acknowledgements

EXTENSION OPERATIONS COUNCIL

Carolyn D. Argentati, D.H. Hill Library
Jeffrey P. Braden, College of Humanities & Social Sciences
Ruben G. Carbonell, Kenan Institute
Timothy G. Clapp, College of Textiles
Patti H. Clayton, Center for Excellence in Curricular Engagement
Scott R. Daughterty, Small Business & Technology Development Center
Mike A. Davis, General H. Hugh Shelton Leadership Center
Mike C. Giancola, Center for Student Leadership, Ethics & Public Service
Lisa L. Grebke, College of Education
Jern Helmlinger Ratchiff, Industrial Extension Service
J.B. Jett, College of Natural Resources
Steve S. Kalland, Solar Center
Duane K. Larick, Graduate School
Greg A. Lewbart, College of Veterinary Medicine
Ballian Li, International Affairs
Raj J. Narayan, Kenan Institute
Jon F. Ort, NC Cooperative Extension Service
Elwood J. Peters, Centennial Campus Middle School
Len J. Pietrafesa, College of Physical & Mathematical Sciences
Benham Pourdeyhimi, College of Textiles
H. Lynn Reese, Industrial Extension Service Operations
Sharon K. Schutz, The Science House
Michael J. Sebert, SBTDC Raleigh Service Center
Pat M. Sobrero, Extension, Engagement & Economic Development
Roland F. Stephen, Institute for Emerging Issues
John S. Strenkowski, College of Engineering
Jack F. Thigpen, Sea Grant Program
Russell D. Thomas, College of Management
Jay D. Tomlinson, College of Design
Alice S. Warren, McKimmon Center for Extension & Continuing Education
Dennis H. Kekas, Centennial Campus
Kay E. Zimmerman, DELTA
James J. Zuiches, Extension, Engagement, & Economic Development

NC STATE UNIVERSITY ADMINISTRATION

James L. Oblinger
Chancellor

Larry A. Nielsen
Provost & Executive Vice Chancellor

James J. Zuiches, Vice Chancellor for Extension, Engagement, & Economic Development

Terri L. Lomax
Interim Vice Chancellor for Research & Graduate Studies

Mary Elizabeth Kurz
Vice Chancellor & General Counsel

Charles D. Leffler
Vice Chancellor for Finance & Business

Thomas H. Stafford, Jr.
Vice Chancellor for Student Affairs

Nevin E. Kessler
Vice Chancellor for University Advancement

Lee G. Fowler
Director of Athletics

Kevin D. Howell
Assistant to the Chancellor for External Affairs

F.J. Teal
Secretary of the University/Assistant to the Chancellor

Warwick A. Arden, Dean
College of Veterinary Medicine

Robert D. Brown, Dean
College of Natural Resources

Thomas E.H. Conway, Jr., Dean
Undergraduate Academic Programs

A. Blanton Godfrey, Dean
College of Textiles

Duane K. Larick, Interim Dean
Graduate School

Marvin J. Malecha, Dean
College of Design

Louis Martin-Vega, Dean
College of Engineering

Kathryn M. Moore, Dean
College of Education

Jeffrey P. Braden, Interim Dean
College of Humanities & Social Sciences

Daniel L. Solomon, Dean
College of Physical & Mathematical Sciences

Ira R. Weiss, Dean
College of Management

Johnny C. Wynne, Dean
College of Agriculture & Life Sciences

EXTENSION, ENGAGEMENT, AND ECONOMIC DEVELOPMENT

Scott R. Daughterty, Assistant Vice Chancellor, Small Business & Technology Development Center, 919.715.7272

Mike A. Davis, Assistant Vice Chancellor, General H. Hugh Shelton Leadership Center, 919.513.0148

Cheryl L. Lloyd, State Leader, Urban Programs, and Director, NC Urban Serving Universities Coalition, Office of EED & NC Cooperative Extension, 919.513.2539

Jon F. Ort, Assistant Vice Chancellor, NC Cooperative Extension Service, 919.515.2811

Terri Helmlinger Ratchiff, Assistant Vice Chancellor, Industrial Extension Service, 919.515.3891

Patricia M. Sobrero, Associate Vice Chancellor, Extension, Engagement, & Economic Development, 919.513.0388

Alice S. Warren, Assistant Vice Chancellor, McKimmon Center for Extension & Continuing Education, 919.515.3373

Thomas J. White, Director, Economic Development Partnership, 919.513.0388

James J. Zuiches, Vice Chancellor, Extension, Engagement, & Economic Development, 919.513.0388
a message from
the vice chancellor

Two years ago, NC State responded to an invitation from the Carnegie Foundation to document the engagement of our students and faculty in the curriculum and through outreach to partners and communities. In the fall of 2006, the Carnegie Foundation recognized us as an engaged university. This concept of engagement connects the teaching and learning of students, and research and educational programs of faculty and professionals statewide to members of diverse communities of practice, interest, and place. NC State University is leading the nation in implementing this concept of engagement throughout its colleges and programs.

The Extension, Engagement, and Economic Development programs are completely aligned with the University Strategic and Compact plans and focus on:

- Preparing leaders for the state, nation, and world
- Creating educational innovation
- Improving health and well-being
- Fueling economic development
- Driving innovation in energy and the environment.

The culture of engagement pervades every college with examples in this brochure of student engagement, faculty engagement, and partnerships with many organizations, communities, nonprofit agencies, and the private sector. NC State University is putting into practice the recommendations of the W. K. Kellogg Foundation's Presidents' Commission on the future of land-grant universities.

Most recently the University of North Carolina—Tomorrow Commission reported its findings from community listening forums and survey responses. The major findings and recommendations, driven by the interest of community leaders and citizens across the state, were to have the entire university more directly engaged with and connected to the people of North Carolina. The recommendations to “apply, translate, and communicate research and scholarship to broader audiences . . . and to significant regional and statewide issues . . .” in the areas of global readiness, public education, economic transformation, health and the environment, reinforce the commitment of extension and engagement that is core to the mission of NC State University.

I invite you to read these stories about our engagement, visit the websites and communicate to our faculty in every county across the state and on the campus so that we might be better partners in serving North Carolina and its people.

James J. Ziche, Vice Chancellor
Extension, Engagement, and Economic Development

the engaged university
Extension, Engagement, and Economic Development
Economic Development Partnership

Serious Gaming/Advanced Learning Technologies

With more than 30 gaming companies employing over 1,000 people, the greater Raleigh area is home to one of the largest concentrations of game development companies in the United States. Similarly, the science of games is getting more serious in North Carolina. The Digital Games Research Center, launched in 2007 in NC State University’s Department of Computer Science, is involved in technologies that promise to change the way we learn, play, collaborate, and work in the 21st century. The Economic Development Partnership between NC State University and Wake County Economic Development teamed to identify high-potential leads for gaming companies that match the region’s gaming industry market, and research and development capabilities. The photo (left) shows the HI FIVES project where students and science teachers use competitive simulations to teach and learn information technology-driven science. www.raleigh-wake.org/games

Supply Chain Resource Cooperative

Since it was established in 1999, the Supply Chain Resource Cooperative (SCRC) at NC State’s College of Management has become a go-to resource for those seeking information about issues and trends in global supply chain management. It also provides the framework through which the college’s supply chain and operations faculty prepare graduate and undergraduate students to work in this industry. Their applied learning approach brings faculty and student teams together with member companies to work on real-world problems, in the classroom, in a special projects practicum, and through internships. The result: practical industry experience for the students and innovative solutions for industry. This knowledge is extended to the global supply chain industry through the SCRC’s online information portal— which includes tutorials, features, research, and other information. scm.ncsu.edu/

Center for Innovation Management Studies
cims.ncsu.edu

The College of Design’s Community Design and Development Initiative and Downtown Design Studio
ncsudesign.org

Institute for Transportation Research and Education
itre.ncsu.edu
NC Small Business and Technology Development Center

In North Carolina, there are approximately 690,000 small businesses that face challenges and need access to high-quality business development, management education, and strategic action services to successfully compete and grow in today's economy. As North Carolina's business and technology extension service, the NC Small Business and Technology Development Center's (SBTDC) mission is to help North Carolina businesses grow and create new jobs within the state. The SBTDC, administered by NC State University, has 17 offices across the state hosted by one or more University of North Carolina system institutions that provide services in all 100 counties. Since opening its doors in 1984, the SBTDC has provided more than 760,000 hours of counseling to over 106,000 clients. www.sbtoc.org

Industrial Extension Service

NC State University's Industrial Extension Service (IES) is the statewide arm of the College of Engineering that partners with business and industry to transfer knowledge and technology that lower costs, improve quality, and shorten lead times. For example, at least $1 million was saved at the U.S. Coast Guard Aircraft Repair and Supply Center in Elizabeth City (below) using the lean manufacturing techniques taught by IES specialists. IES's 184-NC initiative's mission is to help create $1 billion in economic impact for North Carolina by 2010, and IES is well on its way, having reached over $371 million of that goal. www.ies.ncsu.edu

Textile Protection and Comfort Center

The Textile Protection and Comfort Center (TPACC) is a recognized world leader for research in protective textiles, clothing, and ensembles. The center's impact extends far beyond textiles, creating technology that saves lives and prevents injuries to military, law enforcement, emergency responders, medical personnel, and the public. The center has facilities on NC State's Centennial Campus for research, development, and testing a full range of personal protective equipment, including the United States' only university-based fire manikin test chamber and Man in Simulant Test Chamber (shown above). TPACC has attracted hundreds to its workshops on protective technologies, conducted new basic research, developed multiple materials and products, as well as standardized test methods. www.bx.ncsu.edu/tpacc

NC Cooperative Extension Gateway Counties

The Gateway County Project is a pilot effort of 12 county NC Cooperative Extension locations in partnership with NC State University. The Gateway County Centers strive to create a model of engagement for the university, maximize use of on-campus resources in community settings, create partnerships between the university and communities, and establish links encouraging exploration and outreach by members of both the statewide community and by campus and county extension faculty and staff. The project provides not only skills to students, but also helps all participants see the broader needs of the state, the community, and the world context in which they occur. www.ces.ncsu.edu/index.php?page=countycenters
General H. Hugh Shelton Leadership Center

NC State created the Shelton Leadership Center to inspire, educate, and develop values-based leaders committed to personal integrity, professional ethics, and selfless service. The Shelton Leadership Forum attracts over 700 university corporate partners, faculty, and students to seminars on values-based leadership in the private sector, K-12 education, higher education, military, and communities. The Shelton Leadership Challenge Institutes, serving over 400 students, are intensive conferences for diversity and compassion through classroom instruction and social responsibility projects. Seven endowments valued at approximately $2 million provide scholarships to students with outstanding leadership credentials, offering incentives for further growth and leadership development. University Honors students participate in leading community engagement projects.

www.ncsu.edu/extension/sheltonleadership

Engineering Entrepreneurs’ Program

Created in 1993, the goal of the Engineering Entrepreneurs’ Program (EEP) is to teach engineering and computer science students skills in product development, organization, management, finance, marketing, and entrepreneurship. Today, the program is a multidisciplinary program open to undergraduates from all disciplines. More than 300 students have completed the EEP, working in teams to turn creative concepts into marketable products. For example, Donald J. Barnes helped build Red Hat into the world’s leading open source software company; David Anderson created PeopleClick, an HR software company based in Raleigh that employs 340 professionals and is positioned for an IPO; and Scot Wingo co-founded and sold Stingray Software, then co-founded AuctionRover.com, which sold for $166 million. His third company, Morrisville-based ChannelAdvisor, currently employs 220 and plans to add 100 new engineering, sales, and account management jobs.

www.engr.ncsu.edu/EEP
4-H Youth Development

4-H is NC Cooperative Extension’s dynamic, non-formal educational program for today’s young people. The program combines efforts of youth, volunteer leaders, state land-grant universities, state and local governments, 4-H Foundations, and the US Department of Agriculture’s Cooperative State Research, Education and Extension Service. These partners are working across the country to assist youth in developing knowledge, skills, and attitudes that will enable them to become productive and contributing members of society. 4-H impacts youth from all ethnic, racial, and socio-economic backgrounds who live in rural, suburban, and urban communities. More than 20,000 adult volunteers, and over 204,000 youth participate in North Carolina 4-H programs such as organized clubs, overnight and day camping, school enrichment, individual projects/study, child care education, and instructional TV/video offerings.

Center for Student Leadership, Ethics and Public Service

The Center for Student Leadership, Ethics and Public Service (CSLEPS) was created in 1998 by reorganizing existing leadership and community service functions into one center that offers a comprehensive program in leadership development, ethics training, and public service outreach to local and global communities. CSLEPS envisions leaders with wisdom, compassion, and integrity who will promote a lasting commitment to the betterment of society. CSLEPS has served as a model for other universities around the country as they aspire to offer a comprehensive program for their students while partnering with non-profit agencies and other community organizations. Through the Alternative Spring and Winter Break programs, CSLEPS currently has 12 service-learning partners from North Carolina to Costa Rica and Sri Lanka.

www.ncsu.edu/csleps

Diversity Community Outreach and Partnerships

The Office of Diversity and African American Affairs collaborates and partners with ethnic, cultural, religious, and other diversity-oriented community organizations, as well as private businesses and corporations interested in diversity issues. In return, these partnerships and collaborations increase NC State’s access to research and educational resources in the community. By working together, these organizations conduct programs that enrich student, faculty, and staff understanding of diversity and multicultural issues that affect our communities, businesses, and society. Examples of partners are Shaw University, St. Augustine’s College, the City of Raleigh, NC Society for Hispanic Professionals, the Muslim American Public Affairs Council, and the NC River States Association.

www.ncsu.edu/provost/offices/diversity

The Science House

The Science House (TSH) annually reaches more than 3,500 teachers and 28,000 students in all 100 counties of North Carolina, through Science, Technology, Engineering, and Mathematics teacher training, content courses, school-based assistance, curriculum materials, and student science activities. TSH helps teachers teach better so that students learn better. Strategically located in Lenoir, Edenton, Fayetteville, Jacksonville, and Asheville, satellite offices serve many of the most resource-poor school systems in the state. Founded in the College of Physical and Mathematical Sciences 16 years ago, TSH has served as a national model in linking research universities with K-12 schools. It has led teacher professional development programs in North Carolina, South Carolina, Virginia, Kentucky, Arizona, and Texas in addition to hosting national conferences on K-12 outreach from university science departments.

www.science-house.org
**NC State: Engaging**

**Expanded Food and Nutrition Education Program**

In Yancey County, North Carolina Cooperative Extension’s Expanded Food and Nutrition Education Program partnered with a local agency to offer a diabetes-prevention program aimed at Hispanic women. EFNEP provides nutrition education programs to limited-resource families across the state.

---

1. **101 Cooperative Extension County Centers**
2. **Industrial Extension Service**
3. **Gateway County Centers**
4. **Small Business and Technology Development Center**
5. **Academic Programs**
6. **The Science House**

---

**Institute for Emerging Issues Regional Forums**

The Institute for Emerging Issues (IEI) organized five regional forums across the state, including one in Asheville, where leaders from the business community, civic organizations, school boards, faith-based communities, higher education, and county and local governments shared their ideas on how local issues affect statewide tax and finance themes.
Engaging with Communities

College of Design’s Downtown Design Studio
In Wake Forest, citizens engaged in a series of community design workshops led by the College of Design’s Downtown Design Studio to create a vision for revitalizing the old W.E.B. DuBois School campus. The College of Design’s outreach efforts bring a better quality of life and economic opportunities to downtowns, neighborhoods, and other areas across the state.

IMPACT Evaluation Project
The IMPACT program brings innovative technology solutions to public schools like those in Perquimans County. The Friday Institute helps evaluate the impact of these programs on students’ school performance.

Lumbee Home Designs
The Home Environments Design Initiative, a research and extension endeavor of the College of Design, collaborates with the Lumbee Tribe of North Carolina to address issues of affordable and sustainable housing. The partnership has produced a set of home design guidelines and four prototype home designs. Six Lumbee Home Designs are now under construction or complete.

Center for Environmental Farming Systems
Based in Goldsboro, CEFS provides a variety of workshops on sustainable agriculture practices for growers, extension agents, and consumers around the state.
The Encore Center for Lifelong Enrichment

Personal enrichment needs of the 50-plus population sector, now 29 percent of the local population, cannot be neglected since retirees in general enjoy longer, active lives. In addition, more than 43 percent of NC State baccalaureate alumni report enrolling in some continuing education, and 61 percent plan future participation. To help meet this growing need, McKimmon Center for Extension & Continuing Education established the Encore Center in 1991 to serve the 50-plus age group. Encore, with a membership of more than 1,000, offers 75 short courses and 37 special events to encourage mental stimulation and intellectual growth. www.ncsu.edu/encore

Nutrition and Human Health: NC Research Campus

Traditional North Carolina industries such as tobacco and textiles have declined in recent years. College of Agriculture and Life Sciences programs figured into the equation when David Murdock, Dole Food Co. owner, decided to revitalize the failing textile town of Kannapolis with a $1.5 billion investment that is creating the North Carolina Research Campus. The campus – which will enhance fruit and vegetable production, food safety, and farm business management – will include the NC State Institute for Fruit and Vegetable Science. The campus is expected to generate 35,000 new jobs and help people live longer, healthier lives. www.ncresearchcampus.net

Psychoeducational Clinic
www.ncsu.edu/psychology/graduate/conc/school/clinic.html

Cooperative Extension's Expanded Food and Nutrition Education Program
www.ces.ncsu.edu/EFNEP/pt.html

Research to Improve the Human Condition
www.pams.ncsu.edu

North Carolina Senior Games
www.ncseniorgames.org
Serving the Needs of the Food Animal Industry

Veterinarians play an essential role in protecting the world’s food supply by ensuring the pre-harvest health of production-type animals such as beef and dairy cattle, poultry, and swine. The College of Veterinary Medicine, recognized as a world leader in food animal veterinary education, research, and industry engagement, addresses important food animal health issues on a regional and global level. In addition, the Food Animal Residue Avoidance Databank (FARAD), formed in 1982, gives veterinarians and livestock producers a comprehensive resource to help them prevent drug residues from occurring in livestock products. FARAD is a multi-state collaborative program with faculty at NC State, UC Davis, the University of Florida, and USDA that has become the primary national and global science-based resource supporting the elimination of violative residues in the edible tissues of food-producing animals.

www.cvm.ncsu.edu/six_proffs.html

Center for Family & Community Engagement

North Carolina is a leader in establishing a form of family-centered meetings called “child and family teams.” Holding these meetings is mandated by state legislation for major reforms in child welfare to include families and community partners in service planning and in public schools to prevent academic failure and placement outside the home. The Center for Family & Community Engagement based in the College of Humanities and Social Sciences offers child and family team training, program support, and evaluation in child welfare, public schools, and system of care.

www.chass.ncsu.edu/fcmp/soc/soc.htm

Teaching Hospital and Equine Health Center at Southern Pines

North Carolina's equine and companion animal industries have an annual value of more than $2 billion, while animal production represents six of the top 10 cash commodities for the state's agricultural industry. In support, the Veterinary Teaching Hospital at the College of Veterinary Medicine serves as a referral medical center for the care of companion animals, horses, and farm animals. In addition, the CVM Center for Comparative Medicine and Translational Research investigates diseases affecting animals and humans.

As a satellite campus, the Equine Health Center at Southern Pines provides podiatry, reproduction, and ophthalmology services, and is one of the few USDA-certified Contagious Equine Metritis quarantine sites on the East Coast.

www.cvm.ncsu.edu/vth
Technical Outreach for Public Schools

The Center for Urban Affairs and Community Services (CUACS) was created by the North Carolina Legislature in 1966 to provide technical assistance and related support for public sector agencies. Under the Technical Outreach for Public Schools program, CUACS manages the statewide public schools testing and accountability program that the NC Department of Public Instruction (DPI) uses to assess student and school performance. CUACS provides technical assistance, publishing assistance, and delivery for end-of-grade tests, end-of-course tests (for ninth through 12th graders), competency tests, the National Assessment of Educational Progress, and Scholastic Aptitude Tests. Operating out of the south wing of the McKimmon Center for Extension & Continuing Education, CUACS collects, analyzes, and reports test results and educational progress to DPI.

www.tops.ncsu.edu

Nonwovens Cooperative Research Center

The College of Textiles' Nonwovens Cooperative Research Center (NCRC) was established in 1991 as a Cooperative Research Center with a seed grant from the National Science Foundation. The center provides research, development, and testing support to the nonwoven textiles industry through its state-of-the-art pilot plants and research labs. One example is research into new materials for the military and for first response personnel. In the past three years, 17 new or expanded nonwovens companies relocated to North Carolina to be close to the NCRC, creating over 1,000 new jobs and investing over $400 million in capital. The center has more than 70 members from leading industrial companies and research centers, and is part of the recently created Nonwovens Institute that offers graduate-level certificate programs.

www.thenonwovensinstitute.com/ncrc

Innovation for 21st Century Teaching & Learning Partnership

21ctl.fi.ncsu.edu/msms/index.html

Distance Education Programs for Military Personnel

www.chass.ncsu.edu/lps

NC LIVE: Statewide Information Access

www.nclive.org/about.phtml
Kenan Institute for Engineering, Technology & Science

The Kenan Institute brings together government, university, and corporate partners to solve scientific and societal problems, generate technology-based economic development, and use public and private resources to address emerging issues. The Institute supports four major initiatives: high technology basic research, science, and math K-12 education partnerships, technology commercialization and entrepreneurship, and science and technology policy. The Kenan Fellows program engages teachers in developing cutting-edge curriculum materials, while providing professional development opportunities. The NC Space Initiative guides analysis of the North Carolina aerospace industry cluster and has leveraged over $15 million in space-related research funding since 2001. www.ncsu.edu/kenan/html/program.html

K-12 Engineering Outreach

NC State’s College of Engineering Office of Academic Affairs manages the K-12 Outreach group that advances science, technology, engineering, and mathematics instruction in K-12 schools. The group runs two National Science Foundation programs that place graduate and undergraduate engineering students in K-12 schools as co-teachers; operates elementary and middle school engineering camps that have served 600 students in seven years; and conducts various K-12 teacher workshops on inquiry teaching, curriculum integration, and engineering. In addition, the group presents “Engineering on the Road,” which has introduced real-life engineering problems to 25,000 K-12 students in North Carolina. Since its formation in 1999, the program has annually impacted an average of 5,000 students and 500 teachers statewide. www.ncsu.edu/k12outreach

The Friday Institute for Educational Innovation

The College of Education’s William and Ida Friday Institute for Educational Innovation, founded in 2004 and housed in a state-of-the-art facility adjacent to the Centennial Campus Middle School, is a public-private partnership that integrates research and technology, and fosters cross-sector collaboration to enhance education and spur economic development. The Institute brings together students, teachers, and education leaders with research scientists, community leaders, and business professionals to identify and create innovative solutions for 21st century education. The Institute works with agencies such as the US Department of Education and the National Science Foundation, partner educational institutions, national and international non-profits, and corporations. The Friday Institute focuses on developing educational broadband network connectivity and online education, infusing technology into the classroom, and improving professional development for teachers and administrators. www.fi.ncsu.edu
Energy for Tomorrow: Biofuels and more

As energy consumption has steadily increased, demand for crude oil has escalated worldwide, especially in developing countries. In developing new energy resources, it is important to consider biomass more readily available in North Carolina, such as loblolly pine, fast-growing hardwoods, switchgrass, coastal Bermuda grass, and various agricultural residues. The College of Natural Resources and the College of Agriculture and Life Sciences are conducting research and technology development to enable a new biofuels industry. Researchers are working to improve the specific chemical and enzymatic processes to promote the economical production of biofuels from biomass. In addition, faculty and students in the College of Physical and Mathematical Sciences partner across campus to study energy production, distribution, usage, and the environmental impacts of energy utilization.

www.cals.ncsu.edu/agcomm/difference/biofuels
cnr.ncsu.edu/wps/biomaterialspromo.html
www.pams.ncsu.edu

In the Garden with Bryce Lane

The College of Agriculture and Life Sciences produces the UNC-TV show In the Garden with Bryce Lane to help home gardeners enhance and protect water quality and the environment by providing research-based gardening information to the public. The show, which airs twice weekly reaching more than 100,000 viewers, features award-winning horticultural science professor Bryce Lane. From retirees in rural communities to community college students and professionals, In the Garden is reaching a wide range of audiences, many of whom participate in a for-credit course through the weekly television show.

www.unctv.org/inthegarden
State Climate Office

North Carolina has a complex climate due to its three distinct regions: the mountains, the Piedmont, and the coastal plain. The State Climate Office (SCO) is a public-service center for climate-environment interactions in North Carolina, housed in the College of Physical and Mathematical Sciences. The SCO is the primary source for North Carolina weather and climate information and is involved in all aspects of climate research, education, and extension services. The office provides the state with weather data from a growing network of more than 30 research-quality weather stations, provides climate information for the citizens and businesses of North Carolina and assists state government agencies in climate-related challenges and decision support tools that reduce costs and conserve resources.

www.nc-climate.ncsu.edu

Cooperative Tree Improvement Program

Many of North Carolina's 436,000 private landowners sell timber for paper and wood products. Because of rapid urbanization and development, more wood must be produced on less land than ever before. More than 50 years ago, the College of Natural Resources partnered with industrial firms, forest landowners, and state agencies across the South to form a cooperative research, breeding, and testing program. Members of the NC State University Cooperative Tree Improvement Program have made dramatic improvement in the productivity and value of forest plantations, including $50 to over $300 per acre in net present value to landowners who utilize improved planting stock, 1,108 tons of improved pine seed produced by Cooperative members and more than 17 million acres reforested with genetically improved seedlings.

cnr.ncsu.edu/for/research/tip

North Carolina Sea Grant

The sustainable use of coastal and marine resources benefits all citizens of North Carolina. Thus, North Carolina Sea Grant provides professional, coordinated, and responsive research and education efforts focused on coastal ecosystems, communities, and economies. Sea Grant's outreach staff has a strong track record of bringing together stakeholders to increase understanding and facilitate informed decisions regarding limited resources. Extension staff members, located along the coast and in Raleigh, cover a variety of topics, including commercial and recreational fisheries and habitats, seafood technology, coastal hazards, and marine education. Sea Grant outreach topics also include aquaculture, coastal law and policy, coastal community development, and water quality. The award-winning Coastwatch magazine is Sea Grant's flagship publication. www.ncseagrant.org

NC Solar Center

In 1988, NC State created the NC Solar Center as a focal point for research, extension and engagement on solar energy technologies and building practices. Today, the center focuses on renewable energy and energy efficiency technologies in the building, power, transportation, and industrial sectors. The center provides technical assistance and information on tax credits and other incentives to more than 3,000 North Carolina consumers and businesses for energy improvements each year. In addition, the center provides education for school and community college groups, technical assistance for homeowners, grants for clean transportation infrastructure, as well as policy analysis and technical assistance to state officials and other agencies.

www.ncsc.ncsu.edu
Centennial Campus

In the span of 25 years, NC State’s Centennial Campus has developed a reputation as a unique national model, bringing teaching, research and outreach together in public/private partnerships to stimulate economic development. With its 26 start-ups in the Technology Incubator, as well as eight new corporate partners in 2007, the campus is home for faculty and programs from every college. More than 70 corporate and government partners employ over 2,000 workers, and the campus is organized into educational neighborhoods that stimulate creativity and innovation.

Centennial Campus is all about collaborations, as these partners work to solve some of the most puzzling scientific and technological challenges of our time—second-generation genomic sequencing, bacteria-killing nanofibers, and green sustainable technology. These are just a few promising areas that will not only result in breakthrough discoveries, but will generate new businesses and industries for the benefit of North Carolina, the nation and the world.

Education continues to be at the forefront. In 2007, the Biomanufacturing Training and Education Center (BTEC) opened on Centennial Campus. It is the largest pilot plant facility of its kind in the nation and provides hands-on training for professionals in bio-manufacturing and bio-pharmaceutical industries. In the educational neighborhood, Centennial Campus houses a Magnet Middle School, conveniently situated next to the learning technologies think tank, the William and Ida Friday Institute for Educational Innovation.

The Association of University Research Parks (AURP) named Centennial Campus the Outstanding Research Park of the Year 2007.