

Summer Professional Development Opportunities

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Get ready for 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](#)
- [Sustainable Forestry Teachers' Tour](#)
- [Science Now Summer Workshop](#)
- [Ocean Science Education Leadership Institute](#)
- [Pisgah Astronomical Research Institute](#)
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Teacher Renewal Seminars: The NCCAT Experience

The North Carolina Center for the Advancement of Teaching, NCCAT offers a full continuum of professional development for teachers from support to beginning teachers to renewal seminars designed to give teachers creative experiences, opportunities for research or scholarly pursuits, and fresh vitality for the important career of education. 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 any seminar of interest. There is no cost to the teacher, but a brief essay and a recommendation from your principal are required. All professional development offerings are available on the NCCAT web page - www.nccat.org.



Rainbows and Tornadoes: Nature's Beauty and Fury
May 9-13 Cullowhee

What makes weather and how do our meteorologists know what's on the way? Learn about how weather happens—how land temperatures, air currents and topography give birth to it. (#4830)

Natural Rhythms of the River
June 6–10: Cullowhee

Get in touch with the natural rhythms of the river by experiencing them firsthand as we paddle on the waters of Western North Carolina. Examine the role of rivers in the development of human culture and study how people have worked with rivers to improve the quality of their lives. Learn about important political issues that center around river use, conservation, and development. Spend time along the banks of local rivers, studying the flora, fauna, and flow of these complex ecosystems. No prior river experience is necessary, although participants should be in good general physical condition for the exciting river raft trip that culminates our week together. Rain or shine, we will get wet. (#4870)

Growing Healthy, June 13–17: Cullowhee

For centuries the healing qualities of nature have been recognized as essential to health and renewal. Join us in the garden as we find tools for self-exploration and natural healing. Our laboratory will be the Renaissance garden on the NCCAT grounds and the beautiful surrounding North Carolina mountains in late Spring. Spend a

day with a beekeeper and learn about the complexities of harvesting honey and the reasons why bees are so vital to the life of the garden. Learn to create healing spaces for yourself and your students by exploring principles from psychology, gardening, and holistic health practices. Reap the benefits of exploring the universal metaphor of the garden as a safe haven in our fast-paced, technology-driven times. (#4880)

Wonders of the Appalachian Trail, June 26–30: Cullowhee

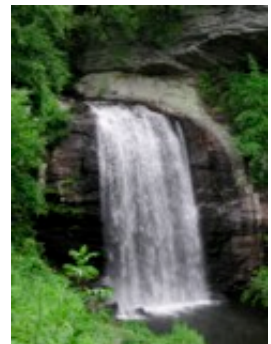
Marked by white blazes or mountaintop cairns, the Appalachian Trail meanders across scenic ridges and valleys for more than 2,100 miles. Explore the diversity of forest growth, flowering shrubs, and flowers like trillium and bloodroot as we embark on easy to moderate hikes. Experience trail magic to the accompaniment of singing birds passing through in migration. Learn about the animals that share the trail with us. Familiarize yourself with the ecologically proper way to minimize your 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. (#4930)

The Evolution of Evolution, July 6–10: Cullowhee and Dayton, Tennessee

The story of evolutionary change through time has intrigued scientists and inspired writers for centuries. Become modern evolutionary biologists seeking out connections among species as we conduct experiments in UNC-Chapel Hill's state-of-the-art traveling science laboratory. Explore evolutionary themes in popular fiction and film, then make literary records of our own inquiries and ideas. Travel to Dayton, Tennessee, site of the famous Scopes "Monkey Trial" of 1925, for a historical reenactment and tour. Science teachers and non-science teachers will enjoy this interdisciplinary exploration of one of the pivotal concepts of the twentieth century. (Two participants to a room during off-site trip.) (#4940)

Waterfalls: The Beauty and Power of Flowing Water, July 11–15: Cullowhee

Where water, stone, and gravity come together, a waterfall is born. Come and explore how waterfalls are formed, as well as the distinctive botanical communities that surround some of the grandest cascades in Western North Carolina. Hike with us in the Nantahala and Pisgah National Forests, discovering the sights, sounds, and folklore of the Great Smoky Mountains. Consider the biology, geology, and cultural history involved in the study of waterfalls. Bring your cameras to capture nature's beauty as we visit waterfalls. Through creative writing, explore rushing water as a metaphor for our lives—our sources, our destinations, and the turbulence along our way. (#4960)



Holistic Health, July 25–29: Cullowhee

Is your life on a fast track, gaining speed, with little or no time for you? Has life become too hectic? If so, take a moment to consider some new approaches to daily living. Examine a variety of alternative approaches that can lead to a more holistic lifestyle. Emphasis will be placed on preventative practices that help reduce stress and control potentially debilitating illnesses. Experience new approaches to wellness through nutrition, daily awareness, general fitness, and flexibility. Learn techniques of stress reduction that will benefit both you and your students. (#4990)

The Chattooga River: Reality and Myth, August 8–12: Cullowhee

The Chattooga River is a National Wild and Scenic River flowing tranquilly through Georgia and South Carolina. It is home to the myriad species of birds, animals, trees, and wildflowers unique to the Appalachian mountain system. The 1972 movie *Deliverance*, filmed on the Chattooga, promoted negative stereotypes of mountain people and their culture. What will happen to these stereotypes as we delve into the real Chattooga and its socioeconomic and environmental impact on local mountain culture? Our journals will serve as our own blank screens as we explore imagination and reality through writing on the banks of this ancient river. (#5040)

How Do I Get There from Here: Adventures with Map and Compass, September 12–16 Cullowhee

Use map and compass to master math and science skills and reinforce teamwork while having challenging fun. Progress from making clay models of topographical maps to negotiating an orienteering course with map and compass. Participants should be physically able to walk several miles, uphill and down, carry light day packs, and ford several streams. (#5050)

Principles of Ecology: Understanding Environmental Tipping Points, September 19–23 Cullowhee

Pollution, over-population, destruction of habitats, and mass extinctions of plant and animal species threaten to

tip the systems that sustain us over into environmental catastrophe. Learn about systems, stability and change, feedback loops, tipping points, and other basic principles of ecology. Participants for this seminar should be able to walk uphill and downhill over rough terrain for short hikes carrying light day packs. (#5080)

Nature's Watercolors

September 26–30 Cullowhee

Sharpen your perception of the beauty of the Great Smoky Mountains as you explore color harmony, color mixing, thumbnail sketching, plant characteristics, applications, and basic supplies. Create a personal record of time spent with nature while developing hand-eye coordination, awareness of the environment, critical thinking, aesthetic intelligence, self-expression, and self-esteem. (Gentle hikes.) (#6010)

The Mountain, September 26–30 Cullowhee and Mt. LeConte

Why climb a mountain? Examine the mountain as a symbol and as a physical reality. Join staff members from the North Carolina State Museum of Natural Sciences as we experience mountain ecology during fall migration. Hikes include an overnight experience on Mount LeConte in the Great Smoky Mountains National Park. This seminar will be physically challenging and requires participants to possess endurance, good health, and a philosophical attitude about the weather. (#6020)

Salty Dogs and the Life of the Sea, October 10–14 Ocracoke

Join us as we explore the marine ecology of the Outer Banks and the lives of the men and women who live from the sea. Experience the thrill of setting your own crab-pots and gill-nets and learn about other tools of commercial fishing. Get acquainted with the basic principles of fisheries management and the issues raised by specific practices. Join us in Ocracoke for this educational fishing expedition. (Two participants will share accommodations.) (#6070)

Stargazing: Majesty and Mystery of the Night Sky, October 10–14 Cullowhee

Join us for a week with faculty from the Morehead Planetarium as we emphasize practical stargazing with the naked eye. 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 the cycles of the moon and planets. Explore phenomena such as eclipses, meteors, comets, and satellites. Master the basics of how to choose and use a telescope to view the evening sky. (#6080)

The Graveyard of the Atlantic, October 17–21 Ocracoke

Dive into the mystery of North Carolina's dangerous coastline, appropriately named the Graveyard of the Atlantic. What conditions of geography and weather lead to the demise of over two thousand vessels? How does modern technology help prevent future mishaps and solve the mysteries of past disasters? Join us as we investigate the enigmas of the deep, including the disappearance, 140 years ago, of the US Navy's first submarine, the USS Alligator. (Two participants will share accommodations.) (#6110)

Hurricanes: In the Eye of the Storm, November 14–18 Ocracoke

What is a hurricane and how is it formed? What are the ecological effects of these storms on the bio-diversity of a region? Explore the impact of nature's forces on coastal communities and their inland neighbors. Learn about the structure and effects of hurricanes: winds, storm surges, rainfall, tornadoes, and storm intensity. (Two participants will share accommodations.) (#6190)

How do I apply?

Registration for January through April 2005 seminars is ongoing. Registration for May through August seminars begins on February 1 for teachers who have never attended an NCCAT renewal seminar and on March 1 for NCCAT alumni. 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.

Emerging Science and Technology Short Course

How small can we go? What do you know about Nanotechnology?

Join experienced high school teachers for three days, July 12-14, 2005 at NC State University and explore how nanotechnology will be influencing our future. Visit campus research laboratories, attend content lectures, discuss the ethical issues of nanotechnology, talk with scientists and technicians about their work, and receive curriculum materials. Participants will receive a \$200 stipend, 2.0 CEUs and housing. Visit the web page for details and to register <http://www.science-house.org/student/hhmi/est/>.

Physical Science for Elementary Teachers

Join us for our newest professional development opportunity for elementary science! Our curriculum will focus on the physical science content in the North Carolina Standard Course of Study. We'll help you review key concepts in physical science such as mass, density, sound, electricity, motion and forces through hands-on activities. The workshop will be held August 1 - 4, 2005. Visit the web site for details and registration <http://www.science-house.org/workshops/elemps.html>.

Science and Math Workshops

This summer we are hosting open registration workshops for all math and science teachers. Just added - 4 new workshops in June and July: Countertop Chemistry, Physics from the Junk Drawer, Graphing Calculator and Using the CBL. Register today as these workshops fill up fast - <http://www.science-house.org/workshops/open/>

GIS with Literature Workshop

Join us for an innovative, engaging and exciting new two-day workshop from The Science House for middle school teachers. This workshop will provide teachers with a basic overview to Geographic Information Systems technology by connecting the technology to a popular book about tracking bears in the Great Dismal Swamp. The Weirdo by Theodore Taylor will be the featured focus for integration of language arts skills with data analysis through GIS. Visit the web site for details and registration <http://www.science-house.org/workshops/gislit.html>

Spring & Summer Workshops at Satellite Offices

Countertop Chemistry & Physics from the Junk Drawer will be offered at our Asheville Satellite Office at The Health Adventure on August 9 and 10, 2005. These hands-on workshops emphasizes simple activities, inquiry, and familiar materials. They are applicable for any teacher who enjoys doing fun demonstrations and activities in their classroom. Each workshop has a \$10 fee to cover materials. Details and registration are online <http://www.science-house.org/info/asheville/tha.html>

Countertop Chemistry, Physics from the Junk Drawer and a Safety Workshop will be offered at our Fayetteville Satellite Office on August 11, 12 and 15, 2005. These hands-on workshops emphasizes simple activities, inquiry, and familiar materials. They are applicable for any teacher who enjoys doing fun demonstrations and activities in their classroom. Details and registration are online <http://www.science-house.org/info/fayetteville/index.html#programs>

Teacher Pioneers is a program for middle school teachers who would like to integrate computer or calculator based probeware into their curriculum. This summer we will host workshops at our Asheville, Fayetteville, Jacksonville and Lenoir offices. Visit the Teacher Pioneer web page for registration information at a location near you <http://www.science-house.org/teacher/pioneers/>

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.

2005 Sustainable Forestry Teachers' Tour

This workshop is free - lodging, all meals, admission fees, transportation and refreshments during the tour are provided. June 13-17, 2005 (New Bern) and June 27 - July 1, 2005 (Asheville)

The Teachers' Tour is a four-day residential program that focuses on the social, economic, and environmental aspects of sustainable forestry. Participants should expect a fast-paced week, with extended moderate walking, great food, and lots of networking and fun! The first afternoon provides a short orientation to the tour and introduces teachers to the science of forestry, followed by a gourmet dinner and presentation about local history. Over the next three days, teachers don hard hats to visit a variety of mills (paper, solid wood, furniture, plywood) and forests (private industrial, non-industrial, private, public) and are taken on a variety of educational stops (museums, state forests, experimental forests, learning centers, Biltmore Estate/Tryon Palace). After reviewing the tour and sharing some insights, teachers head home with lots of new friends, information, concepts, and materials that can be used in the classroom. Multiple teachers from the same school can apply.

To apply print off the Request for Consideration form at <http://www.ncsu.edu/feop/tour>. Fill out the form and send it in to the address on the form. Or contact Lindy to request a form be sent to you: [Lindy Allen](mailto:Lindy.Allen@ncsu.edu) 919-733-2162 x 260

Science Now Summer Workshops for 5th and 8th Grade Teachers

Teachers report that students learn science best by doing science - investigating natural phenomena with student-led, hands-on inquiries. Science Now workshops are designed to provide teachers the content knowledge and resources they will need to meet the challenges of facilitating inquiry-based science. Join fellow teachers for a five day workshop. Share information and ideas as NC implements end-of-grade (EOG) science testing in grade 5 and grade 8.

Through the support of the Z. Smith Reynolds Foundation and the Burroughs Wellcome Fund, participating teachers will receive a science kit valued at \$500-\$700 to keep for their classrooms. Emphasis will be on the NC Standard Course of Study with the topic Forces and Motion in Technological Designs for 5th grade teachers, and Investigating Wastewater for 8th grade teachers .



The Science Now Workshop for 5th grade Teachers will be held in two places this summer.

- June 13 -17 at Alleghany High School in Sparta, NC
- June 27 - July 1 at The NC from NC School of Science and Math in Durham, NC (dorm residence provided at no charge)The Science Now Workshop for 8th grade Teachers will be held in Durham.
- June 27 - July 1 at The NC from NC School of Science and Math in Durham, NC (dorm residence provided at no charge)

For information regarding the workshop in Alleghany, contact Ellen Widener, 336-372-4345, widenerea@alleghany.k12.nc.us

For information regarding the workshops in Durham, contact Carole Stern, 919 416-2635, stern@ncssm.edu or register online at <http://ncssm.infonowonline.org>

The Center for Ocean Sciences Education Excellence SouthEast invites middle (including 5th grade) and high school science teachers to participate in the Ocean Sciences Education Leadership Institute. This Institute is designed to promote ocean sciences in formal and informal education and forge lasting relationships between ocean sciences researchers and educators. Twenty-five teachers and five alternates will be selected from North Carolina, South Carolina and Georgia. Participants will receive state education renewal credits and a stipend of \$200, plus lodging and some meals. Five master teachers from prior Institutes will provide mentorship. In this residential experience, participants will participate in field experiences, meet ocean scientists, receive new curriculum and resources, conduct activities relating to estuaries and the coastal margin for use in their classrooms and understand the importance of ocean and estuarine research.

Dates: Sunday, June 19 – Saturday, June 25, 2005

Location: University of South Carolina Belle Baruch Marine Field Laboratory and Kimbel Center, Georgetown, SC

Deadline for application submission: April 1, 2005

The Institute information can be found on our website at <http://www.scseagrant.org/se-cosee/education.htm>

Pisgah Astronomical Research Institute (PARI)

The School of Galactic Radio Astronomy (SGRA) offers teachers and students in grades 8-12 a unique live, hands-on inquiry based approach to learning through Internet control of a 4.6 meter radio telescope, nicknamed Smiley, located at PARI southwest of Asheville. PARI will offer 4 workshops during 2004-2005 that last a day and half. Teachers may stay at PARI and are provided room and board during the workshop. The workshop is free and provides 1.0 to 3.0 CEUs. Workshop dates are March 19, April 23 and July 30, 2005. For details visit www.pari.edu or email mblake@pari.edu.



Summer Institute in Genomics and Bioinformatics

June 19 -24, 2005 Duke University is offering a workshop in genomics and bioinformatics for North Carolina secondary school teachers (grades 9-12) in summer 2005. This one-week residential program, funded by a grant from the Howard Hughes Medical Institute, will provide a \$500 stipend and travel reimbursement for up to \$200, as well as room and board on the Duke campus for 5 nights. In addition, participating teachers will receive a take-home kit, including a power supply, gel box, and fixed volume micropipette. Additional information and application forms may be accessed on the web <http://www.aas.duke.edu/trinity/hhughes/introduction/outreach/teachers/>

Summer 2005 Biotechnology Workshops for Educators



This summer, you can learn how to:

- Sequence DNA in your own classroom
- Examine societal issues raised by advances in biotechnology
- Make millions of copies of any gene of interest for further analysis
- Identify genes using Web-based tools
- Apply biotechnology to improve traits of plants and animals
- Use biotech-based diagnostics in environmental protection

Plan to attend this summer's 2005 Biotechnology Workshops for Educators, sponsored by the North Carolina

Biotechnology Center. Learn how to successfully present biotechnology lessons that appeal to today's students. These workshops introduce activities that will engage your students while reinforcing the objectives in the NC Science Standard Course of Study. North Carolina teachers will receive a daily stipend, room and board, technology renewal credits (CEUs) and access to the Center's Free Supplies and Equipment Loan Programs.

Summer 2005 Workshop Schedule

- Introductory Biotechnology, East Carolina University, June 6-10
- DNA Sequencing and Sequence Analysis for Secondary School and Community College Instructors, Forsyth Technical Community College, June 20-24
- Biotechnology for Plants, Animals and the Environment, North Carolina State University, June 27-July 1
- Biotechnology, the Flu and You: Using Bioinformatics to Learn About Disease, Campbell University, July 12-15

Complete information about the workshops may be found on the Biotechnology Center's Web site. Space is limited so register now at www.ncbiotech.org/summerworkshops.

SRHS Summer Institutes

Our training workshops "Science Research in the High School" have been tried and tested for ten years. In the summer of 2004, recognizing that science teachers of today are much more technology savvy than those of 1995, we redesigned the format of the workshops. Participants now prepare articles and presentations under our expert guidance, before the workshop begins. As a result we can have the research teacher ready to "hit the ground running" in a short, intensive, four and a half days (36 hours).



The cost of each workshop is \$500.00 per participant, paid for by the participant's school district, and a commitment from your school to run a research course. This fee represents a 30% cost sharing as specified in our NSF grant. The participant receives a \$600.00 stipend, three graduate credits at the University at Albany (State University of New York), and some excellent training. Lodging, meals, and travel costs are also covered by the grant on completion of the workshop.

For more information email lenbehr@mhonline.net.

SIMSS: Summer Institutes in Middle School Science

Sixth- and seventh-grade teachers are invited to participate in a week-long summer institute designed to help them teach topics in the life, earth, and physical sciences. Horizon Research, Inc. (HRI), an educational research firm in Chapel Hill, has partnered with CMSE to offer two one-week summer institutes for sixth-grade teachers and another for seventh-grade teachers. Each institute will work to enhance teachers' own understanding of the content area, with the goal of helping them work more effectively with their own students in these content areas.

Teachers participating in these institutes will be paid a \$500 stipend. There is a \$25 CMSE registration fee, which will be refunded by HRI upon completion of the institutes. This summer's institutes feature 3 topics (2 for sixth-grade teachers and 1 for seventh-grade teachers). More details can be found at <http://www.unc.edu/depts/cmse/workshops/SIMSS2005.htm>

AMNH Summer Seminars

Deepen your knowledge of the life, Earth and physical sciences this summer through an online course from Seminars on Science, the award-winning online professional development program from the American Museum of Natural History. In each Seminars on Science course you will discuss scientific ideas and classroom applications, connect with Museum scientists and educators as well as colleagues from across the nation and receive up to 4 graduate credits for each course. The coursework is designed for busy teachers, so you can complete the weekly activities at your convenience. All you need is Web access.

Seminars on Science is offering eight courses this summer:

- The Ocean System – Integrated Science (a new course)
- Diversity of Fishes – Classification, Anatomy and Morphology
- Earth: Inside and Out – Dynamic Earth Systems
- Genetic, Genomics, Genethics – Molecular Biology
- Space, Time and Motion – Physical Science
- The Link Between Dinosaurs and Birds – Evolution and Classification
- Sharks and Rays – Ecology, Classification and Evolution
- In the Field with Spiders – Classification, Anatomy and Morphology

Each summer course runs from June 27 to August 6. A \$50 early registration discount is available if you enroll by May 6.

If you have questions, email seminfo@amnh.org or call (800) 649-6715.

For more information on courses or to register, go to <http://learn.amnh.org/welcome.php?w=NCSTA>

The following is a current job opening at Carolina Biological Supply Company, Burlington, NC.

Product Developer

We are seeking a Product Developer to create innovative, quality educational products for elementary through college level science courses. Applicants need a distinct emphasis in one or more of the following areas: environmental/earth science, geology, or biology. The product developer must be able to work independently and collaboratively. He or she must also have good communication skills to conduct workshops, attend exhibits, and coordinate field tests of our products.

A bachelor's degree in science and one to 2 years of applicable experience is required; however, an equivalent combination of education and experience will also be considered. Teaching experience is preferred. Candidates should include the position title in all correspondence and direct all inquiries and resumes, including salary requirements, to jobs@carolina.com.

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