



## **Special Thanks to the Program Partners**

**Albemarle-Pamlico National Estuary Partnership**

**NC Botanical Garden**

**NC Department of Environmental Quality's Office of  
Environmental Education and Public Affairs**

**NC Department of Natural and Cultural Resources**

**NC Department of Public Instruction**

# 2025 NC Outdoor Classroom Symposium

*Environmental Literacy through Natural Phenomena: Teaching Science with the Observable World*

**Monday, October 13, 2025, NC Botanical Garden**

## 8:45 AM – 9:15 AM – Registration and Coffee

Covered walkway outside Reeves Auditorium

## 9:15 AM – 9:30 AM – Welcome and Opening Remarks (add speakers)

Reeves Auditorium A and B

## 9:30 AM -9:50 AM - General Session

### **Environmental Literacy Through Natural Phenomena: Teaching Science with the Observable World**

Reeves Auditorium A and B General Session

Dr. Debra Hall, K-5 Science Consultant, Office of Teaching and Learning, NC Department of Public Instruction

Benita Tipton, Secondary Science Consultant, Office of Teaching and Learning, NC Department of Public Instruction

## 10:00 AM – 10:45 AM Sessions

### **Learn to Love Lichens**

Reeves Auditorium A

Janina Millis, NC Air Awareness Coordinator

Department of Environmental Quality's Division of Air Quality/NC Air Awareness

Discover the significance of air quality science and its impact on our natural world, including the use of bioindicators like lichen. Explore the various types and complete a community science survey to learn about the lichen and air quality near you using real-time data!

Target Grade Level: 6-8

### **NC Atlas of Phenomena**

Reeves Auditorium B

Dr. Debra Hall, K-5 Science Consultant, Office of Teaching and Learning, NC Department of Public Instruction

Benita Tipton, Secondary Science Consultant, Office of Teaching and Learning, NC Department of Public Instruction

Discover how the North Carolina Atlas of Phenomena (NCAP) can bring local phenomena into your science instruction. This resource helps educators connect the North Carolina Standard Course of Study for Science to real-world, place-based examples, supporting students in making predictions, solving problems, and explaining the natural world. Join us to explore how NCAP can be used in both formal and nonformal settings to spark curiosity and deepen science understanding.

Target Grade Level: K-12

## **Using Artificial Habitats to Enhance Outdoor Learning**

Joslin Classroom 106

Christine Peckman, Outdoor Education Coordinator, Chestnut Ridge Camp and Retreat Center

Artificial habitats offer an exciting way to connect students with reptiles and amphibians, bringing these often elusive creatures closer to our everyday lives with minimum disruption to the ecosystem. They create opportunities for hands-on learning, deepen our understanding of the natural world and encourage us to develop a sense of responsibility toward conservation.

Target Grade Level: K-12

## **Lincoln Heights- The Story of an Environmental Connections Magnet Elementary**

Joslin Classroom 107

Laura Wood, Environmental Connections Integration Specialist, Lincoln Heights Environmental Connections Magnet Elementary School

Learn about Lincoln Heights, a public Environmental Connections Magnet Elementary School in Wake County – from the inception of the program all the way to the school’s current designation as a top "Magnet School of America." Explore the school’s outdoor learning and teaching locations, integration of environmental connections and the unique programs and partnerships we have developed over the years. Come and see what you can take back to your classroom and school!

Target Grade Level: K-12

## **What's Your Evidence for That?**

Growing Classroom 110

Michelle Pearce, Programming Lead, Environmental Educators of North Carolina

Explore how observations become data, how data becomes evidence, and how evidence is used for explanations. But how do we know if the evidence is strong? We'll also explore the criteria used to determine the strength of evidence with some replicable student activities.

Target Grade Level: K-12

## **Teaching Outdoor Ethics and Setting Expectations**

Bell Seminar Room

Kristin Owens-White, Environmental Connections Teacher, South Stanly Middle School

Learn how to set expectations for outdoor learning areas and learn more about ethical practices when engaged in outdoor activities. The participants will have tools and lesson plans to teach their students the seven principles of Leave No Trace.

Target Grade Level: K-12

## **Tour of the NC Botanical Garden**

Meet in Courtyard

### **10:55 AM – 11:40 AM Sessions**

## **Discover Your Urban Forest with Project Learning Tree**

Reeves Auditorium A

Renee Strnad, Project Learning Tree State Coordinator

Most students and their families are city dwellers. Discover Your Urban Forest from Project Learning Tree encourages learners in grades 6-8 to investigate environmental issues that affect their community. The three activities in the DYUF activity bundle lead students on investigations that help them understand that being outdoors has many benefits, the quality of our outdoor environments differs, and determining how community land is used can be a participatory activity. Attendees in this session will receive copies of the activity bundle. Some activities include variations for grades 3-5.

Target Grade Level: 6-8

## **Connecting with Your Local Soil and Water Conservation District**

Reeves Auditorium B

Lisa Marochak, Senior Administrative Officer, Durham County Soil and Water Conservation District  
Sherry, Scully, Ag Development Coordinator, Durham County Soil and Water Conservation District  
Monica Unger, Teacher, R.N. Harris Elementary

Learn how Durham Soil and Water Conservation District has engaged Durham schools in environmental education and how you can connect with your local District. We'll discuss programs, contests, funding opportunities, and more. In addition, we will share examples of outdoor education learning centers created with the assistance of Soil & Water Conservation Districts. This session will give you innovative ideas on how you can implement outdoor learning centers at your school.

Target Audience: Pre-K - Adults

## **Unlocking the Outdoor Classroom: A Living Laboratory for Learning**

Joslin Classroom 106

Mary Bures, Vice President, Outdoor Engagement, NC Wildlife Federation

Explore tips and actionable ideas to transform the outdoors into a dynamic and engaging learning environment – a living laboratory where curiosity blossoms and connections to the natural world deepen. Resources and programs offered by the North Carolina Wildlife Federation (NCWF) that can support and enrich outdoor education initiatives will also be highlighted.

Target Grade Level: K-5

## **Learning Happens Here with NCDNCR**

Joslin Classroom 107

Sonya Davis, K-12 Professional Development and Education Manager, NC Department of Natural and Cultural Resources

Jorge Malo Guajardo, Multilingual Program Manager, NC Department of Natural and Cultural Resources

For over 50 years, the NC Department of Natural and Cultural Resources (DNCR) has inspired a love of learning through its museums, parks, historic sites, zoo, aquariums, libraries, symphony, and archives. This session introduces DNCR's *Learning Happens Here* initiative, which supports K–12 educators with immersive field trips, standards-aligned resources, and professional development. You'll explore top classroom resources, learn about field trip funding, and take part in a hands-on activity inspired by our newest publication, *Plott's Tales and Trails*; a free copy is yours to keep and free classrooms sets are available on request!

Target Grade Level: K-12

## **Creating Inclusive Outdoor Experiences: Tools and Strategies for Diverse Student Needs**

Growing Classroom 110

Sarah Tanke, Horticultural Therapist-Registered, Interim Therapeutic Horticulture Program Manager, NC Botanical Garden

Explore practical ways to create inclusive outdoor experiences that engage diverse learners. Drawing on resources offered at our garden, we'll highlight tools such as social stories, schedule cards, and sensory kits designed to support students with varied needs. Participants will gain strategies to foster accessibility and comfort in natural settings.

Target Grade Level: K-12

## **Inquiry Based Science Learning Utilizing the 5E Model**

Bell Seminar Room

Jim Luft, Instructional Coach, Out Teach

The 5E Model of Science Instruction provides a powerful framework for fostering inquiry, engagement, and deep conceptual understanding. In this session, participants will explore how the five phases—Engage, Explore, Explain, Elaborate, and Evaluate—work together to support student learning. Educators will examine practical strategies for applying the model at the lesson, unit, and program level, and consider how to adapt it to their own classrooms to promote curiosity, critical thinking, and lasting comprehension.

Target Grade Level: K-5

## **Tour of the NC Botanical Garden**

Meet in Courtyard

**11:50 AM – 12:00 PM – Gather in Reeves Auditorium for lunch instructions and lunch speaker (need speaker here)**

**12:00 – 1:00 PM - Lunch - You are welcome to each your lunch in the auditorium or in the garden. Please visit the resource table. The garden shop is open and has a great selection of books, art, T-shirts, and native plants.**

### **1:00 PM to 2:30 PM Sessions**

#### **Outdoor and Place-Based Explorations for Examining Extreme Heat in Your Community**

Reeves Auditorium A

Emma Refvem, PhD, NBCT, 6-12 Science Specialist, Durham Public Schools

Ashton Merck, Program Manager, Climate Research and Engagement, Museum of Life and Science

Imani Vincent, Associate Program Manager, Climate Research and Engagement, Museum of Life and Science

Explore place-based and hands-on activities, including outdoor explorations, designed to engage students in learning about extreme heat and the urban heat island effect. Featured activities invite students to: (1) use sensors to explore microclimates on their school campus and consider implications for extreme heat days, (2) interpret temperature maps to identify the hottest areas of a city, and (3) evaluate solutions that can reduce the heat island effect and protect public health during extreme heat events. This session will feature ready-to-implement lessons that include literacy integrations and options for differentiation across grade level and content area.

Target Grade Level: 9-12

#### **"The Sky is Falling!" Practicing Scientific Inquiry Through Acorn Analysis**

Reeves Auditorium B

Megan Davis, Manager of Teacher Education, NC Museum of Natural Sciences

To quote Chicken Little, “The sky is falling! The sky is falling”! During uncertain times, paying closer attention to the seasonal cycles of the natural world can help both teachers and students feel more grounded. Join us as we practice scientific inquiry to unravel the mystery of falling acorns. Why do acorns fall in the autumn? What happens to them? Why are they important for life cycles of plants and animals? We’ll use our nature journals/science notebooks to document our observations and investigations. Walk away with a greater understanding of this simple (but complex) phenomenon.

Target Grade Level: K-12

## **Help Scientists from Your Schoolyard**

Joslin Classroom 106

Chris Goforth, Head of Collaborative Science, NC Museum of Natural Sciences

Learn how to engage your students in citizen science on your schoolgrounds! We'll practice with a couple of projects and explore educational materials that may help you bring this fun approach to learning science to your classroom.

Target Grade Level: K-12

## **Nature as Classroom: Discovering Phenomena in the Schoolyard**

Joslin Classroom 107

Misty Parrish, Schools in Parks Specialist, NC State Parks

Jason Vanzant, Schools in Parks Specialist, NC State Parks

Sarah Yelton, Environmental Education Manager, Center for Public Engagement with Science, UNC Institute for the Environment

Discover how to turn your schoolyard into a dynamic science classroom! This hands-on session will highlight outdoor learning strategies and activities designed to investigate natural phenomena and aligned with North Carolina science standards. Join the Schools in Parks Collaborative to explore ways to engage students in observing, questioning, and exploring nature right outside their classroom doors. Learn how to connect curriculum goals with real-world experiences and foster curiosity through schoolyard investigations.

Target Grade Level (K-5)

## **The UnderStory Project: Seed Balls and Sling Shots**

Growing Classroom 110

Lisa Pope, ForestSmart Schools Coordinator, Catawba College Center for the Environment

Target Grade Level: K-12

Seed ball technology is a campus-community greening technique that fosters environmental literacy, a deeper connection to the environment and to others. School campuses are the best opportunity to emphasize systems that restore, renew, and revitalize learners and learning spaces. The UnderStory Project encourages active engagement, problem solving, and critical thinking through authentic projects that support the learning environment, students, and communities.

## **Cultivating Learning- A Guide to Creating Low-Maintenance Perennial Gardens for Your Classroom**

Bell Seminar Room

Amanda Bratcher, Horticulture Agent, NC Cooperative Extension – Lee County Center

Transform your outdoor space into a living laboratory! This session will provide K-12 educators with the tools and confidence to design, install, and maintain a beautiful, low-maintenance perennial garden of any size. Learn how to select the right plants for your space and explore simple lessons to engage

students with horticulture, plants, and pollinators year-round. We'll also cover how to integrate the garden into the Great Southeast Pollinator Census and share existing curricula. The lecture will be followed by a guided walk to showcase these concepts in action.

Target Grade Level: K-12

### **Geology: Hidden in Plain Sight**

Meet in Breezeway

Amy Pitts, Senior Geologist for Education and Outreach, NC Geological Survey

Look beyond rock and mineral samples to the real-world uses of those geologic resources. Geology is all around us, hidden in plain sight. We'll explore our surroundings to put a real-world spin on geoscience.

## **2:40 PM – 4:10 PM Sessions**

### **Growing in Science through the Power of Literacy**

Reeves Auditorium A

Krista Brinchek, Science Specialist, Wake County Public School System

Stacy Darwin, Librarian Specialist, Wake County Public School System

What do you get when you combine a fantastic children's story, outside nature connections, body movements, and place-based science at your school? A great StoryWalk event! Join us to learn what a StoryWalk is all about, and how to connect children's literacy to exciting science projects. This session will dive into how to combine literacy and science to create an intergenerational family school event that is free and encourages outside participation and exploration.

Target Grade Level: K-12

### **Using Nature Journals as a Tool for Scientific Inquiry**

Reeves Auditorium B

Megan Davis, Manager of Teacher Education, NC Museum of Natural Sciences

Your students' observations and investigations of the natural world are the perfect foundation for working on all the scientific and engineering practices, but how do we get started? Join us for a quick introduction to science notebooks/nature journals. Learn some tips and tricks on making and using them with students. Break in your new journal with a variety of activities that leave you feeling inspired to explore the outdoors in all the subjects.

Target Grade Level: K-12

### **Creative Pathways to Standards: Outdoor Learning and Community Partnerships in Action**

Joslin Classroom 106

Erin Carroll, Outdoor Learning Specialist, Durham Public Schools

Amanda Bowers, Elementary Science Specialist, Durham County Schools



Learn how Durham Public Schools has successfully integrated outdoor learning across schools and how these practices align with academic standards. Explore strategies to encourage outdoor learning in traditional learning spaces. Through shared stories and practical models, you'll discover how schools and community partners can work together to enrich instruction and student engagement using the outdoors. Join us for a Q&A at the end that will help you take these ideas back to your own community.

## **Water Education in the Classroom and Outside**

Joslin Classroom 107

Lauren Daniel, Water Education Program Coordinator, Department of Environmental Quality's Division of Water Resources

Ready to take your water education beyond the water cycle? Teachers will experience a few Project WET activities to teach about how water moves throughout the hydrosphere. We will also learn about water conservation and NC River Basins with hands-on activities and relevant, real-life data. In addition to participating in these fun Project WET activities, we will also explore resources to learn about the waterways in your community, how water resources are managed, and ideas for future projects guided by student interests.

Target Grade Level: K-12

## **Sharing Seeds of Knowledge: Community Seed Libraries in K-12 Schools**

Growing Classroom 110

Alyssa Putt, Education and Instruction Librarian, State Library of North Carolina

Do you have access to dirt and paper? You can start a seed library at your school. This workshop will explore the basics of seed saving and seed libraries as well as strategies for integrating school gardens and native plantings into lessons for all ages and content areas. We will discuss ways to foster hands-on learning in science, math, literacy, art, and more. Join us to learn practical strategies for saving seeds with students and starting a seed library at your site to cultivate a deeper connection to the natural world in your school community!

Target Grade Level: K-12

## **Reimagining the Curriculum – Native American History and Culture**

Bell Seminar Room

Stephen Bell, American Indian Education Coordinator, Guilford County Schools

Participants will engage in reflecting on experiences and reimagining curriculum from a culturally responsive lens to better teach Native American history and culture.

Target Grade Level: K-12

## **4:10 PM – 4:30 PM – Closing Remarks and Evaluation**

Christie Norris, Director of Education, NC Department of Natural and Cultural Resources