



TESI[®]

Thompson Earth Systems Institute

2019-2020 Annual Report





Mission:
To advance communication and education about Earth systems science in a way that inspires Floridians to be effective stewards of our planet.


What is Earth systems science?
The study of the interactions among air, water, land and life on Earth, and how these systems are influenced by human activities.


Vision:
Florida is on the frontlines of massive Earth systems changes that are affecting our environment, our economy and our way of life. Now more than ever, science-based information needs to be communicated in a way that resonates with all Floridians so they can make informed decisions about their natural resources. Our vision is to lead the way to a healthier planet by cultivating a responsible and curious society that values, trusts and has access to science.

Program areas:

 **Innovative Public Programming:** *Connecting scientists with the public in a meaningful way* **Page 9**

 **Digital Outreach:** *Packaging scientific information in a way that is digestible, understandable and solutions-oriented* **Page 11**

 **Scientist in Every Florida School:** *Inspiring the next generation of environmental stewards*..... **Page 13**

 **Science Communication Professional Development:** *Helping scientists hone their communication skills*..... **Page 15**



From the TESI Director

This past year has been one of incredible growth: we have expanded our core team to eight full-time faculty and staff members; hundreds of scientists and educators around the state have joined in TESI's mission; we have developed many new partnerships around the state; and we have helped thousands of Floridians better understand their connection to Earth systems and how they can be effective stewards of the future.

This past year was also a year of strategy — teaching statewide audiences about the importance of our environment is no small feat. As a new institute, we undertook a strategic planning process to help focus our mission, vision and main program areas. Moving forward, the TESI team will continue to develop our Scientist in Every Florida School program, expand public events and digital outreach efforts, refine our science communication professional development program, and situate the Institute as a leader in environmental sustainability.

As a Gainesville-based institute, statewide partnerships are an important way to build our capacity and expand our reach geographically. This year we formed many meaningful collaborations, both on the University of Florida campus, in our local Gainesville community and throughout the state. These partnerships include the UF Water Institute, UF Fredric G. Levin College of Law, UF's Institute of Food and Agricultural Sciences, Florida Museum's Randell Research Center, First Magnitude Brewing Company, Cypress & Grove Brewing Company, Mounts Botanical Garden of Palm Beach County, South Florida Science Center and Aquarium, Conservation Florida, Loggerhead Marinelifelife Center, Manatee Lagoon, Florida Gulf Coast University, Valencia College, and seven school districts in Florida, just to name a few.

This year has also been a year of resilience. As the coronavirus pandemic shut down physical spaces and banned public events, TESI quickly adapted by going completely virtual. Our faculty taught their classes completely online, taking care to engage students in a meaningful way during this difficult time. And, our Science on Tap series was redesigned using videoconferencing technology and live polling tools to encourage audience participation. Meanwhile, our Scientist in Every Florida School team assisted teachers across the state with their online classrooms by providing free virtual field trips and digital learning resources.

Finally, this year was a year of forward thinking. We have launched official fundraising efforts both with local philanthropic foundations and federal agencies. We are pleased to have received our first grant from the Frances C. & William P. Smallwood Foundation to support hands-on and virtual science learning opportunities for rural communities around Gainesville. We are also talking with other foundations about their potential interest in investing in TESI.

Our many successes during 2019-2020 are demonstrated by the metrics cited in this report and the activities and meaningful partnerships that we have undertaken.

TESI has much to look forward to in the upcoming year as we now have built our core team to a critical mass and strengthened the focus of our programs and activities through strategic planning. We will nevertheless continue to develop meaningful partnerships and seek additional support for our programs from governmental and private sectors to further TESI's mission. We will continue to build a framework in which we can evaluate our reach and impacts in Florida, and beyond. We will also continue to find ways to further develop TESI's resilience while also continuing our unique niche and brand.

In closing, I would like to thank UF and the Florida Museum for their vision and support, our partners and stakeholders for their engagement, our TESI team, and all of the other people whose passion for what we do has made this past year a success!

Bruce MacFadden




2019-2020 Impact by the Numbers



2.2 million potential readers learn about TESI through 16 news articles.



\$25,550 in private funding is acquired to support Scientist in Every Florida School science learning programs and TESI outreach projects.



16,000 K-12 students representing **138** schools learn about Earth systems science through **183** scientist visits organized by the Scientist in Every Florida School program, a growing network of more than **1,000** public school teachers and **350** scientists.



4,200 people follow TESI on social media and **20,000** unique users visit the TESI website to learn about Institute programs and Florida environmental issues.



2,000 K-12 students and teachers attend **35** virtual events hosted by Scientist in Every Florida School amid the COVID-19 pandemic.



1,843 Floridians learn about Earth systems science topics through 15 in-person and virtual TESI public programs and outreach events.



66 scientists and journalists learn best practices for sharing complex subject matter through TESI-led science communication professional development workshops.



Faculty & Staff Updates

Over the past year, TESI welcomed two new faculty members and one staff member to our core team.



Alise Cross

Education & Communications Assistant
B.A., English, University of Central Florida



Megan Ennes

Assistant Curator, Museum Education
B.S., Marine Biology, University of North Carolina Wilmington
M.S., Environmental Studies, University of North Carolina Wilmington
Ph.D., Science Education, North Carolina State University



Mariela Pajuelo

Assistant Scientist
B.S., Biology, Universidad Nacional Mayor de San Marcos
M.S., Zoology, University of Florida
Ph.D., Zoology, University of Florida

To learn more about our team members,
visit: <http://bit.ly/TESIteam>

2018-2020 Faculty Fellows

TESI's faculty fellows each possess two things: the ability to do incredible science and the willingness to share scientific results with broader audiences. Stemming from other UF colleges outside the Florida Museum, our faculty fellows advance TESI's mission by finding innovative ways to teach complex subject matter. Read below to see what they've helped us accomplish in the past year.



Pasha Antonenko

As director of the University of Florida Neuroscience Applications for Learning (NeurAL) Lab, Pasha Antonenko focuses his research on how to use technology to make science more accessible, usable and engaging. Because of his unique expertise, Antonenko is a co-investigator on the Scientist in Every Florida School (SEFS) team who helps secure additional grant funding and ramp up the program's ability to provide effective virtual programming to K-12 teachers.

During the January 2020 SEFS K-12 teacher professional development summit that focused on wetlands, Antonenko provided participating teachers with 360 degree cameras. With these cameras, the teachers were able to take footage of wetlands in their counties with a goal of producing a "Wetlands of Florida" teaching website.

Antonenko believes the SEFS program can serve as a model for similar programs across the nation. In order to conduct sound research on the program for future publication, he also assisted the SEFS team in developing research protocols and obtaining approval from the UF Institutional Review Board.

"It has been a pleasure to collaborate with the SEFS team to spark curiosity and increase knowledge of scientific and environmental issues in Florida."



Andrea Lucky

Andrea Lucky, an assistant professor of insect systematics with the UF Entomology and Nematology Department, uses ants as a basis for collaborating with public audiences to study how invasive species are changing Earth's ecosystems. She does this primarily through a nationwide citizen science program called "School of Ants."

This year, Lucky used her funding as a faculty fellow to recruit early-career scientists, including undergraduates, to work in her lab. Her goal was to help these emerging researchers learn how to translate their work to the public by finding and applying for specific grants geared toward outreach.

"I wanted my students to have hands-on experience attaining grant funding for an education and outreach project that not only helps with their research, it also builds their science communication skills while inspiring the next generation of scientists," Lucky said.

Priming the Next Generation

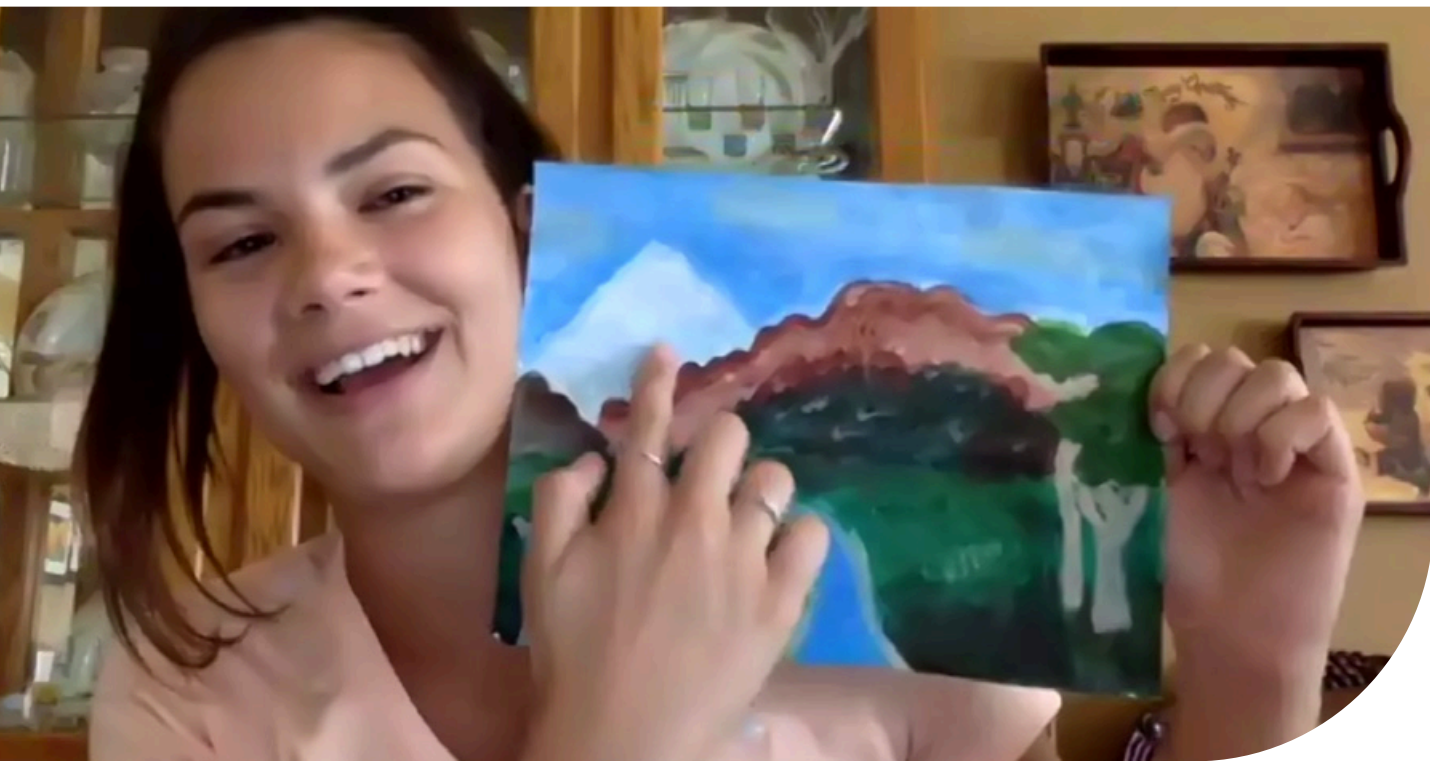
University of Florida students are one of TESI's target audiences. Through various for-credit classes, assistantships and mentorship programs, we are working to raise awareness of environmental issues and solutions in Florida.

Awareness through Literature

TESI faculty Bruce MacFadden and Megan Ennes are helping students from a broad variety of majors delve into environmental issues by teaching a discussion-oriented course in the UF Honors Program called (un)common reads. The course centers around a book of the instructor's choosing, but the goal is to help spark important conversations around complex topics — like water quality. MacFadden's class read and discussed chapter-by-chapter Cynthia Barnett's *Mirage*, which outlines the many challenges facing our water resources.

"I was surprised that prior to this class, many of my students were unaware of the challenges facing this precious resource. I, therefore, was glad that reading *Mirage* opened their eyes to some of the complex issues we face in the 21st century," MacFadden said. "I am now a firm believer in using literature to inspire behavior change and action."

Ennes' class centered around the book *The Invention of Nature* by Andrea Wulf, about the life and discoveries of Alexander von Humboldt. The class was aimed at exposing students to a scientist who helped lay the foundation for many fields of study, but who also believed in the importance of engaging in science with emotions as well as logic.



For Megan Ennes' (un)common reads final class project, students used their talents to create paintings, collages and short videos about their relationship with nature.



Students from the UF College of Journalism and Communications learn best practices for telling science stories at the TESI-led Water Resources Journalism Intensive.



Broader Impacts

The term "Broader Impacts" refers to those societal impacts and benefits of academic research, and defining these are an essential component of any successful National Science Foundation proposal. TESI director Bruce MacFadden has become a national leader in Broader Impacts in the U.S., and has even written a book about it: "Broader Impacts of Science on Society" (Cambridge, 2019).

Each fall, MacFadden, along with TESI assistant scientist Mariela Pajuelo, teaches a class called "Broader Impacts," which helps UF science majors think deeply about how their research benefits society, rather than it being an afterthought or soundbite on a grant application.

"Through this class, I encourage students to step back and think about the societal impact of their research as a meaningful way to approach their work," MacFadden said. "I look forward to expanding this class offering so that more science majors at UF can establish this important foundation in their future careers."

Guiding Gators

University of Florida students are not only one of TESI's target audiences, they are integral to the Institute's work. With mentoring from TESI faculty and staff, students help with projects in each of our focus areas. While some work to produce content for our digital outreach campaigns, others serve as scientist role models when visiting schools as part of the Scientist in Every Florida School program.

"At TESI, we include students in every aspect of our work," MacFadden said. "This not only builds capacity for fulfilling our mission, it also allows UF undergraduates to learn about Earth systems science through hands-on experiences."



Innovative Public Programming

Our team of trained science communicators and environmental educators works with scientists, peer organizations, nonprofits and decision-makers to curate and share the latest science-based information related to Earth systems science in Florida through public events, both in-person and virtual.

Science to the People » From breweries to rotary clubs, TESI is increasing access to science by bringing it beyond a typical academic setting.

Science on Tap

As a state famous for many perceived dangers, it’s no surprise that 850 curious Floridians flocked to Gainesville breweries for TESI’s Science on Tap: Is Florida Trying to Kill Me? event series, a collaboration with the Florida Museum of Natural History’s education department.

As they sipped on a cold beverage, curious participants listened eagerly as enthusiastic scientists debunked myths, tested attendee knowledge and explained the science behind common Florida dangers like hurricanes, wildfires and sinkholes.

Science on Tap is not a new concept. Organizations around the world are bringing science talks to informal settings like bars, restaurants and cafés. But TESI and Florida Museum educators go a step further: they coach scientists on how to make their presentations more user-friendly, engaging and interactive.

“In addition to helping the scientists communicate their research in a way that makes sense to everyone, even those without a science background, we also help them relate to the audience,” said Sadie Mills, TESI educator and coordinator. “By making sure the audience knows that the scientist is just like them — with a family, hobbies and their own work frustrations — the speaker becomes more approachable and participants can better connect with what they do.”



Growing Our Audiences

On average, 41% of Science on Tap attendees reported that it was their first time attending a Florida Museum or TESI-sponsored event, showing that science talks in non-traditional settings can help attract new audiences. Each of these talks were also livestreamed on Facebook, attracting additional viewers, and recorded, garnering hundreds of additional views once the events concluded.

As the coronavirus pandemic caused worldwide cancellations, our team did not give up — we got creative. Using Zoom, we were able to use technology to facilitate audience interaction as we capped off our spring series with a program aptly named, Science OFF Tap.

Florida Museum researcher Tyler Bowling speaks to audience members about sharks during a Science on Tap event at Cypress & Grove Brewing Company in Gainesville, Florida.



One ingredient for a successful Science on Tap event is Mentimeter, a presentation software that includes a live polling tool to ensure audience participation throughout the talk.

Florida Springs Film Series

Because Science on Tap event was so successful, TESI collaborated once again with the Florida Museum to teach Floridians about our freshwater through the power of film. The Florida Springs Film Series kicked off at the museum with a standing room only film screening of “Water’s Journey,” a documentary that follows the path of

freshwater from our tap to the Floridan aquifer. A panel discussion with the film’s director and experts in the field concluded the evening. Three more screenings are planned for 2020-2021.

Expanding Our Reach

As TESI became known around the University of Florida campus, we were viewed by peer organizations as a valuable partner. Throughout the year, we collaborated with various entities on campus to co-host and serve on steering committees for a variety of public programs and conferences: The 26th Annual Public Interest Environmental Conference with the UF Fredric G. Levin College of Law; the 7th biennial UF Water Institute Symposium; and a talk featuring the state climatologist with the UF Bob Graham Center for Public Service.



Because of our success rallying participants in the North Central Florida area, we have been expanding our reach to South Florida. By establishing collaborations with the City of West Palm Beach’s Office of Sustainability and the South Florida Science Center and Aquarium, we have launched several virtual public programs that are set to continue next year.

TESI also had the opportunity to share its mission at outreach events like UF Gator Day at the Florida Capitol, the famed Florida Museum ButterflyFest and the Florida Trail Association’s Wild & Scenic Film Festival, as well as many rotary clubs throughout the state. Through these collaborations we were able to reach many of TESI’s target audiences, including important decision-makers and business leaders in Florida.

By the Numbers



1,843 Floridians learn about Earth systems science topics through 15 in-person and virtual TESI public programs and outreach events.



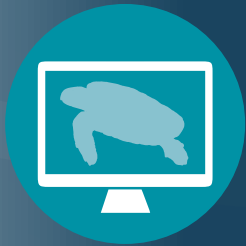
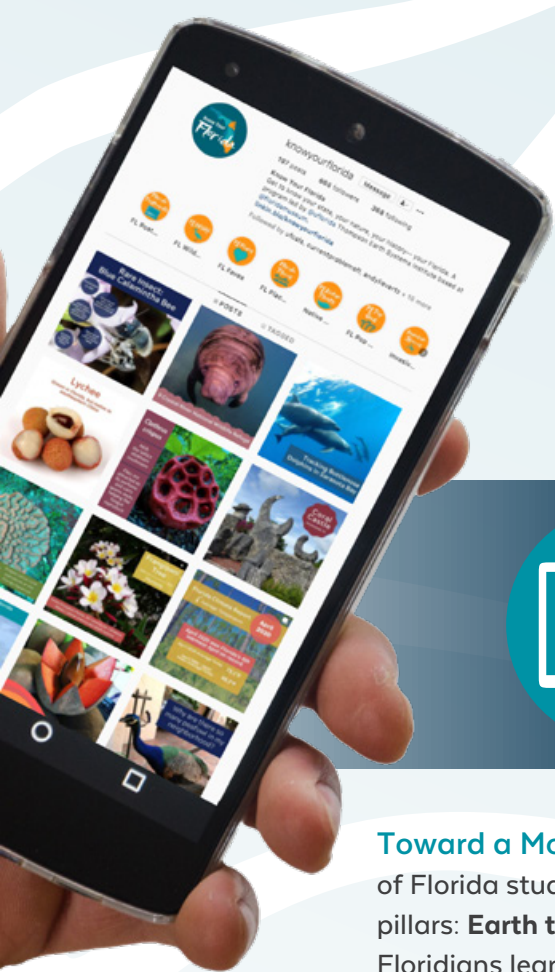
53% of public programs are **streamed live**, expanding reach and access.



47% of TESI public programs **engage audiences** through interactive live polling tools.



41% of Science on Tap **attendees are new** to TESI and Florida Museum programming.



Digital Outreach

Through online platforms, we’re curating information about Florida’s environment and natural resources and packaging it in a way that is digestible, understandable and solutions-oriented.

Toward a More Informed Florida » Through the TESI internship program, University of Florida students help the TESI team develop content for our two digital outreach pillars: **Earth to Florida** and **Know Your Florida**. These online campaigns help curious Floridians learn more about their history, environment and natural resources.

Earth to Florida

Each month, more than 500 Floridians receive TESI’s Earth to Florida newsletter in their inbox. The monthly bulletin provides a snapshot of Florida’s environmental news, packaged in a way that explains what’s going on, why it matters and what we can do about it. Since its inception in May 2019, hundreds of articles have been written about Florida’s most pressing environmental issues like water quality, sea level rise and biodiversity loss. Each story written is posted to TESI social media channels, garnering new audiences on each platform. This past year, the publication has become largely student produced, giving University of Florida undergraduates a chance to hone their science communication skills through mentorship by the TESI team.

Every February, the team produces a special legislative issue that explains environmental bills being considered and what they would mean for the state, if passed. The issue has been the most popular one to-date, garnering more than 1,400 views.

“This newsletter is really a win-win,” said Rebecca Burton, TESI communications manager. “Because of the student component, it’s not only helping fulfill our mission of providing pertinent information to Floridians, it also serves as a unique science communication professional development program.”

Earth to Florida Reader Testimonials

“This is my new favorite series. HIGHLY recommend it. It’s a great way to feel more connected to environmental news stories as a Floridian.” -Nick

“If you haven’t already, consider following the University of Florida Thompson Earth Systems Institute. They are doing regular #EarthtoFlorida issues that curate environmental news specifically about the state. This is one way to stay informed!” -Stephenie



Know Your Florida

TESI’s students also help run the Institute’s **Know Your Florida Instagram** campaign, which showcases important information about Florida’s wildlife, people and natural history. The campaign is the brainchild of TESI coordinator, Sadie Mills. As a relatively new Floridian, Mills wanted to create a campaign to generate appreciation for the Sunshine State, especially since 900 new Floridians move here every day.

“In addition to informative posts, Know Your Florida also shares interactive stories where Floridians can test their knowledge about the state’s wildlife, geography and more,” Mills said.

Through both digital campaigns, the TESI team provides information that is highly relevant and solutions-oriented so that instead of feeling overwhelmed, readers feel equipped to act.

Ask Me Anything

For two hours at a time, University of Florida scientists typed furiously, answering hundreds of questions about their research from Reddit users all around the world. These scientists were participants in a new initiative to get UF engaged in Reddit’s Ask Me Anything (AMA) science series, which gives researchers a platform to answer questions for a set amount of time using their keyboard. TESI partnered with UF Research to identify scientists and topics for the series, based on what was trending in the news cycle.

For example, amidst the wildfires that consumed the Amazon rainforest, UF environmental scientist Robert Walker answered questions related to the science and ecology of the rainforest, where he has been conducting research for more than 20 years. And during hurricane season, UF climatologist Corene Matyas answered questions about what to expect. In total, the AMA sessions reached 7,200 curious Reddit users.

By the Numbers



4,200 followers across TESI digital outreach channels learn about Florida’s environmental issues, as well as its wildlife, natural history and people.



Each month, **Earth to Florida** and **Know Your Florida** content reaches an average of **64,000 social media viewers**. This content garners a monthly average of 3,250 likes, comments and shares.



Earth to Florida stories receive **15,700 unique web views**, accounting for more than 37% of TESI website traffic.



515 people receive the Earth to Florida newsletter in their inbox each month, a **215% increase** from last year.



2020 Atlantic Hurricane Season Forecast

- 16 named storms
- 8 hurricanes
- 4 major hurricanes (category 3, 4 or 5)
- 69% chance a major hurricane will make landfall on U.S. continental coastline

Each Know Your Florida post equips Floridians with facts about our state packaged in a easily digestible and shareable format.

Posted on April 14, 2020



Scientist in Every Florida School

Through this free program, the SEFS mission is to build long-term collaborative relationships between teachers and scientists, better integrate current scientific research and big data into classroom lessons that adhere to Florida's Sunshine State Standards and connect a scientist with every school in the state.

Scientists and Teachers Join Forces » At the heart of the Scientist in Every Florida School program are the lasting relationships between teachers and scientists. By participating in SEFS, teachers have someone to call on for first-hand content expertise, while scientists have a chance to share their research and love for science with the next generation of environmental stewards.

In July 2019, Scientist in Every Florida School K-12 education and outreach coordinators Brian Abramowitz and Stephanie Killingsworth got straight to work planning the program's second teacher professional development workshop, **"Florida's Connection to the Biosphere."**



Thirty-four science teachers representing 10 counties traveled to Gainesville and spent four days in one of 10 laboratories within the Florida Museum of Natural History, UF's Institute of Food and Agricultural Sciences and UF's College of Liberal Arts and Sciences. While there, they assisted scientists with ongoing research projects that focused on topics ranging from climate change and forests to the evolutionary history of mammals.

At the end of the program, scientists worked with teachers to set up in-person visits for the fall semester.

"Working with scientists of SEFS has inspired me to create and share engaging, higher order, standards-based lessons that foster an application of knowledge in real-world situations that become memorable experiences instead of just a lesson that will soon be forgotten," said Jonathan Green, a teacher from Liberty Park Elementary School in Palm Beach County who participated in the program.

Switching Gears

One of the most popular program components of SEFS is the ability to match teachers with scientists who fit specific curriculum needs. With individualized support from the SEFS team, teachers are guided through the process of identifying the right scientists, developing a lesson plan around the scientists' work and setting up a visit to the classroom, either in person or using webinar technology, like Zoom.

Because of the team's experience setting up secure and interactive, web-based visits, they were able to quickly jump into action when the COVID-19 pandemic disrupted traditional school learning and prompted teachers around the state to quickly mobilize, rethink their curriculum and launch virtual classrooms.

In response, SEFS quickly developed a suite of digital, on-demand K-12 resources organized by topic that teachers around the state could easily deploy using their virtual teaching platform of choice.

Each topic package included several elements to make up a complete lesson plan: a short educational video, a writing prompt or worksheet, a virtual field trip, supplemental reading material and hands-on activities. The lessons culminated in multiple live online discussions with a scientist each week.

"I am so thankful for the support I have gotten and I know the students and parents appreciate how opportunities like this keep the standard of education high in these weird times," said Leigh Larsen, a biology and environmental science teacher at Gainesville High School in Alachua County.

By the Numbers



Scientists around Florida complete **183 visits to classrooms**, representing **138 schools** and more than **16,000 students**.



Growing SEFS network supports collaboration among **1,000 public school teachers** and more than **350 scientists**.



SEFS team produces **35 virtual events** for teachers and students amid COVID-19 pandemic, attracting more than **2,000 participants**.



SEFS Teaching Expansion

Thanks to a \$20,000 grant from the Frances C. & William P. Smallwood Foundation, SEFS is increasing its ability to provide hands-on and virtual science learning programs to classrooms around the state. This funding provides for a specific focus on Title I schools in rural areas like Marion and Levy counties.

"With these additional resources, we will be able to increase the number of students and teachers engaged in SEFS by the thousands," said Brian Abramowitz, K-12 education and outreach coordinator with SEFS.



Science Communication Professional Development

We are helping scientists hone their communication skills. Through our education and outreach grants program, science communication training seminars and K-12 teacher professional development workshops, we help scientists (and journalists) hone their communication skills and disseminate scientific research to broader audiences.



Communication is Key » Over the past year, science communication professional development has emerged as one of TESI's main program areas. Providing scientists and journalists with evidence-based skillsets to communicate research in an impactful way is embedded within TESI's mission.

Science communication, also known as science interpretation, education or outreach, is the practice of raising awareness and efficacy around science-related topics. When done correctly, effective science communication can not only help garner trust and support for science, it can also help people make more informed decisions. In STEM fields, communication skills are no longer seen as soft skills by job recruiters, but as a crucial element of any scientist's skillset.

SciComm 101

The field of science communication draws on social sciences, like psychology and sociology, to better understand what works when communicating complex subject matter. Building on research-based evidence from this emerging field, TESI partnered with the Florida Museum and iDigBio to launch a two-day SciComm 101 workshop for University of Florida graduate and postdoctoral students.

During the workshop, 20 participants learned best practices for sharing their science both in-person and online. Topics covered included: building a common vision for science outreach, strategies for interacting

with the public, storytelling techniques, building a digital content plan, photography best practices and writing a science blog post. Participants were required to participate in one public event and create at least one piece of digital content to successfully graduate from this pilot program.

Taking SciComm on the Road

In addition to stationary workshops, the TESI team has developed a mobile, half-day workshop that can be easily worked into scientific conference agendas. Workshop topics include: best practices for National Science Foundation Broader Impacts statements, mapping your digital presence, how to advocate for your science and how to share your science with K-12 audiences.

"With these mobile workshops, TESI can bring our expertise to science conferences around the state and nation," said TESI director Bruce MacFadden. "Many people attending these conferences are seeking professional development opportunities, and we are happy to provide this for science communication."

TESI works with conference organizers to design a workshop with topics that are most relevant to their audience. In 2020, TESI hosted science communication workshops at the Society for Systematic Biologists Annual Conference, UF Water Institute Symposium, UF Law's Public Interest Environmental Conference and iDigTRIO Biological Sciences Conference and Fair.

SciComm for Aspiring Journalists

Here at TESI, we believe science communication professional development programs should also be designed for journalists, who serve as important conduits for scientific information. As part of an effort to share Florida's biggest water stories with broader audiences, we partnered with the UF Water Institute, Florida Sea Grant and UF Institute of Food and Agricultural Sciences to launch the inaugural Water Resources Journalism Intensive (WRJI), a science writing training program that centered around the UF Water Institute Symposium.

During WRJI, UF journalism students learned how to structure a science news story, how to mine scientific conferences for story ideas, how to work with editors, how to find evidence-based information and how to interview a scientist. During the symposium, students attended related sessions and worked with experienced science communicators to get their stories published and shared broadly.

"As TESI grows its capacity to build science communication and Broader Impacts training programs, we aim to emerge as leaders in this growing and crucial field," said TESI director Bruce MacFadden.

By the Numbers



TESI hosts **five** science communication training programs, reaching **66 aspiring and early career scientists and journalists**.



Evidence-based science communication **best practices** are embedded within **100% of TESI program areas**.



95% of SciComm 101 participants left feeling more **confident in communicating their science** face-to-face with a general audience and in a digital space.



2020 TESI Education and Outreach Grant Recipients

Each year, the Institute awards education and outreach grants to support projects led by UF students and postdoctoral researchers that communicate Earth systems science research to either K-12 students and teachers or lifelong learners. This annual grant competition helps foster collaboration, leverages the Institute’s capacity to reach a broader audience and encourages students to think about how they can communicate their own science.



Florida Archaeology and Arts in Medicine: Exploring the Art and Environment of Early Native Florida in Hospital Outreach

Brittany Mistretta, *Ph.D. student, UF College of Liberal Arts and Sciences, Department of Anthropology*

For Brittany Mistretta, archaeological artifacts like pottery and cooking tools are evidence of long-term human interactions with the environment. With funding from TESI, Mistretta is working to share this appreciation by bringing Florida Museum of Natural History archaeological collections into a place that is often off-limits to science educators: the hospital.

Mistretta will be hosting workshops where pediatric cancer patients and adults with limited mobility can examine artifacts and make artistic replicas, all while learning about how Florida’s indigenous people were, and continue to be, tied to our environment.



Using a Multimedia Approach to Connect Consumers and Scientists to Discuss Current Issues Affecting Florida Agriculture, Ecosystems and Wildlife

Jacqueline Aenlle, *Ph.D. student, UF College of Agricultural and Life Sciences, Department of Agricultural Education and Communication*

By providing complex information in digestible audio soundbites, Jacqueline Aenlle hopes to help adult urban consumers make educated decisions about their own habits, and better understand how they are connected to and affected by agriculture, forestry, wildlife conservation and natural resources.

Aenlle is developing new podcast episodes focused on two timely topics — how urban encroachments are impacting Florida panthers and red tide. The completed podcasts will be available on Spotify, Apple Podcasts and Google Play.



Growing Under the Rainbow

Drake Garner, *Ph.D. candidate, UF Plant Molecular and Cellular Biology Program*;
Samantha Burrell, *Ph.D. student, UF/IFAS Department of Environmental Horticulture*;
Enrique Anzola, *undergraduate, UF College of Liberal Arts and Sciences*

Scientists have discovered that the ability to manipulate plant growth using single color wavelengths of light can cause visible differences such as bigger leaves, taller plants or faster flowering.

This team is illuminating K-12 classrooms in Florida with multicolored LED plant growth boxes to inspire an appreciation for plants. The team hopes to help combat a condition called “plant blindness,” a phenomenon in which humans underappreciate the plants around us.

From left to right:
Drake Garner,
Enrique Anzola,
Samantha Burrell



Frass in the Class: Fostering Interest in the Natural World Through Insect Rearing

Amanda Markee, molecular lab manager, Florida Museum McGuire Center for Lepidoptera and Biodiversity;
Becky Messcher, undergraduate, UF School of Forest Resources & Conservation;
Hailey Dansby, undergraduate, UF College of Liberal Arts and Sciences;
Emily Hernandez, undergraduate, UF Engineering School of Sustainable Infrastructure & Environment

Insect populations are declining globally, and this trend is set to continue. Staff and students in the Kawahara Lab at the Florida Museum of Natural History are looking to slow this trend by inspiring a greater appreciation for insects and their diversity.

Armed with live caterpillars, the team is descending on Florida classrooms and giving K-12 students the chance to rear their own insects, from caterpillar to butterfly. In the process, the students will also learn about the importance of frass, or butterfly poop.

Clockwise from upper left: Amanda Markee, Becky Messcher, Emily Hernandez, Hailey Dansby



Where Will We Find the Little Fire Ant Next? Citizen Science as a Tool for Learning the Process of Science

Jacob Hornfeldt, undergraduate, UF/IFAS Department of Entomology and Nematology;
Rachel Atchison, master's student, UF/IFAS Department of Entomology and Nematology;
Yuanmeng Miles Zhang, postdoctoral researcher, UF/IFAS Department of Entomology and Nematology;
Virginia-Rose (VR) Seagal, master's student, UF/IFAS Department of Entomology and Nematology

This team is developing a classroom workshop with elementary and middle school teachers to help students learn about invasive species, biodiversity and scientific research. The workshop will include an interactive talk, followed by a show and tell of curated ant specimens for students to look at under a microscope.

The workshop will culminate in a community science project where students will collect data on invasive ants in Florida, using protocol from a nationwide project called "School of Ants."

Clockwise from upper left: Jacob Hornfeldt, Rachel Atchison, Virginia-Rose (VR) Seagal, Miles Zhang



Our Commitment to Sustainability

We are committed to reducing our negative impact on Florida and the planet. We strive to use the latest science to develop policies that support a sustainable and healthy future. As part of our organizational culture, our commitments to sustainability include:

-  Minimizing our **use of paper** and **recycling** any necessary paper materials
-  Utilizing **reusable or compostable** dishware and utensils during catered events
-  Encouraging **walking, biking, public transportation** and **carpooling** to meetings and events
-  Selecting promotional items that serve a necessary function and that are made from **sustainable materials**, when possible.
-  Hosting **virtual meetings** when possible rather than meetings that require travel
-  Encouraging our partners and collaborators to **practice sustainability**



Support TESI and advance our mission:

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