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HOW NC STATE'S HIGH SCHOOL SUMMER RESEARCH PROGRAM IS INTRODUCING STUDENTS TO FORESTRY

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Meet the High School Summer Research Program

For many students, choosing a career begins with discovering opportunities they never knew existed. At North Carolina State University, the High School Summer Research Program is helping students do exactly that by introducing them to forestry through hands-on research, mentorship, and real-world experiences.

Led by Dr. Zakiya Leggett, Associate Professor at NC State University, and Dr. Porche Spence, Associate Professor at NC A&T State University the four-week summer program was created to expose high school students to forestry and natural resources while building a stronger, more diverse pipeline into the profession. The program was developed with an emphasis on increasing opportunities for students to become exposed to forestry, recognizing that forestry is a field that many students are unaware of. It provides students with the opportunity to explore a field that many have never encountered before. Today, it provides students from a variety of backgrounds with the opportunity to explore a field that many have never encountered before.

Throughout the program, students conduct research, develop leadership and communication skills, build lasting relationships with peers and mentors, and gain a deeper understanding of the many career opportunities available within forestry and natural resources.

Discovering Forestry Through Experience

One of the strongest themes shared by both students and faculty is that exposure changes perspective.

Many participants entered the program with little or no understanding of what forestry actually involved. Some admitted they had never even heard of forestry as a career before participating. Others assumed the profession was simply about planting trees. As program participant Logan O'Neal reflected, "Before, I kind of just thought it was honestly about planting trees... after I learned that it was more about managing the resources in a way that benefits both the forest and the people that use those resources." By the end of the program, students described a much broader understanding of forestry as a field centered on managing natural resources, supporting healthy ecosystems, and balancing environmental, economic, and community needs.

Rather than learning about forestry only through lectures, students experience it firsthand. They collect field data, measure loblolly pine seedlings, explore forest ecology, sustainability, hydrology, GIS, soils, and natural resource management while hearing directly from students and professionals who share their own educational and career journeys.

These experiences help students begin connecting classroom science to real-world applications while showing them that forestry is an interdisciplinary profession with opportunities spanning research, conservation, technology, and environmental management.

Learning Like Scientists

The program is designed to immerse students in the complete scientific research process.

During the first week, participants learn how scientific research begins by asking questions, reading peer-reviewed literature, and developing research ideas. They are introduced to science communication and begin thinking critically about how research contributes to solving real-world challenges.

As the program continues, students move from the classroom into the field, where they collect environmental data and gain practical experience conducting research alongside and student faculty mentors.

Back in the lab, students organize and analyze their findings using Microsoft Excel, learning introductory statistical techniques and creating graphs to better understand the patterns within their data.

The experience culminates during the final week as students work together to develop professional research posters. After practicing presentations and receiving peer feedback, they present their research to faculty, family members, and community supporters during the program's closing celebration.

For many students, it is their first opportunity to experience what research truly looks like. Program participant Arvindh Krishna described the experience by saying, "It gave me a really unique perspective on how research in a lab really works, from formulating your question in the start to presenting your final outlook and results at the end."

More Than Career Exploration

While the program introduces students to forestry, its impact reaches far beyond career awareness.

Participants consistently describe gaining confidence, developing professional communication skills, and building relationships with peers who share similar interests. Several students noted that the experience helped them better understand what they wanted to study in college, while others said it opened doors to academic fields they had never previously considered.

Students also emphasized the value of networking with faculty, researchers, and professionals who encouraged them throughout the program. Arvindh Krishna shared that the program was "a great way to meet a lot of new friends and gain experiences you wouldn't gain in school," highlighting how the relationships and experiences extended well beyond the research itself. These connections helped transform what initially felt like an unfamiliar profession into one where students could envision themselves succeeding.

Even students who ultimately pursued broader environmental science degrees credit the program with expanding their understanding of natural resource careers and influencing their educational decisions.

Building Pathways Into Forestry

The High School Summer Research Program demonstrates the importance of introducing young people to forestry before they begin making decisions about college and careers.

Since its launch, the program has grown from serving three students during its first summer to welcoming approximately twenty participants each year. More importantly, many alumni have continued into forestry and natural resource degree programs at NC State University and other institutions, demonstrating how early exposure can create lasting educational and professional pathways.

The program also reflects the power of collaboration. Faculty from NC State University and North Carolina A&T State University work together to provide students with meaningful research experiences, while financial support from the Weyerhaeuser Giving Fund and the USDA Forest Service has allowed the program to continue expanding its reach.

As interest grows, program leaders hope to build additional partnerships that will allow even more students to participate, including the possibility of future residential programming.