of the sun and surf world grow more resilient.

We spoke with a few local companies focused on resilience to see what they're doing — and what they hope to accomplish. Their vision — and accomplishments — are inspiring and a model for others to follow.



1Print

FREDRIK WANNIUS, Co-Founder

1Print is a developing efficient and sustainable, multi-functional green/gray coastal protection solutions through additive manufacturing. The goal is to mitigate damage in coastal communities and military installations due to extreme weather events by placing underwater structures to break waves before they can hit the shore. The barriers also have crevices that invite coral growth. The company is also part of the consortium that earned South Florida recognition by the White House as a designated Tech Hub for Resilience.

"1Print LLC is honored to be a consortium member and we eagerly anticipate collaborating with entrepreneurs, innovators, researchers, non-profit organizations, and civic leaders within the Tech Hub," Wannius says. "Together, we aim to transform South Florida into a shining example of resilience for our communities and the entire planet."



Broward County has become a leader in stability and resilience given its past and focus on the future. Looking at the past, the impact of Hurricane Andrew drove innovation that has made our community more resilient. Innovation in construction materials and engineering, along with designated land development, continues to position Broward County with the ability to sustain its growth into the future."



— ERICK STRATI, Senior Vice President, South Florida Market Executive, Wells Fargo

Flood Sense

DAN ZIMMERMAN, GEORGE SKLIVANITIS, Principals

An honoree of the Ocean Exchange program, Flood Sense seeks to become a decentralized network of flood sensors that will lead to major improvements in the accuracy of flood forecasts, especially for areas that lack weather infrastructure.

Their goal is to develop a new model, using open source hardware, crowdsourced hydrologic data and machine learning to create an entirely new data economy that rewards people/cities who deploy and maintain its flood monitoring sensors. Eventually, insurance based on parameters will benefit from real-time data.

“Being located in Florida is what makes this such a great testing ground,” says Zimmerman, a graduate student pursuing a Master’s in Artificial Intelligence, with a Bachelor’s in Computer Science at FAU.

Sklivanitis, the Charles E. Schmidt Research Associate Professor with the Department of Electrical Engineering and Computer Science at FAU said, “If there is no chance of their house flooding, why should they pay the same rate as someone whose property is underwater twice a year?”



SDB_Automate

DEFROSA KATARAIHYA, Principal

SDB, which stands for Satellite Derived Bathymetry, is a software application that uses satellite images and altimeter data, and integrates it with deep learning algorithms to derive the bathymetry (depth) of different water bodies.

The idea came to Kataraihya when she was pursuing her masters degree in hydrography and oceanography in Italy. She saw a need to develop an alternative affordable solution to mapping the water bodies. In her native Tanzania, water bodies are not mapped.

“I was pushed to create something that would help map the water bodies in my country and worldwide,” says Kataraihya, a PhD student in the Department of Earth and Environment at Florida International University and Ocean Exchange honoree. “SDB would revolutionize the hydrography industry by providing precise depth measurements to stakeholders (port authorities and boaters), especially in the safety and navigation of water bodies.”

Greener Process Systems

MATT SWEETWOOD, CEO

Greener Process Systems has developed a patented, modular system to capture maritime, industrial emissions, and CO₂. Its ship emissions capture technology, SETH®, reduces pollution to near zero from docked oceangoing ships, such as tankers, freighters, cruise ships, ferries, and other vessels. Its systems have industrial applications, as well, capturing CO₂ and carbon credits, while producing significant energy and revenue from waste heat recovery, while improving health conditions for millions.

“South Florida has a fantastic business environment,” says Sweetwood, a mentor with FAU Tech Runway who has started businesses elsewhere.



He finds Florida's networking, collaboration, regulatory environment and costs more attractive. From its offices in the Research Park at Florida Atlantic, the company has applied for a National Science Foundation grant - and found the park to be an “invaluable resource for connections and business development.”

NEPTUNYA Ocean Power

RODRIGO GRIESI, Founder and CEO

Neptunya is an ocean renewable energy startup that designs technology to make ocean energy generation a viable solution, while preserving marine life. An FPL 35 Mules program graduate now supported by research groups, including FAU TechRunway, where it's currently based, 1909, and the FAU research ecosystem, the company recently took first place in 13th Annual Cade Prize for

Innovation; its invention is also supported by the US National Science Foundation.

South Florida is the perfect market to boost the amount of renewable energy,” says Griesi, whose previous venture was part of the Research Park's Global Ventures initiative and was later acquired by Accenture.



“The synergy between governments, educators, and companies creates a robust ecosystem that accelerates the development and deployment of ClimateReady technologies. Governments provide the framework and support. Educators generate knowledge and talent. Companies bring innovation and practical solutions to market. This collaborative model not only addresses local and regional sustainability challenges, but also positions South Florida as a hub for climate innovation with global reach and impact.”



— **FRANCESCA DE QUESADA COVEY**, Chief Innovation and Economic Development Officer, Miami-Dade County



Ensuring the resilience and sustainability of the marine environment has always been a top priority for business and government leaders in Greater Fort Lauderdale and the South Florida region. The rapid development of Fort Lauderdale as a technology hub has laid the foundation for the explosive growth observed in marine technology. The convergence of our technology resources with Fort Lauderdale's experience and ardor for a sustainable and resilient marine ecosystem has created an influential force for good that can act as a global leader in the fight to save our oceans."



— GREG NORDONE, President / CEO Greyson, co-chair, Broward Workshop Technology Committee

Smart Seawall Technologies Inc.

PEPSY M. KETTAVONG, Founder and CEO

By 2050, sea level rise will push average annual coastal floods higher than land — land that is now home to 300 million people. Smart Seawall Technologies' mission is to redefine shoreline protection, manufacturing, and installation. Smart Seawall's patented and patent-pending wave diversion design and shoreline systems integrate utilities, enhance aquatic habitats, and provide luxurious waterfront solutions for municipalities, residential, and non-government organizations. The technologies absorb and divert 71% of destructive wave energy whereas traditional seawalls, as opposed to 100% creating shoreline erosion that threatens marine and plant life. It also seamlessly adjusts to rising sea levels and actively contributes to marine conservation by fostering the growth of indigenous marine and plant life.

"Having operations in South Florida provides a significant advantage for the company," says Kettavong. It works with private sector partners, mentors, collaborators, and academia, tapping into resources such as Nova Southeast University, entrepreneur events, Florida International University, Marine Research Hub, Marine Industries



Association, Residents4Resilience, Ocean Exchange, and the Greater Fort Lauderdale Alliance.

Added Tristen Short, the company's business development director and investor, "South Florida's collaborative atmosphere allows for shared ideas and the advancement of our collective missions to address critical local and global blue/green issues.

Kind Designs

ANYA FREEMAN, Founder and CEO

Anya Freeman arrived in Miami to attend law school and found a pressing need along its coast.

Home to the biggest seawall market in the world, those barriers face an astronomical challenge of rising seas. Kind Designs' 3D-printing technology prints "Living Seawalls" that mimic coral reefs and mangroves, hosting biodiversity and improving the quality of water. They sequester carbon and collect essential water quality data through embedded sensors. With 50,000 miles of marine habitats expected to be destroyed by 2040 because of traditional, toxic seawalls, Freeman hopes to save over 500 cities from risks related to rising sea levels.

"By democratizing seawalls and empowering local contractors with our tech, we can save those communities," she says. Being in South Florida "has



empowered us to be in the water within six months of raising our seed round." She was a finalist in eMerge Americas in Miami Beach. "Now, most of our cap table are strategic investors from Florida — construction companies, government people and even our customers."

Carbon Limit

TIM SPERRY, Inventor and CEO

Carbon Limit has created a CO₂ Capturing Concrete called CaptureCrete, that can be added to any concrete and give it the ability to capture CO₂ pollution from the air or from water. A South Florida Marine Research Hub featured company, the climate tech company's CaptureCrete solution is an environmentally impactful additive that transforms any concrete into a CO₂-capturing concrete.

Sperry chose South Florida because of the impacts of climate change, its lifestyle — and its academic and entrepreneurial network. The company has built relationships, collaborations, and pilots and projects with Florida Atlantic University and the FAU TechRunway, the University of Miami, and networking with other climate tech companies.



"There are a lot of great companies and startups here that have been very valuable to share ideals, get great insights, partnerships, and build those mutually beneficial relationships," he says. "We want to be here to help protect, heal, and improve the environment in South Florida and globally."



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