

Professional Development Opportunities

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Get ready for Fall 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](#)
- [Morehead Planetarium and Science Center](#)
- [Astronomy Workshop at UNC Pembroke](#)
- [Sustainable Forestry Teachers' Tour](#)
- [MSEN Science Initiative](#)
- [Pisgah Forest Institute](#)
- [Dolan DNA Learning Center](#)
- [Science Now](#)
- [Science Laboratory Safety Seminar](#)

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 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.

The Natural Rhythms of the River

June 12-16, 2006: Cullowhee

How have rivers shaped human culture and how have humans shaped rivers? Hike and raft wild river gorges as we explore the botany, zoology, geomorphology, and cultural history of rivers.

Growing Healthy

June 12-16, 2006: Cullowhee

For centuries, the healing qualities of nature have been recognized as essential to health and renewal. Learn about current research on the connection between nature and human stress reduction.

Chattooga River: Real and Imagined

July 17-21: Cullowhee

The Chattooga River is a national wild and scenic river flowing through Georgia and South Carolina. Experience white-water rafting on this ancient watercourse and learn about mountain culture from the perspective of the river.

Capital Culture: Museum Resources of Raleigh

July 17–21: Raleigh

What do bones, plants, paint, art, and hands-on experiences have in common? They are all a part of the museum life of North Carolina's capital city. Together we'll explore the museums of Raleigh, often called "the Smithsonian of the South," as we experience various approaches to museum resources available to teachers and students.

Holistic Health

July 24–28: Cullowhee

Enhance your life in and out of the classroom by learning healthier habits of mind and body. Come experience new approaches to wellness through nutrition, daily awareness, general fitness, and flexibility.

Teacher Scholars in Residence

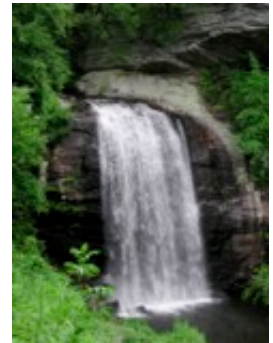
July 31–August 4: Cullowhee

The Teacher Scholar program offers educators a 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. The Teacher Scholars in Residence 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. A special application is required, for more information e-mail tscholars@nccat.org or dial 800-922-0482.

Waterfalls and Butterflies: Grace and Beauty in Motion

July 31–August 4: Cullowhee

From the ephemeral and short lives of butterflies to the slow geologic and hydraulic movement that creates waterfalls, explore with us the power and beauty of nature in the mountains of western North Carolina.



Multimedia in the Classroom: Empowering Student Learning

August 7–11: Cullowhee

Explore new ways technology can enhance teaching and learning. Review techniques and guidelines that ensure multimedia projects are pedagogically sound, curriculum-based, and enlivening for the child and the classroom community.

Fontana Dam: The Town that Drowned

September 18–22: Cullowhee

Learn about Fontana, a small logging town hidden deep in the mountains, which now lies beneath the lake created by one of the largest hydroelectric dams in the East. Hear stories of removal of families, and promises of access roads, ending with a road to nowhere that remains unfinished. We will travel by railroad deep within Nantahala, known to the Cherokee as the "Land of the Noonday Sun."

Starry, Starry Night

September 18–22: Ocracoke

Wake up to the awe and mystery of the cosmos. Join us for a week on Ocracoke Island as we re-tell the myths of the constellations and focus on practical stargazing with the naked eye. Also, learn the basics of how to choose and use a telescope to view the evening sky.

The Mountain

September 25–29: Cullowhee and Mt. LeConte

Experience mountain ecology during the fall migration of birds and butterflies. Hikes include an overnight experience at rustic Mt. LeConte Lodge in the Great Smoky Mountains National Park. This seminar is physically challenging and requires endurance, good health, and a philosophical attitude about the weather.

The Age of Sail

October 9–13: Ocracoke

Learn the language and the songs of the sea. Share hardtack with your messmates. Practice marlinespike seamanship. Tune your ear to the bosun's pipe and the ship's bell. Rediscover our heritage as a maritime nation and become more aware of how our history shapes our present.

Leaves: Nature, Art, and Identity

October 9–13: Cullowhee

Explore the concept and structure of individual and community identity as seen through the lens of modern brain science, creative expression (bookmaking and sketching), and encounters with the natural beauty of the changing colors of the fall in the Great Smokies.

Lost! Adventures with Map and Compass

October 9–13: Cullowhee

Where are we? Answer this question and many more while studying the history and pedagogical use of compasses, maps, navigation, and orienteering. Participants need to be able to walk several miles, uphill and down, carrying light day packs.

A Place of Refuge: The Great Smoky Mountains National Park

October 16–20: Cullowhee

Discover the Great Smokies on day-hikes as we explore one of the world's richest reserves of biological diversity. Deep forests, massive geologic formations, and clear tumbling streams lend themselves to opportunities for reflective writing, photography, and environmental education.

Salty Dogs and the Lore of the Sea

October 16–20: Ocracoke

Explore the marine ecology of the Outer Banks and the lives of the men and women who live from the sea. Work with small commercial fishermen pulling gill nets and crab pots off the shores of Ocracoke Island as you experience the culture and environment of North Carolina's fishing industry.

Hurricanes: In the Eye of the Storm

November 13–17: Ocracoke

Learn about the structure, intensity, and effects of hurricanes: wind, storm surges, rainfall, tornadoes, erosion, and change. Explore the impact of nature's forces on coastal communities and their inland neighbors.

Birds, Ducks, and Decoys

December 4–8: Ocracoke

Discover Pea Island National Wildlife Refuge on Cape Hatteras as we explore bird habitats, territorial displays, and feeding patterns. Sharpen your visual perception as we learn how to identify, sketch, and carve birds like the black skimmer, brown pelican, snowy egret, great blue heron, whistling swans, and various gulls and ducks.

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 submitting your name, home telephone number, social security number, and seminar choice. Or visit the NCCAT Website at 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.

Teacher Programs at The Science House



Open Registration Professional Development

Do you need some high quality professional development before you head back to school this fall. You don't want to miss these exciting workshops held at our Raleigh office. Click on the link below to see the full workshop descriptions. Sign up online and join us this summer for some fun hands-on training that you can take back to your classroom. Learn more and register online at <http://www.science-house.org/workshops/open/>

Science Technology for the Elementary Classroom - July 24, 2006

Using Calculator Based Lab Equipment - July 26, 2006

Physics From the Junk Drawer - August 9, 2006

Teacher Pioneers

Are you interested in integrating technology into your math or science class? Become a Teacher Pioneer! 1-week and 2-week workshops are available at the Fayetteville, Asheville and Jacksonville satellite offices this summer to introduce middle and high school teachers to calculator and computer based probeware. Participants receive a stipend and can borrow the equipment (including computers!) to use with their students. Teachers must teach in qualifying counties to participate.

Asheville - <http://www.science-house.org/info/asheville/ms.html>

Fayetteville - <http://www.science-house.org/info/fayetteville/index.html#programs>

Jacksonville - coming soon! Contact Shawn Reintjes Shawn_Reintjes@ncsu.edu

Genetics Workshops & Kits

Relating Genetics to Everyday Life Workshop, July 11-13, 2006

Learn how to better prepare your students for the cutting-edge world of biotechnology. Come for a three-day learning cycle that takes you from the basics of genetics to the modern techniques of genomics. Find out about resources available to teachers, including how to borrow kits that will allow you to do equipment-intensive experiments with your students. Talk to scientists, do hands-on bench science, and self-paced tutorials. The workshop will be held in Greenville, North Carolina, at East Carolina University, July 11-13, 2006. Participants will receive a stipend of \$225 and a copy of an activity manual with age-appropriate classroom activities in genetics for high school students. Contact Mary Watson (Mary_Watson@ncsu.edu) for more information.

Environmental Science Summer Workshops

This hands-on workshop is for North Carolina high school science teachers. Teachers will participate in hands-on learning activities that have been correlated with the North Carolina Science Standard Course of Study. Everyone completing the workshop will receive a FREE copy of The NSF STC/Science House's publication, Environmental Science: A Collection of Activities for the High School Classroom Vol. 2 as well as 1.8 CEUs and a stipend.

Raleigh, NC: June 27-29, 2006; The Science House; NC State University

Fayetteville, NC: July 25-27, 2006; Fayetteville State University

Greensboro, NC: August 1-3, 2006; Hairston Middle School

Register today as these workshops fill up fast!

<http://www.science-house.org/CO2/educators/workshops.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/) for more information on our workshop or contact Scott Ragan (scott_ragan@ncsu.edu) at The Science House or call (919) 515-6118.

The Morehead Planetarium and Science Center in Chapel Hill

Padding Under the Stars

Friday, June 2, 2006, Approximately 8:30 –10:30 p.m.

Join Frog Hollow Outdoors and Morehead Planetarium and Science Center for a nighttime paddle under the

stars and discover what the evening hours have to offer! MPSC Astronomy Educator Amy Sayle will help us navigate our way around the night sky. Please feel free to bring binoculars for celestial viewing. These very leisurely paddles are suitable for all levels of paddling experience.

\$25 for MPSC members and UNC students, \$35 for non-members

Location: Jordan Lake



NC EE Criteria II credit & CEU contact hour credit available for educators.

To register, contact Frog Hollow via phone (919-949-4315) or email at info@froghollowoutdoors.com. Please do not rely solely on email to make reservations. Spaces are limited

Starry Summer Nights

Wednesday, June 21, 2006, 7:30 – 9 p.m.

Celebrate the summer solstice under the stars! Discover the planets, bright stars, and meteor showers best seen this summer. Why does Orion the Hunter “disappear” when his downfall, the constellation Scorpius, enters our nighttime view? Learn about Scorpius the Scorpion, Cygnus the Swan and other constellations ready for your viewing during our Carolina summer nights! A resource list for further learning is available to all participants following the class.

\$8 for MPSC members and UNC students, \$12 for non-members

Location: MPSC Star Theater in Chapel Hill

NC EE Criteria III credit & CEU contact hour credit available for educators

To register, call MPSC Visitor Services at (919) 962-1236 today!

Registration

Advanced registration is required for all classes. *To register, please contact the Morehead Planetarium and Science Center Visitor Services office at 919-962-1236. *

All classes are held at the Morehead Planetarium and Science Center in Chapel Hill, NC. Questions? Please contact Michele Kloda at mkloda@email.unc.edu or 919.843.9071.

For more information, visit the

Morehead Planetarium and Science Center’s website: www.moreheadplanetarium.org.

Summer Workshop for STEM Teachers of Grade 6-12

A one-week summer workshop for twelve STEM teachers from grades 6-12 will be offered at the University of North Carolina Pembroke from June 26-30, 2006, with 2 follow-up sessions during the academic year.

The workshop, which is sponsored by NASA and the North Carolina Space Grant Consortium, will be on using computers and computer modeling in astronomy. A \$500 stipend will be allocated for each teacher.

The workshop will have two major purposes:

- (1) To introduce teachers to the use of computer modeling in the classroom. The major emphasis will be on the use of previously developed computer models readily available from web sites.
- (2) To educate teachers on how computers are used in modern astronomy to understand and obtain data about the universe. In this regard, we will explore CCD photography and the software used to enhance the digital images obtained. Teachers will have the opportunity to take their own CCD image using our 16" telescope and also using the Prompt telescope network on Skynet.

The workshop will identify a wealth of excellent astronomical modeling software available on the web and teachers will learn how to use several readily available software packages. The overall purpose of this proposed project will be to strengthen the classroom practices of middle and high school teachers of astronomy, earth science, physical science and mathematics. The teachers who participate in this project will better understand the physical world by being able to construct and use scientific models to describe, to explain, to predict and to control physical phenomena.

Email Jose D'Arruda with any questions and to register - jose.darruda@uncp.edu

2006 Sustainable Forestry Teachers' Tour

June 26-30, 2006 New Bern, NC

July 17-21, 2006 Asheville, NC

Each tour is a four-day residential program, beginning on Monday afternoon and ending on Friday at lunch. The Tour emphasizes the social, economic and ecological aspects of sustainable forestry. Through visits to a variety of mills (paper, engineered wood, solid wood and furniture), forests (private, public and private industrial), an active logging site, research and education centers, participants will learn how the forest products industry meets society's needs while simultaneously providing those same resources for the future. Interactions with forestry professionals will also give a new appreciation for career opportunities for students as well as respect for the challenges forestry professionals face on a daily basis.

In-service teachers of grades K-12 may apply

Participation is FREE for those who are accepted (all meals, lodging, transportation during the tour, refreshments, and entry fees)

Application deadline is March 8, 2006

CEU renewal credits are available

Space is limited to 30 teachers per tour. Multiple teachers from the same school are encouraged to apply. For more information about the program, to view last year's tour details and pictures, or to obtain a registration form, visit our web site at www.ncsu.edu/feop/tour.

For other information Becky Townsend at (919) 515-9563.

Excellence in K-8 Science Teaching: NC-MSEN Statewide Science Initiative for Grades 3-5 Teachers

This nine-day institute (five days this summer and four days during the 2006 - 2007 school year) will focus on the four major science themes in the *NC Science Standard Course of Study* for Grades 3-5: Ecology, Energy/ Forces, Rock Cycle, and Weather and Climate. The institute will emphasize science content and authentic integration of literacy, mathematics, and technology. It also will model science pedagogy. Assessment in science and managing science materials are included. Upon successful completion of the nine-day institute and a curricular project, participants will receive 6 CEUs. For details, dates and locations [download the flier](#) (pdf).

Pisgah Forest Institute Summer Workshops

PFI workshop participants are presented with a certificate of achievement based on contact hours, which they can use to gain continuing education units (CEU) and PFI workshops are eligible for Criteria 1, 2, or 3 credit in the North Carolina Environmental Educators Program. Several PFI workshops may now be taken for college credit in conjunction with Brevard College.

2006 Summer Workshops Include...

June 18 - 23: Earth/Environmental Science for Elementary School Teachers

June 25 - 29: Sustainability: Teaching For Tomorrow

July 9 - 14: Elements of Nature

July 16 - 18: The Good, The Bad, and The Ugly

July 19 - 21: What Goes Around Comes Around: The Art and Science of Recycling and Composting in the Classroom

July 23 - 28: Earth/Environmental Science for Middle/High School Teachers

Workshops are FREE to educators and include meals, lodging, and awesome takeaways for your classroom!

To register for any PFI workshop, or for more information check out the website - www.brevard.edu/pfi

Dolan DNA Learning Center at Cold Springs Harbor

Plant Molecular Genetics and Genomics, June 19-23, Greensboro, NC

Two 5-day workshops in Plant Molecular Genetics and Genomics introduce laboratory and computer modules in

modern plant genetics. Participants use genome analysis methods such as polymerase chain reaction (PCR), agarose gel electrophoresis, and bioinformatics to map and annotate genes in the model plant *Arabidopsis thaliana* and important food crops such as rice, corn, and soybean.

Application forms and brochures describing workshop content, stipends and other relevant details are available at <http://www.dnalc.org>

Science Now Workshop

Join fellow for a week in residence at the NC School of Science and Mathematics in Durham. This workshop is designed to provide teachers the content knowledge and resources they will need to meet the challenges of facilitating inquiry-based science. Share information and ideas as NC implements end-of-grade (EOG) science testing in grade 5. The Course Registration fee is \$25.00; board and breakfast and lunch will be provided each day. Through the support of the Z. Smith Reynolds Foundation and the Burroughs Wellcome Fund, teachers will receive a science kit valued at \$700 to keep for their classrooms. Emphasis will be on the NC Standard Course of Study and the topic Changing Landforms.

5th Grade teachers - July 24 - July 28, 2006

8th Grade teachers - June 26 - June 30, 2006

Register online at <http://ncssm.infonowonline.org>

Summer Science Safety Seminar

July 16-21, 2006 Asheville Renaissance Hotel

For LEA Personnel to become professional development providers for their respective LEAs. National safety experts will deliver relevant information regarding Federal and State OSHA regulations, NC General Statutes, NCDPI Policy, fire/building codes and professional standards that govern the unique school science laboratory. This is a NIOSH-school based safety training for school personnel. Cost is \$1250 including hotel accommodations. Deadline is May 30, 2006. Visit www.sciencesafetyconsulting.com for details and to register.

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