

ENGINEERING the ECONOMY

Creating jobs. Inventing solutions. Improving lives.

During difficult economic times, NC State engineering continues to make its mark on North Carolina's economy.

1 MECHATRONICS—The joint NC State/UNC-Asheville mechatronics program integrates several engineering fields to improve design and production methods and create new information technology tools.

2 NUCLEAR ENGINEERING—NC State nuclear engineers are important partners with the state's two major utilities, Progress Energy and Duke Energy, and the growing energy-related industrial sector located in Charlotte, including companies such as Areva, Shaw Group and Fluor.

3 VIRTUAL COMPUTING LABORATORY—UNC-Greensboro is one of several campuses using NC State's Virtual Computing Lab to offer its students remote access to software that was previously only accessible in campus labs and offices. The VCL is expanding its reach to community colleges and K-12 schools.

4 INDUSTRIAL EXTENSION—When the Timken Company, a bearings manufacturer, wanted to improve its manufacturing process, it turned to NC State's Industrial Extension Service and saved nearly \$900,000 in just a few months. IES is working to create \$1 billion in economic impact in North Carolina by 2010.

5 GAME TIME—The Triangle is home to more than 30 video gaming companies, making it one of the nation's top game-development centers. Fueling this growth is the Digital Games Research Center, where NC State computer scientists collaborate with industrial designers and others to explore ways games can help people.

6 RESEARCH TRIANGLE PARK—Computer giant IBM employs more engineering graduates from NC State than from any other institution. Many work in Research Triangle Park.

7 ENGINEERING ENTREPRENEURS—The founder of Morrisville-based ChannelAdvisor Corp. is engineering alumnus Scot Wingo, who credits the Engineering Entrepreneurs Program at NC State for his business success. The program provides students with a full-immersion educational environment for prototyping new products and businesses.

8 NC SOLAR CENTER—With the state mandating that energy utilities produce more renewable energy by 2021, the NC Solar Center is helping to meet the goal. The Solar Center, which is part of the College, collaborated with SAS Institute in Cary on a solar farm that will help power the company's headquarters.

9 HOSPITAL HELP—Senior biomedical engineering students work with doctors at WakeMed Health & Hospitals in Raleigh to find problems in various clinical settings and then develop solutions. "They're coming in with new and innovative minds," a WakeMed official said.

10 SUPERSTREETS—NC State engineers have been leaders in promoting and designing "superstreets," intersections that employ U-turns to keep traffic moving smoothly and safely. The summer of 2009 saw NC State civil engineers conducting traffic studies on three superstreets in the Wilmington area.

11 SPIRIT AEROSYSTEMS—When Spirit AeroSystems was looking to build a new manufacturing plant, NC State engineering faculty worked with the Department of Commerce to help bring the company to Kinston. The new plant is scheduled to open next year and will eventually create more than 1,000 jobs.

12 NAVY PARTNERSHIP—The U.S. Navy base in Cherry Point turned to NC State's Institute for Maintenance Science and Technology to custom manufacture parts for older helicopters. These advanced techniques are creating skilled jobs that aren't easily lost to foreign competition.

13 DISTANCE EDUCATION—The College offers a 2+2 program as well as a four-year B.S. degree program with Craven Community College. These programs allow area residents, including military personnel, to pursue engineering degrees in Havelock for the first two years, and then transfer to NC State for the last two years.

14 COASTAL RESEARCH—Coastal communities have always been subjected to waves and wind, and now they're coping with the effects of climate change. NC State's new program in Coastal Sustainability and Resilience, based in Manteo, uses engineering principles to develop solutions to coastal infrastructure challenges.

