

## Professional Development Opportunities

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Get ready for spring and summer with these great workshops and trainings. Below are links to some upcoming programs all over the state. For a more complete list visit the [NCSTA Professional Development Calendar](#).

- [The NCCAT Experience](#)
- [The Science House, NC State University](#)
- [Pisgah Astronomical Research Institute](#)
- [Project Learning Tree](#)
- [Pisgah Forest Institute](#)
- [Promoting Standards in Science and Mathematics](#)
- [Ocean Awareness Through Technology](#)
- [NCSLA/NSELA Summer Leadership Institute](#)
- [Sustainable Forestry Teachers' Academy](#)

If you know a program that should be included in the next issue of the Science Reflector, [email the editor](#).

### Teacher Renewal Seminars: The NCCAT Experience

Join us for a North Carolina Center for the Advancement of Teaching (NCCAT) seminar. Teachers of all grade levels and subjects who have been employed full-time in North Carolina public schools for at least three years may apply. Seminar materials, lodging, meals, substitute teacher pay, and most travel expenses are covered **at no cost to the participating teacher or their school**. All seminars are aligned with the NC Standard Course of Study, are multi-disciplinary, and are based on experiential learning principles.



To register call NCCAT Teacher Services at 1-800-922-0482 or email [registrar@nccat.org](mailto:registrar@nccat.org) submitting your name, home telephone number, social security number, and seminar choice. Abridged descriptions follow; however, full descriptions of all professional development offerings are available on the NCCAT web page, [www.nccat.org](http://www.nccat.org).

9440

NASCAR: Science on the Race Track

TBD\* (see below): Randleman

The National Association for Stock Car Auto Racing, NASCAR, is a staple of Southern life. Deeply rooted in the region's culture, the sport of auto racing claims a long list of victories that range from aerodynamic triumphs on the track to sold-out stands on race day. Originating as the back-roads mode of transport for moonshine, motor sports in the modern age have created a fast-moving career path for specialists not only in automotive design and performance, but also in technology, economics, marketing, public relations, art, finance, accounting, and tourism. Visit NASCAR team shops and motor speedways to meet those who have helped turn a regional sport into a multimillion dollar national industry. Explore the ways in which math and physics work together on the speedway. Enjoy the tales and stories that made cultural icons of the people driving the race-car movement. You will learn ways to connect motor sports to learning in your classroom while immersing yourself in the world of speed. (Two participants to a room.) *\*Due to NASCAR schedules, the seminar will be held sometime between January 20 and February 8.*

9595

Sea Level Rise: The Impact of Climate Change on the Outer Banks

February 11–15: Ocracoke

One of North Carolina's greatest resources is its coastal region. With more than 3,300 miles of shoreline, this fragile area is on the frontline if climate change causes the seas to rise. Can we afford to ignore this threat?

Few issues today are as controversial and timely as the impact of human activity on climate change. Join us on Ocracoke as we study the complex forces at work causing global climate change. Compare current weather patterns with historical data to assess trends of global warming and cooling. How does human consumption of fossil fuels and the production of greenhouse gases affect climate change? How does climate change impact sea level rise? Explore the beaches and marshes along the Outer Banks for a firsthand look at the effect of coastal storms, which have increased in frequency and intensity, to witness what our state stands to lose. Learn ways we can help our students understand and respond to this complex issue in a responsible and powerful manner as we strive to become better stewards of our world.

9625

Starry, Starry Night

February 18–22: Cullowhee

Look up into the night sky. Feel the wonder, fascination, and awe that our ancestors felt as they were guided by star lore in their planting, building, navigating, and migrations. Learn about the celestial sphere, how the sky seems to move and change, how to identify many bright stars and constellations, why we have seasons, and what causes the cycles of the moons and planets. Explore phenomena such as eclipses, meteors, comets, and satellites. Participate in hands-on activities that awaken the wonderment and mystery of the cosmos. In collaboration with faculty from UNC-Chapel Hill's Morehead Planetarium and Science Center, learn practical methods of stargazing with the naked eye. Master the basics of how to choose and use a telescope to view the evening sky. Discover new and exciting resources to stimulate scientific inquiry in your students. Come experience the stars and see why the sky's the limit!

9730

Space Camp: Your Place in Space!

March 3–7: Huntsville, Alabama

Ten...Nine...Eight...Seven...Six...The countdown for NCCAT's Space Camp experience is on. Realize the childhood dream of becoming an astronaut as you immerse yourself in the wonders of the space program at the U.S. Space and Rocket Center and NASA's Marshall Space Flight Center in Huntsville, Alabama. Relive one of America's most important historical endeavors as you study "the finest rocket collection in the world," according to astronaut John Glenn. Discover a renewed appreciation for Newton's laws of motion while you train as the astronauts do using simulators such as the one-sixth-gravity trainer, the manned maneuvering unit, and the multi-axis trainer. The culmination of our astronaut training will be an intensely realistic simulated mission. The mission applies the basics of shuttle operation and the science and history of the space program, but also will involve leadership skills and teamwork. Through the excitement of space exploration teachers can encourage their students to study math, science, history, and technology. Come and experience the future today. (Two participants to a room.)

9775

Teacher Scholars in Residence

March 9–13: Cullowhee

The Teacher Scholars in Residence program offers educators an excellent short-term residential experience for study and research. Teachers pursuing projects of outstanding intellectual or artistic promise are invited to apply. Teams of up to four educators who seek time and space for collaboration also may apply. Offered at least twice a year, this program provides five days devoted to independent study in a scholarly, supportive environment. Preference is given to teachers with outstanding proposals who are applying to the program for the first time. For more information, contact NCCAT. Call 800-922-0482 or e-mail [tscholars@nccat.org](mailto:tscholars@nccat.org).

9820

The Ecology of Barrier Islands

March 16–20: Ocracoke

If our students are going to grow into responsible stewards of North Carolina's critically important coastline, their understanding of this region has to go deeper than sands, tans, and seafood restaurants. Explore the world of the barrier islands. Barrier islands are typically characterized by low sandy islands that are easily affected by wind, tides, and currents and protect the mainland from these forces. What makes North Carolina's barrier islands unique is their distance from the mainland and their close proximity to the continental shelf and the Gulf Stream. Learn about the formation and stability of these landforms, the seasonal effects of storms, and how these islands change over time. How do these islands reflect a world of dynamic equilibrium, a world of constancy and change? Compare and contrast the land of the sound with the land of the sea. How do these two regions of the island differ? Investigate the key plant and animal species associated with these two distinct regions. Gain firsthand knowledge and collect classroom activities related to the ecology of barrier islands.

9885

Crime Scene Investigator: The New Sherlock Holmes

March 31–April 4: Cullowhee

Today's crime scene investigations might cause Sherlock Holmes, Sir Arthur Conan Doyle's legendary sleuth, to retract his analysis of, "Elementary, my dear Watson." In fact, the demands on the investigators are anything but elementary. Investigations require a keen sense of observation, extensive use of the scientific method, and physical and biological expertise. The field is often peopled with multiple investigators, all with their own areas of expertise. Become detectives as we put on the hat of the forensic scientist and determine the facts in a simulated crime scene. Discover how to objectively apply the techniques of physical and natural sciences in examining forensic evidence. Stalk the trail with a famous tracker. Analyze the smallest traces of human evidence using DNA profiling as we become molecular scientists aboard UNC-Chapel Hill's state-of-the-art traveling science laboratory. Work with a world-famous forensic anthropologist who will help us as we "leave no bone unturned."

9930

Wonders of the Appalachian Trail

March 31–April 4: Cullowhee

Marked by white blazes or mountaintop cairns, the Appalachian Trail meanders across scenic ridges and valleys for more than 2,100 miles. From the perceptions of millions of hikers, it has gained a reputation as a place of solitude and natural beauty. Study the history of those whose pioneering vision like Benton MacKaye came to see the trail as a "cultural and national treasure." Explore the diversity of forest growth, flowering shrubs, and wildflowers, as we embark on easy to moderate daily hikes. Experience the trail's magic to the accompaniment of migrating birds overhead and animals that sometimes share the trail. We will become ecologically aware of how to minimize our impact on the backcountry as we hike the Nantahala Gorge, Stecoah Gap, Wayah Bald, and Siler Bald areas of the Appalachian Trail. The expanded ecological awareness and appreciation for experiential learning we gain on the trail can be shared with students of all ages.

10020

Appalachian Spring Wildflowers

April 21–25: Cullowhee

Come to the mountains at the peak of the spring blooming season and learn how to identify, record, and appreciate the wildflower bounty native to western North Carolina. Take field trips to discover various wildflower habitats in the region, under the able guidance of botanists. Delve into issues related to species diversity, habitat destruction, and wildflower conservation. Learn a logical, systematic approach for identifying wildflowers following a simple, yet precise, key system. Analyze the structure of wildflowers and increase your botanical knowledge and vocabulary. The nature of this seminar makes hiking a necessity, perhaps during soggy or chilly weather, but offers the rare opportunity to gain knowledge of wildflowers while enjoying the beauty of spring in the Great Smoky Mountains.

10155

The Art and Science of Boat Building

May 12–16: Ocracoke

Boat building has a long tradition in coastal North Carolina. Watermen throughout history have refined and mastered the necessary skills to create small and large vessels that ply the sounds and ocean waters. From engaging in coastal trade to pursuing seafood and leisure activities, locally crafted boats represent both form and function. What math and science lessons can we learn from the precise measurements required in boat building? What makes a well-built craft move through the water with grace and ease? Come aboard as we explore Pamlico Sound. Compare and contrast today's recreational and commercial boaters with traditional crafts. Join us on Ocracoke as we participate in the building of a sea worthy wooden skiff, create individual boat models, tour small boat building operations, and learn about the science and art of this age-old tradition.

How do I apply?

Teachers of all grade levels and subjects who have been employed full-time in North Carolina public schools for at least three years may choose a seminar. There is no cost to the teacher. Call NCCAT Teacher Services at 1-800-922-0482 or email [registrar@nccat.org](mailto:registrar@nccat.org) submitting your name, home telephone number, social security number, and seminar choice. Or visit the NCCAT Website at [www.nccat.org](http://www.nccat.org) to download an application. If you have any questions about particular seminars, please feel free to contact Renée Coward, 2005 NCSTA President and NCCAT representative.

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**Teacher Programs at The Science House**

*Envirothon Workshop*



Are you a middle school or high school teacher who enjoys helping students become more aware

of our environment? Nucor Plate Mill in Hertford County has partnered with the North Carolina Department of Environment and Natural Resources and The Science House at NC State University to sponsor a workshop focused on NC Envirothon competition topics. This all-day workshop on Saturday, February 2nd is open to teachers from any Northeastern North Carolina middle or high school. As an added bonus, we have special resource learning kits available for teacher mentors of registered Envirothon teams. Learn more and register online at <http://www.science-house.org/workshops/envirothon.html>

### *Bring the Science House Teacher Workshops to Your School*

The Science House also provides one or two-day programs to update and refresh teachers' mathematics, science, and Internet skills. These workshops have been taught many times in schools across North Carolina. Our workshop participants learn skills and activities that they can immediately use in their own classrooms. We especially emphasize programs to help meet teacher technology competencies. Each workshop can be tailored to fit local needs. Please visit the workshop web page ([www.science-house.org/workshops/](http://www.science-house.org/workshops/)) for more information on our workshop or contact Scott Ragan ([scott\\_ragan@ncsu.edu](mailto:scott_ragan@ncsu.edu)) at The Science House or call (919) 515-6118

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### **Pisgah Astronomical Research Institute (PARI)**



#### Advanced School of Galactic Radio Astronomy

This workshop is for teachers who have already attended a SGRA workshop or have been trained to use Smiley.

March 7-8, 2008 at PARI

Are you already using Smiley and want to learn more? Join us for an overnight workshop at PARI!

Participants will

- Learn and help develop more experiments using radio data from Smiley.
- Explore the Smiley radio observatory being built in 2nd Life.
- Learn how to incorporate other astronomical research being done at PARI into your classroom
- Much, much more! (Have some ideas? Let us know!)
- Receive 10 hours of Smiley access time for use in the classroom
- Receive a \$100 stipend
- Spend the night at PARI, a truely unique experience!

Register online at [www.pari.edu/programs/teachers/smiley/sgra-registration-form](http://www.pari.edu/programs/teachers/smiley/sgra-registration-form)

PARI, in Transylvania county, is a not-for-profit public foundation dedicated to providing hands-on educational and research opportunities for a broad cross-section of users in science, technology, engineering and math (STEM) disciplines. Visit us online at [www.pari.edu](http://www.pari.edu).

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### **Project Learning Tree**



Project Learning Tree (PLT) workshops will introduce you to exciting, hands-on, multidisciplinary activities that cover a broad range of topics in our natural and built environments. Attendees at PLT workshops can obtain CEU renewal credits, and the PreK-8 curriculum is correlated to the NC Standard Course of Study in the areas of science, math, language arts, and social studies. Additionally, PLT is required for the NC EE Certification program. Unless stated, workshops and materials (including activity guides) are provided free of charge, but participants must pre-register. To pre-register for any of the workshops below, please contact the person listed directly.

January 22, 2008, 9am - 4pm

PreK-8 Workshop

NC Aquarium on Roanoke Island, Manteo, NC

To Register: Susan Ahlfeld [susan.ahlfeld@ncmail.net](mailto:susan.ahlfeld@ncmail.net) 252-473-3494 x 254

6-hour workshop. Participants will need to complete a simple "homework" assignment to receive 1.0 CEU credits and/or to meet EE Certification requirements.

January 23, 2008. 8:30am - 3:30pm

PreK-8 Workshop

Davidson County Cooperative Extension Office, Lexington, NC

To Register: Leslie Vinesett [leslie\\_vinesett@ncsu.edu](mailto:leslie_vinesett@ncsu.edu) 336-242-2085

6-hour workshop. Participants will need to complete a simple "homework" assignment to receive 1.0 CEU credits and/or to meet EE Certification requirements.

January 25 & 26, 2008, 1:30pm - 5:30pm & 9:30am - 4:00pm

Secondary Workshop - Places We Live

Kathleen Clay Edwards Family Branch Library, Greensboro, NC

To Register: Melanie Buckingham [melanie.buckingham@greensboro-nc.gov](mailto:melanie.buckingham@greensboro-nc.gov) 336-373-2923

10-hour special topic workshop. CEU credits and Form Bs will be distributed at the end of the workshop. Grant funded to include additional curriculum materials to help teachers and students study community growth and development. Visit NC PLT for a more detailed workshop description.

February 1 & 2, 2008, 1:30pm - 5:30pm & 9:30am - 4:00pm

Secondary Workshop - Places We Live

Kathleen Clay Edwards Family Branch Library, Greensboro, NC

To Register: Melanie Buckingham [melanie.buckingham@greensboro-nc.gov](mailto:melanie.buckingham@greensboro-nc.gov) 336-373-2923

10-hour special topic workshop. CEU credits and Form Bs will be distributed at the end of the workshop. Grant funded to include additional curriculum materials to help teachers and students study community growth and development. Visit NC PLT for a more detailed workshop description.

February 8 & 9, 2008, noon - 5pm & 9am - 2pm

PreK-12 Workshop Fire Focus

Clemmons Educational State Forest, Clayton, NC

To Register: Clemmons ESF Rangers [clemmonsesf.dfr@ncmail.net](mailto:clemmonsesf.dfr@ncmail.net) 919-553-5651

10-Hour Workshop. CEU credits and Form Bs will be distributed at the end of the workshop. Visit NC PLT for a more detailed workshop description.

March 7 & 8, 2008, 4pm - 8pm & 9am - 3:30pm

PreK-12 Workshop Technology Focus

Centennial Campus Center for Wildlife Education

Raleigh, NC

To Register: Beth Folta [wildlife.educator@gmail.com](mailto:wildlife.educator@gmail.com) 919-269-9034

10-Hour Workshop. CEU credits and Form Bs will be distributed at the end of the workshop. Visit NC PLT for a more detailed workshop description.

March 24 & 25, 2008, 10am - 5pm & 9am - 5pm

Where is Away? A PLT PreK-12 Workshop

Raleigh, NC

To Register: [Please fill out the online registration form.](#) [Kelley Dennings](mailto:Kelley.Dennings) 919-715-6507

This is a 6-Hour workshop, with the option to attend multiple events on day two to complement the PLT curriculum (and for 10 contact hours). This is a very unique opportunity, as this workshop is being held as a pre-conference session for the Carolina Recycling Association's annual conference. More details and a draft agenda can be found on the NC PLT web site. Maps to the workshop location, speaker venue, and tour sites will be provided upon registration.

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Pisgah Forest Institute at Brevard College in Brevard, North Carolina presents:

**2008 Distance Learning Workshop for 6-12 Educators**

February 16-April 14, 2008. Both traditional and non-traditional educators are eligible to participate.

This free workshop includes online instruction, resource notebook, and many classroom takeaways! The workshop will run for 8 weeks and is designed for educators of grades 6-12. The workshop will focus on four general sections of earth and environmental science curriculum: geology, ecology, hydrology, and atmospheric conditions. This workshop will start with an orientation at Brevard College with the PFI staff. This course is geared to participants that are unable to travel to our week-long summer workshops.

Workshop participants are eligible to receive up to 4 Continuing Education Unit (CEU) credits based on 40 contact hours, as well as Criteria III credit in the North Carolina Environmental Educator's (NCEE) Certification Program. Three semester hours of undergraduate college credit is available through Brevard College. (This is a great way for lateral entry teachers to receive science credits!)

**Summer Workshops**

All summer workshops are FREE to all educators (both traditional and non-traditional educators) and included: room, board, instruction, resource notebook, and many classroom takeaways!

**June 15—20, 2008: Earth/Environmental Science for Middle and High School Teachers**

This workshop provides science educators of grades 6-12 with classroom lessons, laboratory activities, and field experiences associated with earth and environmental topics. The workshop will focus on four general sections of earth and environmental science curriculum: geology, ecology, hydrology, and atmospheric conditions. The workshop will use the national forests of Western North Carolina as a classroom to teach participants about the unique organisms and ecosystems of the Southern Appalachian Mountains. Workshop participants are eligible to receive up to 4 Continuing Education Unit (CEU) credits based on 40 contact hours, as well as Criteria I or II credit in the North Carolina Environmental Educators (NCEE) certification program. Three semester hours of undergraduate college credit is available through Brevard College.

**June 22—27, 2008: Earth/Environmental Science for Elementary School Teachers**

This workshop provides elementary educators with classroom lessons, laboratory activities, and field experiences that capitalize on the topics in the earth and environmental K-5 science curriculums. Teachers will be presented pertinent background information along with tangible methods to introduce these earth and environmental science concepts to K-5 students. Emphasis will be placed on using the environment around us to provide a living classroom to students. Some of the specific topics include: plants and animals, geology, water and air quality, and weather. Environmental issues will be integrated throughout the workshop. Workshop participants are eligible to receive up to 4 Continuing Education Unit (CEU) credits based on 40 contact hours, as well as Criteria I or II credit in the North Carolina Environmental Educators (NCEE) certification program. Three semester hours of undergraduate college credit is available through Brevard College. (A great way to receive college science credits for lateral entry teachers!!).

**July 13—15, 2008: Recycling and Composting in the Classroom**

This workshop, designed for K-12 educators, will focus on recycling and composting, and their importance in solid waste management and sustainability. In learning about these topics, participants will also be learning how and why to teach about recycling and composting. Woven throughout the workshop will be material from both Wake County's "Feed the Bin" and Keep America Beautiful's "Waste in Place" school recycling curriculum guides. In addition to this curriculum, we will focus on how to implement and effectively run a recycling and composting program in a school setting. Workshop participants are eligible to receive up to 1.5 Continuing Education Unit (CEU) credits based on 15 contact hours, as well as Criteria III credit in the North Carolina Environmental Educators (NCEE) certification program.

**July 16—18, 2008: Forest Invasives**

Forest Invasives will examine invasive species of plants, animals, and fungi that have affected the forests of the Southern Appalachians and altered the composition of native trees and other

organisms. The most recent invader has been the Hemlock Woolly Adelgid, an aphid-like insect that attacks Hemlock trees, but several other animals have also affected forest systems. Everyone recognizes that Kudzu is an invasive plant, but there are several other plants that are even more damaging to forest ecosystems. Fungal diseases have historically been problematic in the moist forests of the Southern Appalachians, with Chestnut Blight a major source of forest change. This workshop will teach participants to identify invasive species and describe ways to control them. This workshop is designed for K-12 educators. Workshop participants are eligible to receive up to 1.5 Continuing Education Unit (CEU) credits based on 15 contact hours, as well as Criteria II credit in the North Carolina Environmental Educators (NCEE) certification program.

July 20—25, 2008: Forest Ecology

This workshop offers participants an opportunity to learn about the important interrelationships in forests. Participants will discover how plants, animals, fungi, and microbes connect to each other to create forest ecosystems. The importance of abiotic features in determining forest type will also be examined, and the role of humans as agents of change will be addressed. The workshop will use the national forests of Western North Carolina as a classroom to teach participants about the unique organisms and ecosystems of the Southern Appalachian Mountains. Topics include: types of forests, changes within the forest systems, and biodiversity. This workshop is designed for K-12 educators. Workshop participants are eligible to receive up to 4 Continuing Education Unit (CEU) credits based on 40 contact hours, as well as Criteria II credit in the North Carolina Environmental Educators (NCEE) certification program.

Pisgah Forest Institute is a non-profit, cooperative, environmental education effort of the USDA Forest Service, the Cradle of Forestry in America Interpretive Association, and Brevard College.

For more information and to pre-register, [visit our website](#) or contact us at [pfi@brevard.edu](mailto:pfi@brevard.edu) or call us at (828) 884-8229.

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### **Promoting Standards in Science and Mathematics (PSSM)**

As part of a comprehensive program of asynchronous online professional development modules for K-12 science and math teachers, the Center for Science, Mathematics, and Technology Education at East Carolina University currently offers science modules for K-12 science. There are four 12-hour modules in each course. Teachers may take one or more modules as their schedules permit. After completing all four modules, teachers may elect to register for graduate credit and complete a summary project in order to receive 3.0 semester hours in science education.

Modules are currently available for: K-2, 3-5, 6th, 7th, 8th, biology, chemistry, physical science, and earth/environmental science. Registration cost is \$40 per module.

Teachers who complete a 4-module course (Level I) have additional options:

1. Apply to serve as an on-line facilitator through the CSMTE
2. Continue professional develop at advanced levels in Advanced Pedagogy and Leadership

For further information, contact Karen Dawkins at [dawkinsk@ecu.edu](mailto:dawkinsk@ecu.edu).

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### **Ocean Awareness through Technology**

NC Aquarium at Fort Fisher, Kure Beach  
Monday, March 24, 2008, 10:00 a.m. – 4:00 p.m.

Teachers have an opportunity to experience Remotely Operated Vehicle (ROV) technology for practical classroom use; operate an ROV built by high school students; understand science provided by ROV use in the deep ocean; and network with other marine educators. Activities, presentations, snacks, and Aquarium admission are provided free of charge for pre-registered teachers. This even can be use for up to 6 CEU credits.

To register, [contact Sami Herbert](#) at (910) 458-7468. For questions, [contact Valerie Southgate](#)

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### **NCSLA/NSELA Summer Leadership Institute**

Powerful Professional Learning in Science: July 7-10, 2008 at the Grove Park Inn in Asheville

At this conference, participants will explore the differences between professional development and professional learning. They will experience several powerful designs themselves – deeply enough that they will be able to facilitate these designs with the educators with whom they work. They will evaluate current professional learning programs according to a variety of criteria. Then, using a Backmapping Model for planning, implementing, and evaluating professional learning, they will create a plan to remodel current professional learning approaches so that they more closely align with students' learning needs, meet National Staff Development Council's standards for staff development, and model the type of learning educators want their students to experience.

<http://www.ncsla.net/sli08/>

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### **Sustainable Forestry Teachers' Academy**

Mountain Academy, based in Asheville June 16-20, 2008

Coastal Academy, based in New Bern July 14-18, 2008

The Sustainable Forestry Teachers' Academy is a four-day residential program that focuses on the social, economic, and environmental aspects of sustainable forestry. Teachers will visit a variety of forests and mills learning about forest management and the manufacturing of various wood products such as paper, furniture, plywood and lumber. Teachers participate in tours and hikes in forests under a variety of ownership and management plans. Excursions to museums, state forests, experimental forests, and environmental learning centers round out the experience. Meals, lodging, and transportation during the Academy are provided, however participants are required to submit a \$100 deposit, which will be returned upon arrival. CEU renewal credits will be awarded.

The online application and more information including sample agendas and pictures can be viewed at [www.ncsu.edu/feop/teachers](http://www.ncsu.edu/feop/teachers). Multiple teachers from the same school, and teachers of all disciplines, are encouraged to apply! This opportunity is available only for teachers associated with a school district, non-formal educators do not qualify. Questions? [Contact Renee](#) at 919-515-5518.

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#### **The Science Reflector**

Newsletter of the North Carolina Science Teachers Association

P.O. Box 33478, Raleigh, NC 27636

[Elizabeth Snoko Harris](#), Editor