

Science Education Center

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## The Nucleus 2009-2010

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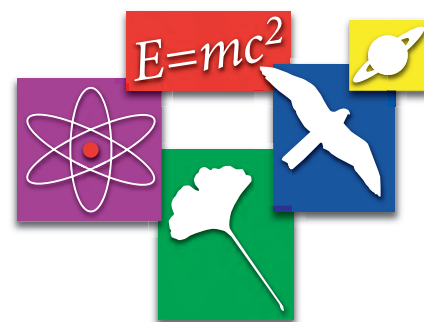
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# The Nucleus



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## STEM Symposium

by SEC Staff



*Dan Bauer and Linda Golson Bradley, faculty in the Department of Early Childhood and Middle Grades Education, co-presented on the impact of their STEM learning community project that involves Midway Elementary School (Baldwin County) and Georgia College Early College teachers and students. As part of the project, the community overnighted at Rock Eagle 4-H Center in Putnam County where they continued their study of ecology. Third graders from Midway Elementary School spent two nights at Rock Eagle. Here, they are using a watershed model to understand and explain the concepts of runoff, nonpoint, and point source pollution and their effects on the environment.*

An inaugural Science, Technology, Engineering, and Mathematics (STEM) Symposium was held on April 23, 2009 and brought together K-16 practitioners in STEM fields and other disciplines to share information, best practices, and to present findings from work in STEM. Each presentation was the result of a mini-grant that investigators were awarded through a competitive Small Grants Program.

The STEM Small Grants Program at Georgia College is a mini-grant program that awards innovative projects that improve instruction and student learning in STEM disciplines and in programs that

lead to initial teacher certification in these areas. Grants for up to \$7,000 are available to fund projects in two focus areas: teaching and learning in introductory STEM courses at the university level, and STEM-focused K-16 Learning Communities that promote higher education and public school partnerships (<http://www2.gcsu.edu/STEM/>). During FY09, a total of 13 projects were funded, with several from each focus area. Besides attracting and retaining STEM majors and improving K12 teaching and learning in STEM, the program aims to seed projects that will be competitive to receive funding from other grant sources.

*continued on next page*

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# Chemistry Rocks!

by SEC Staff

The 2008 Chemistry Rocks! Summer Institute was an eight-day commuter program offered at no cost to qualified in-service teachers from counties within 50 miles of Georgia College. Twelve middle and high school teachers participated in laboratory experiences around topics such as mass conservation, energy, nanotechnology, and astronomy during early June. The institute was designed to provide teachers with opportunities to grow professionally in chemistry content knowledge and to use sense-making activities at grades 6-12. Teachers also completed certifica-



*Ashley Lampp, Robert Toombs Christian Academy high school science teacher and Georgia College alum, was fascinated by the pattern created by foam squares in water during Nanotechnology Day at the 2008 summer institute. Ms. Joyce Palmer of the National Nanotechnology Infrastructure Network, with headquarters at Georgia Tech, spent the day working with teachers to incorporate nanotechnology into the classroom.*

*Katrina Fort (left) and Kay Lowe (right), of Southwest High School in Bibb County, carefully measured the volume of silver nitrate required for use in a precipitation reaction to solve a murder mystery. Teachers spent the afternoon at the Chemistry Rocks! One-Day Workshop applying principles of mass conservation to identify a murderer who used a specific concentration of a lethal colorless liquid in a laboratory adaptation of the Clue Game™.*



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tion in Project WET, participated in a one-day follow-up workshop in February 2009, and received science materials and resources. As part of the institute, teachers were able to apply for \$500 mini-grants for classroom materials and supplies. A 2009 Chemistry Rocks! One Day Workshop on May 16 offered other local science teachers opportunities to study chemistry through food and forensic science. Similar to the summer course, the content was aligned with

the Georgia Performance Standards. Over 150 teachers registered for the 25 spaces available for the one-day event. Teachers applied from as far north as Union County to as far south as Camden County. Chemistry Rocks! is funded by the Camille & Henry Dreyfus Foundation. Additional support was provided by the Office of Academic Outreach, the Science Education Center, and the Department of Chemistry & Physics.

## STEM *continued from cover*

In 2007, Georgia College received funding for a STEM Initiative to increase and retain the number of students and K12 teachers trained in STEM fields. This project is part of the University System of Georgia's Presidential STEM Initiative, MATH + SCIENCE = SUCCESS, a system-wide project aimed at three sets of interconnected strategies: promoting K-12 student preparation for,

and interest in, majoring in STEM in college, increasing the success of STEM majors in college, and producing more and better science and mathematics teachers for the schools, which in turn will lead to increased preparation of K-12 students in science and mathematics (<http://www.usg.edu/p16/initiatives/stem.phtml>). For more information, contact [jason.huffman@gcsu.edu](mailto:jason.huffman@gcsu.edu).

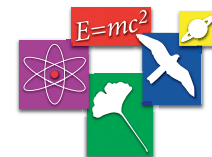
# High School Students Trade Sunglasses for Goggles

by Kelsie Funk

The High School Research Program at Georgia College gives talented high school students scientific research experience during the summer. Participants also receive pay for their work. The programs seek out students interested in careers in science. Since 2002, Dr. Rosalie Richards, professor of chemistry at Georgia College, has been the primary mentor of 15 students from rural areas in central Georgia and many have fallen in love with science. To date, students have conducted research in the chemical sciences on the design and synthesis of new materials for application in wound healing, cancer therapies, and the detection of small molecules and ions. Participants can choose from two programs: Young Scientists Academy and Project SEED.

The Young Scientists Academy selected its first scholars in 2007. Of the five students that have participated to date, two are currently chemistry majors and another has plans to pursue chemistry as a career this fall. Students with at least one year of chemistry and plans to pursue a college degree in science can apply. Participants receive a weekly stipend of \$300 from funds raised by the Science Education Center.

Project SEED, on the other hand, is a national program of the American Chemical Society and seeks students who are financially-disadvantaged. In 2009, new students will receive a \$2800 stipend and returning students will receive \$3,300 for the program. The Georgia College SEED program has experienced much success in the five summers since its inception. Of the 10 SEED students, three are currently undergraduates majoring in chemistry, one is teaching physics and physical science at Twiggs County High School, and another is pursuing a doctoral degree in chemistry. Javoris Hollingsworth is currently enrolled at Louisiana State University as a graduate student. Hollingsworth was a 2003 Project SEED participant and recognizes the program's contribution to his career choice. "Project SEED was an enlightening experience which completely altered the course of my life for the good," Hollingsworth said. "Prior to participating in the program, I had very limited knowledge about the field of science and research." After Hollingsworth graduated from Twiggs County High School in 2003, he attended Georgia Southern University where he earned a degree in Chemistry in 2007. From 2002-



*DeAndre Beck of Twiggs County High School and Quintaya Womble, a recent graduate of Washington County High School, made sol gels in the research lab. Beck and Womble participated in the 2008 Young Scientists Academy and Project SEED programs, respectively. Womble was also a SEED scholar in 2007 and is majoring in chemistry at Georgia Southern University. Beck was nominated as valedictorian and graduates in May 2009. He will return for another summer internship and plans to major in chemistry at Georgia College.*

2008, the American Chemical Society has provided \$15,350 of funds for summer research awards and Georgia College has provided matching funds of \$9,950 from the Science Education Endowment. For more information, go to <http://chemphys.gcsu.edu/~science>.



*The 2008 High School Research Program attracted students from different counties. Pictured from left to right: Quintaya Womble (Washington), Keiwana Williams (Baldwin), Alvin Huff ((Baldwin), Jah-Wann Galimore (Baldwin), Nick Gober (Washington), DeAndre Beck (Twiggs), and Tseng Xiong (Putnam).*

# Regional Science and Engineering Fair

by SEC Staff

Students from grades 4-11 filled the west court in Centennial Center on February 6, 2009 to compete in the 32nd annual Georgia College & State University Regional Science and Engineering Fair. Many of the 187 students competing at the regional fair also won local or school-wide science fairs. Georgia College faculty and students acted as judges and were eager to lend their time to the rising stars in science and engineering. Ken Procter, dean of the College of Arts and Sciences, was also excited about the university hosting the event. "This is a very exciting opportunity for the students involved. Hands-on science is what gets students interested in the subject. Early success in a science and engineering fair could propel a student into further study and an eventual career as a scientist or a science teacher who would be able to excite the imagination of the next gener-



Thomas Wilkason Jr., 2009 Best of Show award winner at the regional fair, posed with Conan O'Brien of *The Tonight Show* at the international fair in Reno. Wilkinson was also the 2008 Best of Show award winner and presented his project at the international fair in Atlanta. Travel and accommodations for the week-long event was generously supported by middle Georgia chemical company GNS Technologies, a subsidiary of DOW.



Students exhibited 135 science and engineering projects at the 2009 fair at the Centennial Center.

ation," he said. More students than ever competed at the 2009 regional fair. The number of entries increased by 36 percent from last year, with the high school projects increasing from 38 to 51. Each project was given a first, second, or third place ranking and special awards were

expenses paid trip to the Intel International Science and Engineering Fair (ISEF) in Reno, Nv this past May. At ISEF, Wilkason won the 3rd Place Grand Award in Electrical Engineering and an Honorable Mention from the Association of Geophysicists. Wilkason was also interviewed by *The Tonight Show* with Conan O'Brien. If the interview makes the cut, it



Wilkason Jr., answered questions about his project at the 2009 ISEF as the cameraman of *The Tonight Show* with Conan O'Brien prepared to tape the interview.

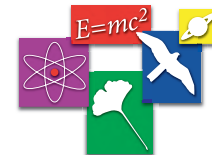
handed out to the most outstanding projects. Many middle grades and high school students received invitations to attend the Georgia Science and Engineering Fair in Athens.

The winner of the Best of Show award, Thomas F. Wilkason Jr. of Mount de Sales Academy, received an all-

will air on June 1 at O'Brien's debut as *The Tonight Show* host.

The regional fair is directed by the Science Education Center. For more information about the fair and awards, visit the fair website at <http://chemphys.gcsu.edu/~science>.

## Special Awards



### 2009 REGIONAL SCIENCE & ENGINEERING FAIR

#### U.S. Army Awards

Alex Byrne – Georgia Military College Prep (Baldwin County)  
Anna Byrne – Georgia Military College Prep (Baldwin County)  
Kenneth C. McGill, Jr. – Baldwin County High School  
Frederick Gleason – Baldwin County High School  
Thomas Wilkason, Jr. – Mount DeSales Academy (Bibb County)

#### U.S. Navy/Marine Corp Awards

Kyrie Hughdahl – Miller Middle School (Bibb County)  
Kenneth C. McGill, Jr. – Baldwin County High School  
Conor Wainwright – Tattnell Square Academy (Bibb County)  
Thomas Wilkason, Jr. – Mount DeSales Academy (Bibb County)

#### U.S. Air Force Awards

Alex Byrne – Georgia Military College Prep (Baldwin County)  
Anna Byrne – Georgia Military College Prep (Baldwin County)  
Cody Cabe – Washington County High School  
Dillon Frost – Washington County High School  
Nick Gober – Washington County High School  
Lance Layton – Washington County High School  
Kenneth McGill, Jr. – Baldwin County High School  
Thomas Wilkason, Jr. – Mount DeSales Academy (Bibb County)

#### Best of Show Awards

**Junior/Senior Division:** Thomas Wilkason, Jr. – 11<sup>th</sup> grade: Mount DeSales Academy (Bibb County)  
**Elementary Division:** Addison Lipper – 5<sup>th</sup> grade: Alexander II Magnet School (Bibb County)

#### Best of Class Awards: Elementary Division

Addison Lipper – 5<sup>th</sup> grade: Alexander II Magnet School (Bibb County)  
Colton Perkins – 4<sup>th</sup> grade: Hubbard Elementary School (Monroe County)

### 2009 GEORGIA SCIENCE & ENGINEERING FAIR

#### Thomas Wilkason, Jr. – Mount DeSales Academy

*Georgia Tech School of Electrical & Computer Engineering Award*  
*National Society of Professional Engineers Award*  
*Georgia Junior Academy of Science – Georgia ISEF Recognition Award*  
*Georgia Science & Engineering Fair Grand Award Top Ten State Recognition*

**Nick Gober and Lance Layton – Washington County High School**  
*SPIE – International Society for Optical Engineering Award – 2<sup>nd</sup> Place*

### 2009 INTERNATIONAL SCIENCE & ENGINEERING FAIR

#### Thomas Wilkason, Jr. – Mount DeSales Academy

*Electrical Engineering – 3<sup>rd</sup> Place Grand Award*  
*Association of Geophysicists – Honorable Mention*

# Middle Georgia High School Students to Attend Future Teachers' Academy

by SEC Staff

An inaugural academy for future teachers will be hosted at Georgia College this summer. The PRELIMS Academy, Preparing Robust Educators through Learning Integrative Math & Science, is a two-week residential experience for high school students in middle Georgia to learn integrative science and math while exploring teaching as a career option. According to Dr. Karynne

Kleine, director of the academy and associate professor in the Department of Early Childhood and Middle Grades Education at Georgia College, the program has already received 50 applicants from students who were nominated by their high school principal or counselor. The program will select 40 participants. Four master teachers and four professors, who are content specialists, will

facilitate the experience. Each week, from June 8 - 19, participants will have a central theme for learning math and science which includes field trips as well as evening social activities. Participants will also have access to follow-up activities and on-line mentoring throughout the school year.

For more information on PRELIMS, contact [karynne.kleine@gcsu.edu](mailto:karynne.kleine@gcsu.edu).

## Hancock County Middle School Hosts Math and Science Night

by Dr. Victoria Deneroff

Hancock County Central Middle School hosted its first family math and science night on April 30. Math and science teachers each provided interesting and challenging activities for students and more than 20 parents. Approximately 150 middle school students, along with younger siblings and even some high school students, moved

### Students created tessellations and turned them into t-shirts...

from table to table to experience math and science in new ways. Mrs. Davina Woods conducted a workshop on math and music, complete with drums and tambourines. Students created tessellations and turned them into T-shirts at Ms. Eva Windom's table. Ms. Jimmie Gilbert and Ms. Bianca Sarabia had three tables crowded with students playing math games, and Ms. Cynthia



Students were engrossed in activities on electricity and magnetism presented by Mr. Zackery Harris, 8th grade science teacher at Hancock Middle.

Ms. Cynthia Cliett's math Jeopardy was a winning event. Ms. Cliett teaches mathematics at 6th grade.

Cliett's math Jeopardy table drew crowds all evening. Science teachers provided curiosities and challenges: Mr. Zackery Harris gave students the opportunity to inquire about electricity and magnetism; students at Mr. Ramirez Lewis's table constructed models demonstrating principles of plate tectonics, and Mrs. Patty Armstrong gave

students a new perspective on the world through a microscope. Students, parents, and faculty enjoyed themselves while they learned about math and science. Mr. Willie Gibson, principal, and Ms. Tanger Ward, assistant principal, have already announced plans for a bigger and better science night next year, although this one will be tough to beat!

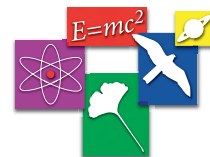
# Science Magic @ Science Camp

by SEC Staff

During the steamy months of June and July, you will find elementary or middle grades students at Georgia College digging in the dirt for animals, testing streams, hiking, cooking, doing chemistry experiments, watching a planetarium show, or swimming. These students are at Science Camp having “fun, fun, fun”, according to a 2008 camper. Science Camp, now in its 8th year is an annual event that integrates biology, environmental science, chemistry, physics, astronomy, and earth science. *Science Magic II* is the theme of the 2009 camp. Two one-week camps will be held at the Lake Laurel Biological Field Station for students who are 11-13 years old (June 22-26) and 7-10 years old (July 13-17). Camp counselors, teachers, university students and faculty, area scientists, and local science educators get students asking the why questions so that they

can get involved and immersed in science experiences.

Science Camp is co-sponsored by the Office of Academic Outreach and the Science Education Center at Georgia College. Sign up early for science camp at <http://chemphys.gcsu.edu/~science>.



*The science camp logo was the winning design submitted by James Pruett as part of a logo competition among campers in 2004.*

*Michaela Joseph examined materials collected from the stream near Lake Laurel during Science Magic Camp in 2008.*

## SMART Partnership

by Kelsie Funk



The Science & Mathematics Alliance for Regional Teachers (SMART) Partnership will host its fourth two-week SMART Institute in July, 2009. The institute, hosted annually at Georgia College, will target 100 teachers to increase their skills in mathematics and/or science. The SMART Partnership is comprised of seven school districts (Baldwin, Hancock, Jasper, Johnson, Putnam, Washington, and Wilkinson), the Oconee Regional Educational Service Agency (RESA), the College of Education, and the College of Arts and

Sciences at Georgia College. The project has been in place since 2005 and a new grant will support the partnership for the next two years. Funds for SMART are provided by the Georgia Department of Education through the state's Mathematics and Science Partnership project.

A unique component of the project is the collaboration between university faculty and teacher leaders to deliver exciting grades 6-8 mathematics and science subject matter and teaching strategies. “This year, we are integrating math and science for grades 6-8 teachers,” said Robbie Ray, school improvement specialist at the Oconee RESA and project team leader. “I am very excited

*Grades 3-5 mathematics teachers participated in 200 hours of professional development through the state's P-5 Mathematics Endorsement. The grades 3-5 institute, which began in 2007 and ended in March 2009, was facilitated by Dr. Angel Abney, Assistant Professor in the Department of Mathematics at Georgia College.*

*Continued on page 8*



# Educators Explore New Ways to Teach Physics

*Adapted from the Union Recorder (June 2008)*

Candice Brooks-Haynes reversed roles with her students and became a student herself as she explored with fellow teachers the very concepts they teach in the classrooms. The four-year veteran science teacher, who will begin her first year at Baldwin High School this fall, conducted experiments to learn how better to teach physics concepts students often find difficult. “We’re just learning new, innovative techniques that are more hands-on to teach our students with,” she said. Sitting beside her cohort Walt Watson, Brooks-Haynes and two other science teachers created a pin-hole camera with

**“More and more, Americans need to be more physics-literate...”**

a coffee can and a light bulb. The camera operates similar to the way the human eye operates, inverting an image. The human brain compensates quickly for the inversion so that images appear right-side-up. The concept, however, surprises many people, especially the students in the teachers’ classes. “You would be surprised by how many high school seniors don’t realize the connection. They go through all those years in



*Candice Brooks-Haynes, a new science teacher at Baldwin High School, sits in the student's seat with fellow teacher Walt Watson, as the pair conduct science experiments and learn how to better teach physics. (Scott Teague /The Union-Recorder) Donned in T-shirts for picture day, 2008 Physics Workshop participants used a Ripple Tank to investigate the basic properties of waves.*

school, and don’t know it,” Ann Robinson, physics teaching resource agent, told the teachers.

Robinson is part a national organization to teach teachers innovating instruction methods. Jane and James Nelson, retired physics teachers with combined 75-years experience in the classroom, head the national Physics Teaching Resource Agent program. Jane said she and her husband started the program 20 years ago because they recognized a need for greater understanding of physics concepts. “More and more, Americans need to be more physics-literate — not physicists, but physics-literate,” she said. The Nelsons stress hands-on, group activities that engage students as a major method of teaching physics. “We’re in competition with MTV. The

good thing is that students love to talk and to work with each other. We use that to our advantage,” Jane said. “We put kids in groups where they work together and turn in lab results as one, which they work harder on because they don’t want to let down their classmates.”

Between 2004 and 2008, Georgia College was designated as the Georgia Rural Regional Center for training teachers in physics by the Physics Teaching Resource Agents project of the American Association of Physics Teachers. Each year during June, the center provided a residential one-week Physics Workshop for Science Teachers to rural teachers statewide. The Physics Teaching Resource Agents project was funded primarily by the National Science Foundation.

## SMART Partnership *continued from page 7*

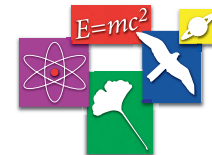
about this one! This year, we will have a class for high school Math I and II teachers. With the new curriculum being implemented in high school, teachers will work with some of the tasks from the frameworks. One of the other topics to be discussed is differentiating tasks for students.” Dr. Rosalie Richards, director of the Science Education Center and university liaison for the project, anticipates a rich experience. “The project

will take a cohort of teachers through an intense professional development program over the course of two years. The institute will begin with the 2009 summer program followed by workshops throughout each academic year. Teachers will then return for another intense summer institute in 2010, and so on,” said Richards. Teachers point to the quality of instruction and the content as the most beneficial components of the

annual institutes. “Over the last three years, I have watched some of our teachers become more comfortable with the Georgia Performance Standards. Many of them have continued to come back year after year,” said Ray.

The Oconee RESA manages the SMART Partnership and Linda Cowan, RESA executive director, is the project’s director. For more information on SMART, visit <http://chemphys.gcsu.edu/~science>.

# Science Education Resources



## Natural History Museum

The Natural History Museum opened in 2004 after more than 20 years of collecting fossils of plants and animals as well as modern vertebrate and invertebrate animals from local, national, and international sites. Dr. Bill Wall, chair of the Department of Biological & Environmental Sciences at Georgia College, is chief curator of the museum. The museum boasts one of the largest fossil vertebrate collections in the Southeast including a number of Ice Age fossils, marine fossils, and other fossils from North and South America. Although the museum is comparatively young, it possesses a state-of-the-art compactor system for specimen reposi-

tory, has amassed a natural history collection that is fast approaching 116,000 catalogued specimens, and opened its doors to over 10,000 visitors. The museum is also the only designated National Parks Service Badlands repository east of the Mississippi. Plus, it is free and open to the public. So, come visit!

### Museum Hours of Operation

Open 8:00 am - 5:00 pm Monday - Friday  
For appointments, call 478-445-0809 or [ashley.cooper@gcsu.edu](mailto:ashley.cooper@gcsu.edu).

*The Natural History Museum at Georgia College is located on the ground level of Herty Hall on the corner of West Montgomery and North Wilkinson streets*



## What's that stuff in the water?

by Dr. Kalina Manoylov and Ruth Eilers, M.Ed.

Dr. Kalina Manoylov, aquatic ecologist and algal taxonomist, and Ruth Eilers, Director of Academic Outreach at Georgia College, are on a mission to raise awareness about algae. According to Eilers and Manoylov, loss of diversity among plants and animals is a global concern and ranks among the most pervasive environmental changes of our time. Their STEM-funded project, Algae ERA<sub>3</sub>, focuses on Environmental Responsibility through Awareness, Attitude, and Action. Algae ERA<sub>3</sub> aims to introduce K-12 students to microbial biodiversity since algae are present in every aquatic habitat. Many ecosystem services, such as drinking water, irrigation waters, recreation, flood control, and waste transport are provided by aquatic habitats. In addition, habitats like lakes, rivers, streams, wetlands, and ponds have historically supported a unique diversity of birds, fishes, reptiles, and amphibians. All of these animals are dependent on algae, a pri-

mary producer in these systems. Eilers and Manoylov plan to provide a better understanding of the roles that algae play in different ecosystems. As part of the project, the algae team will use the Georgia Performance Standards, guidelines for what K12 children need to know and do at each grade level, to show students the link between the number of species present in aquatic habitats, habitat characteristics, and human influence on aquatic environments. For more information about Algae ERA<sub>3</sub>, contact [academic.outreach@gcsu.edu](mailto:academic.outreach@gcsu.edu).



*The Algae Station, a booth at the official opening of Oconee River Greenway last spring, was a crowd favorite. Dr. Kalina Manoylov, Ruth Eilers, and the Community Action Team for Service (CATS), helped pre-K students, teenagers, and adults discover the diversity of microbes as they viewed algae samples through microscopes.*

# Cool Sites for Students and Teachers

## National Nanotechnology Infrastructural Network (NNIN)



The NNIN sponsors fellowships for middle and high school science teachers as well as pre-service teachers at Georgia Tech and places K-12 teachers at the Microelectronics Research Center during the summer. Participants will work with faculty, graduate students, and staff to conduct research using state-of-the-art facilities, including the cleanroom at the Microelectronics Research Center. The stipend is \$5,500 with the possibility of earning up to 10 PLUs and \$150 for classroom supplies. To learn more about the NNIN, go to <http://www.nnin.org>.

## Region 2 Newsletter

A Region 2 Science Implementation Newsletter is published monthly by the

Georgia Department of Education. Each newsletter provides many invaluable resources and information for the 47 Region 2 school systems. Newsletters date from 2005 to present. [http://www.gadoe.org/ci\\_services.aspx?PageReq=CIServReg2](http://www.gadoe.org/ci_services.aspx?PageReq=CIServReg2)

## SCIENCENET

The Center for Science Education (CSE) at Emory University promotes access, interest, and participation in science careers. Check out their web site for pre-college programs and teacher professional development. <http://www.cse.emory.edu/sciencenet/index.cfm>

## math + science = success

This site provides science and mathematics information for parents, students, and schools. The site is a product of the Georgia Partnership for Reform in



Science and Mathematics (PRISM), an initiative funded by the National Science Foundation. <http://www.mathscience-success.org/>



Check out this library of hands-on science activities for all ages at the Exploratorium. <http://www.exploratorium.edu/explore/handson.html>

# State and Local News

## HELP WANTED!!! Certified math and science teachers!!!

A shortage of educators certified to teach math and science in Georgia caused Governor Sonny Perdue to push a bill that would boost pay for these teachers. The pay increase will take effect in 2010. The bill will allow new teachers in FY10 with proper math or science certification to move up three steps on the state salary scale (a boost of about \$4,561 to \$37,985 a year). Their salary will then continue to jump a step every year for five years. Adapted from the Associated Press

**LISA THOMPSON**, a biology teacher at Georgia College Early College, was one of sixteen teachers across the nation to meet at Texas A&M University for a workshop on incorporating horticulture into inquiry science teaching. This is quite an honor and one well deserved by Ms. Thompson.

**SUSAN MCGILL**, life science teacher at Baldwin County High School, has been awarded a Bright Ideas Grant from Tri-County EMC. This will enable Ms. McGill's students to use portable microscopes while exploring organisms in their natural habitat. Congratulations, Ms. McGill!

## SEND US YOUR NEWS!!

Do you have a science story or news event that you'd like to share?

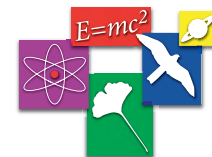
Send your news, photos, and contact information to [science@gcsu.edu](mailto:science@gcsu.edu).

## PHYSICS DEGREE RETURNS TO GEORGIA COLLEGE

Georgia College is offering a physics degree program beginning fall 2009. For more information on the bachelor degree in physics, contact [ken.mcgill@gcsu.edu](mailto:ken.mcgill@gcsu.edu).

Congratulations to **CHUCK CLAXTON** for being named Baldwin County Teacher of the Year. This is the fourth time Mr. Claxton has been named Teacher of the Year in this area: once at Boddie Middle School, once at Putnam County Middle School, and was named Baldwin County Teacher of the Year in 1997. Mr. Claxton is also the lead teacher of Oak Hill Middle School's Green ExStream, an environmental club that aims to increase local participation in recycling and other programs that help the community's aquatic environment. The 7th grade team recently won a \$10,000 EcoChallenge award in a contest among only 8 middle schools that were chosen nationwide and one of two middle schools chosen from the South. Team members include Brett Chandler, Jasmine Cowart, Matthew Daniels, Elizabeth Harpe, Katelyn Jackson, Jayla Lango, Kayla McCray, Terence Percival, Paul Song and Quanisha Trawick. Well done!

# Connecting with the Stars



GCSU Info Page

The Georgia College Planetarium can transform a celestial trip exploring the last frontier into an everyday reality with its new simulated planetarium. “The planetarium is a fantastic tool to show how the night sky moves during the course of the day, and how the appearance of the night sky changes according to the latitude of the observer,” said Dr. Agn s Kim, assistant professor of physics at Georgia College. “While it does not replace actual night time observations with a telescope, it is the next best thing to bring astronomy to a wide audience.” Nestled snugly into a corner of the Georgia College Natural History Museum in Herty Hall on the Georgia College campus, the planetarium can seat about 20 students comfortably for the overhead shows. The planetarium highlights space telescope observations – the basic features of the sky, each season and the more famous features, said Dr. Donovan L. Domingue, associate professor of physics at Georgia College.

“We show the constellations on the dome, the water in the solar system and the exploration of Mars,” said Domingue whose research interests include galaxy interactions, dust in galaxies and star formation. Students can watch a simulation

of the sunrise and sunset over Milledgeville and the alignment of the stars and planets. “And we can even physically change location, such as travel to the North Pole and see what the night sky does up there,” Kim said. Georgia College uses the planetarium for astronomy labs for students to carry out real astronomical observations on a simulated by realistic sky, Kim said. “And we are not at the mercy of the seasons, daytime or weather,” she said. Funded through the E.J. Grassmann Trust, student technology fees and the departments of chemistry and physics, the planetarium has been two years in the making. Now, the planetarium is open to local students and groups interested in taking a relaxing trip through the galaxy.

The Planetarium is adjacent to the Georgia College Natural History Museum on the ground level of Herty Hall on the corner of West Montgomery and North Wilkinson streets. School groups can make arrangements to visit the planetarium. And teachers can build lesson plans around the planetarium events. “We can have groups of children from nearby schools come during their regular school time on a field trip,” Kim said, “and show them the night sky and the planets.”



*Drs. Donovan Domingue and Agn s Kim, professors of physics and astronomy at Georgia College, posed beneath the planetarium’s 20-foot dome during the official opening on March 10, 2009. Celebrate the International Year of Astronomy 2009 by visiting the Georgia College planetarium!*

## UPCOMING EVENTS

### JUNE

- 1–30 Project SEED and Young Scientists Academy – *High School Summer Research Programs*
- 8-19 PRELIMS Academy – *Future Teachers Residential Camp for High School Students*
- 22–26 Science Camp – *ages 11-13 (Lake Laurel Biological Field Station)*

### JULY

- 1-17 Project SEED and Young Scientists Academy – *High School Summer Research Programs*
- 6-9, 13-16 SMART Summer Institute – *professional development for math and science teachers*
- 13-17 Science Camp Jr. – *ages 7-10 (Lake Laurel Biological Field Station)*

### AUGUST

- TBA From Fossils to Space – *museum program for teachers and students (pending funding)*

### SEPTEMBER

- 19 SMART Institute – *Follow-Up Workshop (GCSU)*

### OCTOBER

- 3 Leadership Development Course: Leading Change – *Middle Georgia Section of the American Chemical Society (catrena.lisse@gcsu.edu)*
- 18-24 National Chemistry Week – *Chemistry—It’s Elemental!*



Georgia's Public Liberal Arts University

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## Meet the Staff

The **Science Education Center** was established in 2001 with generous support from the kaolin industries and the Georgia Eminent Scholar Trust Fund of the University System of Georgia.



**Ms. Patti Veal** joined the Center in 2008 as the first, full-time Administrative Assistant. Ms. Veal lives in Sandersville, GA with her husband, Tom, and their son, Daulton. She enjoys spending time with her family and friends, enjoys traveling, gardening, and yard work, being outdoors, and attending her son's sporting events.



**Ms. Joy Crowe** has been senior secretary at the Center since 2004. Despite being employed only part-time with the center, Ms. Crowe undertakes myriad clerical duties and program coordination. Ms. Crowe enjoys playing bridge, traveling, and trips to the beach house with her family. This is Ms. Crowe's last year at the center and she will be surely missed. Bon voyage, Joy!



**Ms. Kelsie Funk** is Public Relations Student Intern at the Science Education Center and a sophomore Mass Communications major at Georgia College. She enjoys traveling, intramural sports, and hanging out with her friends. This summer, Ms. Funk will participate in an internship with the Eatonton/Putnam County Chamber of Commerce.



**Dr. Rosalie Richards** is Director of the Science Education Center and Kaolin-Endowed Chair in Science. She is professor of chemistry at the Department of Chemistry & Physics and joined the faculty in 2001. Dr. Richards enjoys reading, gardening, and outdoor activities. She lives in Milledgeville, GA with husband, James, and their two children, Brontë and Byron.

## The Nucleus... an introduction

*by Rosalie Richards and Linda Chandler*

**W**elcome to the first issue of The Nucleus. According to Webster's Dictionary, a nucleus is "a central part or core about which other parts are grouped or gathered". As such, the newsletter is our attempt to collect, chronicle, archive, and distribute information about the extraordinary number of science resources available at Georgia College and beyond. Nucleus is also Latin for "little nut", and this word is associated with each of the science disciplines. When we started designing the logo, we decided on an image that represents several of the science fields without being cliché. The overlap of boxes represents the interdisciplinary nature of the fields. We chose a bright color scheme since the center dedicates a significant portion of its resources to K-12 students and teachers. We also desired an attractive logo that demonstrates that science is fun! *Linda Chandler is the design guru for the newsletter's name and logo. Chandler is a biologist, artist, and wife of Dr. Bob Chandler, professor of biology at Georgia College.*