St. Pete INNOVATION DISTRICT

2021

ADDENDUM

Companion to the
2020 SPID Report

Pillars of the SPID

MARINE SCIENCE

LIFE SCIENCE

DATA & TECHNOLOGY

ENTREPRENEURSHIP

ART

EDUCATION

Welcome Letter

The institutions within the Innovation District and their partners are pushing boundaries, working tirelessly to change the course of their respective industries for the betterment of our world.

At the St. Pete Innovation District (SPID), we foster an innovative ecosystem by surrounding great thinkers with the resources—institutions, infrastructure and connections—that encourage an intersection of disciplines. The resulting creative collisions incite developments, new inventions, discoveries and groundbreaking methods that make our lives better, safer and more sustainable.

As an organization, one of the SPID's goals is to be a microphone for the remarkable innovation occurring daily. We tell these stories to facilitate growth, funding, partnerships, interdisciplinary collaboration and to raise general awareness.

In 2020, we published a book highlighting the assets, impact and scope of work occurring within the boundaries of the District. This companion piece will stretch beyond the quantitative statistics of our collective accomplishments, detailing stories of the inspiring work coming out of the District.

I encourage you to innovate with us; be sure to read the final pages of the book which outline the various ways you can become involved. As always, thank you for your support of and interest in the St. Pete Innovation District.

Alison Barlow
EXECUTIVE DIRECTOR

Robert Kapusta
BOARD PRESIDENT

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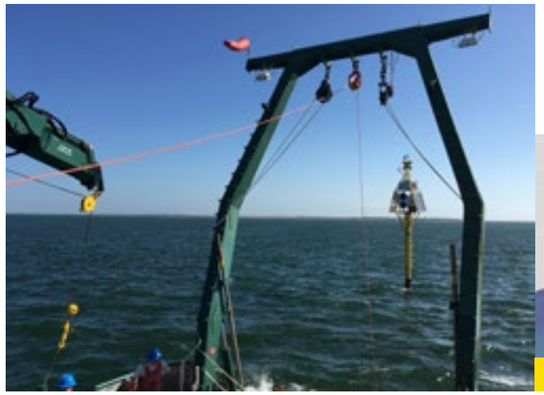
Mapping the Uncharted Seafloor

USF, NOAA

In late 2020, the University of South Florida's (USF) College of Marine Science (CMS) and the National Oceanic and Atmospheric Administration's (NOAA) National Ocean Service (NOS) Office of Coast Survey launched a five-year cooperative ocean mapping center. The Center for Ocean Mapping and Innovative Technologies (COMIT) aims to test, evaluate and apply approaches to ocean and coastal zone mapping. This work builds upon the college's existing expertise in ocean engineering, habitat and mapping, modeling of coastal storm events, coastal geodesy, sea level rise and safe navigation in ports.

Approximately 80% of the world's ocean floor remains unmapped. It is now a global priority to map the world's seafloor by the end of the next decade, as outlined in the Seabed 2030 project led by the Nippon Foundation and General Bathymetric Chart of the Ocean (GEBCO). Improved maps mean better science and management: safer ship navigation, improved fisheries management and conservation, better ocean circulation models, a more informed ability to approach underwater resource exploration, extraction and improved ability to understand past and future impact of sea-level rise and more.

COMIT's team of hydrographers, marine biologists, physical oceanographers, engineers, coastal geologists and students are leveraging their strengths to use innovative mapping technologies in ways that will help build resilient coastal ecosystems, communities and economies. What was once costly and time-consuming work is now shifting towards uncrewed autonomous surface vessels, underwater robots and satellites. COMIT's efforts are further bolstered by its proximity to the Florida Institute of Oceanography (FIO), which operates two research vessels that have supported seafloor mapping efforts at the college since 2015. FIO is also a co-chair organization within the Florida Coastal Mapping Program (FCMaP), which coordinates federal, state, academic and private institutions within Florida to facilitate the collection and accessibility of coastal seafloor data.



COMIT CENTER FOR OCEAN MAPPING AND INNOVATIVE TECHNOLOGIES
UNIVERSITY OF SOUTH FLORIDA • COLLEGE OF MARINE SCIENCE

Image of mapped region

Red Tide Research's Beginnings

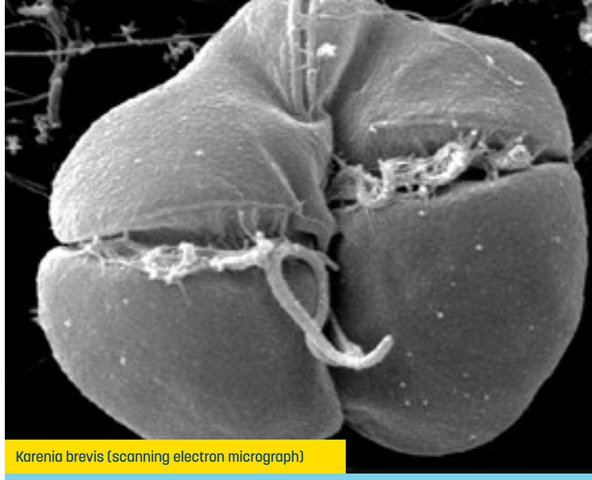
FWC, USF, FWRI

Red tide is the common term for algal blooms that result from high concentrations of microscopic marine organisms. These toxic blooms can pose harm to coastal communities–interrupting maritime business operations and adversely impacting tourism. A toxin inside the cell is also responsible for a host of human, wildlife and ecosystem health problems.

Innovation District organizations have a long history of conducting research on the organism most commonly responsible for Florida red tides, Karenia brevis. K. brevis was named in honor of Dr. Karen A. Steidinger, the local, now retired, Florida Fish and Wildlife Conservation Commission Research scientist who spent her career unraveling the mysteries of this organism.

The Innovation District-based research includes:

- Computer modeling efforts used to predict blooms and forecast where blooms may go.
- Using satellite imagery to help monitor blooms in real time.
- Deploying underwater robots called gliders to help understand bloom dynamics.
- Unraveling the mysteries of how water chemistry affects bloom dynamics and more.



Karenia brevis (scanning electron micrograph)

Scientists at the University of South Florida (USF) College of Marine Science (CMS) and the Florida Fish and Wildlife Research Institute (FWRI), in partnership with additional collaborators outside of the Innovation District, such as Mote Marine Laboratory in Sarasota, recently started a five-year program called New Interdisciplinary Approaches to Red Tide Tracking and Forecasting on the West Florida Shelf (2020-2025).

An Aquatic Balancing Act

USGS, TBEP, USF

Scientists at the U.S. Geological Survey (USGS) recently partnered with the Tampa Bay Estuary Program (TBEP), the University of South Florida's (USF) Physical Oceanographic Real-Time System (PORTS®) and Coastal Ocean Monitoring and Prediction System (COMPS) to study ocean and coastal acidification and examine the potential benefits of seagrass restoration in mitigating acidification in Tampa Bay.

Coastal acidification can be caused when too much algae grows then dies in the water (often due to pollution from fertilizers) and from freshwater flow from land to sea. Acidification lowers concentrations of biologically important carbon compounds that are used to build shells and coral skeletons. This slows the growth of shellfish and corals, and can cause seafloor sediments to dissolve. These elements all protect the coast from erosion and are important components of a healthy estuarine environment.

Seagrass is both an extremely valuable food source and a shelter for marine life. It also serves as an indicator of potential environmental disturbance. Recent USGS research indicates a further potential role of seagrass—providing refuge from ocean and coastal acidification.

Beginning in 2015, USGS began studying the daily pH of two seagrass beds in Tampa Bay. Like all plants, seagrasses use CO^2 to grow. During the day, when photosynthesis occurs, seagrass pulls CO^2 out of the water, increasing the pH (decreasing acidity). At night, with the absence of sunlight, photosynthesis does not occur and pH decreases making the water more acidic. Researchers wondered if there were benefits from the daytime-only pH increases and whether they were specific to only the beds being studied or bay-wide.

The TBEP looked back at data from 1972 to the present from the Environmental Protection Commission of Hillsborough County's (EPCHC) bay-wide water quality monitoring program. According to this data, Tampa Bay is becoming less acidic and the pH increase correlates with seagrass rebound, reduction in nitrogen and improved water quality. This finding reveals crucial steps at the local level that have the potential for impacting global ocean acidification.

The USGS also is monitoring the impact of ocean acidification on coral reefs in the Dry Tortugas. Photo courtesy USGS.

Marine Science Milestones

OCG, PORTS®, TBEP

Three impactful Marine Science initiatives reached a major milestone this year-they all turned 30.

Oceanography Camp for Girls (OCG)

Each summer, University of South Florida's (USF) College of Marine Science (CMS) scientists and graduate students host Pinellas County teenage girls during the three-week STEM program. Participants get hands-on, real-world experiences in both lab and field environments. Alumni campers return to serve as mentors, building upon their own communication and leadership skills. The College has inspired and motivated more than 1,200 young women through this camp to consider career opportunities in the sciences—disciplines in which women and minorities are most often underrepresented.

Tampa Bay's Physical Oceanographic Real-Time System (PORTS®)

This integrated system of 35 individual oceanographic and meteorological sensors at 15 locations provides mariners with reliable real-time "coastal intelligence," increasing competitiveness of U.S. maritime commerce, while reducing risks to life, property and the coastal environment. Harbor pilots and mariners can access measurement of winds, waves, currents, tides, visibility, bridge clearance and other data at critical locations. This system was the first of its kind in the U.S., developed in the aftermath of the Summit Venture Sunshine Skyway Bridge crash. PORTS® has reduced Tampa Bay accidents by two-thirds since its implementation—crucial given that more than four billion gallons of oil, fertilizer components and other hazardous materials pass through Tampa Bay each year. National Oceanic and Atmospheric Administrations (NOAA) manages PORTS®, and USF's CMS operates and maintains the system.

Tampa Bay Estuary Program (TBEP)

As one of the nation's 28 National Estuary Programs, TBEP serves as a catalyst of the restoration of Tampa Bay, securing funding for research, restoration, outreach, education, management and policy initiatives that support the protection of Florida's largest open-water estuary. Nationally significant estuaries are threatened by pollution, land development or overuse. Recovery of seagrass resources has required public, as well as private, support to accomplish. TBEP has spent the past 30 years working to get all parties and a variety of industries to the table to appreciate the work needed to reduce nutrient flows into the Bay.

National Trial for Children Hospitalized with COVID & Related Diseases

JHACH

A national clinical trial launched by a multidisciplinary team of pediatric researchers at Johns Hopkins All Children's Hospital (JHACH) studied the use of anti-clotting medications to treat children who are hospitalized for COVID-19 and related diseases.

COVID-19 causes inflammation of the blood vessels and activation of the clotting system of the blood. As this occurs, clots form in the vessels; this is a serious concern, as clots are frequently the cause of, or a contributor to, death in patients with COVID-19.

When this condition presents in adults, the patient can be administered an anticoagulation medication to combat the clots. This trial—known as the COVID-19 Anticoagulation in Children (COVAC) Thromboprophylaxis trial—has been designed to evaluate the safety, dose requirements and preliminary efficacy of this treatment in children.

The trial enrolls not only children hospitalized with the respiratory illness who have tested positive for COVID-19, but also those hospitalized with the rapidly-emerging, COVID-related multisystem inflammatory syndrome (MIS-C), which impacts the respiratory system, along with the heart, kidneys, brain, skin, eyes and gastrointestinal organs.

The study protocol, network of participating sites, FDA Investigational New Drug (IND) waiver application and two grant applications were developed and submitted in an unprecedented 10 days, and the trial was completed in approximately 1 year from its launch date.

Approximately 20 hospitals nationwide are participating in the year-long study.

Mandy Gustafson, lead medical technologist for microbiology, performs COVID testing in the laboratory at Johns Hopkins All Children's Hospital. Pathology & Laboratory Medicine.

Groundbreaking Unit Achieving Incredible Outcomes

JHACH

Congenital Diaphragmatic Hernia (CDH) refers to a life-threatening birth defect—a hole in the diaphragm—impacting one in 3,000 pregnancies. Families from all over the United States come to Johns Hopkins All Children's Hospital (JHACH) for treatment, as it is home to the nation's first inpatient unit dedicated to infants and children with CDH.

CDH allows organs such as the intestines, stomach and liver to move into an infant's chest cavity, threatening lung development. Only surgical repair immediately following birth allows the lungs to mature properly. After surgery, parents need to be educated on how to care for their newborn's fragile lungs once they leave the hospital.

Providing not just the surgical procedure but offering the whole continuum of care was crucial for Dr. David Kays. He accepted the invitation five years ago to join the All Children's team and two years ago to build this unit, seeing alignment between the hospital's vision and his own.

Described as a unit where different disciplines came together to create their own new discipline, the unit is achieving incredible outcomes; nationwide, the survival rate for CDH infants is 65-70% while All Children's Hospital's is 90%.

Photo: JHACH Dr Kay with patients, 2017

Humanizing Patient Care

Bayfront Health St. Petersburg

Bayfront Health St. Petersburg recently rolled out a comprehensive new healthcare system that puts patients at the center of their care and helps to streamline health data and care delivery for patients and providers.

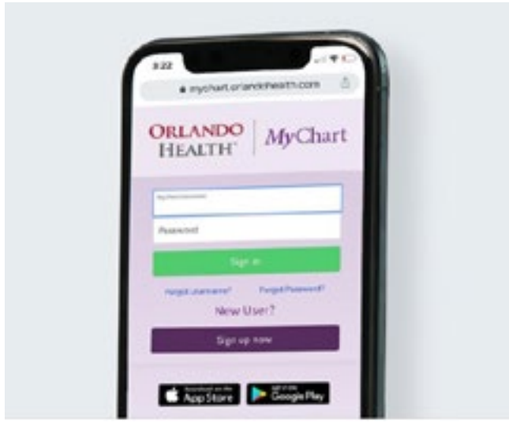
Bayfront Health St. Petersburg has adopted Epic—the most widely-used and comprehensive health records system. Epic is used by a majority of U.S. News and World Report's top-ranked hospitals and medical schools that work collaboratively every day to improve patient care, innovate healthcare delivery and achieve financial health.

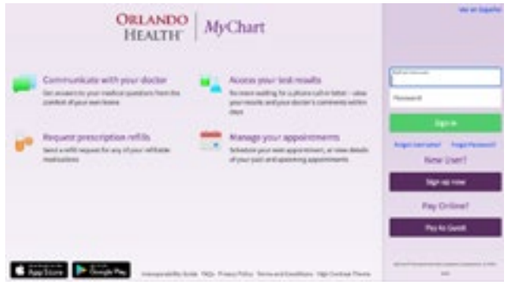
Branded as ELLiE, to "humanize" the system, this new platform provides both administrative and clinical integration, meaning the system provides operational efficiencies, as well as enhancements to patient experience.

Through ELLiE, patients have a single health record that comprises their total care journey across all doctors and specialties. The system also coordinates with providers outside of its parent organization, Orlando Health, spanning 250 healthcare organizations nationwide, allowing providers to easily exchange patient data for greatly improved patient care.

As part of the deployment, Bayfront Health St. Petersburg now offers patients access to MyChart. MyChart is a free online web portal or application that can be downloaded to a mobile device through which users view their health information, schedule appointments, pay bills, connect to providers through on-demand video visits and more.

To get to this point, Orlando Health engaged physicians and team members across disciplines to evaluate needs and expectations for the new system so that the resulting platform would enable standardized, high-quality care and streamlined information-sharing based upon best practices across the health system.





Sleep Apnea Treatment

Bayfront Health St. Petersburg

Bayfront Health St. Petersburg has recently become the third provider in the state to offer an innovative sleep apnea treatment for people who cannot use Continuous Positive Airway Pressure (CPAP) therapy, called Inspire.

An estimated 22 million Americans suffer from Obstructive Sleep Apnea (OSA), a disorder where the patient's airway collapses during sleep and blocks the flow of oxygen to the brain. The brain senses a lack of oxygen and wakes the body up just long enough to take a breath, before returning to sleep. This cycle repeats throughout the night and causes poor, disruptive sleep.

A common treatment for sleep apnea patients is a CPAP, but this line of treatment is not feasible or effective for many who suffer from OSA, claustrophobia or PTSD; Inspire offers a solution to these patients.

Inspire is implanted during a short, outpatient procedure. It works inside the body with a patient's natural breathing process to treat sleep apnea. Mild stimulation opens the airway during sleep, allowing oxygen to flow naturally. The patient uses a small handheld remote to turn Inspire on before bed and off when they wake up.

This treatment has demonstrated exceptional 5-year clinical outcomes, including significant reductions in sleep apnea events and significant improvements in quality-of-life measures. There have been over 150 peer-reviewed publications on Inspire.

This program has wide-reaching impacts for many OSA sufferers. Many of these patients are misdiagnosed with and treated for dementia, early-onset Alzheimer's and narcolepsy, as the cognitive impacts of limited sleep begin to interrupt daily function.

Applications for this treatment are not only limited to adults. Johns Hopkins All Children's Hospital (JHACH) is finishing a clinical trial for this technique to be used on children with Down Syndrome. Inspire offers new opportunities to this young segment of sleep apnea sufferers who have long been disqualified from traditional CPAP treatment due to mouth shape.

Dr. Trina Espinola

Dr. Julia Pfaff

Smarter and Safer Movement About the District

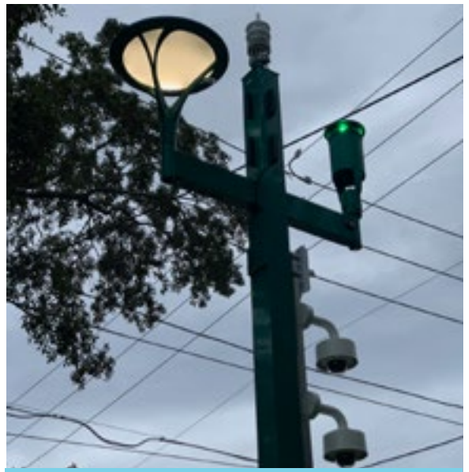
U.S. Ignite, USF, Spectrum Enterprise

Approximately two dozen cities across the U.S. and Canada have been named “Smart Gigabit Communities” by U.S. Ignite, a smart-city ecosystem developer. This comes with recognition of the city’s efforts to address modern-day challenges and a grant to implement advanced networking technologies and data-driven strategies.

Smart Streetlights and Smart Intersections are two "smart" pilot programs that are uniting multidisciplinary skill sets to spark innovation.

Smart Streetlights have been installed on the University of South Florida (USF) St. Petersburg campus in collaboration with Spectrum Enterprise. The LED bulbs lower energy and maintenance expenses by 60% and 75%, respectively. The pole itself has the potential to be more technologically advanced than a cell phone. The light poles connect to Spectrum’s network, enabling features such as emergency call buttons and safety cameras to integrate with USF Campus Police. Environmental and weather sensors monitor temperature, wind, humidity and air quality. This information is facilitating further sustainable practices on campus by way of building heating and cooling adjustments. Students are engaging with the initiative, earning credit hours by analyzing the data under the guidance of USF faculty.

Smart Intersections involve the placement of sensors at busy intersections. While past sensors have been limited to motorized vehicle traffic counts, today’s sensors collect, analyze and visualize pedestrian, bicycle and automobile traffic. Through another Spectrum Enterprise collaboration, the intersection of 3rd Street South and 6th Avenue South is an active smart intersection. Time of day, directional travel, accident and near accident counts, vehicle type and speed are captured—all in the name of understanding decision-making as people approach the intersection. Through artificial intelligence and machine learning, data will be used to fine-tune crosswalk signal timing, signage and traffic patterns.



Smart Sreetlight on USF’s St. Petersburg campus.

Closing a Gap in Technology Access

SPID’s Digital Inclusion Working Group

Digital Inclusion refers to access to the internet, as well as the devices, technical training and technical support required to navigate it. There are a multitude of ways in which digital inclusion facilitates participation in today’s digital economy—from civic and cultural engagement, employment, education, small business operation, essential services, to most recently, COVID-19 vaccination registration.

The Tampa Bay market at large ranks competitively on broadband speed and service provider access, but the digital divide is magnified for individuals of color and low-income households. In the South St. Petersburg Community Redevelopment Area (CRA), 44% of households with incomes less than $20,000 and more than one in four households with incomes $20,000-$75,000 do not have an internet subscription.

To close the gap, the Innovation District, along with the Deuces Live District, government organizations, non-profits and faith organizations convened as a working group. Between December 2019 and the present, U.S. Ignite facilitated introductions between the group and communities experiencing similar gaps. The group inventoried existing local programs and established a website to be the definitive source of digital inclusion resources.

At the onset of COVID-19, the group established free WiFi in designated outdoor spaces, created four neighborhood tech hubs and launched a computer recycling program called Gadgets for Good, which has gathered more than 14,000 pounds of equipment to date.

Community Tech House began in 2020 to address gaps in device operation knowledge and network support. It provides access to devices in a lab setting—some received from Gadgets for Good—and further helps residents who are having difficulty using their devices. It has helped more than 250 seniors in the community get a COVID-19 vaccine.

Thanks to funding support from Regions Bank, Tampa Bay Resiliency Fund, Pinellas Community Foundation, Foundation for a Healthy St. Petersburg, St. Petersburg Downtown Partnership and tireless efforts by 30 community partner organizations, the group continues to facilitate meaningful use of digital resources.

In the South St. Petersburg CRA, 44% of households with incomes less than $20,000 and more than 1 in 4 households with incomes $20,000-$75,000 do not have an internet subscription.

Smarter, Smoother Sailing

USF, Pole Star

In the marine science world, data and technology integrations make it possible to study not only activities taking place below the surface, but impactful activities above. Researchers at the University of South Florida (USF) College of Marine Science (CMS) are collaborating with local partners and private industry to generate real-time ocean observation information for managing secure maritime transportation.

Maritime transportation is a big business; 90% of global commerce and 95% of U.S. international trade relies on maritime transportation. Over the last three decades, global ship traffic has increased by 300% and the size of vessels has exponentially grown in response to increasing global trade demands for merchant fleets.

Tampa Bay is the largest port in Florida, making it a prime location for CMS scientists studying the interaction between maritime travel and the environment.

CMS recently partnered with the USF College of Engineering, as well as one of the largest providers of vessel tracking data, Pole Star, to develop applications that merge vessel data with captured wind, wave, current, tide and fog data. Pole Star is the sole provider of vessel tracking data to the U.S. government and recently relocated its U.S. headquarters to St. Petersburg.

This partnership has resulted in the development of an artificial intelligence platform that is helping to detect nefarious maritime activity by examining vessel movement under known conditions. The integration of these data sets helps monitor ship location, understand piracy and illicit activity risk levels, ensure reliable alerting processes are in place for ship security and confirm appropriate compliance processes are in place.

One month of vessel tracks near Florida. Colors indicate vessel type: cargo (red), passenger (green), tanker (blue), and other (yellow).

Instilling Media Literacy in a New Generation

Poynter Institute

Within the SPID, the Poynter Institute stands as a global leader in journalism education and digital literacy. It has also become a global strategy center, housing the International Fact-Checking Network (IFCN), the Pulitzer Prize-winning PolitiFact, the Craig Newmark Center for Ethics and Leadership and its newest program, MediaWise.

MediaWise is a hybrid media literacy and fact-checking program that began in 2018 with the help of funding from Google. The program aligns with Poynter's goal to empower people of all ages to be critical consumers of digital media. It is one of more than 85 fact-checking organizations verified by the IFCN for its trustworthy and nonpartisan content; the verification is one of the few media quality standards recognized worldwide.

The bedrock of MediaWise is its Teen Fact-Checking Network (TFCN), which provides daily fact-checks of top viral content for teens by teens who have been trained and are continually mentored by MediaWise staff. Over two years, 91 MediaWise teen fact-checkers from across the U.S. have uploaded nearly 400 productions to Instagram, YouTube, Snapchat, Twitter, Facebook, TikTok, Apple News and poynter.org.

Each produced segment allows the teen fact-checkers to virtually walk their audience through every step of how they fact check a claim so the viewers can replicate the steps for themselves. Claims are rated on a scale of "legit" to "not legit," as well as "needs context." The teens encourage viewers to be discerning, encouraging them to consider data, content and source when conducting their evaluations.

Feedback indicates the intended results are being achieved, with viewers reporting greater willingness to fact-check on their own after watching one of the produced fact-check posts.

Flood Damage Mitigation

Ceres Engineering

Flooding is a byproduct of virtually every climate event; it accounts for approximately 75% of climate damage. The City of St. Petersburg receives an average of 51 inches of rain each year compared to the U.S. average of 38 inches.

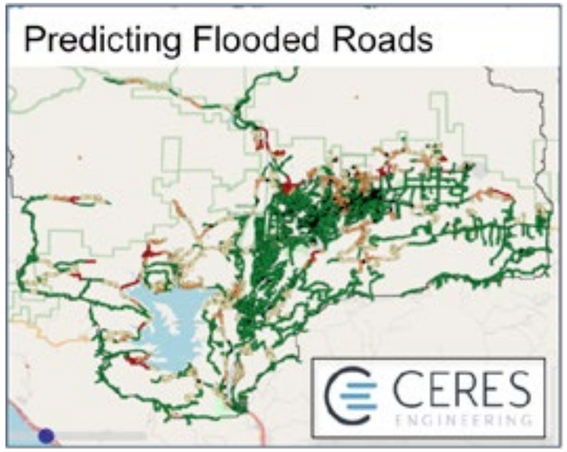
Here in St. Petersburg, data from tools such as the Sea, Lake and Overland Surges from Hurricanes Model (SLOSH) are being used to define local flood risk. This model takes into consideration the category of the storm and elevation of the land to project storm surge and flood risk. However, its risk projections are limited because it does not take other factors into consideration such as rain, current tides, storm intensity and storm duration, thus not representing the complete risk of the weather event. Innovation District entrepreneurs are developing a platform to bolster community resiliency and facilitate more robust decision-making through their climate data analytics venture, Ceres Engineering.

The entrepreneurs are collaborating with municipalities, public-private organizations and funders to establish a pilot program for a network of flood sensors throughout the community. These sensors will capture what is occurring on the ground at all times and associate what is happening with a heavy rainstorm, hurricane, rising water table, tide changes and more. This data feeds the platform and facilitates more accurate flood impact predictions to specific regions of the community in real time.

The sensors will facilitate significant future collaborations. The University of South Florida College of Marine Science can start to look at connections between offshore events and onshore impacts; anthropologists can study climate equity and resiliency; the City will gain surface level data to support stormwater decisions; and private industries like insurance, real estate and finance can better evaluate properties.

Additionally, data from the flood sensors will help Ceres Engineering build comprehensive flood models for the City capable of providing predictive data. When a storm rolls in, the team will take the forecast for that storm and plug it into their proprietary platform. The output is where, when and to what extent flooding will occur as a result of the storm—pinpointing at risk bridges, roadways and neighborhoods as an event approaches and helping Emergency Management to engage and more quickly alert residents.

Though an inherent risk based upon St. Petersburg's geography, flooding is a national challenge. These Innovation District entrepreneurs are eager to roll out this resource with wide-reaching implications.



Hometown Anti-Terrorism Innovations

Field Forensics

What started in a garage, matured in the Tampa Bay Innovation Center and then established permanent roots in the Innovation District, has grown into an anti-terrorism leader for in-field threat chemical detection and identification called Field Forensics.

The entrepreneurs behind Field Forensics launched their startup in 2001, in response to September 11th. Initially, the team licensed an explosives detection product, but soon began producing their own kits, testing for a broad range of explosives at a high level of sensitivity. Clientele includes NATO Special Forces, Department of Defense, Customs and Border Protection, commercial security companies, police, explosives detection and screening units and intelligence agencies.

Customer feedback and rich understanding of the industry drive their R&D. Law enforcement customers spurred the development of narcotics detection and identification kits, including kits specifically for trace fentanyl and heroin detection. Newly developed and manufactured explosive screening kits will soon be deployed by airports and the military.

The entrepreneurs have further forged partnerships with companies manufacturing anti-terrorism equipment that have turned into standalone businesses.

Today, Field Forensics Tactical (FFT)—originally established to resell unique safety and infrastructure protection technologies for bomb squads, military and public agencies—also distributes and manufactures some of the products. In response to needs expressed by sports arenas, places of worship, transit organizations, municipalities and corporate parks, FFT is manufacturing a blast mitigating trash can that contains and redirects the impact of improvised explosive devices.

The team also has worked with a South African manufacturer of innovative bomb suits and humanitarian demining personal protective equipment (PPE) to establish a U.S. headquarters just a few blocks beyond their own HQ. The company, Holdfast Systems, has military contracts for Made in the U.S.A. blast tested equipment, shipping hundreds of sets of PPE and dozens of heavy bomb suits across the globe.

Field Forensics is a two-time winner of the R&D award.

A Home for Maritime and Defense Tech

Maritime and Defense Technology Hub

Proximity to MacDill Air Force Base has historically been an appealing factor for defense contractors and defense tech firms in deciding to set roots in the area. Over the past two years, as remote work opportunities have grown, so have local defense tech firm startups and relocations.

In July of 2021, St. Petersburg City Council supported plans to repurpose an existing building in the Innovation District into a Maritime and Defense Tech Hub. "The Hub" will bring a triple helix of innovation—industry, government and academia—together under one roof to spur connection, partnership, entrepreneurship and opportunity creation.

Half of the 32,000 square foot building will be lab space for research, assembling equipment and embracing the next wave of technology. Its proximity to the Port allows for in-water tests and evaluation. The building has the ability to provide secure communications.

Impacts expand beyond the building's walls and into the community. The Hub will offer pathways for students from local colleges and universities through targeted internship programs, opportunities to receive security clearances while still in school, as well as future employment options. It also will serve local entrepreneurs in early-stage startups in related industries via peer-mentoring.

The project is expected to create 182 jobs with a combined salary of almost $15 million when the space is fully utilized.

Build It and They Will (Continue to) Innovate

ARK Innovation Center

Entrepreneurs and tech startups soon will have a new resource within the Innovation District—The ARK Innovation Center. While the team at the Tampa Bay Innovation Center has been leading the innovation and entrepreneurial community in Pinellas County for nearly 20 years, their new Center will be the first in Pinellas County purposely constructed for entrepreneurs and tech startups.

Slated for completion in 2023, the 45,000-square-foot, two-story, state-of-the-art facility is being funded by both public and private sources, including ARK Investment Management LLC, newly headquartered in Downtown St. Pete.

Entrepreneurs will enjoy 30,000 square feet of client space, co-working and collaboration space options for market-rate tenants, dedicated office spaces, community rooms, lab equipment with 3D printers and laser cutters, podcast rooms and large event spaces for conferences and classrooms.

To encourage progression along the startup life cycle, the Center will provide a variety of services to tenants, including counseling, idea validation, strategy development, marketing assistance, network opportunities and access to capital.

The new building will not only offer enhanced infrastructure and services, but also proximity to Innovation District organizations. Its location—within walking distance to campuses of the University of South Florida (USF) and St. Petersburg College—will facilitate intern recruitment and class project partnerships. The USF College of Marine Science will offer shared wet lab space.

Greenwood Consulting Group has estimated the center is expected to create 122 direct and indirect construction jobs over two years. By the fourth year, the incubator should be sustaining 1,265 direct and indirect jobs, and its clients should be generating $127 million in annual revenues.

Bringing the Legacy to Life

The Dalí

Innovation District cornerstone institution, The Dalí Museum, is home to the most comprehensive collection of Salvador Dalí's art outside of Spain. It is one of the country's largest single-artist museums and the most-visited art museum in Florida. Surrealism abounds within the galleries, extending to the museum structure itself, through its large free-form geodesic glass bubble and use of spirals.

Leading up to the celebration of its 40th year, the Museum aspires to provide new, unconventional access to the art and man behind it. In an integration of art and emerging technology, the exhibit Dalí Lives became a groundbreaking celebration of his art and legacy.

The exhibit engages visitors with a life-like Salvador Dalí on a series of screens throughout the museum. The image is not an actor, but instead was created using artificial intelligence fed by hundreds of interviews, quotes, authentic writings and existing archival footage from the artist. Over 1,000 machine-learning hours studying his speech, mannerisms and gestures, brought the mustached master of surrealism, to life.

The program uses 125 interactive videos in nearly 200,000 combinations so that no two visits are the same. The exhibit makes possible his prediction, "If someday I may die, though it is unlikely, I hope the people in the cafes will say, 'Dalí has died, but not entirely.' "

> "IF SOMEDAY I MAY DIE, THOUGH IT IS UNLIKELY,
>
> I HOPE THE PEOPLE IN THE CAFES WILL SAY, 'DALÍ HAS DIED, BUT NOT ENTIRELY.'"
>
> -SALVADOR DALÍ

Empowering Nonprofits Serving Women through Dalí's Lens

The Dalí

The Dalí serves as a community resource through inspirational programming. One such program—Innovation Labs—combines Dalí's art, philosophy and methods with state-of-the-art research on creativity, team building and organizational management, to improve problem-solving and enhance innovation outcomes.

While Innovations Lab programming serves all disciplines, the Women's Empowerment Program is the Museum-designed workshop series specifically for nonprofit organizations serving women. Sessions including clients, staff and board members are funded by civic-minded sponsors. Local organizations who have participated to date include Dress for Success, CASA and The Spring.

Facilitators work with organization leaders to determine appropriate custom content for each program, establishing scope, flow and deliverables that can enhance creative thinking and problem solving and apply these skills to individual challenges.

The root of the program is challenging perspectives; the proprietary techniques honor Dalí's mastery of juxtaposition and connection of the seemingly disconnected. Facilitators help groups mindfully move through creative problem solving—an act that is very empowering when participants realize the answers are within the group.

The programming mantra is: See Differently. Do Differently. Be Differently.

See Differently. Do Differently. Be Differently.

Shining Example of STEAM

SHINE®, SPID, NOAA, JHACH

2021 marks the seventh year of SHINE®—St. Petersburg's outdoor mural festival that celebrates the power of art in public spaces. Each year, muralists are selected based upon diversity of style, ensuring that the collection of more than 600 murals continues to evolve at the hand of local, national and international artists.

The Innovation District is home to four murals. SPID organization National Oceanic and Atmospheric Administration (NOAA) began collaborating with SHINE® in 2019, eager to showcase their work through an artistic lens. In the most recent SHINE® festival, collisions between artists and scientists in the SPID had powerful results.

In 2020 a mural called Diversity in Science, Tech, Engineering, Art, and Math (STEAM) was planned, imagined and executed in a large-scale collaboration between artist Brain Storm, NOAA Fisheries, Johns Hopkins All Children's Hospital (JHACH), St. Pete Youth Farm and the St. Pete Innovation District.

Just as NOAA recognizes the importance and value of maintaining healthy, diverse ecosystems, all organizations involved similarly recognize the importance of strengthening diversity and inclusion within the STEAM workforce and the local community—fostering new ideas, perspectives and innovation.

One of the incredibly positive aspects of mural art is its accessibility. Throughout the eight days that it took to complete the mural, children and their families who were patients at JHACH had a front row seat alongside "festival goers" to watch the mural take shape.

Brain Storm Sea Wall Mural

Youth Farm Painters with Mural

A New Artist-Made World

Fairgrounds St. Pete

Fairgrounds St. Pete is a ticketed immersive experience in St. Petersburg pioneering new modes for storytelling and audience engagement in the fields of art and technology. While not located within the District boundaries, Fairgrounds St. Pete is a notable local startup supporting the vision for innovation within the District and its cornerstone institutions.

Within the 15,000 square feet, artist-made world, guests engage with interactive, story-driven, multi-media installations that combine elements of art, technology and engineering.

Fairgrounds St. Pete develops creative technology, new modes of expression, audience engagement and interactive storytelling to inspire creativity, community and commerce. As an economic engine, their profit sharing-based business model provides additional income to artists and empowers them to further invest in their practice and community.

Mobilizing Dalí

The Dalí, Pinellas County Schools

Named in honor of Dalí's obsession with verbal puns, this traveling trailer classroom is a mobile collaborative project between the Pinellas County School Board and The Dalí Museum. It is on a four-year circuit to visit more than 45,000 K-5th grade students in Pinellas County.

The Art Mobile was designed as an introduction to museum culture, using a standards-based curriculum aligned with the Pinellas County Elementary Art Educators' learning goals. It bridges connections between the artist Salvador Dalí and the worlds of math, science and dreams—from which he drew inspiration for his art.

An engaging introductory video takes students on a brief virtual tour. In a mixture of drone footage, live action and animation, this brief documentary teaches students about surrealism and Dalí's inspiration derived from Science, Technology, Engineering, Art and Math (STEAM) disciplines. Students also learn of Dalí's interest in and use of the gadfly; he was intrigued by the design of the fly eye and the unique perspective it enabled, using the fly as a symbol of "multiple ways of seeing."

The video concludes with a prompt to incite thought and discussion, "What Inspires YOU and YOUR art?" Students then get a virtual tour of the reproduced artworks by the art teacher acting as a museum docent.

Program resources include teacher training materials, a Dalí Museum Activity Book for students, a gallery tour by the Dalí's Curator of Education, a vocabulary list, teacher prompts and post-curriculum materials—all in the name of inspiring the next generation of art enthusiasts.

Inspiring a New Generation of Guardians

USF, Boys & Girls Club

Guardians of the Gulf is a prime example of connecting technology and subject matter experts located in the Innovation District with underserved youth. This program introduces school-aged students at the Boys & Girls Club of the Suncoast to themes around coastal and human resiliency through a summer Science, Technology, Engineering, Art and Math (STEAM) program. The goal is to empower youth to steward and champion our changing coastlines.

Spectrum Enterprise updated the WiFi infrastructure at the Boys & Girls Club Royal Theater facility and at a waterfront University of South Florida (USF) College of Marine Science (CMS) educational center and installed a wireless connection from the dock outside of the center to a testing lab.

Following the setup of a series of underwater and above water cameras, CMS installed an artificial reef to attract aquatic life. The wireless connection makes it possible to share a live feed of what is happening at the reef with students located miles from the water.

The feed from this reef and others will be integrated into a website with immersive STEAM-based educational content to help children understand their connections to the coast, empower them to steward it and to envision viable STEAM career paths.

Guardians of the Gulf held its kick-off pilot program at the end of July 2021—long delayed due to COVID-19. The team also is developing educational content, including two activity booklets funded by the Tampa Bay Estuary Program, an app prototype that gamifies learning about coasting resiliency, resiliency career videos, a website to house the content and more.

GUARDIANS OF THE GULF

Art, Advocacy & Activism

USF

The St. Petersburg campus of the University of South Florida (USF) offers a robust Graphic Arts Program, taking students through the critical and creative design process, while challenging them to investigate new ways of solving complex, multi-layered visual problems. The program additionally introduces design activism, which teaches students how to use design methodologies and tools as a framework for action, advocacy and awareness.

The Graphic Arts Faculty strongly believe that graphic design has the power to affect change and provide students with a variety of engagement opportunities. Over the past six years, there has been a community engagement component in Professor Jenny Yucus' package design course. Working with local organizations builds a design attitude for creativity, tolerance, empathy and engagement with aesthetics. Local organizations and businesses engaged thus far include St. Petersburg Social Services, William's Park, 3 Daughters Brewing, The Red Tent Women's Initiative, The St. Pete Innovation District and Guardians of the Gulf.

In 2020 Professor Joan Reid, a USF faculty member, received a grant to launch The USF Trafficking in Persons - Risk to Resilience Research Lab. The lab is analyzing data from hundreds of suspected child sex trafficking cases to identify how they operate, tactics used and how to prevent them. The Graphic Arts students were asked to help establish their brand.

Students began by researching the issue and its impacts and then divided into teams competing for final selection. The "winning" logo, business cards and materials are actively being used today.

The community engagement inspiration appears to be contagious; graduates of the Graphic Arts Program have gone on to design independently for numerous causes including voter participation and most recently for LGBTQ+ rights.

TiP The USF Trafficking in Persons Risk to Resilience Research Lab

Studying Role of Public Sentiment in Global Empowerment

USF, NOAA

An interdisciplinary think-tank at University of South Florida (USF) St. Petersburg campus is exposing how global empowerment of women and sustainability could be within reach sooner than we think. The group documents cultural evidence of our assumptions about nature and gender and how these assumptions undermine, reinforce and shape environmental justice and gender equity.

The EcoFem Lab blends ethnography—the discovery of people's deeply connected structures of meaning-making—with online (N)ethnography—a technique to analyze people's words and images, contexts and sentiments about specific topics and themes. These methods magnify the deep and immediate insights into how people are reacting to and driving the most pressing social, economic and business problems.

Director Heather O'Leary, Ph.D., began to apply these techniques to her research into women's water access in a "slum" settlement in Delhi, India—and now she uses them in the EcoFem Lab to highlight how Florida's water security is dependent on environmental, political and economic change. The foundation of change, however, is ultimately rooted in the public. The Lab works with grantors and businesses to answer that critical question: How is public sentiment tied to changes we can make?

Under a National Oceanic and Atmospheric Administration (NOAA) grant, the Lab is developing a historical model of Tampa Bay's red tide event from 2017-2019. Researchers are integrating indicators of marine distress with economic and social distress, as expressed on social media.

The goal is to help politicians secure relief funding sooner and help refine social messages that help prevent and mitigate red tide.

The Lab is working on nine other active research projects with local and global impacts. Topics include the online drivers of Florida's coral reef restoration support and the tourist economy; the disproportional impact of red tide events on ALICE (Asset Limited, Income Constrained, Employed) households; COVID-19's exposure of environmental injustice in air quality perceptions; COVID-19 vaccine hesitancy and community resilience; and more.

Dr. Heather O'Leary

UNIVERSITY of SOUTH FLORIDA

CLOSING

The innovative work continually occurring within the District does not happen in a vacuum; the success of any innovation district requires support from its anchor institutions, as well as leaders within the community who step up to engage in committees and workgroups. These groups make progress on initiatives year-round and are always seeking qualified participants.

If you are interested in joining or getting more information, contact **Alison Barlow, abarlow@stpeteinnovationdistrict.com**

Communications Cohort

Formed in 2017, it brings together marketing and communications professionals from District member organizations to envision joint events and collaborate on stories about our innovative people and projects. Projects include securing three SHINE® murals within the District, the Innovation in the 'Burg podcast and the SPID's monthly newsletter.

Digital Inclusion

A collaboration of more than 30 organizations formed in 2019 who are committed to eliminating the digital inclusion gap in St. Pete, including internet access, devices, training and technical support.

Inclusive St. Pete

A partnership forged by The 2020 Plan, the Florida State Minority Supplier Development Council (FSMSDC) and a host of partners, to understand current supplier diversity of member organizations and work collectively to increase representation of minority-owned firms. The Innovation District joined as a participant in 2020.

Master Planning

Formed in 2016, it takes a comprehensive look at the places and spaces in and adjacent to the District. The committee was instrumental in the District's strategic vision, placemaking and streetscape design. Project work includes updates to those initial efforts, pedestrian-oriented amenities, neighborhood scale cafes and expanded use of office space.

Ocean and Human Health

Formed in 2019 to explore the interconnection of the health of the Gulf of Mexico and other waterways with the health of our community. The converging lessons learned from these "warm, salty, wet" environments apply, not only to our coastal city, but globally.

Ocean Team

Formed in 2009, it is comprised of more than 20 complementary firms, government entities and institutions that pool collective staff expertise, infrastructure and research capabilities. Members of this group seek synergies between the research being conducted and practical applications.

Science Festival

Since 2010, the group has helped plan this annual regional celebration where families and the public explore the wonders of hands-on Science, Technology, Engineering, Art and Math (STEAM). It is held in conjunction with MarineQuest, the annual open house of the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute.

Smart City

In 2019 the SPID was admitted into the U.S. Ignite Smart Gigabit Communities program. SPID is a test bed for the City and leads the exploration of smart city technologies and their usefulness to the community. These currently include Digital Inclusion, Guardians of the Gulf, Smart Lighting and Intersection projects.

Youth STEAM

The group launched in 2020 with the purpose of addressing STEAM workforce gaps. This collaboration of educational institutions, STEAM program providers and employers is focused on providing youth from communities of color with exposure, access and resources to pursue careers in the Grow Smarter target industries.

Thank you to our participating institutions who took time to share their latest innovative works.

Bayfront Health St. Petersburg
Ceres Engineering
Community Tech House
The Dali
FG
FFI
Florida Fish and Wildlife Conservation Commission
Gadgets for Good
Guardians of the Gulf
Johns Hopkins All Children's Hospital
NOAA
Pole Star
Poynter.
SHINE St. Petersburg Mural Festival
Spectrum Enterprise
TBEP Tampa Bay Estuary Program
Tampa Bay Innovation Center
USGS science for a changing world
usignite
University of South Florida College of Marine Science
University of South Florida St. Petersburg Campus

Research and Content Development

meshsem

Creative Direction and Design

Dyper Inc

BRIGHT IDEAS AHEAD

DIVING DEEPER

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