Student Programs 2015-2016

The Ruth Patrick Science Education Center’s K-12 Student Programs offerings for 2015-2016 will be posted online on April 13, 2015.

Teachers will be able to select from 52 different hands-on, inquiry based classroom programs aligned to state standards. We recommend that teachers coordinate field trips with their grade level, and combine 2 or 3 programs in one visit. A teacher may bring up to 60 students for a “double” group or up to 90 students for a “triple” group. More information about groups can be found here: http://rpsec.usca.edu/student/planningyourvisit.html

Teachers may download program descriptions, standards correlations, pre-and post visit activities, reservation request forms, and more at http://rpsec.usca.edu/student/.

Information will be mailed to those teachers who have reserved programs in the last three years. Request forms may be emailed, mailed or faxed to the RPSEC.

Teachers may request up to 4 programs for the school year but, pending funding, this number may be reduced—so please prioritize your requests. Last year we received many more requests than we were able to serve. We will schedule teachers’ requests, subject to availability, in the order specified on the reservation request form.

The deadline to submit reservation requests is Friday, June 12, 2015 at 5:00 PM. Due to the volume of anticipated requests, it is highly unlikely that late requests will be filled. Requests received after June 12 will be placed on a waiting list. Thank you for your understanding.

2015-2016 STUDENT PROGRAMS TIMELINE

Friday, June 12, 2015
Deadline to submit Student Programs Requests for 2015-2016

Friday, July 24, 2015
Confirmation Contract Letters will be mailed to teachers’ home addresses

Tuesday, September 8, 2015
Deadline to return signed Confirmation Contract Letters to the RPSEC

Friday, September 11, 2015
All unconfirmed 2015-2016 student programs will be cancelled and filled from the wait list

Monday, September 11, 2015
RPSEC Student Programs classes begin
New Programs for 2015-2016
The RPSEC will offer three new student programs for 2015-2016

Lunar Design Challenge (Grades 4 & 8)
Students will design, build, and test a Lunar Buggy to transport astronauts and cargo on the Moon. They will collect and analyze data, take measurements, and refine their models.

Engineering the ISS (Grades 6, 8, 9-12)
This interactive show describes how 15 nations worked together to create the International Space Station (ISS), a unique scientific laboratory and home in space. A rap and animations explain how weight, mass, gravity and speed are related, and why astronauts are weightless on the ISS even though there IS gravity in space. Benefits to humanity of the ISS are also discussed.

Engineering Insects: (Grades K-3)
Students will learn about the major body parts of insects. They will test different insect "mouth parts" at feeding stations, and then use the engineering design process to brainstorm inventions based on insects.

Sun & Shadows (Grade 1) Students will conduct investigations that help them discover how the Sun appears to move, how shadows change over time, and how the angle at which light shines changes the brightness and spread of the light.

HOME SCHOOL MONDAYS 2016
The RPSEC will again offer a series of monthly programs for home school students. The programs will be held on selected Monday afternoons from January through May. Different programs will be offered each year with a 3-year rotation cycle. Reservation request forms will be available online on September 7, 2015, and will also be mailed to families who signed up for Home School Mondays 2015. NOTE: The deadline to return reservation request forms with payment will be Tuesday, December 1, 2015. Please make checks payable to USCA.

One Monday per month, each child will attend (2) one-hour, back-to-back science or math programs at the RPSEC.
- Over the course of the spring semester, each child will attend a total of 10 programs.
- The children should arrive at 1:00. The programs will begin at 1:15 and end at 3:30 PM.
- The two programs for the younger students (Grades K-3) will be held at the same time as the two programs for the older students (Grades 4-8).
- Please note that children under the age of 4 are not permitted to attend any student programs (planetarium or classroom programs) at the RPSEC.

The cost is $35 per student for the Home School Mondays 2016 series, provided the student is registered and pre-paid by the deadline. After December 1, the cost is $50 per student, and we cannot guarantee that we will be able to accommodate late requests.
Your Next Year’s School Field Trip is only a STEP away!

Teachers will be able to select from a variety of exciting hands-on inquiry-based programs that are grade specific and aligned to state standards. Programs include soil studies, wildlife adventures, plant explorations, pond investigations, and much more! A STEP visit includes 3 one-hour activities all addressing the chosen program topic: lab study, field study and a hike (unless otherwise stated) with a half hour for a picnic lunch. A typical schedule is 9:15 AM - 1 PM. Shorter visits can be accommodated.

Hear what some teachers have been saying about their STEP Field Trip this year:

“The short lesson and hands-on experiences that followed were all excellent!”
Barnwell Elementary Teacher

“Great instructors! Nice integration of multiple concepts!”
LBC Middle School Teacher

“Instructor was very enthusiastic and knowledgeable about content which made the students more attentive and eager to learn.”
Greendale Elementary Teacher

“All three programs utilized standards we are currently covering.”
Warrenville Elementary Teacher

The Science and Technology Enrichment Program (STEP) is a cooperative effort between Savannah River Nuclear Solutions, Silver Bluff Audubon Center, and the Ruth Patrick Science Education Center. Two field trip locations for STEP include the Savannah River Site and the Silver Bluff Audubon Center. Both sites have indoor classrooms, beautiful forests with miles of trails, lovely ponds and a variety of resident wildlife.

Program offerings for 2015-2016 will be posted online on April 13, 2015. For program information and a STEP reservation request form, please visit the STEP website at: http://rpsec.usca.edu/step/. Reservation requests may be submitted online, mailed to the RPSEC or faxed to (803) 641-3615. The deadline to submit reservation requests is June 12 at 5:00 PM.
Family Earth and Sky Night

Celebrate National Astronomy Day and Earth Day with an evening of fun and learning at the Ruth Patrick Science Education Center. A variety of free, hands-on activities will be offered from 6:30 to 9:30 p.m., and our planetarium show Engineering the ISS will be presented at 7:00, 8:00, and 9:00 p.m.

When: April 25, 2015
Where: Ruth Patrick Science Education Center at USCA
What: Hands-on activities, planetarium shows, and night sky viewing
Hosted by: The Astronomy Club of Augusta (ACA), the DuPont Planetarium, the Ruth Patrick Science Education Center and USC Aiken

Hands-On Astronomy and Earth Day Activities!
6:30 to 9:30
Explore the wonders of earth and space science, make items to take home, and interact with live animals such as snakes, turtles, alligators, and owls.

Planetarium Shows
Engineering the International Space Station will be presented on a first-come, first-served basis with start times of 7:00, 8:00, and 9:00pm. Ticket prices: Students 4K-12th $3.00, Adults $5.00, Seniors $4.00, USCA Affiliates $1.00.

Telescope Exploration
Once it gets dark, the observatory will open for viewing through the Bechtel Telescope, and amateur astronomers will set up other telescopes on the lawn. Weather permitting, see details in the Moon, Mercury, Mars, Jupiter, Saturn and other celestial objects that are invisible to your unaided eyes. Members of the Astronomy Club of Augusta will orient you to the night sky: naked-eye, binocular, and telescopic. They will help you find many fascinating heavenly bodies with their telescopes or with your own. This is a good opportunity to learn the most important constellations and stars, and how to star hop from one to another.

Family Earth and Sky Night will be held rain or shine.
April will be an exciting month in the DuPont Planetarium!

On April 4th, a lunar eclipse will be visible locally from 6:15 to 7:15 a.m., and that night we will present Dark Shadows, our live show that describes the science behind eclipses and the phases of the Moon. Dark Shadows includes hands-on activities, stunning images, Digistar segments and an inspiring video of a total solar eclipse. So, get up early to watch the eclipse, and come to the planetarium at 7:00 or 8:00 p.m. to learn why eclipses occur.

On April 11th at 7:00 and 8:00 p.m., we will debut our new planetarium show about the International Space Station. The ISS is one of the greatest feats of human engineering and more than 15 nations have cooperated in its design, development and operation. In Engineering the ISS, you’ll learn how the space station was constructed, why its crews seem weightless, and how the ISS benefits people on Earth. We hope you’ll enjoy this interactive show that features USCA students, NASA videos, and our Weighty Matters Rap.

On April 25th, we will celebrate National Astronomy Day with our annual Earth and Sky Night. A variety of hands-on activities will be offered from 6:30 to 9:00 p.m., and our planetarium show Engineering the ISS will be presented at 7:00, 8:00, and 9:00 p.m. Once it gets dark, the observatory will open for viewing through the Bechtel Telescope, and amateur astronomers will set up other telescopes on the lawn. Weather permitting, Mercury, Venus, Mars, and Jupiter will be visible as will the first quarter Moon. Put Earth and Sky Night on your calendar now, and come explore the majesty of the heavens with us on April 25!
Camp Invention @ the Ruth Patrick Science Education Center

Camp Invention is where BIG ideas become the next BIG thing! Join us as we celebrate our 25th year of reinventing summer fun!

In partnership with the National Inventors Hall of Fame, the RPSEC is pleased to offer the nationally-acclaimed Camp Invention program to children entering grades one through six. It’s an exciting, weeklong summer adventure with lessons that explore connections between science, technology, engineering and innovation. Children will work together to seek innovative solutions to real-world problems, turn ordinary into extraordinary and sharpen critical 21st century learning skills while rotating through several fascinating modules. The week begins on June 15th with John Hutchens serving as Director of the Illuminate™ program!

In the KartWheel™ module, children let their engineering skills glide them across the finish line as they build, enhance and upgrade their very own freestyle racing cart. Boys and girls will explore what it means to prototype a product from scratch as they become an entrepreneur during the Design Studio: Illuminate™ module. In the I Can Invent: Next Level Gamers™ module, participants will take apart broken or unused appliances using real tools to create a physical video game model in the 3rd dimension! Finally, in the Inducted™ module, personalized video challenges from National Inventors Hall of Fame Inductees are introduced along with hands-on activities like constructing super-structure mega-towers, assembling out-of-this-world space rockets and so much more!

Local educators will facilitate program modules and enthusiastic college students will serve as Leadership Interns ensuring that one staff member is in place for every eight children.

The Spring into Summer Discount of $15 off begins March 21st and is valid until May 12th. Use promo code SPRING. The base price is $220. Every registration includes a complimentary Camp Invention t-shirt. Availability is limited, so visit www.campinvention.org or call 800.968.4332 to secure your child’s spot today!

**USCA and ACPSD employees receive $30 OFF. Please email johnh@usca.edu for a special host district registration form.**
NEW SUMMER STUDENT PROGRAMS

The Ruth Patrick Science Education Center is offering a collection of summer programs for daycares, church groups, scout troops and groups of 10 or more students. Classes will be held from June through August on Tuesdays, Wednesdays and Thursdays at 9:15, 10:30, Noon, 1:15, and 2:30.

Group leaders are encouraged to sign up for a block of two or three programs. Each program lasts approximately an hour. Lunch is NOT PROVIDED by the center, but you may bring your own lunches and reserve the cafeteria for seating at no extra cost.

For more information please visit http://rpsec.usca.edu/summer/student/ or call (803) 641-3313.

Join us for a summer filled with explorations, experiments, engineering and more!

New Resident at the RPSEC

Holden came to us in October 2014 and was born earlier last spring. He is about 8 months old. He is Al’s little brother! He ignites the imaginations of our young visitors with the idea that this cute little foot-long alligator will one day be up to 18 feet long! He loves to eat crickets and tiny rodents, and does not mind a gentle pat. Please support Holden’s care and the excitement and engagement he brings to our local school children. Find out more about adopting an RPSEC animal on page 9.

Owl Cam at the RPSEC

Thanks to the kindness and generosity of several donors, the Ruth Patrick Science Education Center now has an owl cam installed in our outdoor aviary. The camera can be moved from cage to cage, and the public can tune in to watch. This month we are featuring Raleigh, the Barred Owl. Please be aware that our birds are busy teaching classes from 8:30 am – 1:30 pm most weekdays, so the outdoor aviary will be empty. The best time to watch is from 4:00 – 5:00 pm when the birds are fed. Here is the link to the new Owl Cam: http://aviary.usca.edu/.

FREE Teacher Resources and Visiting Scientists Available

The Traveling Science and Mathematics Demonstrations Program has over 300 science and math kits available for use in the classroom. Supplement your curriculum with nationally recognized and state adopted exemplary materials. Kits have been correlated to SC state standards. 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 Scientists with Traveling Resources and Neat Demonstrations (STRAND) volunteer for classroom presentations.

For more information please visit http://rpsec.usca.edu/travelingscience/
The Ruth Patrick Science Education Center thanks the following individuals, corporations, and organizations for their generosity and support of our mission by being a Friend of the RPSEC. For information on how you can become a Friend, please call (803)641-3313.

**Infusers ($2500 and up)**
- AT&T
- Savannah River Nuclear Solutions

**Innovators ($1000 - $2499)**
- Clear Channel Communications
- Eli Lilly and Company Foundation, Inc.
- Ms. Barbara Fenstermacher
- Border Bash Foundation
- Dr. Jeff and Mrs. Ellen Priest
- SRP Federal Credit Union
- SRS Leadership Association
- Dr. Gary and Mrs. Mandy Senn
- WAGT NBC 26 / CW Augusta

**Scientists ($4500 - $9999)**
- American Concrete Institute
- American Nuclear Society
- Clemson University Foundations
- Mrs. Joan S. & Dr. David W. Cundey
- Institute of Industrial Engineers
- IEEE- Columbia Chapter
- Mr. Bruce A. & Mrs. Karen K. Morgan
- National Engineers Week Foundation
- Project Management Institute Carolinas Chapter
- Aiken Electric Cooperative
- Dr. Carol S. & Mr. Robert E. Botsch
- Dr. Robert L & Mrs. Gina C. Buckley
- Mrs. Linda M. & Mr. James M. Ferrell
- Rooney Floyd
- Ms. Carolyn Fox
- Kiwanis Club of Aiken
- Mr. Roderick C. Lee & Ms. Katherine
- Aiken Women’s Club
- Robert and Aimee Barton
- Ms. Pat Q Bernard
- Frank and Sonya Bishop
- Timothy and Maria Chandler
- Dr. Bridget Kelly Coleman
- Mr. Peter I. & Mrs. Annette H. Crawford
- Mrs. Catherine Coward
- Mr. William R. & Mrs. Karen S. Cue
- Dr. Paul and Mrs. Monica Dainer
- Mrs. Arlene DiPietro
- Mrs. Elizabeth F. Eberhard
- Mr. Charles Everhart
- Mrs. Thayne Ellis
- Mrs. Ursula Evans
- Mrs. Laura & Mr. Alan Foreman
- Ms. Bethany Suzanne Fralick & Bradley Salter
- GB Corporation

**Analysts ($250-$499)**
- Ms. Gloria Allen
- American Society of Agricultural and Biological Engineers
- American Society of Civil Engineers, CSRA Branch
- American Society of Mechanical Engineers (ASME) CSRA Section
- Association for the Advancement Cost Engineering, CSRA Section
- Mr. John Hutchens
- ISA (Instrumentation, Systems, and Automation) Savannah River Section
- Mrs. Darya R. & Mr. Cory W. McMurtrie, Sr.
- Mr. John Y. & Mrs. Deborah McMurtrie
- Mr. E. S. & Mrs. Anne B. Sawyer

**Researchers ($100-$249)***
- Aiken Electric Cooperative
- Dr. Carol S. & Mr. Robert E. Botsch
- Dr. Robert L & Mrs. Gina C. Buckley
- Mrs. Linda M. & Mr. James M. Ferrell
- Ms. Carolyn Fox
- Dr. Bridget Kelly Coleman
- Mr. Peter I. & Mrs. Annette H. Crawford
- Mrs. Catherine Coward
- Mr. William R. & Mrs. Karen S. Cue
- Dr. Paul and Mrs. Monica Dainer
- Mrs. Arlene DiPietro
- Mrs. Elizabeth F. Eberhard
- Mr. Charles Everhart
- Mrs. Thayne Ellis
- Mrs. Ursula Evans
- Mrs. Laura & Mr. Alan Foreman
- Ms. Bethany Suzanne Fralick & Bradley Salter
- GB Corporation
- Maxwell Law Firm
- Dr. Sally L. McClellan
- Mrs. Carolyn Moore
- Ms. Sherly Philips
- Mr. and Mrs. John Pullen
- Rich and Darlene Smalley
- Ms. Carol Anne Taylor

**Scholars (up to $499)***
- Aiken Taekwondo Academy
- Aiken Women’s Club
- Robert and Aimee Barton
- Ms. Pat Q Bernard
- Frank and Sonya Bishop
- Timothy and Maria Chandler
- Dr. Bridget Kelly Coleman
- Mr. Peter I. & Mrs. Annette H. Crawford
- Mrs. Catherine Coward
- Mr. William R. & Mrs. Karen S. Cue
- Dr. Paul and Mrs. Monica Dainer
- Mrs. Arlene DiPietro
- Mrs. Elizabeth F. Eberhard
- Mr. Charles Everhart
- Mrs. Thayne Ellis
- Mrs. Ursula Evans
- Mrs. Laura & Mr. Alan Foreman
- Ms. Bethany Suzanne Fralick & Bradley Salter
- GB Corporation
- Mr. Patrick O. Gelinas
- Mrs. Elizabeth Green
- Dr. and Mrs. Randolph Guschi
- Mr. and Mrs. John Harrington
- Mr. Robert & Mrs. Nancy F. Harrington
- Dr. David and Sue Hayes
- Scott and Dianne Nicholson
- Mrs. Evelyn Petrea
- Mr. Keith L. Pierce
- Mrs. Trudy A. & Mr. Terry L. Ortner
- Mr. Joel S. & Mrs. Elaine M. Ray
- Ms. Drucillia Raymond
- Mr. Frank and Harriet Shallo
- Mrs. Donna Smith
- Ms. Sibylle Hope Smith
- Dr. Joette and Mr. L.K. Sonnenberg
- Michael and Brittany Stone
- Staff of RPSEC
- Mrs. Jane L. & Dr. Ray B Vaughters JR

Ms. Carol Anne Taylor

Mr. Patrick O. Gelinas

Mrs. Elizabeth Green

Dr. and Mrs. Randolph Guschi

Mr. and Mrs. John Harrington

Mr. Robert & Mrs. Nancy F. Harrington

Dr. David and Sue Hayes

Scott and Dianne Nicholson

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Mr. Keith L. Pierce

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Ms. Drucillia Raymond

Mr. Frank and Harriet Shallo

Mrs. Donna Smith

Ms. Sibylle Hope Smith

Dr. Joette and Mr. L.K. Sonnenberg

Michael and Brittany Stone

Staff of RPSEC

Mrs. Jane L. & Dr. Ray B Vaughters JR
Adopt an Animal

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 displayed on donor recognition kiosks at RPSEC, and they will be recognized in the Center’s publications and website as Friends of the RPSEC. Donations are tax deductible; sponsorship opportunities January through December 2015 are listed below.

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

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<thead>
<tr>
<th>BIRDS</th>
<th>Adoption Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raleigh, Barred Owl (Strix varia) Non-releasable male</td>
<td>$500</td>
</tr>
<tr>
<td>Lina, Eastern Screech Owl, brown phase (Megascops asio) Non-releasable female</td>
<td>$350</td>
</tr>
<tr>
<td>Charlotte, Eastern Screech Owl, brown phase (Megascops asio) Non-releasable female</td>
<td>$350</td>
</tr>
<tr>
<td>Hunter, Eastern Screech Owl, red phase (Megascops asio) Non-releasable male</td>
<td>$350</td>
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<tr>
<th>REPTILES: CROCODILIANS</th>
<th>Adoption Information</th>
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<tbody>
<tr>
<td>A1, American Alligator (Alligator mississippiensis) male, hatched 2012</td>
<td>ADOPTED by Mr. John M. Hutchens</td>
</tr>
<tr>
<td>Holden, American Alligator (Alligator mississippiensis) male, hatched 2014</td>
<td>ADOPTED by Ms. Barbara Fenstermacher</td>
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<thead>
<tr>
<th>REPTILES: SNAKES</th>
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<tr>
<td>George, Eastern Kingsnake (Lampropeltis getula getula)</td>
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</tr>
<tr>
<td>Bonquiqui, Grey Rat Snake (Elaphe obsoleta spiloides)</td>
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</tr>
<tr>
<td>Maize, Corn Snake (Elaphe guttata) female</td>
<td>$100</td>
</tr>
<tr>
<td>Corny, Corn Snake (Elaphe guttata) male</td>
<td>ADOPTE d by Tristan Davis</td>
</tr>
<tr>
<td>Casper, Albino Corn Snake (Elaphe guttata)</td>
<td>$100</td>
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<tr>
<th>REPTILES: TURTLES</th>
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<tr>
<td>Romeo, Box Turtle (Terrapene carolina Carolina) male</td>
<td>$75</td>
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<tr>
<td>Fatty, Box Turtle (Terrapene carolina Carolina) female</td>
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<tr>
<td>Pee wee, Box Turtle (Terrapene carolina Carolina) juvenile</td>
<td>$75</td>
</tr>
<tr>
<td>Durtle, Snapping Turtle (Chelydra serpentina) male</td>
<td>ADOPTE d by Mrs. Linda &amp; Mr. James Ferrell</td>
</tr>
<tr>
<td>Donatello, Chicken Turtle (Deirochelys reticularia)</td>
<td>$75</td>
</tr>
<tr>
<td>Raphael, Red-Eared Slider Turtle (Trachemys scripta elegans) female</td>
<td>ADOPTE d by Dr. Joette G. Sonnenberg</td>
</tr>
<tr>
<td>Michaelangelo, Red-Eared Slider Turtle (Trachemys scripta elegans) male</td>
<td>$75</td>
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<tr>
<td>Leonardo, Yellow-Bellied Slider Turtle (Trachemys scripta scripta)</td>
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</tr>
<tr>
<td>Marie, Red-Eared Slider Turtle (Trachemys scripta elegans) female</td>
<td>$75</td>
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<tr>
<td>Pierre, Red-Eared Slider Turtle (Trachemys scripta elegans) male</td>
<td>$75</td>
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<table>
<thead>
<tr>
<th>REPTILES: Lizard</th>
<th>Adoption Information</th>
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</thead>
<tbody>
<tr>
<td>Lizzy, Eastern Fence Lizard (Sceloporus undulates)</td>
<td>ADOPTED by Ms. Elizabeth F. Eberhard</td>
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</table>

<table>
<thead>
<tr>
<th>AMPHIBIANS</th>
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<tbody>
<tr>
<td>Gerald, Barking Tree Frog (Hyla gratiosa)</td>
<td>ADOPTED by Dr. Carol S. Botsch</td>
</tr>
<tr>
<td>Kermit, Green Tree Frog (Hyla cinerea)</td>
<td>ADOPTED by Dr. Carol S. Botsch</td>
</tr>
<tr>
<td>Buddha, Southern Toad (Bufo terrestris)</td>
<td>ADOPTED by G B Corporation</td>
</tr>
<tr>
<td>Bubba, Southern Toad (Bufo terrestris)</td>
<td>ADOPTED by Mr. &amp; Mrs. Robert Moore</td>
</tr>
<tr>
<td>Spot, Spotted Salamander (Ambystoma maculatum)</td>
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</tr>
<tr>
<td>Louie, Tiger Salamander (Ambystoma tigrinum)</td>
<td>$50</td>
</tr>
<tr>
<td>Fireball, Red Salamander (Pseudotriton ruber)</td>
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</tr>
<tr>
<td>Marley, Marbled Salamander (Ambystoma opacum)</td>
<td>$50</td>
</tr>
</tbody>
</table>
How would you like to adopt a celestial object and be its Galactic Guardian for a year? There are a number of celestial objects that need a caring person, family or group to look out for their best interests over the next year. Additionally, you will have the opportunity to support programming at the Ruth Patrick Science Education Center with your tax-deductible donation. For more information, please call the main office at 803-641-3313 or email RPSEC@usca.edu.

$400 level:
1. Milky Way
   Adopted by Ms. Barbara Fenstermacher
2. Sun
3. Moon

Planets:
4. Mercury
5. Venus
6. Earth
7. Mars
8. Jupiter
9. Saturn
10. Uranus
11. Neptune
12. Pluto (Dwarf $399.99)

$150 level:
Zodiac Constellations:
13. Virgo
14. Libra
15. Scorpius
16. Ophiuchus
   Adopted by Dr. Gary J. & Mrs. Senn
17. Sagittarius
18. Capricornus
19. Aquarius
20. Pisces
21. Aries
22. Taurus
23. Gemini
24. Cancer
25. Leo

$75 level:
Galaxies and Nebulae:
44. Cat’s Eye Nebula, NGC 6543
45. Cat’s Paw, NGC 6914
46. Crab Nebula, M1
47. Dumbbell Nebula, M27
48. Flame Nebula, NGC 2024
49. Helix Nebula, NGC 7293
50. Horsehead Nebula B33, IC434
51. Horseshoe Nebula, M17
52. Lagoon Nebula, M8
53. Orion Nebula, M42
54. Owl Nebula, M97
   Adopted by Dredborah McMurtrie
55. Pillars of Creation (M16)
   Adopted by Dr. Joette and Mr. L.K. Sonnenberg
56. Ring Nebula, M57
57. Rosette Nebula, NGC 2237
58. Seagull Nebula, IC2177
59. Stellar Spire (M16)
60. Tarantula Nebula, NGC 2070
61. Trifid Nebula, M20
62. Andromeda Galaxy, M31
63. Black Eye Galaxy, M64
64. “Cigar” Galaxy, M82
65. Pinwheel Galaxy, M101
66. Sombrero Galaxy, M104
67. Sunflower Galaxy, M63
68. Tadpole Galaxy, UGC 10214
69. Whirlpool Galaxy, M51

$50 level:
Other Constellations:
70. Centaurus
71. Cetus the Sea Monster
   Adopted by Dr. David W. Hayes
72. Columba the Dove
73. Corona the Crown
74. Corvus the Crow
75. Delphinus the Dolphin
   Adopted by Mr. and Mrs. John Harrington
76. Lepus the Hare
77. Monoceros the Unicorn
78. Sagitta the Arrow

Stars and Star Clusters:
79. Albireo, a double star
80. Beehive cluster
81. Alcor & Mizor, double stars
82. Hercules globular cluster
83. Pleiades, the Seven Sisters
84. Polaris, the North Star

Brightest Stars:
85. Aldebaran
86. Altair
87. Antares
88. Arcturus
89. Betelgeuse
   Adopted by Mr. Roderick C. Lee & Ms. Katherine Mason
90. Capella
91. Castor
   Adopted by Mr. Roderick C. Lee & Ms. Katherine Mason
92. Deneb
93. Fomalhaut
94. Pollux
95. Procyon
96. Regulus
   Adopted by Mr. Roderick C. Lee & Ms. Katherine Mason
97. Rigel
98. Sirius
   Adopted by Mr. Roderick C. Lee & Ms. Katherine Mason
99. Spica
100. Vega
CALL FOR NOMINATIONS

The Ruth Patrick Science Education Center is seeking nominations for the Spirit of Ruth Patrick Award and the Robert E. Alexander Outstanding Administrator of the Year Award. If you know a teacher or school administrator who fits the criteria below, please nominate them for an award. Nominations must be received by May 15, 2015 to be considered for this year's award. Biographical sheets will be sent to each nominee and the RPSEC Advisory Board will determine the winner. If you have any questions, please call Laura Johnson at 803-641-3313 or contact her by email at LauraJ@usca.edu.

Spirit of Ruth Patrick Award

This award recognizes a teacher in the CSRA who demonstrates a passion for teaching and infusing a love of science, technology, engineering and mathematics. In 1986 the RPSEC was named for Dr. Ruth Patrick, a world renowned scientist who developed a way to test the water quality of the Savannah River while the Savannah River Site was built in the early 1950s.

Robert E. Alexander Outstanding Administrator of the Year Award

This prestigious award recognizes administrators in the CSRA for their efforts and support of bringing full awareness to math and science education and using the resources of the RPSEC to help meet science and math standards. Recipients of the award are also individuals who encourage teachers to work with the RPSEC to develop skills needed for science and math instruction.

Hitchcock Woods Essay Contest

Célestine Eustis Prize

Area students are invited to participate in the sixth annual Hitchcock Woods essay contest.

The winner receives the Célestine Eustis Prize consisting of a $500 check and his or her name engraved on a sterling silver trophy. The winner is announced at the annual Festival of the Woods to be held on Friday, September 25, 2015. The winner of the 2015 award will be told early September.

A panel of judges reviews all entries and selects a recipient whose appreciation of the Woods is in the tradition of Célestine Eustis, who purchased land in the pine forests of Aiken more than 130 years ago.

She had a passion for flora and fauna, and loved the serenity of the Woods. Célestine Eustis’s niece was Louise Eustis (Mrs. Thomas Hitchcock). She helped to ensure that her family and future generations could enjoy what we know today as the Hitchcock Woods.

For more information on the history and activity of the woods go to www.hitchcockwoods.org.

Contributors should describe why the Woods are important to them and detail their use and enjoyment of the Woods.

The Célestine Eustis Prize is funded through the generosity of Jane Page Thompson. Deadline is May 31, 2014

Please visit hitchcockwoods.org for Essay Rules and Entry Form.
The 2014 CSRA Regional Science and Engineering Fair was held on March 14, 2015 at USC Aiken. There were nearly 200 projects from CSRA schools displayed at the fair. Each year, the RPSEC presents an environmental science award in honor of Dr. Ruth Patrick. Dr. Patrick pioneered work in the study of fresh water ecosystems and developed methods for measuring the health of these systems.

This year, the RPSEC Environmental Science Award was presented to Olivia Barrett from Davidson Fine Arts Magnet School. The title of their project was “Coliform Levels in the Augusta Canal.” Coliform bacteria are a group of microorganisms that aid in digestion and are found in the intestines of animals, animal waste, soil, and plant material. The three types of coliform include total coliform, fecal coliform, and Escherichia coli (E. coli). Total coliform is found in soil that has been contaminated with the waste of cold and warm blooded animals. Fecal coliform is a subset of total coliform that is only found in fecal matter of warm blooded animals. E. coli is the main subset of fecal coliform that is also found in warm blooded animals’ feces. E. coli was used as an indicator for contamination in the Augusta Canal. Adopt-A-Stream protocols were followed and using 3M Petrifilm E. coli/Coliform count plates, five different locations on the Augusta Canal have been monitored bimonthly for the past two years. Two sample sites have consistently shown the presence of both total coliform and E. coli. Petrifilm growth has indicated as many as 12,000 E. coli per 100 ml at both. Since August 2014, sites 2 and 4 have a mean of 5,540 per 100 ml plus or minus 4,580 and 5,150 per 100 ml plus or minus 4,300 respectively. This exceeds the EPA’s limits by at least 5,000/100ml. The city of Augusta was informed of these data last year and took corrective actions. She will present this year’s data to the Director of Utilities this spring.

Congratulations to David Stoner from South Aiken High School for winning Best in Show. David will now compete at the International Science and Engineering Fair in Pittsburgh in May. The Best in Show award includes an all-expenses-paid trip for David and a parent.

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
AETE 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

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 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.

Anyone interested in enrolling in this program should contact Karen Morris at 803-641-3489.
Students from Paul Knox Middle School received first place recognition at the 2015 South Carolina Regional Future City Competition, sponsored by Savannah River Nuclear Solutions and the Ruth Patrick Science Education Center. The competition, which each year invites 6th, 7th and 8th graders to create a city of tomorrow, was held January 24th on the USCA campus.

This year’s winning team created the futuristic city, Korbinia, and included students Abbi Fralick, Savannah Padgett, and Duncan Crowder, along with Amanda Burnside, teacher and faculty sponsor of the Future City Team, and engineer mentor Matt Bodine.

In addition to a $1,000 USC Aiken scholarship sponsored by AT&T, students on the winning team received a trip to the Annual Future City National Finals in Washington, D.C., held Feb. 15-18 during Engineers Week. Team members were also awarded $100 each, backpacks, a trophy, and medallions.

Sponsored by the nation’s professional engineering community, Future City is the nation’s largest engineering education program, encouraging interest in science, technology, engineering, and mathematics through hands-on applications.

2ND PLACE - W.A. PERRY MIDDLE SCHOOL    3RD PLACE - AIKEN AREA HOME EDUCATORS
Nuclear Science Week is a national, broadly observed week-long celebration that focuses on all aspects of nuclear science. Events during this week will provide many learning opportunities about contributions, innovation and careers that can be found by exploring nuclear science.

**Education Days**
Ruth Patrick Science Education Center (Aiken, SC)
University of South Carolina Salkehatchie (Allendale, SC)
Georgia Regents University (Augusta, GA)

**Site Visit Days**
Southern Company - Plant Vogtle (Waynesboro, GA)
Savannah River Site (Aiken, SC)
SCANA - VC Summer (Jenkinsville, SC)

**STEM Career Connections Day**
Hosted by SRS Community Reuse Organization
Kroc Center (Augusta, GA)

**Annual Edward Teller Lecture**
Hosted by the Citizens for Nuclear Technology Awareness

For updates on these activities and more, visit www.nwinitiative.org or contact Kim Saxon at kim.saxon@srsro.org
Nuclear Science Week Programs for Grades 7-12
October 19-23, 2015

We invite middle and high school teachers to consider bringing your students to a new, hands-on physical science class entitled Center of an Atom: An Investigation of Protons, Neutrons, Electrons, Elements, and Isotopes that will be offered at the Ruth Patrick Science Education Center during Nuclear Science Week in the fall (October 19-23, 2015). In this program, students explore atomic structure using a series of hands-on activities, concluding with the discovery of the uses of an atom they create using the Interactive Nucleus display and the Living Periodic Table. This program is sponsored by the American Nuclear Society-Savannah River Section.

Other RPSEC programs offered that week that may be of interest to middle and high school students include Probing the Periodic Table, Chemicals Matter, and Mission to Mars or Engineering the ISS (planetarium). Note: We can accommodate up to 90 students per visit if they rotate through three, one-hour programs.

Beginning in April, the Ruth Patrick Science Education Center will be accepting reservation requests for field trip programs for the 2015-2016 school year. Reservation request forms are available at http://rpsec.usca.edu/student/. The deadline for teachers to submit their requests is Friday, June 12, 2015 at 5:00 PM. Our programs fill up quickly, so please do not delay!

Border Bash Grant Received

The Ruth Patrick Science Education Center has been selected to receive a grant from the Border Bash Foundation. The grant was received in January, 2015.

The project that was funded, Discovery 360, will provide scholarships for economically disadvantaged 6th grade students at Glenn Hills Middle School, a Title I school from Richmond County, to visit the Ruth Patrick Science Education Center at USC Aiken for a series of programs, free of charge, during the 2015-2016 school year. The activities will be aligned to state science standards and will be designed to actively engage students in hands-on, inquiry-based learning.

Border Bash Foundation, Inc., itself a 501(c)(3) organization, uses the money raised by the annual Border Bash event to benefit other area 501(c)(3) organizations focused on positively impacting children. Since its inception, Border Bash has donated over $600,000 to various charities with grants ranging in amount from $2,500 to $7,500.

Development Officer, Judith Goodwin, says, “The folks involved with the Border Bash have worked hard to have a successful event that thousands enjoy, and then turn the proceeds around to help the community. USC Aiken is extremely grateful that they recognize the importance of STEM education (science, technology, engineering and math) through the Ruth Patrick Science Education Center to benefit the children of the CSRA.”

Family Literacy Nights at Ridge Spring Elementary

The Aiken Writing Project and the Ruth Patrick Science Education Center continue to collaborate on a yearlong Family Literacy project at Ridge Spring Monetta Elementary School. Activities for ELL (English Language Learner) students and their families so far have included reading English/Spanish books, collecting family recipes, making a quilt, playing bilingual games, making crafts, and sharing a meal.
RPSEC Receives Cutting-Edge Conservation Grants from Toyota TogetherGreen

Toyota TogetherGreen, a conservation initiative of the National Audubon Society and Toyota, recently announced new awards of $765,000 to 39 innovative and diverse conservation projects nationwide. Audubon and Toyota founded Toyota TogetherGreen in 2008 to foster and invest in conservation pioneers and ideas that impact the environment on a national scale. Now in its seventh year, the program has invested $25.4 million in community-based conservation, engaging more than 455,000 people in 300 cities and all 50 states.

“Toyota believes that the key to solving the complex conservation challenges that face communities across our country can be found in bringing together smart, creative partners to share ideas,” said Toyota Motor North America Chief Corporate Social Responsibility Officer, Latondra Newton. “That’s why we are so excited to partner with Audubon for the seventh year to support the innovative solutions of the Toyota TogetherGreen grantees and fellows.”

Since 2008, Audubon’s Toyota TogetherGreen fellows and grantees have been tackling tough problems with creativity, originality and a diverse array of perspectives. In hundreds of communities, the program helps tens of thousands of people take conservation action, including a congregation that hosts organic farmers markets for residents with little access to healthy food, veterans who are healing war wounds through ecological restoration, and prisoners who help restore habitat for threatened wildlife. The program has built the capacity of over 695 environmental leaders who worked with communities to improve 33,255 acres of habitat, conserve 15.75 million gallons of water and log $11.4 million worth of volunteer time. Toyota TogetherGreen fellows and grantees have partnered with more than 3,000 organizations across the country—from Native American tribes to schools to corporations— and have leveraged their funding to raise an additional $10.6 million to support conservation.

Ruth Patrick Science Education Center was honored to receive $16,500 to work with Helping Hands Children’s Home residents to create and maintain bird-friendly habitat on their campus that will support some local species including the brown-headed nuthatch and bluebird. The brown-headed nuthatch is a high-priority species of concern in the piedmont area and bluebirds have become heavily dependent on human support for proper nesting sites. In addition to helping our feathered friends, this project is focused on creating positive interactions for these children of abuse and/or neglect in human and nature and with safe adults through gardening, bird-watching and bird-focused programming throughout the year. We want to thank other local organizations and businesses including Silver Bluff Audubon Center, Cold Creek Nursery, Birds and Butterflies and the South Carolina Bluebird Society for financial and in-kind support as well as expertise and enthusiasm that is enabling this project to be a success for both child and bird!

For more details about this and other 2014 Audubon and Toyota TogetherGreen projects, visit: www.togethergreen.org.
Southeastern Summer Nuclear Institute (SSNI)
July 15-17, 2015

A 3-day summer institute will be presented to promote nuclear education and workforce development in the southeast. Middle and high school teachers with interest in nuclear technology applications and promoting student interest in STEM related careers are invited to attend.

The Institute includes a tour of the Vogtle nuclear power station in Burke County, GA. including control room visits, simulator exercises, meetings with nuclear power reactor personnel, etc. The Institute will also include a tour of the Savannah River Site near Aiken, SC including waste management facilities and information about the Savannah River National Laboratory.

The Institute will feature a workshop to emphasize atomic and nuclear fundamentals, power generation fundamentals, nuclear technology applications, risk (real vs. perceived), and nuclear workforce opportunities with hands-on activities to illustrate important technical concepts and scientific principles.

The SSNI will have the following benefits:
• Broader knowledge and understanding of the advantages of nuclear energy.
• Inspiration for middle and high school students to pursue STEM related careers.
• Future nuclear workforce opportunities including engineering, technical support, crafts, etc.
• Public communication about the nuclear industry and contributions of nuclear technology.
• Support for southern nuclear utilities in selecting nuclear power for future energy needs.

Partners include: Southern Co., Georgia Power Co., Citizens for Nuclear Technology Awareness, SRSCRO, ANS, AREVA, USCA, and Energy Solutions.

Registration is limited to 25 middle and high school teachers in order of receipt. A registration fee of $50 must be received by May 15th to be eligible. Questions should be e-mailed to: SSNI1515@gmail.com.

Teachers receive $50 in gift cards, free housing (if needed), free meals, educational resources including DVD with presentations and reference materials, American Nuclear Society outreach materials and teacher guides, and a certificate of completion.

http://rpsec.usca.edu/Workshops/CNTA/SSNI2015.html
SUMMER 2015 STEM EDUCATION
PROFESSIONAL DEVELOPMENT OPPORTUNITIES
Focusing on Teaching and Assessing South Carolina College- and Career-Ready Standards for Mathematics
with an Integration of the Science & Engineering Practices
For K-12 Mathematics and Science Teachers, Curriculum Support Specialists and School Administrators

JUNE 2015 SUMMER INSTITUTES
(See descriptions and registration details below.)
All Sessions will be held Monday – Thursday, 8:30 AM – 3:30 PM

<table>
<thead>
<tr>
<th>High School Grades 9-12</th>
<th>High School Mathematics With STEM Applications</th>
<th>June 15 – 18, 2015</th>
<th>USC Aiken</th>
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<tr>
<td>Elementary School Grades K - 2</td>
<td>Elementary Mathematics With STEM Applications</td>
<td>June 22 -25, 2015</td>
<td>USC Aiken</td>
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JULY 2015 SUMMER INSTITUTES
(See description and registration details below.)
All Sessions will be held Monday – Thursday, 8:30 AM – 3:30 PM

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<tr>
<th>Elementary School Grades 3 - 5</th>
<th>Elementary Mathematics With STEM Applications</th>
<th>July 13-16, 2015</th>
<th>USC Aiken</th>
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<tbody>
<tr>
<td>Middle School Grades 6-8</td>
<td>Middle School Mathematics With STEM Applications</td>
<td>July 27-30, 2015</td>
<td>USC Aiken</td>
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STEM Focus Areas Include: Science and Engineering Practices; The Engineering Design Process; Modeling & Interactive Simulations; Aerospace Engineering – The Mathematics and Science of Flight; Mechanical Engineering - Wind Turbines; Civil Engineering - Bridges; Computer and Electrical Engineering – Robotics; Graphing Calculator and Computer-Based Technology Applications
The RPSEC summer 2015 STEM Education sessions are designed to strengthen understanding of grade-level mathematics and science content, pedagogy, and assessment strategies. Integration of mathematics and science content in teaching STEM topics emphasizes trans-disciplinary connections. Selected unifying contexts will provide links to ELA and Social Studies content while bringing relevance to science and mathematics.

Specific outcomes include:

- Methodologies that enhance teacher content knowledge, teacher empowerment in making real world connections, emphasis on content relevance, and student engagement in STEM education;
- Assurance of rigorous academic integrity of content;
- Innovative focus on STEM education;
- Inquiry learning environment;
- Evidenced-based argumentation in mathematics and science classrooms;
- Effective integration of instructional technology;
- Interactive simulations for teaching mathematics and science content; and
- Resources for effective implementation of STEM education at the classroom and school level.

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<th><strong>Registration Fee:</strong></th>
<th><strong>Early Bird Registration Fee:</strong></th>
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<tr>
<td>Four-Day Institute - $480.00</td>
<td>Four-Day Institute $440.00</td>
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<tr>
<td><strong>Registration Deadline:</strong></td>
<td><strong>Early Bird Registration Deadline:</strong></td>
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<tr>
<td>Two weeks prior to each Institute</td>
<td>Monday, June 1, 2015</td>
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</table>

Registration forms can be found at http://rpsec.usca.edu/

For more information, please contact:
Gloria Allen, Coordinator, Professional Learning;
Ruth Patrick Science Education Center
471 University Pkwy, USC Aiken, 29801
Phone: 803-641-3592; 803 641-3313   Fax: 803 641-3615   Email: gloriaa@usca.edu

Space is limited! Please register early!
Structured Investigations of the Science Standards Institute (SISSI)

- Investigate the NEW South Carolina Science Standards -
- Explore the new Science & Engineering Practices -
- Apply the new Cross Cutting Concepts -

SISSI consists of four (4) full day professional development sessions.

2015-2016 sessions open to participants from across SC.

Information and registration will be available online at:
http://rpsec.usca.edu/ProfessionalLearning/
or call (803) 641-3313 for more information