

**Consortium of Florida Education Foundations  
2021-22 ATT Full STEAM Ahead! Project Abstracts**

Foundation Name	Project Title	Project Abstract
Baker County Education Foundation	Soaring Through Science	Students will work on a variety of hands-on, engaging science lessons designed to enhance the Nature of Science, Physical Science, Life Science, and Earth/Space Science standards for grades 6-8 according to the Next Generation Sunshine State (NGSS) standards assessed on the Florida Statewide Science Assessment.
Bradford County Education Foundation	The Cade Museum STEM Experience	The purpose of this project is to expose 445 students to new ideas and allow them to experience "hands on" and interactive learning in different areas of STEM/STEAM. With this experience we hope to create more interest in the STEM areas, excitement about learning and an atmosphere that is challenging, fun and keeps them wanting to learn more. During visits from CADE Museum staff, students will work with each other on STEAM projects and learn about the museum. The majority of participating students have little experience outside of Bradford County and exposure to other educational services other than public schools.
Brevard Schools Foundation	An Investigation of the Indian River Lagoon Using SeaPerch and SeaGlider ROVs	Student participating in this project will be involved in designing a research project of their group's choice to answer the essential question "How can we utilize SeaPerch ROVs and/or Seagliders for data collection to monitor the health of the Indian River Lagoon?" Students will problem solve using robotic technology which models current methods used in the marine science and oceanography field by building and operating the ROVs. The use of the ROVs allows students to gather data for biotic and abiotic factors in the ecosystem and students can compare their data to existing data and form conclusions based on what they gather in the field. Students will present their findings to their classmates and have the opportunity to submit their project to the Youth Making Ripples Competition, a " global platform supporting ocean conservation, education, and discovery." Students may also submit data to the Lagoon Watch program which supports community involvement in the monitoring of water quality of the Indian River Lagoon.
Broward Education Foundation	Allusions Made From Fusion	<p>The purpose of this project is to increase the number of Fusion 360 Mechanical Design certifications of students through hands on activities. Students will complete different projects using Fusion 360 and then create their designs on either a 3D printer or Laser Cutter. The projects include CO2 Dragster Car, Balsa Bridge Design, 3D Printed Solid Fuel Rocket, and a Balsa Wood Glider.</p> <p>The students will see the benefits of Computer Aided Design as they apply to aerodynamics, mechanical and structural design. They will have lessons to prepare them for each project so that they can bring their background knowledge and apply new knowledge to their designs. As they progress through the projects their mastery of Computer Aided Design and Fusion 360 will increase as they create their virtual designs and then apply them physical models. The students will be able to test their prototypes through simulation and real-world tests.</p>
Clay County Education Foundation	Building STEM Opportunities: Engineering Career Pathway	Career-ready students possess a strong foundation in problem-solving, critical and design thinking, as well as exposure to STEM skills that help them to be future-ready and competitive for college and career options. Using Woz Education curriculum and materials, this project will support Orange Park Junior High's program to prepare students for a career in nearly every industry through engineering and design theory hands-on learning. The career pathways are designed to teach students the skills that correspond with the Tinker and AutoCAD industry knowledge and certifications, as well as increase student interest in STEM fields and STEM content area achievement.
DeSoto County Education Foundation	3D Model House with Working Electrical Parts	<p>The purpose of the project is to build reading, math, science and technology skills through application of concepts necessary for success in the real-world. The project will prepare 5th grade students for success, exposing them to rigorous concepts, additional transitions/expectations for their education, as they begin to contemplate career choices at the secondary level. The activities will be standards based and integrated across curricular areas, including a problem solving component that requires higher-order thinking and application skills. Activities will include:</p> <ul style="list-style-type: none"> <li>• building knowledge about the concept of electrical energy by having the students build and experiment with electric circuits;</li> <li>• applying knowledge of electrical circuits, the Maker and related software to create light-up greeting cards that will be used as part of the Leader In Me Community Service initiative and distributed to local hospitals or nursing homes;</li> <li>• proficiency in the use of the Tinkercad software, Maker (machine and software/design program) and 3D printer to create designs for keychains, a spinner mini-project and ultimately items for dream home;</li> <li>• designing, collaborating and develop ing all components of their dream home, including the electrical, engineering and redesign.</li> </ul>

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Flagler County Education Foundation	Career Coaching	The purpose of our Career Coaching program is to match students with community adults who will help the student identify a program of interest, guide and mentor the student through the program to completion and hopefully help find a job following graduation. A workbook has been created full of activities that provides the Career Coach with a "roadmap" to help the student identify interests and possible career pathways as well as personality traits. The "Classroom to Careers" field trips, technical school tours, "Intern for a Day" trips as well as the curriculum developed for the workbook will all be activities for this program. We will track the underclassmen in this group to see how many students enroll in CTE programs and how many complete at least one course towards a certification. For upperclassmen we will track the number of students who complete CTE programs and receive certifications. We will also track the number of times the students meet with their Career Coach.
Franklin Education Foundation	We Are Certifiable!	The purpose of this project is to provide students with the extra tools, instruction and training needed to pass end of course CAPE certification exams. Franklin County students have historically performed poorly on CAPE certifications. In 2020-21, 4 of 21 students earned the ServSafe food handler's certification and 2 of 17 students were able to earn the Level 1 Safety certification in Unmanned Aircraft Systems (drones). In addition to increasing CAPE certification exam pass rates, there has been an influx of non-English speaking students enrolled in the district over the past few years. These students are expected to meet the same certification standards as their English speaking counterparts. This project will assist students by providing study guides (English and Spanish), test taking strategies, tutors/mentors (including an interpreter) and online testing practice (English and Spanish). An interpreter is already employed by the district to assist students with the language barriers. The outcome to be measured will be the number of students achieving a CAPE certification. A sub-outcome to be measured will be the impact of these strategies on English versus non-English speaking students, also measured by the number of CAPE certifications earned.
The Foundation for Lee County Public Schools, Inc.	Digital Lee	<p>Digital Lee is a showcase of digital student excellence, highlighting both art and technology skills of middle school, high school and postsecondary students' work. This year's award reception event is occurring in-person at the local community art gallery, Sidney &amp; Berne Davis Art Center. The center is dedicated to bringing world-class art events to the Southwest Florida community.</p> <p>The best of our Graphic Design, Animation, Digital Photography, Publication, and Web Design departments will be highlighted. Students who are currently or previously enrolled in digital design classes across the district will be invited to participate in the event by creating their original work, digitally, and submitting it to the Career and Technical Education Department. The students use acquired skills and supported software in their digital design classes to create their projects. Local and national design professionals and community sponsors serve on the judging panel to review and score the submissions. The reception event highlights all student submissions, announces the winners, and celebrates career in digital design, allowing students to network with those professionals in that career field.</p>
Foundation for Leon County Schools	EGE - Engineering Green Energy	This project will introduce students to the field of energy transformation as they explore and discuss how chemical, mechanical, solar and wind energy are transformed into other forms of energies such as light, heat, sound and motion. Students will work in teams to design electrical circuits and an electrical alarm circuit that includes a switch that, when closed, activates the alarm with a light and/or a sound. Students will be able to observe how wind energy is transformed by wind turbine into other forms of energy and how the solar cell transforms the sunlight into other forms of energy as well. Science concepts such as electrical insulators and conductors, open and closed circuits, and energy transformation will be reinforced throughout the project. In addition, students will learn about and engage in the engineering concept of using schematic diagrams to communicate circuit designs.
Levy County Schools Foundation	STEAM Lab Support	This project will support under-achieving, low-income elementary students with hands-on activities and experiments in our STEAM labs in two elementary schools. The purpose of our project is to improve student performance. We will do that by teaching students using hands-on activities and experiments, while also providing them real-world examples of career pathways in the STEAM fields.

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Okaloosa Public Schools Foundation, Inc	Closing the gap for CTE Cosmetology Students	The purpose of this project is to prepare students for cosmetology licensure. Students will use manikins to practice hair shaping, hair styling, hair coloring, and chemical texture services. Students will develop competencies in hairstyling, chemical texture, hair coloring services, and hair shaping as outlined in FDOE student performance standards. To gauge the success of the skills they are being taught, students will take a pre- and post- test and will show a 90% increase in knowledge. Students enrolled in the cosmetology program require a large amount of hands-on learning. For this reason, students must use and practice using consumable materials. This project will support realistic manikins where the students can practice these skills and requirements that are outlined in coursework standards. This project is even more critical as Cosmetology has lost federal allocation of money for supplies and materials, yet the local labor market still needs certified cosmetology students. Student can leave our program ready to enter the workforce but we must fund hands-on learning to ensure this can happen.
Polk Education Foundation	Recycling Plastic to Product	Students will develop computer-aided design skills and demonstrate that skill by designing a product to be produced in plastic. Students will assemble a plastic shredder, source recycled plastic, and shred the plastic in preparation for molding. After assembling an injection-molding machine, students will melt and inject plastic into a mold of their design, producing a plastic part of their creation. Along the journey, students will attempt to earn an industry certificate in Solidworks showing competency in computer-aided design. The journey will also explore and educate them about plastics as a product and as a source of waste. The history of plastic and types of plastic will be learned along the way with an emphasis on the ethics of engineering design and solutions to the plastic problem. Essential to the project is measuring student attitudes, their understanding of engineering design, and their knowledge of manufacturing processes. Students will be surveyed about their use of plastic and attitudes about plastic. Students will confront issues surrounding single use plastic and possible solutions.
Santa Rosa Education Foundation	Aiming for the Moon Through Space and Career Exploration	The purpose of this project is to expose students to local career fields while teaching the basic forces of flight and the response of vehicles to external forces thereby strengthening their knowledge of aerospace as they prepare for industry certification. Students will be asked to design student portfolios and will be given a task in which they must help NASA design a rocket that can go the farthest, while using the least amount of fuel to get to their destination. Throughout the process, students will learn essential vocabulary, the design process, aspects of force and motion, and how to collaborate with a team of people. Students will also be exposed to outside factors such as wind, weather, and other environmental conditions throughout this process. Through research and collaboration, students will deepen their knowledge on the physics of flight. These outcomes will be measured through teacher observation, informative assessments using technology, such as Kahoot review, and a formal assessment at the end of the unit.
Education Foundation of Sarasota County	Building STEAM through the Career Skills Challenge	The Career Skills Challenge will increase career awareness, exploration, and concentration throughout the Sarasota County School District. It will celebrate students interested in STEAM-related fields through two competitions, one for high school students, another for middle schoolers. Students and teams of students from area schools will compete in 12 career skills challenges in areas such as video production, VEX Robotics, and coding. These hands-on, enrichment activities will be held at Suncoast Technical College. Students will meet other young adults with similar interests, and they will engage with experts in the field to learn more about STEAM-related careers.
Foundation for Seminole County Public Schools	Elementary STEAM Enrichment and Family Engagement	Layer Elementary students grades 3-5 will receive 40 minutes of hands-on STEAM enrichment each week and will participate in a culminating grade level project. The STEAM enrichment materials will be selected based on Science and Math standards that are grade-level appropriate. The goal is to address equity gaps that were exacerbated by the pandemic, support students' mastery of Science and Math learning standards, and increase opportunities for student and family engagement in STEAM learning. Each grade level will receive different STEAM enrichment materials to create a sustainable program for future use. In the Spring, the school will offer a STEAM Night for family engagement, where the students will lead families through the grade level STEAM project. The enrichment occurs during the school day and each teacher has a STEAM Team/Club. Some of the clubs include bubble-ology (math and science with bubbles), Code Breakers (computer coding), Green Thumbs (growing vegetables in a garden), and Viva Violins (learning to play the violin). Layer Elementary STEAM program outcomes will be measured by pre/post student surveys, parent feedback from the STEAM night event, and the results of the Consortium online evaluation survey for participating students.

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Sumter Schools Enhancement Foundation	Rise to the Challenge	This project utilizes the Orlando Science Center to provide a workshop with groups of up to 30 eighth grade students at each of our middle schools. These students will utilize skills of an aerospace engineer to experience the challenging relationship between gravity and buoyancy. Through data collection, calculations and team collaboration students will test their hypotheses through the creation of a balanced attachment that is suspended from a model weather balloon. This project aligns to many science standards and directly supports student preparation for the upcoming Statewide Science Assessment in Spring 2022. Prior to the on-campus workshop from the Orlando Science Center, classroom teachers will spend time reviewing standards that directly support the Rise to the Challenge project. By doing this, teachers will help build student capacity, increase prior knowledge, and create excitement for the ability to experience this hands-on.
Suwannee Foundation for Excellence in Education	Art of Speaking Chicken	The purpose of this project is to leverage Digital Art and Outdoor Learning Labs as a means to increase student engagement and achievement in Mathematics, Science or Language Arts. Volunteers will be recruited to build a chicken coop to establish a project called the Art of Speaking Chicken. Students digitize the project with video and create a digital story book entitled the Art of Speaking Chicken. Using classroom library materials the students research, select which chickens/eggs they want to raise and build the habitat to house them. Students rotate through five different teams each designed to help improve core academic achievement: 1) Research and Development Team--researches all facets of the project; 2) Architectural & Construction Team--designs and builds the habitat; 3) Communications & Public Relations Team--develops content for the digital art production and communication for school and the public; 4) Flock Management Team--tends to the chickens and eggs; and 5) Creative Design Team--shoots video footage and develops the branding and pictures that tell the story. The ultimate goal beyond academics is to nurture future leaders and cultivate teamwork and conflict resolution.
Futures Foundation for Volusia County Schools	Futures for Girls in STEM	The purpose of this project is to increase the number of girls interested in STEM fields and those interested in pursuing STEM careers. This project will have two major components to carry out this purpose. First, there will be school clubs that introduce STEM activities and provide a platform to discuss the issues and rewards of being a girl in the STEM arena. Girls will also be encouraged to participate in a personal, yearlong passion project. Second, the larger collaborative of all the school clubs will have monthly guest speakers and take at least two field trips to investigate girls in STEM careers. These trips currently include going to the Orlando Science Center and Larson Motorsports. Speakers from Google and NASA are also already lined up to speak.