Students who grow up in small, rural towns do not have the same exposure to high-tech jobs as their “big city” counterparts and may not be aware of what it takes to be a rocket scientist or video-game programmer. With an increasing need for workers to fill science, technology, engineering and mathematics (STEM) careers in the United States, educational researchers at North Carolina State University are finding ways to reach students at a time in their lives when research has shown they are most likely to consider careers in STEM fields.

“Those of us who live in larger cities take for granted the exposure we have to high-tech jobs. We have neighbors and friends who work in various STEM fields. But children who live in rural towns do not have that same exposure,” says Dr. Margaret Blanchard, assistant professor of science education. “We hope by increasing students’ awareness of STEM careers, along with giving them ‘role models’ of people within that field, we’ll have a higher likelihood these students will pursue STEM careers.”

Blanchard is teaming with other NC State faculty to work strategically with leaders, teachers and students in rural North Carolina. These “STEM Teams” will build a virtual bridge from isolated middle schools in northeast North Carolina to high-tech university resources. They will provide professional development to enhance STEM content knowledge and skills, and promote student interest in STEM careers. Fueled by a nearly $1.2 million grant from the National Science Foundation (NSF), the researchers will track 60 sixth-grade students – through their middle school careers – as well as all the STEM teachers and leaders in four rural North Carolina districts – Bertie, Northampton, Warren and Weldon. The hope is to garner additional funding to follow the same cohort of students as they enter high school, college, and into their chosen profession.

Students will participate in long-term extracurricular STEM-related activities that encourage college attendance and STEM career paths. Teachers will be supported by an administrative team that will develop a district plan to support and empower teachers to best use instructional technologies to benefit students. “The North Carolina Mathematics and Science Education Network Pre-College Program (NC-MSEN PCP) at NC State has had wonderful success in encouraging minority student participants to go to college and enroll in STEM majors. We want to get students thinking about careers as a way to help motivate them to succeed in their math, science and technology classes,” Blanchard says. “Currently, 80 percent of students in these rural middle schools are African-American. We want to show the students video clips of African-American, Latino, and female STEM professionals talking about the work they do so that students might better identify themselves in similar roles. Ultimately, we are hoping we can tap into these students’ potential and encourage them to become part of the next generation of STEM professionals.”

Co-principal investigators include Braska Williams, coordinator of NC-MSEN Pre-College Program, and Dr. Tom Alsbury, associate professor of educational leadership.

Excerpts of this story were copied from NCSU News Services and was written by Caroline Barnhill, Communication Specialist, NCSU.
For the 2009-10 school year, 42 seniors graduated from high school in the NC-MSEN Pre-College Program. All of the seniors were accepted into a 4-year college/university.

Here is a list of our students and their college of attendance.

Bernard Allen, III - Elizabeth City State University
Jasmine Bullock - NC Central University
Spencer Carr — NC State University
Mys’Mali Clemmons—UNC-Charlotte
Kamari Dickens-NC A&T State University
Alvi Diggs—NC State University
Tyrell Elliott—NC A&T State University
Jordan Farrell—East Carolina University
Jasmin-Akia Fritz—East Carolina University
Kerrell Gomes—Virginia Tech
Robert Green—UNC-Greensboro
Fatima Guerrab—ECPI
Donielle Huggins—UNC-Charlotte
Victoria Jones—NC Central University
Sa’Metria Jones—UNC-Charlotte
Phillip Jordan—Averett University
Ceewin Louder—UNC-Chapel Hill
Taurean Lynch—Campbell University
Shamane McAdams—UNC-Charlotte
Jazalyn McNeil—NC State University
Kelsey Merritt—NC A&T State University
Sterling Minor—NC A&T State University

Deja Mitchell—Winston-Salem State University
Jasmine Molin—Spellman College
Brandi Moore—Elizabeth City State University
Brianna Nichols—NC Central University
Kingsley Nlewedim—UNC-Greensboro
Anthony Ogunah—Florida A&M University
Ernest Paul—NC A&T State University
Roland Pruitt—Hampton University
Amit Raval—UNC-Charlotte
Ceira Rhame—NC A&T State University
Ashlyn Sanders—UNC-Chapel Hill
Robyn Sanders—NC State University
Myah Smith—UNC-Chapel Hill
Tiffany Somerville—NC A&T State University
Gregory Terrell—NC State University
Melanie Thompson—NC A&T State University
Janae Tucker—UNC-Pembroke
Vanita Watford—Meredith College
Kiara Webb—Hampton University
Michelle Whitaker—NC A&T State University

PERSIST Conference Presents Opportunity for MSEN Seniors In Math and Science Education

October 11, 2010—Pre-College Experiences to Recruit Students Into Science Teaching (PERSIST) is a science and mathematics teacher recruitment program for high school students with high potential, but who may not have been encouraged to pursue mathematics or science teaching as a career.

The NC MSEN PERSIST Scholars Fall Leadership Conference, Pathways to Teaching, hosted 55 high school seniors from across the state on October 2. Dr. Rita Fuller, NC MSEN Director; Mr. Braska Williams, NC State University NC-MSEN Pre-College Program Coordinator; and Danny Bland, Director of the NC Teaching Fellows planned the conference for the students in the PERSIST Scholars Program. It was held at the Friday Institute for Educational Innovation on NC State University’s Centennial Campus.

Sponsored by a Burroughs Welcome Fund grant to the North Carolina Mathematics and Science Education Network (NC MSEN) Pre-College Program, five UNC campus sites (Elizabeth City State University, Fayetteville State University,
Summer Scholars 2010: Robotics and FUTURE Cities

The NCSU Summer Scholars Program was held from June 28—July 2 and July 12-16, 2010 from 8am – 5pm daily. The objective of the program was to prepare students for their first quarter math class in the fall semester. One hundred twenty middle and high school students participated in the program which was comprised of sixty (75) high school students and forty-five (45) middle school students. Students attended classes from 8am-12 noon daily. After lunch, students attended scheduled events such as guest speakers, campus tours, and field trips.

Middle school students rotated through four classes in Math, Science, Communications, and FUTURE Cities while the high school students attended classes in math, physics, communications, and career awareness. The FUTURE Cities class was a class that prepared the students and teachers for a national competition where student teams design a city of the future using the Sim City software. In addition, the students will create a model city using the computer developed city. Two NCSU civil engineering faculty members came to the program and spoke to the students about suggestions.

Some of the field trips included a trip to East Carolina University where students toured the Heart Institute and learned how robotics are used to perform better open heart surgery. Also, the middle school students toured Cisco, and the high school students visited UNC-Chapel Hill to tour the medical school and the School of Public Health. In addition, the high school students toured Duke’s Engineering School. On each campus tour, students ate lunch on campus so that students experienced college life.

NASA and PERSIST programs Provide Opportunities For Ninth Graders

The NC-MSEN Pre-College Program has won two grants over the past three years that has greatly benefited its students. NASA and Burroughs Wellcome have both provide substantial awards that have provided outstanding opportunities to ninth grade NC-MSEN Pre-College Program (NC-MSEN PCP) students. The PERSIST program will provide support for students for three years while the NASA program will provide support for students for two full years including the summer. Both programs have their own curriculum and provide supplies to teachers. These programs are assisting students with their transition from middle to high school.

The NASA program provides content in physics, engineering, and robotics to students. In addition, students were able to attend the Summer Scholars program for free while the PERSIST program provides exposure to math and science teaching as a career option. It includes a variety of college trips to various in-state colleges and universities with a focus on education. The NASA program provides a trip and tour of a NASA site each year that students participate in the program.

PERSIST Conference Presents Opportunity for MSEN Seniors In Math and Science Education (Continued)

UNC-Chapel Hill, UNC-Charlotte, and Winston-Salem State University are involved. North Carolina State and North Carolina A&T State universities have identified high school freshmen to begin later this month.

The leadership conference was created to prepare the PERSIST seniors to apply for available teaching scholarships this fall. Pathways to Teaching gave the students all of the necessary information to make the transition from high school student to college student, and then to teacher preparation program participant. Special guests included: Dean Jayne Fleener, NC State University’s College of Education; 2010-11 NC Teacher of the Year, Ms. Jennifer Facciolini, a 1998 Meredith College Teaching Fellows graduate; Ms. Tamica Stubbs, a recent Burroughs Welcome Fund Science Teacher Award winner; Dr. Vincent Snipes, Winston-Salem State University; Dr. Elaine Franklin, Western Carolina University; Mrs. Sarita Broadway, College Foundation of North Carolina (CFNC); and a panel of freshmen through senior Teaching Fellows from NC State and North Carolina Central universities.
NC-MSEN Pre-College Program Calendar of Events

Saturday Academy, Fall Session
October 16 and 30, 2010
November 20, 2010
December 4 and 11, 2010

Saturday Academy, Winter Session
February 26, 2011
March 5 and 12, 2011
April 2 and 9, 2011

Parent Workshops: Navigating Through the School System: Taking the Right Courses
November 20, 2010—9 a.m.—Saturday Academy—Friday Institute—Claude Lee, Guidance Counselor, SE Raleigh High School

College Financial Aid: Scholarships, Grants, and Loans
November 20, 2010—Saturday Academy
10 a.m. Session—9th—11th Grade Parents
11 a.m. Session—12th Grade Parents
Friday Institute
Presenter: Dr. Gerri Williams, Associate Director, Pack Promise Program, Scholarships and Financial Aid

College Tours: Northern College Tour
Wednesday—Friday, November 3—5, 2010

Mini-Runoff
Saturday, March 12, 2011
9—12:30 pm

MSEN DAY 2010
Fayetteville State University
April 30, 2011

MSEN 25th Annual Awards Ceremony
Tuesday, May 19, 2011
6:30 p.m.—Witherspoon Student Center—NCSU Campus

EnvironMentors Symposium
TBA

Summer Scholars Program
June 20—July 1, 2011
NCSU Main Campus