

# Annual Report 2009-10



## From the Executive Director



Another year has passed and it's time to look back on what we've achieved. The 2009-10 fiscal year represents Gateway's sixth year of development and once again, we have numerous accomplishments that support our mission of catalyzing university research, innovation, and economic development.

At the close of the year, we find the Joint School of Nanoscience and Nanoengineering (JSNN) approximately 25% complete and on schedule for completion in December of 2011 with full operation beginning in January 2012. We've welcomed the inaugural class of students into the JSNN. Nineteen students joined the school in August 2010 and so the much anticipated growth of the JSNN in offering both Master's and Ph.D. degrees has begun. By the time the new facility becomes operational, we anticipate that 40 or more students will be in the program and we will be offering four different degree tracks. In addition, Gateway and the JSNN have also signed our first local partnering agreement with chip manufacturer, RF Micro Devices. With the inaugural class and our first local partner, we are already seeing the fruits of the signature program of the research park.

We've also managed to navigate these uncertain economic times and have been fortunate that the impact has been limited. As our economy begins to recover, Gateway and the JSNN are well positioned to continue partnering discussions and create mutually beneficial opportunities based on leveraging our collective resources. The past several months have been extremely active and we are very hopeful that a number of current discussions will result in new and exciting partnerships that will provide economic development to our community as well as generate momentum for the future growth of the research park.

As always, I continue to be extremely optimistic about the great potential of the Gateway University Research Park and I am thankful for this tremendous opportunity. Fortunately, I have been surrounded by compassionate and active leadership who have provided the necessary support and guidance for Gateway to succeed. The past several years have been fruitful and I continue to be tremendously excited about the future.

Sincerely,

A handwritten signature in blue ink that reads "John R. Merrill". The signature is fluid and cursive.

John R. Merrill  
Executive Director

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*Gateway University Research Park  
is the bridge to successful commercial application  
of the research being performed at  
Greensboro's two high research universities.*

## The Year in Review

Each year, we publish an annual report that encapsulates the activities and successes of the previous year. Despite the existing economic imbalance, Gateway continued to experience increased interest and steady growth, primarily as a result of the Joint School of Nanoscience and Nanoengineering.

What follows is a summary of the activities which occurred at both campuses during the fiscal year 2009-10.



## Outreach

### Community

- One of Gateway's most important missions is to facilitate community outreach in order to increase science, technology, engineering and mathematics education ("STEM initiative") and awareness in our community. Throughout the year, Gateway staff provided guided tours of its campuses, facilities and laboratories for various university associations, alumni, college students and K-12 students, including tours for the Strategic Planning Committee of NC A&T's Cooperative Extension Office and the Rockingham County 4-H Club. Tours and presentations were given to groups as small as 5 individuals to more than 40 individuals. Further, the faculty and staff of the Joint School of Nanoscience and Nanoengineering ("JSNN") made presentations to groups by discussing the relevance of nanotechnology in our daily lives, and more importantly, to engage, excite and inspire the Triad's future scientists and leaders.

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- During the year, Gateway held a reception for the adjacent College Forest Neighborhood Association. Both university Chancellors and Dean James Ryan of the Joint School of Nanoscience and Nanoengineering participated in a question and answer forum and reception designed to educate our neighbors about the existing and planned activities occurring at Gateway's South Campus. Discussion topics included the upcoming construction of the new school, as well as the types of research to be performed and other potential impacts as the Park continues to develop, including aesthetics, noise and traffic, land use and planning issues, and the creation of a master development plan by the City of Greensboro for the East Lee Street corridor.
- In November 2009, Gateway hosted a joint reception, the first of its kind, which included the Board of Trustees for NC A&T State University and The University of North Carolina at Greensboro, and also the Board of Directors for Gateway University Research Park. This event brought together more than 60 prominent leaders for an unmatched networking opportunity and in-depth discussion of the Park's activities.
- Gateway's Equipment Engineer, Karen Ryan, was accepted into the 2010 Class of Leadership Greensboro.

### Sponsorships

January 2010  
North Carolina First Lego League (NCFLL) Regional Tournament  
Gateway University Research Park  
Browns Summit, North Carolina

April 2010  
North Carolina Nanotechnology Commercialization Conference  
Koury Convention Center  
Greensboro, North Carolina

August 2010  
State of our Community Luncheon  
Koury Convention Center  
Greensboro, North Carolina

2010 PGA Wyndham Championship Golf Tournament  
Sedgefield Country Club  
Greensboro, North Carolina



## The Joint School of Nanoscience and Nanoengineering

The most significant project occurring at Gateway University Research Park is the Joint School of Nanoscience and Nanoengineering (JSNN). The JSNN is a unique collaborative academic program of North Carolina A&T State University and the University of North Carolina at Greensboro. The program will be housed in a 105,000 square foot building that will include laboratories, clean rooms, classrooms, an auditorium, and office spaces. The design and construction of the school will attempt to achieve LEED Gold certification, a recognized standard for environmentally friendly construction.

The JSNN will be a world class education and research institution, also serving as an engine for economic growth in the Greensboro/Triad area of North Carolina. The JSNN's education and research programs will produce trained professionals that are highly sought in the fields of pharmaceuticals, defense, medicine, materials, electronics and communications.

Construction of the school remains on schedule and the building is expected to be enclosed by April 2011 and faculty, staff and students will begin moving into the facility in December 2011. The first classes in the new building will begin in January 2012.

Below is a timeline outlining the various activities which occurred over the past year relating to the Joint School of Nanoscience and Nanoengineering:

### October 2009

The design / development phase for the JSNN was completed.

### November 2009

NC A&T and UNCG broke ground on for the 105,000 square foot research facility. The ground-breaking event brought together more than 300 people to celebrate the historic event. Speakers included UNC President Erskine Bowles; Hannah Gage, Chair of the UNC Board of Governors; Rep. Joe Hackney, Speaker of the NC House of Representatives; and Chancellors Harold L. Martin, Sr. and Linda P. Brady of NC A&T and UNCG, respectively.

### February 2010

Preliminary site work began. Construction on below-ground utilities, footings and foundations commenced shortly thereafter. Multivista Construction Documentation installed a camera on the rooftop of Research Facility One, which documents the daily construction activities occurring at the site. A web link is located on Gateway's web site ([www.GatewayURP.com](http://www.GatewayURP.com)) for web users to easily access the camera.

### June 2010

Construction was completed on a microscopy lab at Research Facility One, and installation of the ORION PLUS Helium-Ion microscope and other equipment was started.

### July 2010

Vertical construction was started.

### August 2010

During the month of August, faculty and staff members hired by the JSNN began their employment. These individuals represent national and international individuals who were individually recruited by NC A&T and UNCG. The faculty will work with Master's and Ph.D. candidates in Nanoscience and the start of the 2010-11 school year marks the inaugural class of the JSNN. A total of eighteen (18) graduate students began classes at the Joint School's temporary space at the South Campus. This was more than double the expected class size. This "grand opening" was covered by several media outlets including WFMY News 2, WGHP Fox 8, News 14 Carolina, Greensboro News-Record, The Business Journal of the Triad, and more. NC Representative Brad Miller also visited the JSNN facilities in August.



## The Joint School of Nanoscience and Nanoengineering *(continued from Page 2)*

### September 2010

On September 7, 2010, Gateway marked the completion of the steel framework of the building. To date, approximately 450 construction workers have been on site, managed by the joint venture firm Barton Malow-Samet-SRS (BMSS). Ninety six percent (96%) of those workers were from North Carolina and the project has excellent participation from local and regional Minority and Women Owned businesses. The project has also provided significant impact to the local community – 45 of the firms subcontracted for the job are from the Triad region. Barton Malow Samet SRS commemorated the last piece of steel being placed on top of the building by hosting a topping out celebration. This traditional celebration honors the many hours of hard work put in by the construction team and ushers the project into its next phases.

### Laboratories and Equipment

Gateway University Research Park and the JSNN have made substantial investments in state-of-the-art advanced microscopy, sensing, synthesis and actuation instruments, and information and services. Some of this specialized laboratory equipment includes:

- a \$2.5 million Carl Zeiss SMT ORION® PLUS Helium-ion-microscope, one of only five (5) located in the country and the only one in the Southeast;
- an EVO® multi-purpose scanning electron microscope (SEM) that is also known as an "environmental SEM" and will enable examination of biological samples without metallic coating;
- a LIBRA® 120 PLUS energy-filter transmission electron microscope (TEM) for high resolution study of nanostructures coupled with chemical analysis capability; and,
- an AURIGA™ CrossBeam® FIB/SEM workstation, a Field Emission Scanning Electron Microscope with Focused Ion Beam to enable high resolution examination of samples as well as in-situ sample preparation.

The availability of this equipment provides for affordable access to highly specialized laboratory equipment or services otherwise too expensive for companies, in particular start-ups. The lab equipment, facilities, and services are available on a fee-for-use basis.

During the course of the past year, a small portion of the entire suite of tools and equipment were installed and are now operational and available for use at Gateway's South Campus location. A complete listing of the available equipment is posted on Gateway's website, the JSNN website, and on the website for NC BIO, the trade association for the North Carolina Bioscience Industry.

*The Park's flagship is the nation's only Joint School of Nanoscience and Nanoengineering whose faculty, students and business partners will forge the products of the future.*



## Tenant Updates

**Barton Malow Samet SRS** entered into a lease agreement for space at Gateway's South Campus and moved into space in October 2009. The space will be utilized in lieu of job/construction trailers for the JSNN project.

**Advaero Technologies, Inc.** entered into a lease agreement and expects to move in and begin operations at Gateway's South Campus in November 2010.

**Prevention Strategies** and **Sarah's Salsa** renewed their respective leases at Gateway's North Campus.

**The Aggie Pride Solution Center and Market Research**, a department under NC A&T's Office of Enrollment Management, is an integrated data driven enrollment methodology to execute strategies that directly impact the quality and steady growth in student enrollment. Using telerecruiting and market research strategies, the Center uses an outbound call campaign to analyze and qualify target applicants who are most likely to enroll at the University. Using technology, the Aggie Pride Solution Center and Market Research is using cost effective methods for increasing and tracking enrollment and using research and analysis systems to determine which outreach methods are working.

The Center's research shows positive results by providing quality customer and support services to prospective, new and current students. The Solution Center completed 3,300 outbound calls in fall 2009. That number nearly tripled during spring 2010 with tele-counselors completing more than 9,500 outbound calls. During the six month period July 2009 to December 2009, the Center fielded 13,358 incoming student calls, and from January 2010 through the end of April 2010, telecounselors have fielded more than 16,000 incoming calls. The Center is comprised of 5 additional full-time and 3 part-time employees.

**The SERVE Center** wins contract for the National Homeless Education Center (NCHE). The NCHE is helping school districts, families and schoolchildren meet the educational challenges posed by homelessness. Thanks to a new \$4 million contract with the U.S. Department of Education, NCHE will continue to do so for the next five years. Based at the SERVE Center at the North Campus of Gateway University Research Park, NCHE's five full-time employees compile reports, create educational materials, such as posters, and provide training at state and national conferences. NCHE also operates a toll-free helpline.

The new contract for the homeless center contributes to the important work of The SERVE Center to build the capacity of states and school districts to provide high quality educational opportunities for all children, especially those who face significant academic challenges. SERVE Center, one of the nation's 10 regional educational laboratories, provides the best available information to local and state educators and policymakers in Alabama, Florida, Georgia, Mississippi, North Carolina and South Carolina.

## Collaborations

In fall 2010, RF Micro Devices, Inc. and the JSNN entered into a Joint Research and Development, Facilities and Equipment Use Agreement. The agreement enables joint research and development activities as well as facilities and equipment use at the JSNN.

Under the agreement, JSNN and RFMD intend to collaborate on the development of innovative nanoelectronics technologies related to RF amplification, filter, and switch functions. The JSNN's cleanroom will be available to RFMD for research and development, and RFMD will collaborate with university research students while locating RFMD personnel at the facility. RFMD and the Joint School intend for the collaboration between industry and academia to drive research excellence and generate leading-edge technologies that ultimately support economic growth. Gateway and the JSNN also are currently in varying levels of discussion with numerous other potential partners. Successful negotiations with these potential partners will likely create 25-50 new jobs located at Gateway University Research Park.



*Affordable access to expensive, highly specialized equipment and the opportunity to work with faculty researchers in areas where the research and the needs of the partner companies intersect.*



## Inside Gateway

### October 2009

Installed new expandable Voice Over IP (VOIP) telephone system that serves tenants at both North and South campuses.

### December 2009

At its request, Gateway University Research Park was rezoned and annexed into the city limits of Greensboro. Both became effective in March 2010.

### January 2010

John Merrill, Executive Director, became an employee of Gateway University Research Park, moving over from the University of North Carolina at Greensboro. John has served as Executive Director of Gateway University Research Park since 2004.

### March 2010

Gateway hired a new Equipment Engineer to oversee the installation, operation, and maintenance of the highly specialized tools and equipment that will be an integral part of the JSNN and Gateway. Karen Ryan will also be responsible for scheduling use of these tools and equipment with partner organizations.



## Former Homeland Security Executive Joins Gateway's Board of Directors

**D**r. Charles "Chuck" McQueary, most recently Director of Operational Test and Evaluation, Office of the Secretary of Defense, has been elected to the board of directors of the Gateway University Research Park in Greensboro, North Carolina.

McQueary's career has been significant. While in the Office of the Secretary of Defense, he served as the senior advisor to the Secretary of Defense on testing of Department of Defense weapon systems, prescribing policies and procedures for the conduct of operational and live fire test and evaluation. During his tenure, McQueary was given the 2008 International Test and Evaluation Association Professional Award, and the 2009 Department of Defense Award for Outstanding Public Service.

In 2003, Dr. McQueary was appointed by the President and confirmed by the U.S. Senate as the first Under Secretary for Science and Technology at the Department of Homeland Security.

In this position, he led the research and development arm of the Department, utilizing our nation's scientific and technological resources to provide federal, state and local officials with the technology and capabilities to protect the homeland.

In 2006, he was given the National Defense Industrial Association Homeland Security Leadership Award. McQueary is a former President of General Dynamics Advanced Technology Systems, in Greensboro, and he has also been resident and Vice President of business units for AT&T, Lucent Technologies, and a Director for AT&T Bell Laboratories. A native of Texas, Dr. McQueary is a graduate of The University of Texas, Austin where he earned a B.S. Degree in Mechanical Engineering; M.S. Degree in Mechanical Engineering; and a Ph.D. in Engineering Mechanics as a NASA Scholar (M.S. and Ph.D.) and member of five Academic Honor Societies. The University of Texas has named Dr. McQueary a Distinguished Engineering Graduate.

## The Year Ahead

The year ahead marks the beginning of a new cycle for Gateway University Research Park, one that will bring a new set of challenges, but also opportunities.

The most significant event we expect in the coming year is the completion of Gateway's flagship building, the Joint School of Nanoscience and Nanoengineering. Construction of the 105,000± square foot facility will be completed by the end of 2011. The school is expected to be occupied in January 2012 by faculty, staff, and the third class of graduate students enrolled in the school's master's and Ph.D. programs.

To correspond with the completion of the Joint School, Gateway University Research Park expects to begin planning for a celebratory ribbon-cutting and grand opening ceremony. Plans are to create a unique event, which embraces the community with interaction and demonstration. Possibilities may include hourly tours of the facility for members of community and for groups of students from the area's local public and private schools and scientific demonstrations of laboratory equipment.

Over the next year, we expect interest at the North Campus will continue to also increase. Several organizations have expressed interest in building out space in the 30,000± square foot Mehl Hall building. Mindful of the economic and financial challenges ahead, Gateway University Research Park plans to continue these discussions and to continue the exploration of design, construction, financing strategies and partnerships, which will progress the construction activity at both the North and South Campuses. Gateway also continues to seek out leasing opportunities for space in currently available buildings.

From an internal perspective, employee growth will correspond with park growth. By year end, Gateway expects to have hired additional outreach, facility, safety and lab technician personnel. The scheduled opening of the JSNN facility is the key driver for these additional positions and we anticipate that these new additions will further enhance the attractiveness of Gateway as a premier site for our prospective corporate partners.

Of particular importance will be the employment of a Director of Outreach and Commercialization. This position will be responsible for engaging corporate partners to develop mutually beneficial collaborations. Further, the director will be responsible for connecting the research, entrepreneurial and investment communities and for the recruitment of companies to drive utilization of Gateway facilities and equipment.

The director will work with Gateway's executive director, the tech transfer offices at the two universities, the JSNN, as well as other university staff and faculty, to further economic development opportunities and research related activities at the park. And while the current focus is the Joint School of Nanoscience and Nanoengineering, the Director of Outreach and Commercialization, along with Gateway's executive director, will also continue to pursue the development of non-nanotechnology related opportunities.

From an informational technology perspective, Gateway plans to undergo an in-depth assessment of its future technology needs, and hopes to introduce and implement a suite of web based tools to streamline facilities management, asset management, and resource scheduling, in particular, scheduling and use of laboratories and lab equipment.

The coming year will present new and exciting opportunities for Gateway University Research Park – opportunities to create physical environments at both campuses, which foster intellectual exchange and creativity, and opportunities to provide facilities that showcase the products and research of North Carolina A&T State University and the University of North Carolina Greensboro.

*Gateway University Research Park is a catalyst for innovation.*



## Board of Directors

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