

Focus on Prosperity

NC STATE IS A KEY ECONOMIC DEVELOPMENT PARTNER IN THE TRIANGLE AND BEYOND

By Katie Mosher

“We see a unique role for NC State in its ability to help attract and retain — in collaboration with the state of North Carolina, along with counties and communities — significant economic investments in the state. Companies leverage our research, expertise and workforce development efforts. Our innovation activities bring

new jobs to North Carolina.”

— MLADEN VOUK

When CBC Americas Corporation was considering new locations for its headquarters, company leaders based their decision on more than just money. That’s why meetings with NC State University’s Japan Center helped them select North Carolina as their new base of operations.

At an April event announcing the company’s move from New York, North Carolina Gov. Pat McCrory credited John Baugh, the center’s director, with providing key “one-on-one dialogue” that welcomed CBC officials and opened wider discussions about the merits of the state.

NC State Chancellor Randy Woodson also noted that the Japan Center has played similar roles for 35 years by hosting economic delegations, fostering cultural collaborations and offering language classes. North Carolina commerce leaders count at least 180 Japanese companies or subsidiaries in the state, which together employ thousands.

The Japan Center is among resources in the university’s expanding toolbox to enhance economic development and prosperity. These efforts complement the \$6.5 billion in North Carolina income attributable to NC State’s economic impacts in 2012-13 alone, as measured by a recent study from the University of North Carolina system. (See related story on page 23.)

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• ABOVE: The North Carolina Japan Center, part of NC State University, offers language classes and cultural programs that are vital resources for Japanese companies in the state and those considering a move here. • OPPOSITE PAGE: The Japan Center was the setting as North Carolina Gov. Pat McCrory lauded the announcement that CBC Americas Corporation would move its headquarters and another facility to North Carolina. Other speakers included company CEO Kazuhiko Kondo and NC State Chancellor Randy Woodson.



North Carolina, along with counties and communities — significant economic investments in the state,” explains Mladen Vouk, interim vice chancellor for research, innovation and economic development.

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KEY COLLABORATIONS

Thomas J. White, director of the university’s Economic Development Partnership, notes that industry executives often initiate contacts. “We consistently receive a healthy volume of direct requests from business and industry for our NC State support services in some form or fashion.”

Each year, NC State is involved in dozens of varied projects. “We work as part of a cohesive team to match demands in the marketplace with our ample supply of research labs, faculty expertise, and student and alumni talent,” White explains. “We do so in concert with our local, regional and state economic developers.”

When White joined NC State in 2008, the university already was engaged with the Wake Economic Development Program, the Research

Triangle Regional Partnership (RTRP) and the North Carolina Department of Commerce to promote capital investment and employment attraction/retention.

“The success of this ‘triple helix’ collaborative endeavor — involving academia, business and government — held great promise for statewide application,” White recalls. “We had an opportunity to uphold the charter of NC State’s fervent commitment as a land-grant institution to broad-based economic growth.”

White chairs the statewide Economic Transformation Council, working closely with Leslie Boney, a University of North Carolina system vice president with a focus on economic development. White also has been active in the 16-county RTRP since his days as president and CEO of the Durham County Chamber of Commerce.

“Tom’s knowledge is especially important in helping counties identified as among those with the greatest economic needs in the state,” Vouk notes.

For example, the North Carolina Rural Center selected six locations for meetings this summer to focus on economic development. NC State has new and expanding industry projects

in four of the locations: Sempruis in Henderson, Aseptia/Wright Foods in Troy, Brooks Brothers in Clinton and Wood Grain Millwork in Lenoir.

White, who previously led the state’s \$100 million program to help displaced workers and youth get jobs, also continues to work with the Backpacks to Briefcases program. NC State recently received a \$386,000 grant from Duke Energy via the North Carolina Community Foundation, to provide training and paid internships to 100 recent college graduates in Wake and Johnston counties. Campus partners include the Career Development Center and Alumni Association. Other partners are the Capital Area Workforce Development Board and EDSI Solutions.

“NC State’s amazing strengths include capacity building and networking,” White adds. He cites a variety of campus leaders active in economic development, starting with Woodson.

In addition, some programs have regional offices, such as the Small Business Technology Development Center (SBTDC), led by Scott Daugherty, and the Industrial Extension Service, led by Terri Helmlinger Ratcliff. Travis Burke is the

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interim director for the North Carolina Cooperative Extension Service, which has a presence in all 100 counties. Kelly Sexton leads NC State's Office of Technology Transfer, which helps startups to launch and established companies to expand.

The state's official economic development guide even features several centers on NC State's Centennial Campus: the Nonwovens Institute, led by Behnam Pourdeyhimi, the FREEDM Systems Center, led by Iqbal Husain, and PowerAmerica, led by Nick Justice.

White sees a particular NC State strength in working with smaller and mid-sized companies. Here are just a few examples:

TAKING FLIGHT

Morganton-based VX Aerospace is developing an aircraft dubbed the VX-1 KittyHawk, a tribute to pioneering flights on the North Carolina coast.

"The blended wing/body is a combination of proven technologies, and the result is a light aircraft that will command as much attention for its future-looking design as it will for its interior comfort and fuel cost per flight hour," the Economic Development Partnership of North Carolina noted when announcing a \$25,000 grant from the Innovation Fund North Carolina.

With the popularity of the U.S. Federal Aviation Administration's new light-sport aircraft category, VX Aerospace sought NC State's help to move the KittyHawk from idea to proof-of-concept testing. The aircraft expands an existing niche in advanced composite structures. Production also would draw upon expert tool-and-die makers in the region.

Rich Gould, who heads NC State's Department of Mechanical and Aerospace Engineering, identified KittyHawk as a good fit for Chuck Hall, who directs the department's Flight Research Group.

That connection led to computational fluid dynamics analysis and wind tunnel testing, then building a 1:4-scale prototype. Test flights — with videos posted on the company website — demonstrated the design's dynamic stability and flying qualities. VX touts the unique aircraft design as very efficient aerodynamically, while also offering a usable internal volume that is more than twice as large as traditional designs of the same weight.

Robert Skillen, company CEO and chief engineer, enjoys working with the university. "Decisions are made quickly, followed by actions," he notes. "NC State understands business. Here at VX Aerospace, we are thrilled with our association with North Carolina's flagship university."

Gould agrees. "It has been a pleasure collaborating with VX," he says. "Outreach and extension are what make NC State unique, and we are happy to help North Carolina companies in any way we can. It's also a great experience for our students to work with companies — a true win-win."

ENCOURAGING EXPANSION

White and his collaborators often help keep homegrown North Carolina companies in the state as they mature and expand.

When Argos Therapeutics broke ground for a \$50 million,



124,500-square-foot automated biomanufacturing facility in Durham, White counted it as a victory — even though it is a spinout enterprise from Duke University.

The new facility will meet strict Food and Drug Administration requirements, and the company anticipates adding at least 230 jobs in research, development and manufacturing in coming years. "Argos' cutting-edge work in personalized immunotherapy may lead to new treatments for people living

with cancer, HIV and other serious illnesses," Gov. McCrory said.

Randal Goller, Argos' facilities director, describes construction of the facility as a milestone. "We are in a position now that we can do something very special," he says.

Argos' Arcelis technology platform induces a potent immune response targeted to each patient's disease. One product is in pivotal clinical trials for patients with metastatic kidney cancer. Another is in earlier trials, as



• **OPPOSITE PAGE, TOP:** VX Aerospace has worked with NC State to develop and test a scale model of the VX-1 KittyHawk aircraft. • **MIDDLE:** From left, Bob Skillen of VX Aerospace, NC State student R.J. Gritter and Lars Soltman, an aerospace doctoral candidate, review the scale model. • **BOTTOM:** Skillen, center, accepted an economic development partnership award this year from Provost Warwick Arden and Vice Provost Terri Helmlinger Ratliff. • **THIS PAGE, TOP:** The Golden LEAF Biotechnology Training and Education Center on Centennial Campus is a key partner for many companies in the Triangle region and beyond. • **BOTTOM:** Argos Therapeutics worked closely with NC State and other partners in its ultimate selection of a manufacturing facility site in Durham County.

in today's economic development world, and in higher education. This collaboration of Duke, NC Central and NC State epitomizes our collective commitment to that laudable goal," White adds.

He helped to arrange dozens of meetings for Argos to consider sites and opportunities in Wake, Durham, Vance, Granville, Orange and Alamance counties. Argos also looked at locations and incentives in Texas, Florida and Canada.

After all the searching, Argos stayed close to home. "We knew that we wouldn't lose any employees," Goller says, noting the financial support of Durham city and county leaders, state commerce programs and the North Carolina Biotechnology Center. "All the stars aligned."

IDENTIFYING SOCIAL SKILLS

A recent *Newsweek* story gives national attention to the success 3C Institute has achieved by focusing on communication, cooperation and confidence — essential skills for healthy relationships and businesses.

3C's cornerstone product is Zoo U, a suite of research-proven, personalized game programs to help students learn social and emotional skills. An affiliated company, Personalized Learning Games, is marketing Zoo U, with several other products for grades K-8 in the pipeline. 3C also is developing health care apps to help youngsters with chronic illnesses understand their conditions and transition to self-care management as teens.

Melissa DeRosier, CEO of 3C Institute, sees great potential for continued expansion by adding game-based

part of a drug-combination treatment for HIV eradication in adults.

With the science in hand, Argos needed help in business development. A venture capitalist suggested company officials meet with White. "Tom immediately got the ball rolling," Goller recalls. "Everyone respects Tom. He was able to introduce us to a lot of folks, and we were able to connect the dots."

A 2011 meeting of Argos collaborators at the Golden LEAF Biomanufacturing Training and Education Center on NC State's Centennial Campus stands out for White. "It's a salient example of how a venture capital network — and corporate leaders in those networks — can help produce a broad array of support-service delivery from multiple constituencies," he says.

NC Central University's Golden LEAF BRITE program also was a partner. "The retention and expansion of existing companies is a high priority

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- **TOP:** Zoo U, the cornerstone product for 3C Institute, helps youngsters build social skills.

- **BOTTOM LEFT:** Tom White, who leads NC State's Economic Development Partnership, has worked closely with Melissa DeRosier to help the 3C Institute to grow.

- **BOTTOM RIGHT:** DeRosier leads a meeting with colleagues from the North Carolina Small Business Technical Development Center, from left, Michael Cames, John Ujvari and Mike Seibert.



tools to develop workplace skills. In fact, the company moved to larger headquarters near Research Triangle Park.

"My area is social and emotional learning. Those are 21st-century skills that are essential for success in school and for workforce development," she explains. In addition to the three Cs, she cites self-discipline, empathy, collaboration and leadership. "In today's workplace, it is critically important for everyone to have these skills."

DeRosier recalls early meetings with NC State partners in 2002. "Without a doubt, SBTDC supported the growth and development of my company from the very beginning."

Michael Seibert of SBTDC and White offered 3C multiple consultations over the years and referrals for market research and interns. These steps helped the company successfully compete for state and federal grants. DeRosier also has worked with James Lester, who directs NC State's Center for Educational Informatics, and has

hired several of his computer science graduates as game developers.

DeRosier's NC State contacts initially suggested leadership workshops. She now accepts their invitations to give keynotes, describing her business model, her community work with North Carolina New Schools and her service on Holly Springs Mayor Dick Sears' anti-bullying task force.

White says DeRosier's company is an example of doing well by doing good. "3C is a wonderful model of

social entrepreneurship. Melissa and her team thrive on designing sophisticated products that, at the end of the day, improve and enhance the quality of life for her customers and clients and our communities."

COLLABORATING ACROSS CULTURES

It was no surprise that CBC Americas, a subsidiary of CBC Co. Ltd. of Japan, and state officials chose the NC State's Japan Center as the backdrop to announce the company's relocation

of its headquarters to Wake County and development of another facility in Alamance County.

“John Baugh and Reiko Chosokabe of the NC Japan Center played a leadership role in hosting numerous meetings with company officials and state and local economic development staff as the due-diligence process played out,” White says, noting that North Carolina won out over incentives from Pennsylvania.

At the official announcement, John Skvarla, state commerce secretary, shared a list of more than a dozen other partners in the CBC Americas success story, including the state’s Economic Development Partnership, town and county boards, economic developers, Meredith College, Elon University and the North Carolina Community College System.

The move is strategic for CBC Americas’ organizational updates and growth. The company specializes in security solutions, chemicals, pharmaceuticals, renewable-energy technology and video-surveillance products.

“North Carolina will provide CBC with the economically rich environment so we can continue to thrive while providing the state with secure, well-paying jobs and tax revenues,” CEO Kazuhiko Kondo explains. “Our employees will benefit from the educational resources and cultural and leisure activities that North Carolina has to offer.”

The move combines the best of both cultures, he adds. “I look forward to a bright future in North Carolina.”



NC STATE ADDS BILLIONS TO STATE, LOCAL ECONOMIES

NC State's economic impact includes contributions to the economy of Raleigh, shown above, as well as the Research Triangle region and the entire state.

An economic impact study commissioned for the 16 colleges and universities in the University of North Carolina system shows that NC State University packs a tremendous economic punch for Wake County, the Triangle region and the state.

During the 2012-13 fiscal year, NC State and its various enterprises created \$6.5 billion in added income to the North Carolina economy, including \$4.8 billion in income for the 13-county regional economy and \$3.3 billion in Wake County income.

The study estimates that the added \$6.5 billion to the statewide economy is equivalent to creating 91,505 new jobs. The \$4.8 billion in added regional income is equivalent to creating 59,237 new jobs. The \$3.3 billion in added county income is equivalent to creating 44,538 new jobs.

“This study shows what we’ve known for many years: Our public universities provide a staggering impact to the local and state economies and are primary drivers of growth across North Carolina,” notes NC State Chancellor Randy Woodson. “Every taxpayer dollar that comes in to NC State yields nearly \$4 of return on investment in the form of research advancements, new technologies, new companies, the most-prepared graduates and jobs waiting for them.”

The study, conducted by Economic Modeling Specialists International, examines a variety of factors to produce what is arguably the most comprehensive picture of the UNC system’s economic impact ever undertaken.

The report shows that for every \$1 that society spent on education at NC State throughout the 2012-13 fiscal year, it will gain \$9 in added state income and societal savings for as long as the 2012-13 NC State students remain active in the North Carolina workforce. For every dollar spent by taxpayers, they gain \$3.80 in added taxes and public sector savings.

The accumulated contributions of NC State alumni currently employed in the North Carolina workforce amounted to \$4.2 billion in added state income, which is equivalent to creating 67,465 new jobs. Alumni impact totaled \$2.3 billion of the \$4.8 billion in additional income in the region and \$1.5 billion of the \$3.3 billion of additional income in Wake County.

The study also shows that university-related startups created \$1.2 billion in added state income, which is equivalent to creating 5,799 jobs. Startup impact also created \$1.1 billion in added regional income and \$471.1 million in added county income.

About 19 percent of NC State’s graduate and undergraduate students are from outside the state. The expenditures of these students who relocated to the state during the analysis year added approximately \$60 million in state income for the North Carolina economy. About 71 percent of NC State’s resident students came from outside Wake County in 2012-13, while 60 percent came from outside the 13-county region surrounding the university. Their relocation to Wake County and the corresponding expenditures on rent, groceries, transportation and the like added \$133 million to the regional economy and \$126 million to the county economy.

Out-of-state visitors attracted to North Carolina for activities at NC State brought new dollars to the economy through their spending at hotels, restaurants and other businesses. Visitor spending added approximately \$17.6 million in state income to the North Carolina economy. Spending by those who live in North Carolina but came from outside the county and region to attend an NC State activity added \$26.8 million to the regional economy and \$26.5 million to the Wake County economy.

NC State University Communications contributed to this report.