International Year of Astronomy Celebrations Continue

Throughout 2009, the DuPont Planetarium has celebrated the International Year of Astronomy (IYA). This year marked the 400th year since Galileo first turned a telescope toward the heavens and made discoveries that changed mankind’s understanding of our solar system. Since 1609, telescopes have increased dramatically in size and resolving power, and they have dramatically increased our knowledge of the universe.

This fall, the planetarium provided many opportunities to discover the universe through telescopes operated by the Astronomy Club of Augusta and RPSEC staff. The theme for SEED 2009 – Discover the Universe – matched the IYA theme, and astronomy club members showed SEED participants how telescopes work and how they can be used to view the Sun safely. Club members set up telescopes on the lawn at the RPSEC during the Fall Star Party on October 24th, and the Bechtel Telescope was open during the star party and every clear Saturday evening. People of all ages were amazed to see Jupiter, Neptune, Albireo and more through telescopes.

The planetarium show, Two Small Pieces of Glass, was presented four times during SEED and at 7:00 and 8:00 p.m. on October 3, 10, 24, and 31. This show celebrates the work of Galileo and others who have used telescopes to expand our understanding of the universe. The evening shows got the audience involved by making models to explain some of Galileo’s observations.

Though the IYA will soon end, we plan to keep encouraging you to discover the universe – with your eyes, with binoculars, with telescopes, or in the planetarium. Wonders await you!
Unveiling of NASA Images

Visitors to the DuPont Planetarium and the Ruth Patrick Science Education Center journeyed to the center of our Galaxy when they encounter two, mural-sized images of the Milky Way’s core as seen by NASA’s Hubble Space Telescope, Spitzer Space Telescope, and Chandra X-ray Observatory. Aiken Mayor Fred Cavanaugh and USCA Chancellor Tom Hallman unveiled these stunning photographs of the central region of our Galaxy on November 10, 2009. This event was part of a nationwide NASA image unveiling to commemorate the International Year of Astronomy.

A giant 6-foot-by-3-foot image presents a unique view that showcases the Galaxy in near-infrared light observed by Hubble, infrared light observed by Spitzer, and X-ray light observed by Chandra. This combined image was carefully assembled from mosaic photo surveys of the core by each telescope. It provides the most wide-ranging view ever of our Galaxy’s mysterious hub.

A second panel measuring 3 feet by 4 feet presents a trio of Hubble, Spitzer, and Chandra images of the Milky Way’s center. Each image shows a different wavelength view of the central region of our Galaxy. These multi-wavelength views provide both stunning beauty and a wealth of scientific information that Galileo could not have imagined!

For additional information:
- Hubble Space Telescope: http://hubblesite.org/
- Spitzer Space Telescope: http://www.spitzer.caltech.edu/
- Chandra X-ray Observatory: http://chandra.harvard.edu/
- NASA’s IYA celebration: http://astronomy2009.nasa.gov/

Ticket Pricing:
- General Shows: Adults $4.50, Seniors $3.50, Students 4K-12 grade $2.50, USCA Staff/Students $1.00
- Digistar Shows: Adults $5.50, Seniors $4.50, Students 4K-12 grade $3.50, USCA Staff/Students $1.00

For More Information Visit: http://rpsec.usca.edu/planetarium/
The 24th Annual SEED offered the community over 50 science and mathematics related exhibits and activities hosted by business, industry and school organizations. Visitors had the chance to make their own paper, build straw towers, make slime, learn about satellite communications and much more. Students also had the chance to test their skills with SEED Trivia, completing math puzzles and exploring other thought-provoking exhibits. This year’s theme “Discover the Universe” was certainly brought to life by the many community volunteers that made this event so successful.
The Ruth Patrick Science Education Center is looking for sponsors to help support the cost of feeding and caring for the animals used in our K-12 educational programs. An animal may be adopted by an individual, a business, or a group such as an elementary school class or a scout troop. The sponsors’ names will be recognized in the RPSEC’s publications and website as Friends of the RPSEC. Donations are tax deductible; sponsorship opportunities for 2009-2010 are listed below.

For more information, please contact Deborah McMurtrie at DeborahMc@usca.edu or (803) 641-2834.

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<td>American Alligator (Alligator mississippiensis) male, hatched 2006 (Louie)</td>
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<td>Corn Snake (Elaphe guttata)</td>
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<td>Chicken Turtle (Deirochelys reticularia)</td>
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<td>Red-Eared Slider Turtle (Trachemys scripta elegans)</td>
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<td>Yellow-Bellied Slider Turtle (Trachemys scripta scripta)</td>
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<td>Southern Leopard Frog (Rana urticaria)</td>
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<td>Southern Toad (Bufo terrestris)</td>
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<tr>
<td>Spotted Salamander (Ambystoma maculatum)</td>
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<td>Tiger Salamander (Ambystoma tigrinum)</td>
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Richmond County Students Visit the RPSEC

Thanks to the generous support of a private foundation, every fourth grade student from five Richmond County elementary schools visited the Ruth Patrick Science Education Center for a series of hands-on programs in September 2009.

The grant paid for RPSEC program fees and transportation for 807 student visits.

The schools were Lamar-Milledge Elementary School, Windsor Spring Elementary School, Southside Elementary School, Craig Houghton Elementary School, and A. B. Merry Elementary School.

The visits featured hands-on, inquiry-based programs aligned with fourth grade earth science, physical science, and life science standards.

The students were excited to visit the planetarium for “More Than Meets the Eye.” In this program, the students learned to identify objects in the sky using the naked eye, binoculars and telescopes. Planets, galaxies, nebulae and stars were shown and discussed in this great introduction to astronomy. The program concluded with a look at the night sky and some of the stories behind the constellations.

During the “May the Force Be With You” class, the students investigated how simple machines reduce the amount of force needed to do work. They worked together in cooperative groups to explore simple machines such as inclined planes, levers, and pulleys.

The students also had an opportunity to observe and interact with live animals including a Barred Owl and an American alligator. The students used field guides, compared and contrasted different types of vertebrates, examined raptor wing and talon specimens, and dissected owl pellets.

Many thanks to Stacey Mabray, Science Curriculum Coordinator of Richmond County Public Schools, for helping us make this experience possible!

Spring Break Opportunities Coming April 2010
More information @ http://rpsec.usca.edu/
Are you looking for an exciting, hands-on, standards-based environmental field trip for your students this spring? The Science and Technology Enrichment Program (STEP) is pleased to offer a limited number of openings for classes in the spring of 2010.

Two field trip locations for STEP include the Savannah River Site and the Silver Bluff Audubon Center. Students who participate in STEP will have an opportunity to conduct outdoor scientific investigations involving water ecology, soils, or wildlife. Participants also learn about careers in land management, forestry and archaeology. For example, students may visit a pond to collect water quality data and use dip-nets to examine various macro-invertebrates such as dragonfly nymphs, beetles or snails. The class may even have an opportunity to see Bald Eagles, American Alligators and a variety of herons or egrets.

The Science and Technology Enrichment Program (STEP) is a cooperative effort between Savannah River Nuclear Solutions, the Silver Bluff Audubon Center, and the Ruth Patrick Science Education Center. To find program descriptions and download a reservation request form, please visit the STEP website at http://rpsec.usca.edu/step/.

These programs are available on a first-come, first served basis, so please do not delay! The deadline to submit a reservation request is December 15, 2009.

### SPRING 2010 OPENINGS

**SAVANNAH RIVER SITE**

*Note: Free, but there are specific procedures that must be followed one week prior to your visit for badging purposes*

- March 3 (up to 30 students)
- March 18 (up to 60 students)
- March 24 (up to 30 students)
- March 25 (up to 30 students)
- March 26 (up to 30 students)
- March 31 (up to 60 students)
- April 23 (up to 30 students)
- April 28 (up to 30 students)
- April 29 (up to 30 students)
- April 30 (up to 30 students)
- May 6 (up to 60 students)
- May 7 (up to 60 students)
- May 13 (up to 60 students)
- May 14 (up to 60 students)

**SILVER BLUFF AUDUBON CENTER**

*Note: $3.00 fee per student*

- March 2 (up to 30 students)
- March 8 (up to 60 students)
- March 16 (up to 60 students)
- March 17 (up to 60 students)
- March 29 (up to 60 students)
- April 13 (up to 30 students)
- April 20 (up to 30 students)
- May 3 (up to 60 students)
- May 4 (up to 60 students)
- May 10 (up to 60 students)
- May 11 (up to 60 students)
South Carolina and Georgia Schools Participate in the 2009-2010 South Carolina Regional Future City Competition

The mission of the National Engineers Week Future City Competition is to provide a fun and exciting educational engineering program for seventh and eighth grade students. This program combines a stimulating engineering challenge with a “hands-on” application as students present their vision of a city of the future.

Participating Schools

A.R. Johnson Health Science and Engineering Magnet
Aiken Area Home Educators
Aiken Christian School
Aiken Middle School
Augusta Christian School
Berkeley Alternative
Blythewood Middle
Cainhoy Middle School
Cardinal Newman School
Colleton Middle
E. L. Wright Middle School
First Baptist School
Forest Circle Middle School
Hand Middle School
Heritage Academy
Jackson Middle School
Kennedy Middle School
Langley Bath Clearwater Middle
New Ellenton Middle School
North Augusta Middle School
Palmetto Middle School
Paul Knox Middle School
Ruffin Middle School
St. Mary on the Hill
Tutt Middle School
W. A. Perry Middle School
Woodmont Middle School

The SC Regional Future City Competition is sponsored by the Ruth Patrick Science Education Center and Savannah River Site Education Outreach Programs. For more information visit http://futurecity.org/

MASTERS DEGREE IN EDUCATIONAL TECHNOLOGY

Earn your USCA Degree online

Do you enjoy using your computer? Do others ask you how to do something on their computers? Do you enjoy showing to others something new on your computer? Have you considered getting a masters degree? Then maybe it is time for you to consider the Masters of Education in Educational Technology (MEd Tech). The MEd Tech program at University of South Carolina Aiken (USCA) and the University of South Carolina (USC) Columbia is accepting applications for enrollment. For more information visit: http://edtech.usca.edu/.

The focus of the program is to develop capabilities essential to the effective design, evaluation, and delivery of technology-based instruction and training (e.g., software development, multimedia development, assistive technology modifications, web-based development, and distance learning) in order to (1) prepare educators to assume leadership roles in the integration of educational technology into the school curriculum, and (2) to provide graduate-level instructional opportunities for several populations (e.g., classroom teachers, corporate trainers, educational software developers) that need to acquire both technological competencies and understanding of sound instructional design principles and techniques.

Foundational Core Courses (6 hours)

AERM/EDRM 700 – Introduction to Research in Education
AEET/EDET 709 – Applications of Learning Principles

Design Courses (15 hours)

AEET/EDET 603 – Design and Development Tools I
AEET/EDET 703 – Design and Development Tools II
AEET/EDET 722 – Instructional Design and Assessment
AEET/EDET 755 – Design and Evaluation of Information Access and Delivery
AEET/EDET 793 – Advanced Instructional Design and Development

Technology Core Courses (12 hours)

AEET/EDET 650 – Internship in Educational Technology
AEET/EDET 735 – Technological Applications for Diverse Populations
AEET/EDET 746 – Management of Technology Resources
AEET/EDET 780 – Seminar in Educational Technology

Electives (3 hours chosen from the following courses)

AEET/EDET 652 – Design and Evaluation of Games and Simulations
AEET 731 – Instructional and Informational Applications of Technology or EDTE 731 – Integration of Technology and Instruction
SLIS 706 – Introduction to Information Technologies
TSTM 790 – Advanced Study in Technology Support/Training Management

Anyone interested in enrolling in this program should contact Karen Morris at 803-641-3489.
The Traveling Science and Mathematics Demonstrations Program has over 350 science and math kits available for use in the classroom. Supplement your curriculum with nationally recognized and state adopted exemplary materials. Many kits contain children’s literature so that you can integrate your science and language arts lessons.

In addition to these resources, you can request a visiting Scientist with Traveling Resources and Neat Demonstrations (STRAND) volunteer for classroom presentations. For more information, please visit:

http://rpsec.usca.edu/travelingscience/ or call us at 803-641-3683.
South Carolina EdTech Conference Presentations

The annual South Carolina EdTech Conference was held in Myrtle Beach, South Carolina from October 14-16, 2009. Students and faculty from the Master of Education in Educational Technology program made presentations during the conference.

**Student Presentations:**

- Isn’t it Del.icio.us? - Andrea Wright
- Assistive Technology Devices to Support Instruction for Students with Disabilities in the General Education Environment - Holtis Adair, Andrea Williams, Shelley Malinski
- A Teacher’s Guide to ToonDoo - Michael Carothers, Andrea Wright
- Just Another Pretty Face? Facebook as a Tool in University Courses - Sherry Grosso

**Faculty Presentations:**

- Smartphones Are Taking Us Beyond the Limits! Are You Ready?! - Tom Smyth, Gary Senn
- Breathing a Second Life into graduate courses - Gary Senn, Tom Smyth
- No Limits or Boundaries: Creating Accessible web pages and documents - Susan Quinn, Cheryl Wissick
- Help your students go beyond their limits with Free Web Tools - Cheryl Wissick

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**CE-MIST Traveling Trunks Project**

The Center of Excellence for Middle-level, Interdisciplinary Strategies for Teaching (CE-MIST) partnered with the Aiken Writing Project to sponsor the development of eight thematic interdisciplinary units of instruction with lesson plans that address and connect standards from each of the four content areas.

Approximately thirty-six teachers from A. L. Corbett Middle School, JET Middle School, and Leavelle McCampbell Middle School served on these CE-MIST/Aiken Writing Project study group teams. One teacher from each team was asked to attend the Aiken Writing Project Summer Institute. The teachers then worked collaboratively to develop interdisciplinary units (“Traveling Trunks”) that emphasize writing across the curriculum. The teachers were given a budget of $800 to purchase instructional materials for each Traveling Trunk. The following are highlights from each of the teacher-designed units.

**A. L. Corbett Middle School - Grade 6 - Unit Plan: Ancient Egypt**
Created by: Donna Blackwell- Science, Alphonso Jones- Math, Danielle Washington- ELA, Pamela Williams- Social Studies

**A. L. Corbett Middle School - Grade 7 - Unit Plan: Milkweed (The Holocaust)**
Created by: Gayle Baxter- Social Studies, Jennifer Craig- ELA, Erria Daniels- Science, Jeni Lambert- Math

**A. L. Corbett Middle School - Grade 8 - Unit Plan: The Great Charleston Earthquake of 1886**
Created by: Kimberly Badger- Math, Marianne Berst- Social Studies, Kanelia Cannon- ELA, Tara Davis- Computer, Sandy Watts- Science

**JET Middle School - Grade 6- Unit Plan: Medieval Times**
Created by: Gloria Jackson- ELA, Becky Prince- ELA, Oscar Stevens- Social Studies, Sally Thomas- Science

**JET Middle School - Grade 8 - Unit Plan: South Carolina’s Culture and the Cold War of the 1950’s**
Created by: Nancy Asbill- Social Studies, Laurie Prince- ELA, Kay Taylor- Math, Judy Turner- Science

**Leavelle McCampbell Middle School - Grade 6 - Unit Plan: The Middle Ages**
Created by: John Brinson- Social Studies, Karen Cue- Math, Latonia Evans- Social Studies, Julie Hawkins- ELA, Lisa Newman- Science

**Leavelle McCampbell Middle School - Grade 7 - Unit Plan: Remember! Never Forget the Holocaust!**
Created by: Latonia Evans- Science, Social Studies, and Math, Yvonne Holston- ELA

**Leavelle McCampbell Middle School - Grade 8 - Unit Plan: Shake, Rattle & Roll**
Created by: Amber O’Connor Bannister- ELA, Brishundra Berry- Math, Kaye Mabe- Social Studies, Marsha Peacock- Science
From the Desk of NSTA Director District VI (SC, NC, TN)

In my position statement for running for this office, I mentioned that it was important that the district director for our region needed to be aware of the variety of needs unique to the diverse populations in our region and that the director must be able to effectively communicate this to the leadership of NSTA. There are several things I have done over the last year that I would like to share with you and several exciting things coming from NSTA in the future.

As a member of the NSTA Council, I worked with delegates from around the country on issues surrounding science teaching to students of poverty. Based on this work, NSTA is now in the process of creating a position statement regarding science instruction for students of poverty.

I was also invited to write a chapter for a new book from NSTA called Professional Learning Communities for Science Teachers: Lessons from Practice. A major portion of this chapter is devoted to the work of the dedicated team of professionals of the South Carolina Mathematics and Science Unit (MSU). The MSU (now part of the S2MART Centers of South Carolina) have a nationally known coaching program for improving mathematics and science instruction in schools, part of which seeks to engage the school community through increasing collaboration among teachers.

In an age of accountability, teachers and administrators are looking for ways to improve student achievement. It is only natural that we look to NSTA for direction in this regard. As such, I have been promoting the importance of NSTA taking the lead in identifying ways to improve student achievement in science. To this end, NSTA now has a Researcher in Residence (Julie Luft) and has begun the process of creating a series of books that are designed to synthesize the research on effective science teaching and be a valuable resource that can be used by science teachers and school administrators.

As the premier organization on science education, the NSTA has begun raising $43 million for the John Glenn Center for Science Education. This effort will fund a series of programs based on the Glenn Commission’s recommendations and a state-of-the art facility to house them. The new facility will be a LEED Platinum-certified green building incorporating sustainable design elements, construction materials, and building management processes. The building itself will become an innovative tool for teaching science, featuring on-line classroom based activities for exploring energy conservation and ecological principals. As NSTA increases its role in offering professional development for science teachers, the Glenn Center will also have state-of-the art professional development facilities for on-site and virtual learning opportunities. NSTA is encouraging individuals and organizations to donate to this fund through many means such as buying a brick ($75), patio stone ($250), and patio stone with logo ($350). Please visit http://nsta.org/cse for further information.

There are several exciting things for science teachers coming this school year. Save the date for November 4-6, 2009 for the South Carolina Science Council conference. The NSTA regional conference will be held in Ft. Lauderdale November 12-14, 2009. I hope you can attend!

And this just in. Page Keeley, past president of NSTA and renowned author, is coming to Columbia, SC, February 26, 2010! The South Carolina Science Education Leadership Association is sponsoring her workshop Formative Assessment in the Science Classroom to Improve Student Understanding and Achievement. Page is a well known author of such books as Science Formative Assessment, Science Curriculum Topic Study, and the series Uncovering Student Ideas in Science. Cost for this workshop is $75 for SCSELA members and $95 non-members.

Please contact me if you have any questions.

Gregory MacDougall
NSTA Director District VI (SC, NC, TN)
gregm@usca.edu
Burkhalter named the Dr. Robert Alexander Outstanding Administrator of the Year

Dr. Gary Senn, the Ruth Patrick Science Education Center director, surprised Dr. Angela Burkhalter at a recent Aiken County School Board Meeting with the Dr. Robert Alexander Outstanding Administrator of the Year Award, recognizing her contributions to science education. The award is named after the retired USC Aiken chancellor.

For Burkhalter, the roots of the award go back early in her career. Her background was English, and she recognized the need to be strong in science, so she came to USCA and took courses to improve her knowledge of science content.

Burkhalter became interested in science and saw it as a hook for kids.

When she became an administrator, Burkhalter explored the idea of vocabulary development through integration with science. After becoming principal at North Augusta Elementary School in 2002, she obtained a science coach and joined that teacher in the training programs.

Later, the elementary school received a federal 21st-Century Learning Centers grant for an after-school program.

Burkhalter incorporated science into that major project as well. She brought in Fort Discovery and RPSEC personnel as partners, and students learned reading and math skills through a structured science curriculum.

Spirit of Ruth Patrick Award Recipient Beth Eberhard

The 2008-2009 Spirit of Ruth Patrick Award was presented to Beth Eberhard at an Aiken County School Board meeting on November 10, 2009. Beth is a teacher at Aiken Elementary School, where she has been an advocate for outdoor science education. Since 2006 this prestigious award has been presented annually to a K-12 educator who has demonstrated a keen interest in mathematics and science and has been effective in providing meaningful learning for K-12 students. This award recognizes a teacher in the CSRA who demonstrates a passion for teaching and infusing a love of science, technology, engineering and mathematics.
REVITALIZING THE PERIODIC TABLE

In honor of National Chemistry Week (October 18-24), the Savannah River Section of the American Chemical Society (ACS-SR) will be revitalizing the Living Periodic Table of Elements in the Ruth Patrick Science Center Lobby. This periodic table was originally developed by ACS-SR in 1994. They are looking for volunteers to help in the rehabilitation, element collection and fund raising. Individuals or groups may sponsor elements for $100. Element choice is available on a first come, first served basis with preference toward the original element sponsor. Your donation will be noted with your name on a plaque to be displayed in the RPSEC and in our local section newsletter. If you previously sponsored an element in 1994 please contact ACS-SR to let us know if you would like to re-sponsor your element.

If you have “elemental items” you would like to see included in the display, would like to volunteer or have any questions, please contact Elise Fox elise.fox@srnl.doe.gov or (803)507-8560.

Looking for that perfect holiday gift?
Visit the Science Store @ the Ruth Patrick Science Education Center.
Call 641-3313 for store hours.

The Camp Invention program is a weeklong summer experience in creativity led by local educators that provides educational enrichment through exciting, hands-on activities.

June 14-18, 2010 @ the RPSEC

The Ruth Patrick Science Education Center Newsletter is a publication of the RPSEC for our patrons. The RPSEC encompasses the CSRA Mathematics and Science Regional Center (MSRC), Center of Excellence in Educational Technology (CEET), DuPont Planetarium, RPSEC Student Programs, Traveling Science and Mathematics Demonstrations Program (TSMDP), the Science and Technology Enrichment Program (STEP), and Middle-level Interdisciplinary Strategies for Teaching (CE-MIST). If you have any information that would be beneficial to the audience of this newsletter, or if you would like to be added to the mailing list, please contact John Hutchens, Editor, at 803-641-3474 or via email to johnh@usca.edu. Deadline for submission in the next newsletter is March 1, 2010.