



NORTH CAROLINA
NEW SCHOOLS

NORTH CAROLINA'S STEM SCHOOLS HELP SHOW THE WAY

MARCH 11, 2011

Later this spring, a few hundred students will become the first graduates of a pioneering group of schools in North Carolina that for the last four years have focused on science, technology, engineering and math – fields which taken together are now commonly referred to as STEM.

Education that emphasizes math and science is nothing new. After all, North Carolina led the nation in 1980 by opening the N.C. School of Science and Mathematics as a public residential high school for the state's best and brightest. But 30 years later, the state's new STEM schools are on the leading edge of a shift in education in North Carolina and nationwide that raises the importance of mastering those skills not just for the few, but for the many. Our future demands nothing less.

North Carolina is now poised to be a leader in STEM education. Under the state's \$400 million federal Race to the Top grant, the North Carolina New Schools Project, in cooperation with the N.C. Department of Public Instruction, higher education and the private sector, is developing networks of STEM schools oriented to four distinct career themes: health and life sciences; energy and sustainability; biotechnology and agriscience; and aerospace. Those schools will serve every region in the state, as a critical investment for our state's economic development, and as a doorway to promising futures for students whose options too often have been limited by geography and poverty.

Without exception, the nine STEM schools graduating their inaugural class this year were opened on existing high school campuses that a judge had threatened to close because of far-reaching academic failure. Student performance suffered no less in such subjects as science and math. All of the schools offered new opportunity to students with limited means and resources. All of the schools have above average levels of poverty.

Yet after nearly four years of experience, the schools are demonstrating that changing the way teachers teach and students learn translates into significant gains in performance and student engagement. Consider these results: As a group, students in STEM schools last year achieved twice statewide pass-rate gains on end-of-course exams in Algebra II, Biology, English and all year-end exams combined. And while STEM schools trailed the state by 18 points in 2009 on that "composite" passing rate, they narrowed that gap to less than 8 points in 2010.

At the same time, students in the STEM schools have been more likely to be promoted from 9th grade – a key indicator of eventual graduation – and less likely to drop out. Seven STEM schools had 9th grade promotion rates of at least 92 percent and last week's dropout data from the state showed STEM schools with a combined dropout rate of 1.5 percent – more than half the state's rate of 3.75 percent. The differences are even more stark when the schools are compared against the high schools from which they were created in 2007.

To be sure, the schools remain a work in progress. Their performance still has plenty of room for improvement. Their students need to learn more and learn better. But their gains are significant. Because of the schools, the students they will graduate this spring will have more and better options from which to choose.

[Read an outline of NCNSP's vision for STEM education](#)