

2010-2011 AT&T STEM at Work Project Abstracts  
 (as of February 18, 2011)

Foundation Name	Project Title	Abstract
Bay Education Foundation, Inc.	STEMulation	As home to two important military installations that conduct research of national and international importance, Bay District Schools has a particular interest in STEM disciplines and a sense of urgency regarding STEM education. To that end, the district has partnered with Florida State University-Panama City and the Department of Defense to enhance science instruction through our annual summer STEM Institute.
Brevard Schools Foundation	Engineering Workshop	<p>STEM activities will center around the engineering design loop/problem solving model and engage students with their choice of three STEM topics to select from :</p> <ul style="list-style-type: none"> <li>(1) C programming</li> <li>(2) Intro to Electronics</li> <li>(3) Intro to Robotics Systems</li> <li>(4) Web Design</li> <li>(5) Animation with 3D Studio Max</li> <li>(6) Intro to Mechanical Systems</li> <li>(7) Intro to Pneumatics Systems</li> <li>(8) Lab View—a graphical interface for C programming and electronics control</li> <li>(9) Computer Numerically Controlled Milling (CNC)</li> <li>(10) 3D Computer Aided Drafting (CAD) –Solid Works or Inventor</li> </ul>
The Education Foundation of Collier County	The Physics Behind Prosthetic Devices and Implants	To select a group of 20 to 30 physics honors students to work with a local business to design and carry out a project that will tie in concepts of physics, mathematics, technology, and engineering. To guide the students in this project while giving them ample leeway to design, test, and draw conclusions from the project. To have the students make connections between the material we learn in the classroom and real-world, practical applications therein, and, ideally, spark their interest in a career in the sciences.
The Education Foundation of Collier County	Engineering and Materials Testing	Students will make connections between classroom work and real world practical applications in the engineering and engineering technology fields & utilize a five step technique to solve engineering word problems as they safely use a metal lathe to

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		make a destructive metal bone sample.
Columbia public Schools Foundation, Inc.	Refurbishing SUMS (Students Using Math & Science) Kits	Columbia High School students will receive hands-on logistics experience by doing a real world project that incorporates many different aspects of Global Logistics and Supply Chain Management.
Jacksonville Public Education Fund	Collards: Soil Treatment & DNA Project	To provide 9 <sup>th</sup> grade agri-science students with a hands-on, real-world experience of growing a food source, calculating the production of the product, conducting DNA on the product, and understanding the process of gel electrophoresis and the scientific method.
Escambia County Public Schools Foundation	HBA Construction Academy	Build Construction Mock Ups to demonstrate specific math and science concepts used in the construction industry
Escambia County Public Schools Foundation	Career Academy University Documentary	Students will create a documentary of the Next Generation Learning Community Career Academy University inaugural conference for all senior academy students in both Escambia and Santa Rosa Counties in February. This documentary will highlight the events of the day where students at CAU will explore various employability skills and be encouraged to continue in their pursuits of the various different academy disciplines.
Flagler County Education Foundation	Flagler Palm Coast High School's Eco Boosters	To encourage the use of energy saving methods in our community so the negative impact of our energy consumption on the environment is decreased.
Flagler County Education Foundation	Using "Green Energy" in Agriculture	Students will design and construct drip irrigation systems to grow food crops that will be powered through the construction of solar panels. Students will collaborate with the UF Extension Service and local irrigation companies to build drip irrigation systems powered with solar panels. These will be applied to the schools Agriculture Vertical Growing Systems and Raised Bed Gardens. The use of the panels will involve students in creating and infusing STEM concepts to increase sustainability of our food supply. These systems are created to operate independently in urban and residential settings and have a real-world application.
Flagler County Education Foundation	Teaching Kids Science By Doing	Students will learn to apply formulas and measure calculations as well as understand

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		<p>simple machines, thermal energy readings, scientific method use in everyday life, waves, atomic structure, composition of matter and forces in motion—all while assisting Flagler County's local animal shelter. Students will have real life applications, all while focusing on STEM concepts. Science is used everywhere and they will learn that engineers are used to build facilities in which air quality control methods are in place to cut back on disease, electronic watering bowls, fencing placement, veterinarian equipment rooms, etc.</p>
Franklin County Education Foundation, Inc.	Student Externship Experience (SEE) Program	To realize the importance of current Science and Math subjects in the Health, Legal, Seafood, Arts, and Culinary fields
Hernando County Education Foundation	"Sublime"	<p>Enhance student interest in math, physics, science and engineering as a career. Engage students in a real-world project to build a human-powered submarine applying mathematics, physics and science. Test the practical application of engineering concepts. Increase in team participation and a rise in FCAT science scores would be expected. Students will conduct in-water testing of hull and mechanics and re-engineering as applicable.</p>
Hernando County Education Foundation	Pine Flatwoods Demonstration Project	<p>Students, with the cooperation of our community business partners, will create a Florida native pine Flatwoods project so students will understand the importance of environment-friendly landscaping and the necessity of conserving Florida's water resource. It will provide hands-on experience in its creation and use science, mathematics, engineering and technology to pull together these in-class concepts with the real world examples.</p>
Hillsborough Education Foundation	Alternative Energy	<p>Through principles of engineering the STEM Institute Students will build solar powered vehicles in order to enhance their understanding and application of solar energy as an alternative source of power.</p>
Jefferson County Education Foundation	Designing Promotional Materials	<p>In their technology classes, the students will be working with the Jefferson County Tourist Development Council to create products that will promote our area's historic resources.</p>

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		They will gather information concerning our county's resources and create a brochure that will be used by the Tourist Development Council. They will also explore avenues to promote the history of the African American Community in Jefferson County.
Educational Foundation of Lake County, Inc.	STEM Project meeting National Engineering Design Competition Guidelines	Students are using STEM education to create a prototype or product that will accommodate a person with a disability. By using the prototype or product created, the disabled person will be able to perform duties/tasks better at work.
Educational Foundation of Lake County, Inc.	STEM Education at East Ridge High School	The space technology and engineering course and the robotics teams will design, build, program and test a fully-functioning robot in less than six weeks for competition purposes, working with Lockheed Martin.
Foundation for Lee County Public Schools, Inc.	STEM Shadowing!	Twenty students will be selected by the teacher to job shadow/intern and get first-hand experience and knowledge in the types of STEM opportunities available in our area; in particular is the area of alternative energy and biomedical. Students will have the opportunity to job shadow/intern at companies that provide/produce solar energy, wind turbine energy, alternative fuel, biomedical, engineering and numerous other STEM related partners. Students will have the opportunity to choose which field interests them after visiting the various STEM businesses.
Foundation for Leon County Schools	LEAPing into STEM Career Paths for Elementary Students	This project will immerse and excite our highest achievers in STEM career opportunities in the areas of biological and physical sciences. Students in the LEAP program (Learning Encounters for Accelerated Pupils) will utilize technology and traditional measurement tools while working side-by-side scientists in the field conducting research, and collecting and analyzing data. Students will apply high-order math and science concepts in real-world situations to further develop critical and creative thinking skills needed for STEM career development.
Levy County Schools Foundation	Math Matters	Increase student understanding of the need for rigorous Math and Science courses for the high skill/ high demand jobs needed by

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		workforce. Increase student engagement in middle school Algebra I courses.
Public Education Foundation of Marion County, Inc	Aligning Teens and Technology	<p>The objective for this AT&amp;T project will connect Marion Technical Institute (MTI) students with the Florida Institute of Human &amp; Machine Cognition (IHMC) in order to:</p> <ol style="list-style-type: none"> <li>1. Provide high school students at MTI hands-on experience in developing basic software programming skills that can be used in designing an instructional curriculum for elementary/middle school students' use as products of the MTI students' interaction with IHMC researchers and their high school faculty during the project.</li> <li>2. Allow IHMC researchers to work with MTI instructional staff in identifying and recommending curriculum redesign to engage, challenge and inspire MTI students in learning the skills needed to register and test for the nationally recognized MSSC, A+ and/or NET+ certifications.</li> <li>3. Establish a business connection between IHMC, the Public Education Foundation of Marion County and MTI offering staff and students the opportunity for on-going interactions and involvement with lab facilities, researchers, and school/community educational activities.</li> </ol>
Education Foundation of Martin County	First Response Training	To build a hands-on scenario and employability training program for students in the First Responders program. The Health Science and Medicine Academy at each of our three high schools will partner with Martin County Fire Rescue to develop and implement a new hands-on student training program to create an educational pathway leading to a first responder career.
Education Foundation of Martin County	Veterinary Assistance	To develop an experiential and employability training program for students in the Animal Science and Veterinary Assistance program. The Animal Science and Veterinary Assistance Academy will partner with local veterinarians, farriers, and animal service organizations to develop and implement a new hands-on training program to create an educational pathway leading to certification and a career in the animal sciences.

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Foundation for Orange County Public Schools	E-Week 2011 Competition	Reach out to high school students and promote STEM by cultivating interest in the engineering profession.
Foundation for Orange County Public Schools	Vex Robotics	Vex Robotics will integrate science, technology, engineering, and math in a hands-on competitive project enabling students to build critical thinking, problem-solving and collaboration skills.
Education Foundation of Palm Beach County, Inc	Classroom Connections; Understanding the Relationships Between Biology, Chemistry and the Real World	Students will be introduced to Science, Technology, Engineering and Mathematics discoveries to elicit real world connections in the content areas of Chemistry and Bioscience. STEM labs will be designed to Rigor, Relevance, and Relationships.
Pasco Education Foundation	Engineering/ Manufacturing	Explore a manufacturing or automation career of interest and determine the appropriateness and steps required to be a professional in that role (on-site field trip is a requirement of the Project Lead The Way Engineering curriculum). Introduces students to prospective summer internship companies.
Pinellas Education Foundation	Cyber Security	To build a course of study in Cyber Security, the ability to protect national, corporate and civilian networks. Instructional goals would include building networking systems, understanding data transmission through networks, hardware and software based techniques to harden and protect data, and ethical hacking. The Academy of Information Technology and the Science Center of Pinellas would partner to build a community-business-school partnership and create an educational pathway leading to a high-tech, in-demand career.
Putnam County Educational Foundation	An Aviation Engineering Journey in the Putnam County School District, 8 <sup>th</sup> grade exploration	Scientific principles of aviation and flight will be covered through the field experience, visitation, and discussion with the Airport Manager, John Youell, who is a former educator. Some of the topics will match a Project Lead the Way unit in an exploratory manner covering introduction to aeronautics, space, the use of design to make aerospace engineering an important career field, Newton's Laws of Motion, forces, rockets, propulsion, and what makes things fly.
Education Foundation of	Designing a Landscape for	Students will research, measure, design,

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Sarasota County	School Spirit...and Implementing It	budget, present, purchase, and then install/construct our school's entry courtyard. They will work with industry specialists and install trees, plants, benches, and our eagle statue. Students will work cooperatively in committees defining and then solving various design problems leading to the goal of a finished, effective and enjoyable courtyard. They will better understand how to apply basic mathematic skills and scientific methods to solve real life problems. Students will understand and evaluate growing conditions, adaptations, uses, and interconnections among the various living organisms in an ecosystem. Various construction materials and tools common to the agricultural and construction industries will be used.
St. Johns County Education Foundation	Virtuality to Reality	Under the guidance of engineers from the Rulon Company, students at Sebastian Middle School will be designing an acoustically sound hallway using all aspects of STEM Education and applying it to real world experience. Students will have a hands on experience in applying mathematical applications into machines that will cut wood for the development of the hallway. Additionally, students will be learning the aspects of wood sciences.
St. Johns County Education Foundation	Project GREEN	Project GREEN is a competition for students in grades 9-12 in the Career Academies of St. Johns County to promote project based exploration of green concepts and their application to solve problems within our community which incorporate STEM education.
FUTURES Foundation (Volusia)	S.T.E.M. Students Identifying Real Problems and Real Solutions with Kaizen Initiatives	Through principles of engineering the STEM Academy students will be able to identify problems and offer solutions to real manufacturing issues in a medical equipment manufacturing plant.
Walton Education Foundation	Nurturing Nature of N <sub>2</sub> Project	Through hands-on environmental education field studies with professional scientists, students will be able to see a direct link between the interdependence of living things.

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Walton Education Foundation	Clinical Classroom— Institute for Medical Sciences at South Walton High School	Pursue academic achievement, health career education, and understanding the relevance of math, science, and technology in the health science industry by teaming with business partner Sacred Heart Hospital to research & develop a deep knowledge and plan for establishing a clinical classroom.
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