

**Albany State University**

High School GPS Math with TI Technology II

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This project is the 2nd year of the four-year plan that aims at meeting the urgent needs of the Dougherty County School System to train their high school math teachers in infusing technology and GPS in their math curriculum. The project this year will train another batch of 16 high school math teachers in the Dougherty County School System in using the TI technology (TI-84 plus graphing calculator, TI-Sjartview, TI-Navigator System) and interactive board to teach the GPS Mathematics 2. These teachers will be trained to implement GPS mathematics using TI technology in a collaborative learning environment that focuses on student learning. A workshop will be given this summer. Sustained contact and math content/technical support will be provided throughout the academic school year.

Arts & Sciences Unit of Institute of Higher Education: Albany State University Department of Mathematics & Computer Sciences

Unit of Institute of Higher Education That Prepares Teachers and Principals: Albany State University College of Education

Partner Local Education Agency: Dougherty County Schools

## Albany State University

### SOWEGA Summer Seminar on African American Literature: Enhancing Teachers' Content Knowledge to Improve the Teaching of English Language Arts

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The College of Arts & Humanities, in collaboration with the College of Education, received funding for a professional development program in English Language Arts for middle & secondary school teachers in Dougherty County. The second phase of a previous seminar, the SOWEGA Summer Seminar on African American Literature is designed to provide an opportunity for teachers to become more conversant with the rich body of African American literature and the project period is March 25, 2009 through March 30, 2010. The specific goals and objectives of the program include helping teachers (1) Enhance their knowledge of African American literature, (2) Diversify their strategies for teaching African American literature, (3) Incorporate technology into their teaching of literature, (4) Improve their understanding of concepts and strategies for implementation of the Georgia Performance Standards and (5) Continue their professional development via follow-up activities, attendance and presentations at conferences and opportunities for publication. A two-week intensive summer seminar conducted from June 1-12, 2009, with follow-up implementation in classroom teaching in the fall, this project will also offer teachers 8 PLUs for the seminar.

Arts & Sciences Unit of Institute of Higher Education: Albany State University Department of English, Modern Languages, & Mass Communication

Unit of Institute of Higher Education That Prepares Teachers and Principals: Albany State University College of Education

Partner Local Education Agency: Dougherty County Schools

**Armstrong Atlantic State University**

Physical Science for Middle School Teachers

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"Teachers Leading Teachers" is the central theme of this unique physical science team taught course which consists of a two week summer in-class component offered for 4 hours graduate credit and/or 5 PLU, and a fall 2009 component offered for 3 PLU. This course is based on the science content knowledge required by Georgia's Performance Standards. The teaching team is made up of a college chemistry instructor and three very experienced high school chemistry and physics teachers working together to select and design inquiry hands-on science activities and demonstrations suitable for middle school classrooms. Participants will use available resources to design science activities suitable for their own classrooms. The fall component involves a series of learning community meetings that will provide additional opportunities for participants to explore and expand science concepts from the summer 2009 session.

Arts & Sciences Unit of Institute of Higher Education: Armstrong Atlantic State University  
Department of Chemistry  
Unit of an Institution of Higher Education That Prepares Teachers and Principals: Armstrong Atlantic State University College of Education  
Partner Local Education Agency: Savannah-Chatham County Schools and Liberty County Schools

**Armstrong Atlantic State University**

Interdisciplinary Marine Science Field Studies 2009-2010

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A three-hour graduate course in interdisciplinary marine field studies was designed to meet needs and requests for education and training experiences for teachers. Because ecological concepts are applicable to any ecosystem, and because marine science is multi-disciplined, this course will serve needs of teachers within and outside the coastal area. A schedule accommodating commuting teachers from throughout the state was developed from input and suggestions from teachers state-wide. The course is field-work intensive and includes inshore/coastal studies along Georgia barrier islands and at the Grace Research Center of the College of the Bahamas on San Salvador Island, Bahamas. Participants are required to develop curriculum-based lesson plans and instructional units based on information, specimens, data and samples collected during the course. The Savannah/Chatham Board of Education and Calvary Day School will provide diving and safety equipment plus additional services, and participants will provide \$800 each for travel costs.

Arts & Sciences Unit of Institute of Higher Education: Savannah State University Marine Sciences

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Armstrong Atlantic State University Department of Middle & Secondary Education

Partner Local Education Agency: Savannah-Chatham County Schools and Liberty County Schools

## **Columbus State University**

### **Modeling in Middle Grades Mathematics (M2GM)**

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Modeling in Middle Grades Mathematics (M2GM) provides professional development through a two-week summer workshop, a practicum teaching experience, and participation in development of a database of performance tasks. Teachers will learn modeling pedagogy and develop strategies for dealing with diverse students during the summer workshop. The first week of the workshop will focus on development of modeling pedagogy and differentiation for students with special needs. During the second week, the participants will apply the modeling cycle to a variety of algebra, data analysis, and geometry problems appropriate for use in their classrooms. Teachers will have the opportunity to practice new knowledge and pedagogy by teaching for one day in one of two summer camps for middle grades students. Extensive support and follow-up will be provided during the school year including participant development of performance tasks to be included in an online database. PLU or university credit is available.

Arts & Sciences Unit of Institute of Higher Education: Columbus State University Department of Mathematics

Unit of Institute of Higher Education That Prepares Teachers and Principals: Columbus State University Department of Teacher Education

Partner Local Education Agency: Muscogee County Schools, Chattahoochee County Schools, Talbot Count Schools and Harris County Schools

## **Columbus State University**

### Helping Teachers Help Students with Just-In-Time Delivery

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Helping Teachers Help Students with Just-In-Time Delivery helps high school teachers effectively implement the Math 2 curriculum. A summer workshop provides opportunities for deepening teacher content knowledge in algebra, geometry and data analysis. Teachers will delve deeper into tasks from the DOE Frameworks and explore additional activities and tasks in supplementary resources. Participants will learn to use Geometer's Sketchpad and will receive single-user versions of the software to help them become more familiar with this helpful teaching tool. Differentiating instruction to meet the needs of diverse learners will be a major focus of the workshop. Extensive follow-up and support will be provided during the school year. Representatives of participating schools will meet with project staff prior to beginning each Math 2 unit to develop strategies for effective implementation of the unit. Participants may earn 3 PLUs for the summer workshop and additional PLUs for participation in the school year portion.

Arts & Sciences Unit of Institute of Higher Education: Columbus State University Department of Mathematics

Unit of Institute of Higher Education That Prepares Teachers and Principals: Columbus State University Department of Teacher Education

Partner Local Education Agency: Muscogee County Schools, Chattahoochee County Schools, Talbot County Schools, Harris County Schools and Troup County Schools

## **Georgia Institute of Technology**

### **Exploring Nanotechnology - Incorporating GPS-based Lessons into Middle & High School Science**

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The proposed Exploring Nanotechnology project will focus on middle and high school teachers served by the Heart of Georgia Regional Educational Service Agency. The project will provide 8-12 science teachers with an understanding of nanoscale science and technology; develop their understanding of the connections between nanoscale science and technology and traditionally taught sciences; enhance their content knowledge of physics, chemistry, biology, and physical science; and provide nano instructional materials linked to Georgia Performance Standards (GPS) that also encourage the teachers to use inquiry-based methods for teaching. This professional development program proposes a three-step approach for teachers in rural South Georgia to incorporate nano into their classrooms. We propose a one week teacher workshop that will provide in-depth exposure to inquiry based nano instructional materials, an additional week with teacher teams providing a summer camp for students in grades 8-12, and follow-up meetings to support inclusion of the materials in the participants' classroom.

Arts & Sciences Unit of Institute of Higher Education: Georgia Institute of Technology National Nanotechnology Infrastructure Network

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Institute of Technology Center for Education Integrating Science, Mathematics & Computing

Partner Local Education Agency: Bleckley County Schools, Laurens County Schools, Montgomery County Schools, Pulaski County Schools, Telfair County Schools, Truetlen County Schools, Wheeler County Schools, Wilcox County School and Dublin City Schools

**Georgia Institute of Technology -CEISMC**

Materials Science and Engineering Professional Learning Program  
(MSE-PLP)

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The Georgia Institute of Technology Department of Materials Science & Engineering and Center for Education Integrating Science, Mathematics & Computing (CEISMC), partnering with Metropolitan Regional Services Agency and ASM Foundation, will offer a professional development program in Materials Science & Engineering for Georgia high school teachers, concluding June 1, 2010. The field of study focuses on the development of new materials for the next generation of engineering applications. Materials science brings together the physical sciences and mathematics and provides teachers with real-world applications of science and engineering. MSE-PLP will consist of a one-week summer camp and two subsequent Saturday workshops. The content-rich, hands-on format of the camp will provide teachers contexts they can use in their classroom to target Georgia Performance Standards (GPS). The program will also focus on best practices and developing MSE modules for teachers to use in the classroom.

Arts & Sciences Unit of Institute of Higher Education: The Georgia Institute of Technology  
Department of Materials Science & Engineering  
Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia  
Institute of Technology Center for Education Integrating Science, Mathematics & Computing  
Partner Local Education Agency: Atlanta Public Schools and Gwinnett County Schools

## Georgia Southern University

ASTERS: Adventures in Science, Teaching, Exploration & Resourceful Stewardship

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This proposal enhances the ASTERS teacher training program conducted by Georgia Southern Botanical Garden and the Georgia Southern University Departments of Biology and Education. ASTERS provides teachers with information about plant biology and ecology and shares effective inquiry-based hands-on ways to teach these concepts. This proposal will improve teachers' content understanding and aid teacher efforts to meet Georgia Performance Standards by providing grade-specific GPS aligned units and the materials needed to implement the inquiry based hands-on activities; improve teacher content knowledge and teaching strategies by offering three workshops (2 PLUs each); increase teacher skill by providing support, practice and feedback on projects generated in the field; and provide ongoing content and expertise through a blog and website. In addition, the project will expand training and curriculum to the upper grades and expand the program statewide. The project will be completed at the end of the 2010 school year.

Arts & Sciences Unit of Institute of Higher Education: Georgia Southern University Department of Biology

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Southern College of Education

Partner Local Education Agency: Emanuel County Schools, Glynn County Schools, Liberty County Schools, McIntosh County Schools and Telfair County Schools

## **Georgia Southern University**

### **Standards-Based Physical Science for High School Teachers - 2009**

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The goals of this workshop are to enhance current physical science content and to further develop appropriate teaching strategies for high school physical science teachers; therefore, the overall goal is the development of pedagogical content knowledge. Additionally, instruction on teaching strategies appropriate to targeted sub-groups will further enhance the ability of teachers to bring about high levels of learning in students. Sustained contact between participants and instructors will enhance the experience of teachers by providing an opportunity for reflection and support. In addition, a follow-up day in Fall will provide a venue for sharing implementation strategies and new hands-on experiences.

Arts & Sciences Unit of Institute of Higher Education: Georgia Southern University Department of Chemistry & Department of Physics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Southern University Department of Teaching & Learning

Partner Local Education Agency: Screven County Schools, Bulloch County Schools and Emanuel County Schools

## **Georgia Southern University**

### **Georgia Sea Turtle Center to Build Teacher Understanding of Sea Turtles & Rehabilitation**

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This project "Using the Georgia Sea Turtle Center to Build Teacher Understanding of Sea Turtles & Rehabilitation" links the Georgia Sea Turtle Center (GSTC), Georgia Southern University and teachers in area schools. The goal of this project is to involve teachers directly in research, preservation, and rehabilitation of sea turtles through the newly developed GSTC on Jekyll Island. Furthermore, by taking this knowledge back to their classroom and students, this project will impact these students, who will be making decisions in the future that will be critical to the sustained survival of this threatened species and the coastal environment. This grant provides an essential link between scientists at the GSTC, educators at Georgia Southern University and teachers within area schools to promote science understanding and the scientific process. Each participant will receive 3 hours of graduate credit for successfully completing the project.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia College of Veterinary Medicine

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Southern University Department of Middle & Secondary Education

Partner Local Education Agency: Tattnall County Schools, Effingham County Schools and Glynn County Schools

**Georgia Southern University**

**"Living" the Standards: Year 3 of a Three-Year Project SENSE Program**

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"Living" the Standards will implement the third year of a three-year cycle of summer workshops for teachers in grades P-2, 3-5, and 6-8 focusing on life science. Each workshop focuses on improving the teachers' content knowledge for teaching science, pedagogical approaches, and using Project SENSE for maximum benefit. The workshops are supported throughout the year by a strong kit-based program already in place (Project SENSE). Teachers are introduced to Professional Learning Groups targeting content needs common in their school environments, design appropriate tasks to integrate scientific reasoning throughout the content, study Best Practices of instruction, and learn to use CRCT-focused assessment tools. Content areas within the GPS for their grade levels are stressed. Included as part of the pedagogical studies is an introduction and practice in brain-based learning. Various resources to help teachers understand the latest research and how to incorporate brain-based learning in their classrooms are used.

Arts & Sciences Unit of Institute of Higher Education: Georgia Southern University Department of Biology

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Southern University College of Education

Partner Local Education Agency: Vidalia City Schools, Emanuel County Schools, Johnson County Schools, Pierce County Schools, Effingham County Schools, Bulloch County Schools, Bryan County Schools and Jeff Davis County Schools

## Georgia Southern University

Establishing & Utilizing Frameworks for Teaching & Learning Social Studies: Project BESST

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Establishing and Utilizing Frameworks for Teaching & Learning Social Studies will implement a one-week summer workshop for teachers in grades K-5. The workshop focuses on improving the teachers' content knowledge for teaching social studies, pedagogical approaches, and using Project BESST for maximum benefit to provide hands-on, minds-on social studies. The workshop is supported throughout the year by a strong kit-based program delivered to the teachers (Project BESST). Teachers are introduced to frameworks utilizing the four "w"s (Where, When, What and Why) in the form of activities and organizers aligned with Georgia Performance Standards that could begin to be modified and adapted for any grade level. Participants will use their grade level GPS to adapt the strategies modeled or develop alternate strategies for their own classroom needs.

Arts & Sciences Unit of Institute of Higher Education: Georgia Southern University Department of History

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Southern University College of Education

Partner Local Education Agency: Effingham County Schools, Emanuel County Schools, Johnson County Schools, Bulloch County Schools, Jeff Davis County Schools and Vidalia City Schools

## Georgia Southern University

### Improving Teacher Quality through the St. Catherines Sea Turtle Conservation Program

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Fourteen teachers are selected annually to conserve threatened and endangered loggerhead sea turtles nesting on St. Catherine's Island, GA. Students enroll in GEOL: 5740 at Georgia Southern, prepare for residency at two workshops in May and build a resource notebook on sea turtles prior to a seven day total immersion conservation residency on St. Catherine's Island (July 13-20). Students practice conservation techniques, field science methods and critical thinking through daily monitoring of beaches, collection/record keeping of nesting data, relocation and protection of nests with documentation by field notebook, spreadsheet and photography. Teachers contribute to a season of nesting data, build collections of minerals, shells, plants and insects for class and lab activities, study the geology and history of St. Catherine's Island, attend a season de-briefing and participate in a long-term field science program and learning community. A spring follow-up course (GEOL 5741) forges content, experience, and collections into an endangered species teaching unit and other projects directed at specific classroom needs.

Arts & Sciences Unit of Institute of Higher Education: Georgia Southern University Department of Geology & Geography

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Southern University College of Education

Partner Local Education Agency: All Georgia LEAs including Glynn County Schools and Brantley County Schools

**Georgia Southwestern State University**

Environmental Education Research Academy

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The Joseph W. Jones Ecological Research Center, in partnership with four Georgia Youth Science and Technology Centers (GYSTCs), will host a summer academy in science for K-12 teachers during 2009 and 2010. The Academy, "Environmental Education Research Academy" (EERA), will take place at the Jones Ecological Reserve in Southwest Georgia. This unique setting has provided teachers with learning experiences that focus on increasing content knowledge and improving instructional strategies in science through data collection and analysis and inquiry-based learning. The Academy provides "hands-on, minds-on" classroom and field instruction promoting integration of natural resource topics into the classroom. All activities and materials are correlated with Georgia Quality Core Curriculum and Georgia Performance Standards and meet objectives for Criterion -Referenced Competency Tests. Subject matter specialists in program planning, natural resources, and educational strategies facilitate instruction. Classroom materials, 5 PLU credits, and credit to purchase educational resources are offered.

Arts & Sciences Unit of Institute of Higher Education: Georgia Southwestern State University  
Department of Biology  
Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia  
Southwestern State University Department of Education  
Partner Local Education Agency: All Georgia LEAs including McIntosh County Schools and  
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## **Georgia State University**

SCI-Casting Project: Using Pod - and Vod Casting in 4th and 5th Grade Inquiry-based Science Curriculum

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This project is a partnership between City of Decatur Schools, Georgia State University, Kennesaw State University and Burton 4-H Center on Tybee Island. This partnership seeks to improve life science and Earth science content knowledge, pedagogy and technology integration skills of 4th and 5th grade teachers at Glennwood Academy through a combination of professional development and science-based field experiences. In the project, we will combine nature study and learning technologies as a means to improve teaching practices for increased student learning. Specifically, we help participating teachers to employ scientific inquiry and the use of podcast and vodcasting technology to enhance the lessons that they subsequently implement before, during and after a student field trip to Tybeel Island.

Arts & Sciences Unit of Institute of Higher Education: Kennesaw State University Department of Biology & Physics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia State University College of Education

Partner Local Education Agency: Decatur City Schools

## Georgia State University

### Math Matters at Burgess Peterson

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The Math Matters at Burgess-Peterson is a school-wide professional learning project in mathematics beginning in the summer of 2009 and continuing through the end of the school year 2010. The objectives of the project are to (1) enhance participants' content knowledge in elementary mathematics (2) increase quality implementation of elementary mathematics topics, (3) introduce collaborative planning, (4) develop reflective practices, and (5) support teachers in the implementation of the Georgia Performance Standards. During the project, teachers participate in two types of experiences. Content Development Days are devoted to deeply exploring general topics from elementary mathematics content. Plan/Teach/Debrief cycles serve to (a) explore specific mathematics content to be taught in a lesson, (b) plan a lesson around the content, (c) study student learning through real-time observation of teaching, and (4) reflect and revise the lesson based on data collect in "c" for re-teaching.

Arts & Sciences Unit of Institute of Higher Education: Georgia State University Department of Mathematics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia State University Department of Early Childhood Education

Partner Local Education Agency: Atlanta City Schools

## Kennesaw State University

### Using Literature to Promote Mathematical Understanding II

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This proposal seeks funding for a summer workshop, along with extensive school year follow-up, for a cohort of mathematics teachers who are responsible for teaching seventh grade, eighth grade, and/or Math 1 in the 2009-2010 school Year. In the summer workshop, participants will explore literature and associated materials that are linked specifically to the Frameworks of the Georgia Performance Standards in mathematics in seventh grade, eighth grade, and Math 1. The teachers will review and revise the materials, create rubrics for grading projects and assessments, and use the materials in the subsequent school year. The workshop and follow-up will provide Professional Development Units (PLU) credits for the school year 2009-2010.

Arts & Sciences Unit of Institute of Higher Education: Kennesaw State University Department of Mathematics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Kennesaw State University Department of Mathematics Education

Partner Local Education Agency: Paulding County Schools, Cobb County Schools and Atlanta Public Schools

## Kennesaw State University

### Implementing the Georgia Performance Standards: Embracing the Vision (Math II)

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This project seeks funding to support the North Metro Mathematics Collaborative [NC<sup>2</sup>C] in helping Math II teachers from five metro-Atlanta school districts to: (a) become knowledgeable of the requirements and resources of the GPS; (b) become knowledgeable about teaching strategies that support the development of students' conceptual understanding of mathematics and be able to develop and use lessons that implement these strategies; (c) develop an in depth understanding of the mathematics they will be teaching; and (d) create a reflective environment for teachers to engage in collaborative planning. Teachers receive 5 PLUs for their participation. Since 1992 NM<sup>2</sup>C has been funded by Eisenhower/Teacher Quality programs to provide professional development opportunities for mathematics teachers in north Metro-Atlanta. This project will focus NM<sup>2</sup>C efforts to develop mathematics teachers with expertise on teaching for conceptual understanding that enables their students to meet the Georgia Performance Standards.

Arts & Sciences Unit of Institute of Higher Education: Kennesaw State University Department of Mathematics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Kennesaw State University Department of Mathematics Education

Partner Local Education Agency: Cobb County Schools, Fulton County Schools, Marietta City Schools, Paulding County Schools, Cherokee County Schools and Douglas County Schools

## **Mercer University**

### The Power of Algebraic Reasoning

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The primary goal of the 5 PLU project is for participating 5th-9th grade math teachers from Coffee and Atkinson Counties to increase their knowledge and understanding of algebraic reasoning. Participants will learn how to teach algebraic reasoning using a constructivist approach that fosters deeper understanding of, and facility with, the languages of algebra. The project activities will illustrate the power of algebraic language for problem solving, emphasize the role of arithmetic as a foundation for algebra, and incorporate problems that require algebraic reasoning in the context of geometry, data analysis, and probability. Participants can expect to learn by doing. Whole group discussions on common errors, subtle misconceptions and teaching strategies will complement the teachers' group work on challenging problems. The project will consist of a five day summer workshop (June 1-5, 2009), three full day follow-up sessions during the school year and ongoing work with mentor teachers.

Arts & Sciences Unit of Institute of Higher Education: Mercer University Department of Mathematics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Georgia Institute of Technology Center for Education Integrating Science, Mathematics & Computing

Partner Local Education Agency: Coffee County Schools and Atkinson County Schools

## **Oxford College of Emory University**

Oxford Institute for Environmental Education 2009

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The Oxford Institute for Environmental Education is for K-12 teachers who are interested in inquiry-based instruction in their schoolyards. The Institute is designed to introduce the fundamental concepts of inquiry-based instruction and to provide field and laboratory experiences that can be used by teachers and their students to investigate their schoolyards and other local habitats. Emphasizing "hands-on" learning and field experiences, this workshop helps teachers develop investigation plans specific for their schoolyards. In addition, topics such as Internet use, grant writing, and schoolyard assessment are addressed. The site for the Institute is located less than a mile from Oxford College and includes about 40 acres of forest, a three-acre lake, and a lab building and conference center.

Arts & Sciences Unit of Institute of Higher Education: Oxford College of Emory University  
Department of Biology

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of Georgia Department of Mathematics & Science Education

Partner Local Education Agency: Baker County School and Mitchell County School

## **University of Georgia Marine Extension Service**

### **The Georgia Shore Program**

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The Georgia Shore Program will provide an opportunity for twenty K-12 teachers to receive an in depth overview of marine and environmental during an intensive two-week summary residential program at the UGA Marine Extension facility on Skidaway Island in June 2009 and 2010. The schedule includes lab, boat, and field experiences, emphasizing "hands-on" inquiry methods for the classroom. The highlight of the two-week program is when teachers create and conduct individual research projects using the marine environment as a model. Teachers will also be required to develop and share classroom curricula based on inquiry methods learned during their research. Instructional technology will emphasize educational use of the Internet as well as mathematical and computer applications in science/math education. Teachers who successfully complete the program will obtain six graduate education credits (from UGA) or ten PLUs from their school district.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia Department of Marine Sciences

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of Georgia Department of Mathematics & Science Education

Partner Local Education Agency: All Georgia LEAs including Atlanta Public Schools

## University of Georgia

Liking Lichens: Applying Knowledge of Lichens to Georgia's Performance Standards in Science

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Lichens are symbiotic organisms comprised of algae and fungi. They color trees, rocks, boulders, and soil--covering 8% of the Earth's surface--and have many uses, including to monitor environmental quality due to their pollution sensitivity. This subsidized Teacher Workshop is designed to enhance educators' understanding of Lichen biology, ecology, natural history, identification and uses through classroom, laboratory and field studies; to assist in building a lichen bio-monitoring network; and to develop geo-spacial knowledge and mapping skills. It is tailored to the Georgia Performance Standards for Science. Participants will meet for a 4-day residential workshop, followed by two sustained contact days as described below. The residential workshop (housing and meals provided at the Conference Center of the Charlie Elliott Wildlife Area) will be from July 12-15, 2009 and consist of multiple meetings and field trips. The two additional one-day sustained contact sessions will occur on one Saturday in late October, 2009 and one in late January 2010. Participants fulfilling more than 50 hours of instruction will be eligible for 5 Professional Learning Units (PLUs). With the exception of travel to the meeting locations, there will be no cost to participants; costs are covered by this grant. Educators interested in participating should contact Dr. Bob Hill. Space is limited, and will be distributed on a first-come, first-served basis. for further information on the GA Lichens Project of which this is a part, please see [www.georgialichens.org](http://www.georgialichens.org).

Arts & Sciences Unit of Institute of Higher Education: University of Georgia Department of Geography

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of Georgia Department of Lifelong Education, Administration & Policy

Partner Local Education Agency: All Georgia LEAs served by the Oconee River Georgia Youth Service and Technology Center, including Atlanta Public Schools, Decatur City Schools and Muscogee County Schools

## University of Georgia

### Global Naturalists: Tropical Ecology of the Andes

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Global Naturalists: Tropical Ecology of the Andes takes teachers to the Andes Mountains of Ecuador, visiting a high elevation cool cloud forest and the paramo, a tropical treeless environment. Participants will study the organisms and ecology of one of the most species-rich biomes on earth, use environmental probes to collect data from forest terrestrial and aquatic environments, explore experimental design to model full open inquiry, and explore ecology in a human context, to understand how human activity can damage natural environments and how alternative economic activities can protect natural areas. Sustained contact in Georgia will: (1) use environmental probes to compare data from local temperate forests to tropical forests and (2) demonstrate ecological connections between Georgia and Ecuador by studying migrating birds and data on atmospheric carbon levels. This course is designed for teachers (grades 4-12) with a primary interest in biological or environmental science.

Arts & Sciences Unit of Institute of Higher Education: University of Odum School of Ecology  
Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of Georgia Department of Mathematics & Science Education  
Partner Local Education Agency: All Georgia LEAs including Glynn County Schools and Atlanta Public Schools

## University of Georgia

### Science Education and Applied Research in Coastal Habitats (SEARCH)

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SEARCH 2009 will provide participating classroom teachers with professional development through collaboration with scientists conducting ecosystem research. Participants will be assigned to a research project in field and laboratory settings including the Sapelo Island LTER site. In preparation, teachers will attend an intensive week of coastal ecological study at the University of Georgia's Marine Education Center and Aquarium (MECA) facilities on Skidaway Island. Classroom implementation will be aided by the participant teachers' creation of parallel research projects for their classes and colleagues through a public and web-based data sources. Evaluation will track knowledge growth of participants in terms of science content as well as applications to teaching through teaching portfolio creation. Workshop participants will have the option of earning ten Professional Learning Units (PLUs) or six graduate credit hours through the University of Georgia.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia Department  
Marine Sciences

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of  
Georgia Department of Mathematics & Science Education

Partner Local Education Agency: All Georgia LEAs including Atlanta Public Schools and  
Liberty County Schools

## University of Georgia

University of Georgia's Satilla River Watershed Program: A Model for Understanding Georgia's  
Natural Resources & Nurturing Ecological Relationships in Georgia Schools

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This workshop will engage teachers who live and work in the Satilla River watershed to explore its ecological links to, similarities to, and differences with the Okefenokee Swamp, mighty Altamaha system, and estuaries of Georgia's Golden Isles. Teachers will develop an understanding of this 260 mile black water river system, its aquatic and terrestrial systems. Teacher will interact with scientists and government officials to analyze issues impacting water quality and their role in preserving one of Georgia's unimpeded and more natural rivers. Teachers will be certified to teach Project Web and Project Wild. The competencies gained will be used to construct learning experiences for the classroom. Workshop follow-up in the fall will include communications via a Wiki website, and on-site data collection for analysis with students, culminating with a meeting to share experiences. This workshop offers resources to develop environmental understandings and continuing support as teachers integrate these projects. The project will be completed in spring of the 2009-2010 school year.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia Warnell School of  
Forestry & Natural Resources  
Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of  
Georgia Department of Mathematics & Science Education  
Partner Local Education Agency: Ware County Schools and Brantley County Schools

## University of Georgia

### Teaching Science Teacher about Masters of Disaster

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The project directors and collaborating partners will conduct a five-day (5 PLU) workshop in June 2009 for 30 science teachers selected statewide to train them in the American Red Cross Masters of Disaster (MoD) curriculum, a professionally designed set of learning materials that meets Georgia Performance Standards for science. This effort represents the second year of a two-year effort to teach science teachers about the MoD curriculum and to help them diffuse the curriculum to their colleagues. Project outcome data gathered thus far suggest the workshops conducted in summer 2008 were highly effective in achieving the project goals. Therefore, similar to last year, with slight modifications in procedure based upon what we learned, the project intends to: 1. Supply science teachers with MoD curriculum kits, 2. Educate teachers about the importance and value of providing education in weather safety and natural hazards, 3. Teach them how to use the materials and to deliver the curriculum and 4. Build teachers' content, skills and efficacy in disseminating the MoD curriculum to their colleagues so that more students can benefit from it.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia Department of Geography

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of Georgia Department of Mathematics & Science Education

Partner Local Education Agency: All Georgia LEAs including Glynn County Schools

**University of Georgia**

Standards Based Professional Learning

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This proposal is for intensive, site-based, daily professional learning at Comer Elementary School during the 2009-2010 school year with the focus on creating standards-based instructional classrooms at each grade level. This professional learning will focus on developing a deep understanding of mathematics concepts at the Kindergarten through 5th grade level. The main goals of the project include: helping teachers move away from whole group teacher centered instruction to implementing standard based instruction, giving teachers time to observe more effective teaching strategies modeled by professionals, and supporting the teachers by providing constructive feedback as they apply these methods in their classroom. Additionally, we will be establishing a team of math leaders at Comer Elementary School who can support all of the elementary teachers in Madison County School District (MCSD) with their implementation of the GPS in order to create ongoing collegial learning among all MCSD schools and teachers.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia Department of Mathematics

Unit of Institute of Higher Education That Prepares Teachers and Principals: University of Georgia Department of Mathematics & Science Education

Partner Local Education Agency: Madison County Schools and Social Circle City Schools

## University of Georgia – Tifton Campus

### Georgia Intern-Fellowships for Teachers Program (GIFT)

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Our society is changing at a pace unparalleled in human history. As educators, teachers are often bound to the classroom, unable to experience first-hand the effects and applications of new technology and innovative ideas. GIFT offers teachers the opportunity for exciting summer work experiences in state-of-the-art laboratories rich in applications of mathematics, science and technology. Teachers experience new technologies first-hand, work on the leading edge of research, applied science, mathematics and computing, and are immersed in "real world" inquiry, problem-solving and reasoning. Through GIFT, Georgia teachers develop leadership skills, and take new science/mathematics perspectives, knowledge and strategies back to their classrooms and Georgia students. This project awards 5-10 PLU's and 3 hours graduate credit can also be awarded dependent on department discretion.

Arts & Sciences Unit of Institute of Higher Education: University of Georgia College of Agriculture & Environmental Sciences

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Valdosta State University Department of Curriculum & Instruction

Partner Local Education Agency: Valdosta City Schools, Tift County Schools and Lowndes County Schools

## University of West Georgia

### Training for Technology Integration in Middle and Secondary Science & Mathematics

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Middle and secondary teachers in this 5 PLU workshop will be involved in a one week course with follow up during the school year. Guided by university faculty and a technology consultant, participants will be engaged in hands on investigations involving technology to investigate problem scenarios requiring application of concepts from both math and science GPS. Participants will: 1) gain expertise and confidence in the use of technology, specifically computers, graphing calculators, and sensors, and 2) improve their ability to design and implement inquiry based instruction that guides students in the use of technology as they do meaningful problem solving. Various forms of technology as well as software, websites, and print resources will be available during the training and participants will be informed about equipment loan programs.

Arts & Sciences Unit of Institute of Higher Education: University of West Georgia Department of Mathematics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of West Georgia Department of Curriculum & Instruction

Partner Local Education Agency: Douglas County Schools and Paulding County Schools

## University of West Georgia

### High School Chemistry Laboratory: A Contextual & Inquiry Based Teaching Approach

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This professional development workshop is targeted towards high school teachers who teach chemistry or physical science. By participating in this workshop, the teachers will: (1) Experience relevant aspects of learning theory that apply to teaching and learning of science, (2) Practice a series of inquiry investigations and adapt them to align with the GPS, (3) Develop strategies to make the content relevant by putting laboratory activities in a context, (4) Learn assessment techniques to measure student learning and (5) Update content and pedagogic knowledge by using chemical literature and peer networking.

Arts & Sciences Unit of Institute of Higher Education: University of West Georgia Department of Chemistry

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of West Georgia Department of Curriculum & Instruction

Partner Local Education Agency: Douglas County Schools and Paulding County Schools

## University of West Georgia

Helping Teachers to Incorporate Inquiry and Nature of Science in the Elementary Classroom

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In this state-wide initiative project, faculty from the College of Arts & Sciences and College of Education at the University of West Georgia will offer a professional learning (PL) experience for twenty four teachers representing schools within the metropolitan RESA, Northwest Georgia RESA and West Georgia RESA regions with the following goals: (1) Understand basic characteristics of science including habits of mind and nature of science in the elementary curriculum, (2) Conduct a series of investigations to master scientific principles and experience the scientific process, (3) Develop necessary skills to successfully implement inquiry in elementary grade science teaching, (4) Utilize experience and expertise of higher education faculty and an evaluation specialist via sustained contact to help implement inquiry-based science activities in their classrooms and (5) Network with peers & professionals by attending/presenting at the 2010 Georgia Science Teachers Association conference and the grant finale.

Arts & Sciences Unit of Institute of Higher Education: University of West Georgia Department of Chemistry

Unit of an Institution of Higher Education That Prepares Teachers and Principals: University of West Georgia Department of Curriculum & Instruction

Partner Local Education Agency: Carroll County Schools, Coweta County Schools, Douglas County Schools and Carrollton City Schools

## **Valdosta State University**

### Creating Classroom Gardens for Critters, Kids and Curriculum

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This project is intended to help teachers become experts in content that will allow them to use schoolyard habitats and gardens to integrate student-centered inquiry about the natural world into their curriculum. Teachers (20) from the participating schools will design and create schoolyard garden/habitats to support native wildlife, and will also develop content knowledge about the natural history, life cycles, and management of suitable organisms through a summer workshop and extensive follow-up. The program teachers will become school leaders who can engage other teachers in understanding and utilizing the facilities, and also directors who can provide vision and planning for maintaining and developing the areas.

Arts & Sciences Unit of Institute of Higher Education: Valdosta State University College of Arts & Sciences

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Valdosta State University College of Education

Partner Local Education Agency: Valdosta City Schools

## **Valdosta State University**

### Strengthening the Teaching of Evolution in South Georgia Schools

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Evolution is unquestionably the most challenging aspect of the life science content in the Georgia Performance Standards. Even though this theory provides the underlying foundation for biology, the social and religious controversy surrounding evolution has impeded adequate coverage. Some teachers have personal reservations about evolution and others fear community backlash because of the prevase misrepresentation of the subject. Even with appropriate emphasis on evolution, student reticence can critically impair their willingness to learn about the subject. Without a basic understanding of evolution, Georgia students will lack cohesive view of life science and be deficient in one of the five specific content standards for both seventh grade life science and high school biology. This initiative will provide science teachers with opportunities to enhance their own understanding of biological evolution and become acquainted with a variety of instructional strategies developed to minimize the impact of the evolution/creationism controversy.

Arts & Sciences Unit of Institute of Higher Education: Valdosta State University Department of Biology  
Unit of an Institution of Higher Education That Prepares Teachers and Principals: Valdosta State University Department of Curriculum & Instruction  
Partner Local Education Agency: Lowndes County Schools, Tift County Schools and Valdosta City Schools

## Waycross College

### Physical Science Content and Resources for Classroom Instruction

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Physical science teachers are invited to attend a workshop on effective teaching strategies and instructional resources based on the most recent physics education and science education research. Some of the resources (ActivPhysics, concept exercises, quicktime movies) are freely available on-line. We will also learn how to use the Camtasia Studio program to create instructional videos for student use on-line or in the classroom. The same strategies for instruction will be employed which participants are encouraged to use in their own classrooms. The workshop will be held on Waycross College campus, and participants will be awarded 5 PLUs upon completion of the full course.

Arts & Sciences Unit of Institute of Higher Education: Waycross College Department of Chemistry & Physics

Unit of an Institution of Higher Education That Prepares Teachers and Principals: Waycross College Department of Education

Partner Local Education Agency: Brantley County Schools and Ware County Schools