

2010 Technology Stars Award Winners

The Award for Leadership in Government

After an extreme loss of manufacturing jobs, the city of Martinsville set out on a mission to transition to a new technology-based economy. Mike Scaffidi is the Telecommunications Director for the City of Martinsville. With Mike's hard work the City of Martinsville now has that infrastructure in place, an agile, future-proof voice, data and broadband solution. Over eight years ago, Mike was responsible for designing and managing the MINet (Martinsville Informational Network) Network.

MINet is a network consisting of up to 96 fiber backbone fiber cable strung throughout the City of Martinsville and Henry County. This network encapsulates a 10 Gigabit Ethernet ring along with an Optical Carrying network at levels 12 to 48 or AKA OC 12 -48. The high-speed network provides video, voice and data streams that will help Martinsville lure new businesses. MINet provides a local communication system that matches or exceeds the speed, reliability and cost effectiveness of similar private services. The city has provided voice and data services to its governmental agencies and local businesses. They also provide telephony and Internet services to all Martinsville public schools. Patrick Henry Community College has a point-to-point circuit from its uptown campus to a downtown artisan center and the public schools have access to both Patrick Henry and the New College Institute.

Most recently, October 5th, 2009, the city launched a wireless network which covered the entire uptown area. Using a Cisco solution, this 802.11 wireless network utilizes all operability bands: a, b, g and n. The most unique feature about this network is that it has the ability to utilize two frequency. One for the general public use operating at a frequency of 2400 MHz.; for most laptops, PDA, gaming devices, and cell phones to connect to. This includes students – citizens – visitors, Being mindful of area Internet service providers, the city implemented a 3 hour time limit within any 24 hour period, which is adequate time form usual use by an individual.

The second frequency used within the same hotspot is an emergency services frequency operating at 4800 MHz. In the event of emergencies or disasters, this bandwidth would ensure

the emergency personal will have large amount of bandwidth to communicate within that department. This is essential in ensuring that in any event, a secured network is available for use without being shared or bogged down with general usage.

The City is continuing to assess hotspots which can enhance the quality of service, life, and add value for businesses to locate within the confines of the City of Martinsville and Henry County. Within the next fiscal year the public will see Hotpost emerging around the Commonwealth Corridor as well as near our high school and Higher Education facilities. Through the hard work and dedication of Mike Scaffidi and the broad coverage he helped to provide, Martinsville is a technology-friendly city for all.

The Award for Leadership in Government

The City of Danville has been actively working to transform Danville's devastated tobacco and textile-based legacy economy to a more focused, technology based economy, specifically to increase the marketability of the Danville community as a technology region.

Danville's Economic Development efforts have focused on targeting strong technology companies (EcomNets), collaborating with regional entities in workforce development and partnering with technology affiliates including IALR, New Horizons Computer Learning Center in Greensboro, NC, and the SPTC. Joint efforts between the City of Danville, New Horizons and the SPTC have created new technology training opportunities for the region.

nDanville continues to focus on providing affordable broadband services to area businesses, institutions, and households. Through nDanville, the City has implemented state of the art Advanced Metering Infrastructure (AMI), which will provide the foundation for time of use billing, home area networks, distribution automation and demand response billing; technologies that will not only improve energy efficiency within the region, but will showcase the City's innovative use of technology.

Through innovative use of grants, Danville' public safety sector has implemented technology enhancements in wireless availability, Automatic Vehicle Location (AVL), GIS, and support

systems that provide unified communications and collaboration. These efforts are being shared among other entities including the Danville Life Saving Crew, Regional One, Pittsylvania County, and Danville Public Schools.

The City of Danville has also enhanced the technological and environmental aspects of the region by a strategic commitment to green and energy efficient projects. This has included a Solar Paneled Farmer's Market Building, electric powered vehicles in the City fleet, digital meter reading that will change the ability to better monitor energy utilization, and the support to start a Residential Energy Auditor program for the Dan River Region Collaborative where the City cofunded and participated in the Energy Auditor program. This comprehensive look at enhanced efficiencies and more effective use of energy in our region has enhanced attraction of new industries, support to reduce costs for existing residents and industries and has attracted funding and contract opportunities into the region. All of these efforts are built around new green technologies.

Danville's leadership in pushing technology innovations in the region not only provides an excellent venue for marketing, but allows for a more effective and efficient organizational structure. These initiatives strongly support the mission of the SPTC.

Leadership in the Telecommunications and Infrastructure Award

Gamewood Technology Group, Inc. is a privately owned technology company based in Danville, Virginia. It was founded in 1991 by Drs. Frank and Dugan Maddux after developing one of the first laboratory electronic data interchange programs for the dialysis industry. Following this application development, the company elected in 1993 to develop the first local Internet access in Southside Virginia.

As the Internet has grown, so has Gamewood. The networking division has expanded to offer services in broadband technology and private networking and e-security services. The network now extends to include four data centers located in southern Virginia and a wide distribution of the Gamewood network throughout the region.

During the past year Gamewood, Inc. acquired a small one man security company. They have had three employees certified in sales and installation and an additional four employees were certified in installation giving Gamewood a total of eight security staff to assist customers with designing, choosing, purchasing and installing security systems for their home or business.

Additionally, Gamewood has made a significant investment in research, technology, connectivity and time to identify high definition television service delivered over fiber optic networks (IPTV) that can be deployed using fiber networks that are being constructed by Mid Atlantic Broadband Cooperative and The City of Danville and has the capability to deploy these services. This service will give residents and businesses another choice for television service using modern infrastructure.

As a locally minority owned and operated small business, Gamewood Technology Group, Inc. continues to provide a level of service and commitment to local residents and businesses that is difficult for national service vendors to provide. Gamewood strives to spend its money locally in payroll, services and equipment needed to deliver its services. Gamewood helps drive high technology solutions to the area that assists in bringing the economic potential of Danville and surrounding communities in the Southern Piedmont to its fullest. And it continues to deliver affordable and high quality products services to national and local companies based in the area.

The Leadership in the Service Industry Award

The Danville Regional Medical Center and Duke University Health System have renewed efforts to utilize the best technology to improve the facilities for Cardiac Surgery and care in the Southern Piedmont Region. In December of 2008, they signed a 10-year affiliation agreement to provide enhanced cardiac services in the region. Ranked among the top ten heart centers in the nation by U.S. News & World Report, the Duke Heart Center is dedicated to improving cardiovascular care through research, education and outreach.

The affiliated Cardiovascular program, also known as the Heart Center of the Piedmont, includes the development, support and delivery of inpatient and outpatient cardiac services, cardiovascular surgery, diagnostic and interventional cardiac catheterization, vascular surgery, vascular intervention and other

cardiac diagnostic procedures and medical services. The Duke Heart Center provides quality oversight for the DRMC program.

This affiliation has been tied to the recruitment for a vascular surgeon and cardiologists. An enhanced education and awareness of heart healthy programs and benchmark monitoring of the results are showing improvements on heart patients over the two years of the program to date. This tie between technology outputs and patient outcomes is the right trend for enhancing our region through successful implementation of technology, and is evidence of the commitment that DRMC has made to support the community by providing quality healthcare close to home. Linking to technology providers around us is another important step toward a better future.

The Leadership in Education Award

The Institute for Advanced Learning and Research is committed to the economic transformation of Southern Virginia, understanding this will require the need to increase the educational opportunities available to the region's citizens. A core part of the IALR's mission is Education and Outreach programs. They put an emphasis on education in the areas of STEM, Science, Technology, Engineering and Math. The Education and Outreach department is providing numerous educational opportunities to area children, students, teachers, and individuals of all ages.

The E&O department has organized a summer internship program for the past four years in which it places approximately 45 college students with local businesses who will provide interns with meaningful on-the-job training and real-world leadership development experiences in the areas of STEM for eight weeks. The intent of this program is to encourage students to return to Southern Virginia for employment once they complete their college education. Funding for the program is provided through a grant from the Virginia Tobacco Commission. This year each intern used the technology of digital storytelling to put together a digital story in relation to their internship experiences. The students collected media and photos, recorded their voiceovers and created the stories during a one-day workshop at IALR. This creative technique has provided a new medium that students love. The videos were presented during a reception to help inform the audience of how truly beneficial the internships are for student's future careers.

In 2009, the IALR offered the NanoTeach conference, a series of Nano workshops which coincided with the Nanoscale Informal Science Education Network. The workshops were offered to teachers to ensure that K-12 students are exposed to the emerging fields of NanoScience and NanoTechnology. The NanoTeach conference featured Nobel Laureate Sir Harry Kroto, co-discoverer of the buckyball and known as the founding father of nanotechnology. It offered seminars on What is nanotechnology, Preparing Virginia Students for the 21st Century, Nanotechnology and Energy, and Nanoscience Tools for the Classroom. Each participant received materials and giveaways to take back to the classroom and provide invaluable information to their students. IALR recorded each session using Mediasite technology which captures both the speaker and their presentation and posted this online so teachers could refer back to the presentations after the conference had ended. These workshops have given Southern Virginia teachers and, therefore, students in Southern Virginia, an edge in one of the hottest fields of research.

The IALR Education and Outreach department is offering extensive STEM education to the community affecting hundreds of individuals. Their use of technology to promote and enhance educational opportunities is evident in each program they have developed.

The Leadership in Manufacturing Award

Canadian Bank Notes Secure Technologies located its first U.S. high security production facility in Danville VA two years ago bringing high-quality technology jobs to Southern Virginia. The facility supports the Commonwealth of Virginia's Division of Motor Vehicles Driver License Program producing driver's licenses and identification cards. All DMV-issued credentials are centrally produced in this secure location and mailed to customers at their home addresses. CBN's commitment to security and innovation is at the core of their business.

Technology is an important and integrated part of the security solutions of CBN. It is at the core of their readers, documents and systems. To deliver their products and solutions, they have mastered a wide range of technologies from traditional security printing to leading identification technology such as biometric, smart cards and radio frequency communications.

CBN's Identification Systems business unit has developed sophisticated multidimensional barcodes and other features that are machine readable in CBN designed electronic document readers, with encrypted data and information crossing highly secure computer networks. Identification Systems products include driver's license and vehicle registration systems, border control systems and vital statistics documents and secure database technologies.

CBN is working to provide the Commonwealth with customized and highly secure system that provides critical identity documents at a very favorable cost. This is a great example of implementing technology to positively impact and improve the manufacturing processes and applications.

The Leadership in Outreach

Melany Reeves Stowe, Communication Coordinator for Henry County Public Schools created a successful and accessible program and facility called "Career Hub". Melany saw a need, which was the limited career knowledge and technology access afterschool from her students and their families and she envisioned a solution toward which she worked diligently until she made it a reality. This took remarkable time, energy, political savvy, and patience, but she did it. Now, an entire school system is better served, and because the location is in a local shopping mall its reach is even greater. The impact that Career Hub has and will have on our community is tremendous.

Thanks to Melany, Henry County Public Schools operates a storefront at the Liberty Fair Mall. With the support of several primary partners (local Chamber of Commerce, West Piedmont Workforce Investment Board, Goodwill Industries of the Valleys, Patrick Henry Community College, and New College Institute), Career Hub is 100% funded and supported by the aforementioned primary partners and other local businesses. The Hub features free SAT support classes, speakers, tutoring and guidance in putting together a resume, choosing the right career and applying for financial aid for college.

Technology available at Career Hub includes wireless Internet, laptops, iPods featuring movies with local professionals, Lego robotics classes, and most recently the addition of iPads. The Career Hub provides unlimited access for all students and families during afterschool, evening, and weekend hours regardless of where they live or attend school. Career Hub is providing career development and workforce training resources to prepare our area students for the 21st century.

The Leadership in Science and Technology

In the midst of discussions of the importance of green jobs and alternative energy, the region hosts a local entrepreneur who is at the forefront of the bio-fuel solution for the nation. Ken Moss, owner and operator of Windy Acres Nursery, the largest wholesale nursery in Southside Virginia, has founded a bio-fuel facility in Gretna, Virginia. The Center for Innovative Technology's CIT GAP Fund invested \$200,000 in Piedmont Bioproducts, LLC in order to support the expansion of technology-based industries in Southern Virginia.

Piedmont BioProducts is a renewable resource company that will generate products derived from energy crops grown by farmers in a closed loop system within a specified radius of its refinery. The facility uses feedstocks for the production of value-added petroleum replacement products. It uses farm-based feedstocks (crops) that produce carbon neutral, environmentally sound fuels that will positively impact the region's economy and environment. Piedmont BioProducts is working with the Institute for Sustainable and Renewable Resources at the Institute for Advanced Learning and Research on developing better-yielding non-food plants for use in biofuels. Moss has been asked to speak at the White House on several occasions about this initiative.

Moss' work with Virginia Tech researchers expanded into biofuel research projects addressing the potential for utilizing the fuel to replace propane to heat green houses, while simultaneously testing the applications for by-products and exploring alternative fuels for diesel fuel. The team developed a model process for establishing refineries across Southside Virginia that will produce "Clean fuel". The Tobacco Commission provided the funding to support the

demonstration proof of concept by the Institute for Advanced Learning and Research and Virginia Tech.

Moss led Piedmont BioProducts efforts to assist in the formation of a CoOp that provides a unique opportunity for farmers in our region to become the suppliers of crop stocks – providing a high value added replacement crop that has the potential to be at the forefront of the nation's energy solution.

The Chairman's Award

The Virginia Tobacco Commission made a significant contribution to the technology infrastructure of this region by the allocation of a \$100 Million fund that is dedicated to research and development projects that are required to be commercialized in this region. Their foresight encourages researchers to apply their technologies in this region, thus providing job creation and capital investment in the footprint of the commission, inclusive of the Southern Piedmont Technology Council Service region. This funding is also attached to a requirement that the commercialization takes place in the region and remains in the region in the period following commercialization.

In April of 2010, the Commission approved projects in the SPTC region totaling \$7 million. This included Intrinergy's Biomass Torrefaction Research, Development and Commercialization Facility in Martinsville and the Dan River Business Development Center's project with IRFlex for a Mid-IR Fiber Optic research, Development and Commercialization Facility. Additional projects receiving approval for due diligence review including a tire research center in Halifax that will be supported by Virginia Tech and the Institute for Advanced Learning and Research and NextGen Aeronautical's unmanned aerial vehicles.

Simultaneously, the Commission committed Reserve Funds to meet required federal matches for research grants. This commitment leverages the Commission's funding to meet the requirements of outside funding. Already GenEdge Alliance (formerly the Virginia Philpott Manufacturing Center) has announced a \$1 million in manufacturing assistance awards as a result of this leveraged funding program which supported their National Institute of Standards

and Technology funding and enables manufacturers across this region and the entire Tobacco Commission footprint to benefit from this funding.

Over the past decade, the Commission has provided more than 1,200 grants for a total of more than \$670 million. That money is credited with creating more than 6,200 jobs in Southside and Southwest Virginia. The R&D Funding will join these significant contributions and promises to enhance the potential for significant leverage of federal funds for research and commercialization in the Tobacco Commission region. This forward approach by the Commission will enable a new era of research in the Southern Piedmont Region. It has already started to leverage additional funding into the region with the requirement of matching contributions by the grantee.