

NORTHERN VIRGINIA TECHNOLOGY COUNCIL EMPOWERING AND CONNECTING TECHNOLOGY'S INNOVATORS

BY SUSAN H. BURNELL



Virginia Tech transmission electron microscope



Northrop Grumman Global Hawk unmanned air system



GWU students in NASA's Reduced Gravity Student Flight Opportunities Program

Northern Virginia is home to a powerful base of technology giants, innovative start-ups, a highly educated workforce and first-class universities. The region's technology leadership, innovation and entrepreneurial spirit have helped build the Commonwealth's reputation as a top state for business.

"Northern Virginia is such a dynamic region that it's hard not to innovate here," says Bobbie Kilberg, president and CEO of the Northern Virginia Technology Council (NVTC). "As the nation's largest technology council, we continually connect and empower innovators of all kinds. We bring educational resources to the forefront, develop public policy initiatives, foster entrepreneurial endeavors and sponsor events between large and small organizations."



Region's Remarkable Resilience

"We are witnessing a re-emphasis on innovation and entrepreneurship, and that's exciting for homegrown businesses and companies looking to locate here," says Kilberg. "As the economy shifts in Northern Virginia, many business decisions are tied to what's happening with the federal budget. While we anticipate significant budget cuts in defense, homeland security and civilian agencies, intelligence agencies may see far fewer cutbacks, and the government will rely on IT to drive efficiencies in other areas. We're also expecting growth in spending related to cybersecurity, health IT, data storage including cloud computing, equipment readiness and modernization, and smart energy."

"Twenty-five to 30 years ago, cutbacks in defense would have been devastating to the region," says Gerald L. Gordon, Ph.D., Fairfax County Economic Development Authority (FCEDA) president and chief executive officer. "But not now, because we have been aggressive about diversifying away from that overdependence."

"The presence of large companies like Northrop Grumman brings many opportunities, particularly for young technology companies," says Kristin D'Amore, director of The Entrepreneur Center @NVTC.

"As large contractors and the government focus more on sectors such as cybersecurity and health IT, innovative tech start-ups are growing to meet those needs and positioning themselves for partnering and subcontracting opportunities. NVTC's vital role in convening both large and small members of the community facilitates these partnerships and contributes to innovation and economic growth in the region."

Another related set of opportunities revolves around healthcare technology, says Kilberg. "This involves far more than the digitizing of medical records. We're seeing growth in the delivery of healthcare, such as telemedicine and sophisticated systems to guide surgery."

Fairfax County Is "Buzz Central"

The convergence of medicine and technology presents immense opportunities for Fairfax County, a thriving business center just west of Washington, D.C. A prime example is Inova Fairfax Hospital and its Inova Translational Medicine Institute (ITMI), a not-for-profit research institute now ramping up efforts in personalized medicine.

"What's exciting about the research taking place at ITMI is that once commercialized, it will require a strong IT workforce, and we have that here," says Gordon. "In addition to creating jobs and filling office space in Fairfax County, the work of unraveling genetic code to cure and treat disease has enormous

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Northrop Grumman

Last year, Northrop Grumman Corporation relocated its corporate office from Los Angeles to Falls Church, Va., to be closer to its government customers and Congress. Today, more than 15,000 company employees live and work in the greater Washington, D.C., area, including 400 at our Falls Church headquarters. The relocation reduced costs and the size of the corporate staff, while bringing new talent into the organization.

Northrop Grumman's presence in Virginia is well established. The McLean-based Information Systems sector addresses the nation's toughest defense, intelligence, civil and cybersecurity challenges. The Technical Services sector, in Herndon, provides logistics and

technical support to customers worldwide. And, just across the Potomac River, the company's Baltimore-based Electronic Systems sector is a leader in airborne radar, navigation, electronic countermeasures, marine and naval systems, communications, bio-defense and government systems.

At Northrop Grumman, we remain committed to our company values, top business performance, technical innovation, industry leadership and to our customers, shareholders and employees.



Wes Bush
Chairman, Chief Executive
Officer and President,
Northrop Grumman Corporation

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potential to benefit mankind. We want to see some of those discoveries emerge from Fairfax County.”

“Companies want to be where there is buzz—activity in multiple sectors and an excitement about the future in the air,” says Gordon. Since 1990, Fairfax County has added more than 15,000 business establishments and nearly 198,000 jobs. With a broader industry base than even a few decades ago, it’s far less dependent on federal contracting business. The diversity extends to foreign-owned firms: There are more than 370 from 40 countries and dramatic growth in women- and minority-owned businesses.

The county has proven its attractiveness as a headquarters location for Volkswagen Group of America, CSC, Science Applications International Corporation (SAIC), Hilton Worldwide and Northrop Grumman. Bechtel, which already has a presence in the region as the lead partner of Dulles Transit Partners, recently announced plans to move its global operations headquarters from Maryland to the Reston Town Center in Fairfax County. The headquarters relocation of technology and management solutions company Acentia is also in the works.

The FCEDA offers a wealth of information about the local labor force, office space, state programs and incentives,

Photo courtesy of Northrop Grumman



Northrop Grumman relocated to its new corporate office building in Falls Church, Va., in August 2011.

and other resources companies need make an expansion or relocation decision, says Gordon. “Our help doesn’t end there. Companies have a new set of requirements after they’ve made their decision. So we help them meet the people they need to meet, obtain permits, orient them to the processes and do our share to see them become as productive as quickly as possible.”

Affordability, Efficiency Behind Northrop Grumman Relocation

Northrop Grumman’s first full day of operations at its new Falls Church headquarters in Fairfax County was August 23, 2011. The move from the West Coast was part of the corporation’s long-term focus on affordability and efficiency. “We now have our primary operations—including our government relations and corporate communications groups—together in the same time zone,” says Randy Belote, vice president of strategic communications. “We are already seeing benefits internally, in the ease of managing those functions; and externally, with fewer cross-country trips to meet with customers.”

Proximity to government business and policymakers allows Northrop Grumman to have better insight into the decision process and a greater influence on the decision cycle for its strategic markets: C4ISR (command and control), cybersecurity, unmanned systems and logistics. “Our industry is rather unique in that federal government departments establish their requirements and then go to Congress for appropriations,” says Belote. “By moving our headquarters to the Greater Washington, D.C., area, we gain more insight and can be an active player in the process.”

The George Washington University



Steven Knapp
President,
The George
Washington University

The George Washington University is proud of our flagship Virginia Science and Technology Campus in the heart of the Northern Virginia technology corridor. Located only 25 miles from Washington, D.C., this 100-acre campus houses cutting-edge research, often conducted in collaboration with colleagues from other Virginia institutions, that makes George Washington a real asset to the

region and to the Commonwealth as a whole. It is also home to our School of Nursing, which is making an important contribution to meeting Virginia’s health care needs.

This year, our Virginia Science and Technology Campus marks 21 years of groundbreaking research, innovative education and strategic collaboration. We will continue to expand our teaching and research activities in ways that strengthen the vitality of the Northern Virginia region and of the Commonwealth—an example of the academic excellence and civic commitment that are hallmarks of The George Washington University.

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GW actively supports economic development throughout Virginia to further enhance a robust economy—



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- Researchers are making life-improving discoveries in laboratories dedicated to **energy research, transportation safety and security, and high performance computing.**
- State-of-the-art **nursing** simulation laboratories and cutting-edge **pharmacogenomics** programs lead the way in technology-supported education.



Throughout the Commonwealth of Virginia:

- Students are enrolled at education centers in Alexandria, Arlington, and Hampton Roads.
- GW continues its 50 year tradition of partnering with state and local businesses, governments, and community leaders.

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Photo © Jessica McConnell/George Washington University



The George Washington University campus

Tapping Today's Tech Workforce, Training Tomorrow's

Northern Virginia's highly educated workforce helps Northrop Grumman stay competitive on the technology front. "Providing solutions that bring value and affordability are paramount in

our business because of the challenges of debt reduction and pressure on budgets everywhere," says Belote. "Innovative approaches are essential, and our presence in this region will enable us to find the smart people we need to develop them."

Northrop Grumman works closely with universities and organizations in Fairfax County and the region to match curricula to its current and anticipated workforce needs. The company sponsors research in the areas of cybersecurity and other technologies, working with George Mason University and Virginia Tech.

World-Class Universities Add Intellectual and Economic Power

The economic impact of the Greater Washington region's universities is \$11.3 billion annually, reports a study commissioned by the Consortium of Universities of the Washington Metropolitan Area. The 2011 study shows that the region's top 14 institutions are responsible for nearly 200,000 direct and indirect jobs. Beyond the universities' impact as major employers, students who attend and remain in the area enhance the intellectual and economic power of the region.

The George Washington University: Innovation for the Commonwealth

The George Washington University (GW) has had a role in Northern Virginia's economic development picture for more than 20 years.

"We develop programs in response to the needs of the Commonwealth and the local market, rather than just transplanting them from our Foggy Bottom (Washington, D.C.) Campus," says GW President Steven Knapp, Ph.D.

"For example, Governor McDonnell wants the Commonwealth to be a hub of cybersecurity-related innovation," says Knapp. "That makes sense because of the concentration of defense industry companies and government agencies in Washington, D.C., and Virginia. Innovation will be needed in all aspects of cybersecurity, and educational programs must cover not only the technological and national security issues, but the legal and privacy issues that must be balanced to respect citizens' privacy. GW has strengths in each of these areas."



Virginia Tech is proud to partner with **General Motors** and the **Virginia Tobacco Commission** to create the National Tire Research Center in **Halifax County**.

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Tools and techniques for finding and outsmarting criminals will be part of GW's new graduate program in forensic psychology set for Fall 2012. The program will train the next generation of criminal profilers, competency experts, psychological evaluators and counselors. A newly established School of Nursing employs state-of-the-art patient simulators and aims to address the national shortage of nursing professionals, especially in underserved rural areas.

Physicist Ali Eskandarian, Ph.D., is Dean of The George Washington University College of Professional Studies and GW's Virginia Science and Technology Campus. Many Professional Studies programs are geared toward adult learners and working professionals, with courses at several campuses and online. "In building our innovative curricula, we have cleared many of the typical institutional barriers to gear up faster and address employers' needs," says Eskandarian. Launched just ten years ago, the college's enrollment has grown to more than 1,000.

The GW Virginia Science and Technology Campus in Ashburn (Loudoun County) is well-situated within the Northern Virginia technology corridor. The 100-acre campus is home to some of the world's most far-reaching research, collaboration and innovation. Its centers of excellence include high-performance computing, renewable energy, transportation safety and public health.

The science behind the next generation of safer cars and earthquake-resistant buildings is now being studied on the Ashburn campus. It's home to the National Crash Analysis Center and an earthquake lab with one of the most powerful earthquake simulators on the East Coast. Major research and developments in GW's Pharmacogenomics/Health Sciences Laboratory are expanding the boundaries of personalized medicine for some of the

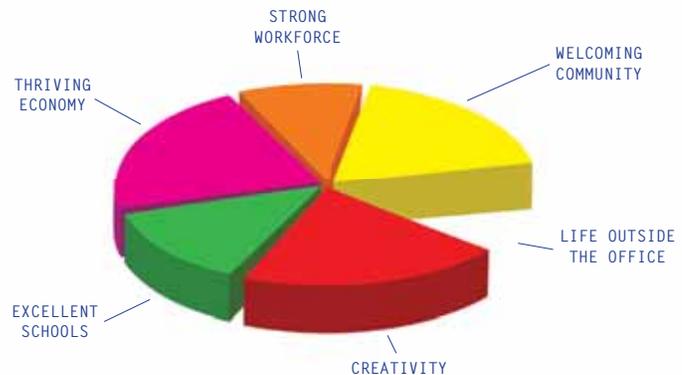
world's most challenging genetic diseases and conditions.

Among GW's industry research partners are IBM, AMD, Siemens, General Motors, Toyota, Hyundai-Kia and other major industry innovators. Companies seeking to conduct proof-of-concept research or technology product

development may find an ideal opportunity at GW in Virginia.

"With about 30,000 square feet of expected new space and ready brainpower available, we're equipped to develop solutions that benefit Virginia, the nation and the world," says Eskandarian.

WHAT MAKES FAIRFAX COUNTY THE IDEAL BUSINESS LOCATION



No chart or graph can adequately convey what makes Fairfax County the ideal business location. Northrop Grumman, Volkswagen Group of America, CSC, Science Applications International Corporation, Hilton Worldwide, Bechtel and Verisign all have moved headquarters operations here. To learn more about why you should join them, visit www.powerofideas.org.

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Fairfax County Economic Development Authority

Virginia Tech: A Pipeline of Talent and Research

National intelligence and the field of cybersecurity are top-of-mind for Virginia Tech President Charles W. Steger, Ph.D., when he looks at the needs of the next-generation workforce. One of the university's proactive efforts, the VT-IDEA Group, enlists alumni from the intelligence community in the Greater Washington Metropolitan Region. These senior-level executives are working to strengthen the pipeline of young graduates willing to enter this sophisticated field.

With a presence in the region since 1969, Virginia Tech continues to address key issues facing Washington, D.C., the Commonwealth, the nation and the world. "Virginia Tech's footprint in Northern Virginia is a front door to all of the work going on in Blacksburg," says Don Leo, Ph.D., Vice President and Executive Director for VT's National Capital Region Operations. "One of our roles is

to ensure that companies—especially tech companies—take advantage of our capabilities in the Commonwealth and recognize that VT has capacities all over the region."

The university's research in data analytics and policy informatics has direct applications for policymakers, says Leo. The work applies computational algorithms to complex systems and populations, and can perform modeling and simulation. The result is better-informed decision making for such big-picture planning scenarios as land use and emergency response for urban environments.

Virginia Tech also serves as a public clearinghouse for data on federally funded smart grid technology projects nationwide. The project, funded by a U.S. Department of Energy grant, is a good technical fit for VT and can help developers understand the effectiveness of smart grid applications. To fur-



A VT graduate student working on CHARLI, the first humanoid robot built in the U.S.

ther ensure the integration of research and education with the needs of government and businesses in the region, an employee of Arlington Economic Development is embedded within VT's National Capital Region offices.

Marymount University Grooms IT Leaders

With locations in Arlington and Reston, Marymount University provides undergraduate and graduate programs in a wide range of IT and business management areas. "Marymount emphasizes a strategic approach to identifying, implementing and maximizing IT solutions," says Marymount University President Matthew D. Shank.

Unlike many institutions, Marymount positions its IT programs within its School of Business Administration. That distinction is significant, says Diane Murphy, Ph.D., associate professor and chair, Department of Information Technology and Management Science. "When budgets are down, companies and government institutions can't afford major technology investments. So in addition to acquiring cutting-edge technical skills, our students focus on getting

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Chris Harrison is a Ph.D. student in the Human-Computer Interaction Institute at Carnegie Mellon University who turns data into beautiful visualizations. When looking at city-to-city connections like this one, it's easy to see the concentration in the Mid-Atlantic region—a concentration born from some of the earliest internet backbone in the world, and to this day, some of the busiest.

Come see why the world's top data center operators, like Digital Realty Trust, Equinix and Dupont Fabros, and companies such as Amazon, Facebook, and Microsoft, have chosen to locate in Loudoun County—the data is certainly beautiful to us.



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the most out of IT resources. That positions them for leadership roles within their organizations.”

Another Marymount strength is its student and faculty diversity, says Murphy. “For example, 25% of the students in our IT programs are female, which means we can be an excellent source of women managers and executives.”

Photo courtesy of Marymount University



Carlos Brinckhaus, B.S. '07, M.S. in IT '09, at work in Marymount University's Verizon Information Security Laboratory

CEA: Promoting Innovation as National Policy

Positioned in the heart of a high-tech region and next door to Washington, D.C., the Consumer Electronics Association (CEA) advocates for its 2,000-plus members and for the support of innovation nationwide. The trade association, based in Arlington County, is best known for its annual Las Vegas consumer electronics trade show: International CES – The Global Stage for Innovation. Yet the CEA is active on numerous fronts on issues that affect the nation.

“CEA and NVTC share many of the same goals in terms of innovation,” says CEA President and CEO Gary Shapiro, who serves on the NVTC board. “NVTC connects technology leaders in the region, and we help the \$195 billion U.S. consumer electronics industry build business and strategic relationships.

“The U.S. leads the world in innovation, and we know that a focus on innovation as a national policy will fuel the country's economic growth,” says Shapiro. “The issue goes beyond consumer electronics—we see innovation as essential to the nation's future. We support the bipartisan super commit-

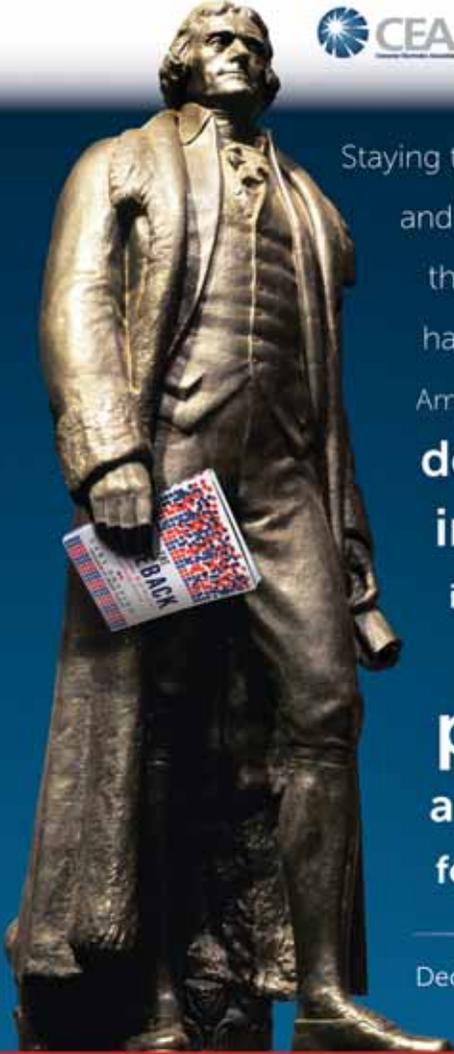
tee's recommendations on reducing the deficit, and we see technology as one way to accomplish that.”

CEA also has taken a leadership role by launching a new smart grid committee to advance standardization of the Modular Communications Interface (MCI) specification. The new standard

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will benefit consumers, manufacturers, utilities and service providers by enabling the development of more smart grid-ready products.

Shapiro says a Northern Virginia location provides advantages beyond access to government policymakers. "It's a six-minute ride from our office to the Capitol, and we have a choice of three airports—we're three minutes from Reagan National Airport, and Washington-Dulles and Baltimore-Washington international airports are within 45 minutes. We've also found Northern Virginia to be a unique U.S. center point for a highly educated and exceptionally diverse workforce. It's also demographically young, physically fit, and is constantly engaged in intellectually and culturally stimulating activity."

Loudoun County: All About Access

During one of the roughest economies in the nation's history, Loudoun County is a stellar economic development success story. "It's all about access," says Thomas Flynn, director of Loudoun County's Department of Economic Development (DED). "We have access to the world through a world-class airport—Washington Dulles International—located in Loudoun County. We have access to the highest concentra-

tion of science and technology workers in the country, and access to the most robust fiber-telecommunications infrastructure in the nation."

Defense and technology are Loudoun County's "sweet spots," says Buddy Rizer, assistant director, Loudoun County DED. "We currently have over 4 million square feet of data center space in use, and almost 2 million more in the building or planning stages here in D.C.'s technology corridor."

Information communications technology firms account for more than two-thirds of the office space deals transacted or announced during 2011. Raytheon, RagingWire and defense systems contractor REI are new to Loudoun County, while Rockwell Collins, NeuStar, NIITEK, Digital Realty Trust and Equinix have recently expanded. Another prime attractor for technology firms is the new Mason Enterprise Center, a small-business incubator partnership between the Town of Leesburg, Loudoun County and George Mason University.

CIT: Growing the Innovation Ecosystem

The nonprofit Center for Innovative Technology (CIT) helps launch entrepreneurial companies through its

Growth Acceleration Program (GAP) Funds. The highly selective GAP portfolio now has more than 60 companies, which have attracted on average 10 to 15 times more in private investments on top of what they received in GAP seed-stage funding.

"We anticipate making between 25 and 30 investments in 2012—more than in years past—and to maintain that level," says Peter Jobse, president and chief executive officer. "That interests potential investors as well as business leaders, who look to our growing innovation community for new partnerships and service offerings that can increase their market penetration."

CIT zeroes in on "disruptive" technologies throughout the Commonwealth, Jobse notes. "We look for companies that can fundamentally change a process or the way a service is provided. That fits into the current emphasis on cybersecurity and protecting the nation's infrastructure, which requires the exact type of problem-solving focus entrepreneurs can provide."

In 2011, CIT opened a new Clean Energy Fund focused on energy-related technologies. "This year, we have added a new innovation fund," says Jobse. "It's for very leading-edge,

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In a world where the only thing that is constant is change, we are committed to accelerating the discovery of new technology solutions and the formation of new technology companies. Contact us to discuss how we can source and deliver nascent technology solutions and provide the capital formation necessary to create the next great company.



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proof-of-concept projects. We'll be helping first-time entrepreneurs secure one milestone, with enough funding for them to get a device patented or to conduct a scientific experiment that validates their concept. That type of limited investment is important in that it stimulates the pipeline of entrepreneurial projects that will eventually continue through the development process."

Vital Connections for Northern Virginia

In Northern Virginia, the innovation economy is more vital than ever. NVTC keeps it growing by empowering and connecting industry giants, rising stars, educators, researchers, investors, government officials and business leaders. "We like to believe we are ahead of the curve," says NVTC President and CEO Kilberg. "We're here to help companies negotiate that curve." ■

WEB DIRECTORY

- Center for Innovative Technology**
www.cit.org
- Consumer Electronics Association**
www.CE.org
- Fairfax County Economic Development Authority**
www.fairfaxcountyeda.org
- The George Washington University**
www.gwu.edu
- Loudoun County Department of Economic Development**
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