36,000 copies of this document were printed at a cost of $0.74 per copy.

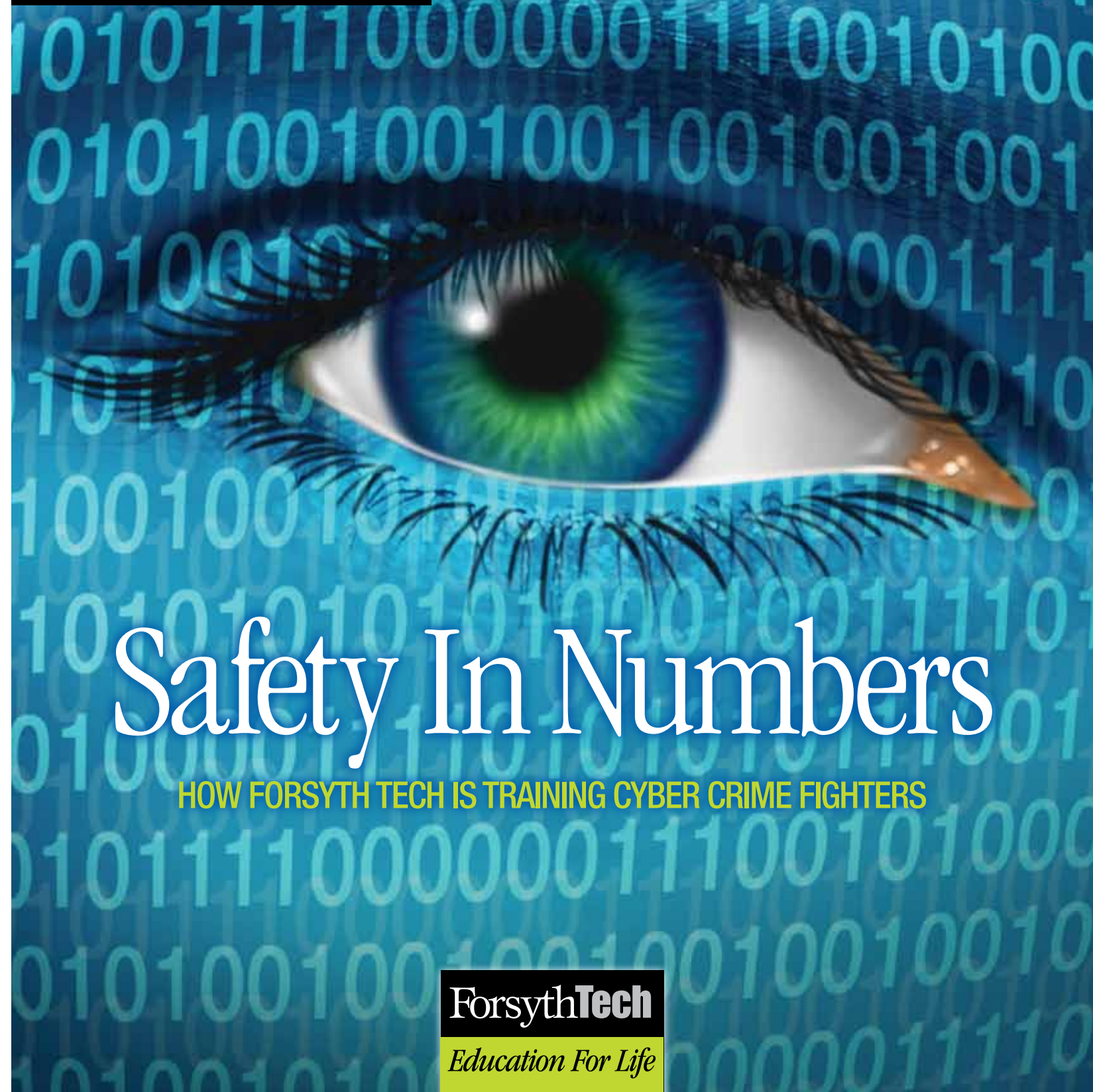Vol. 7, No. 2 } Spring/Summer 2014

Tech Quarterly

TQ

The Magazine of Forsyth Technical Community College

in this issue:

I SPY: *Staying Cyber Safe*

FOREIGN EXCHANGE: *Fulbright Scholar's Tale*

LAB TEST: *Biotech Grads Pass w/ A+*

Safety In Numbers

HOW FORSYTH TECH IS TRAINING CYBER CRIME FIGHTERS

Forsyth Tech
Education For Life

From the President | *Cyber Savvy*

Dr. Gary M. Green

I n this day and age, technology is at the core of everything we do. "The Internet of Things" is turning to reality as everyday devices, such as our smartphones, cars and medical equipment, become integrated into information networks.

The proliferation of technology in our daily lives has increased the need for a workforce of skilled information technology specialists who can develop and maintain the technology. Forsyth Tech is at the forefront of this effort, offering pathways for our students to pursue careers in computer programming, database management, and computer information technology as well as networking and web technologies. In addition to degrees, we encourage our students to obtain industry credentials to make them even more valuable in the workplace.

Technological advances come with a dark side. A new pool of IT workers is now required to protect information systems from threats and vulnerabilities, and to investigate the growing number of security breaches committed by cybercriminals.
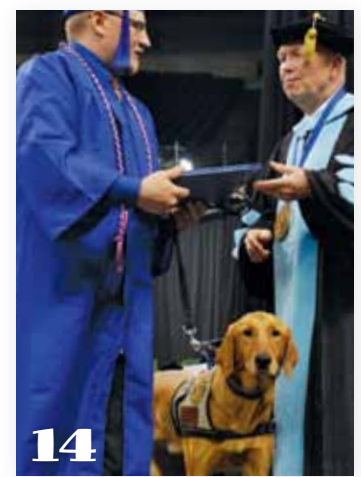
As you will read in the cover story, our cybersecurity programs are among the most advanced available, thanks to our partnership with CyberWatch, a national consortium of educational and professional organizations focused on cybersecurity curriculum development. We are in the process of applying for a Department of Homeland Security certification designating our cybersecurity program as an academic center of excellence. Cyber crime is booming as a growing number of hackers wage war in cyberspace. This situation is opening up doors of opportunity for our students, offering them prospects for a long-term career in the IT industry.

In this issue, you will also read about one of our many outstanding faculty members. Herb Burns is department chair of Design Technologies and program coordinator for Digital Effects & Animation. This spring, Herb received a Fulbright Foreign Scholarship to visit Russia, where he introduced the American community college system to his counterparts in Russian universities and forged relationships for future exchanges of ideas. This distinction reinforces our commitment to excellence and our emphasis on being a learning organization, which enriches the lives of our students as well as our staff and faculty.

Finally, I want to mention that *TQ Magazine* will be evolving to a semiannual print publication that will come out in the winter and summer. In addition, to keep you updated on the latest Forsyth Tech news and events, we are introducing a new e-newsletter. Information on how to add your email address to the e-newsletter distribution list can be found on our website at Foundation.ForsythTech.edu/FTE-News. Yes, this is one more example of technological change. With this initiative we recognize that people who are interested in Forsyth Tech increasingly depend on digital technology to stay in touch. *FT*

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We're Listening!

If you'd like to comment on anything in this issue of *Tech Quarterly*, we'd love to hear about it. You can email us at TQ@forsythtech.edu.

Latin Scholars

On Wednesday, March 26, four Forsyth Tech students – Estella Torres, Vanessa Guzman, Andrea Paz Melgan and Juan Ortega – conducted a panel discussion at the World View Conference 2014 Latin America and North Carolina Seminar at UNC-Chapel Hill. Co-sponsored by the Consortium in Latin American and Caribbean Studies of UNC and Duke, the seminar was designed to help K-12 and community college educators with the challenges and opportunities of working with the state's growing immigrant student population. The Forsyth Tech students' panel, Rising Through the NC Educational System: A Latino Experience, was the second-highest rated session in the entire two-day program. They attended the seminar with Anuradha Williams, Department Chair of Forsyth Tech's Communication/Humanities department.

DUKE ENERGY®

A Wise Investment

In April, Forsyth Tech received a $248,088 grant from the Duke Energy Foundation to purchase a mechatronics learning system that integrates mechanical, electrical, electronic and computerized control systems. This system will expose students to the types of equipment used by local companies on their production lines, enabling Forsyth Tech to train students and incumbent workers alike. The grant is part of an overall $6.7 million investment Duke Energy is making in the North Carolina community college system that is focused on technical education and support of business and industry in our state.
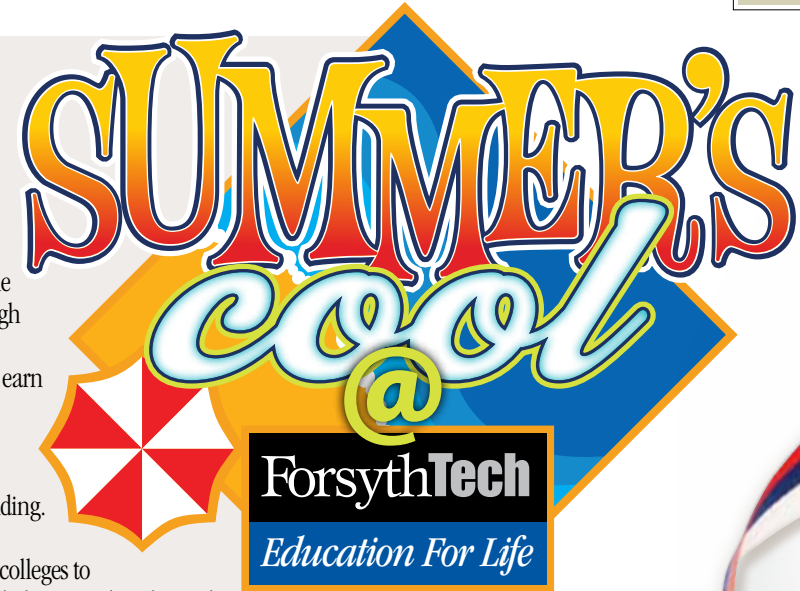
All-Star Linemen

In February, Forsyth Tech became the only college in North Carolina to be designated an Electrical Lineman Accredited Training and Education Facility by the National Center for Construction Education and Research (NCCER). This designation is significant because it gives graduates of the nine-week program a national, industry-recognized credential. Pike Enterprises serves as industry sponsor for Forsyth Tech's program and provides a master trainer as part of the certification agreement. Pike has hired about half of Forsyth Tech's Electrical Lineman Training graduates since the program began.

Natural Talent Design Competition first place team (left) and second place team (above).

Success By Design

Forsyth Tech Architectural Technologies students have been piling up the plaudits recently! Alston Willcox, a second year student, placed 2nd (out of over 90 entries) in the Interior Design portion of the prestigious Bienenstock Furniture Library Design Competition, which is open to colleges and universities nationwide, including graduate programs. His task was to design a summer camp and recreational building, as well as a two-bedroom apartment and office space for the camp director.

Two teams of Forsyth Tech students also finished first and second in the 2014 Natural Talent Design Competition hosted by the U.S. Green Building Council of North Carolina. Alston was on the first place team, along with fellow students (left to right) Jessica Ballard, Allison Carithers, Nathalee Carey and Rosemary Deal. The second place team was made up of students (left to right) Kelsey Fry, Taylor Hensley, Cari Brown, Veronica Nielsen and Andy Freeman. The teams were asked to design a train station that included a very large urban planning component impacting several city blocks.

We're proud to have such talented students representing Forsyth Tech!

Forsyth Tech greatly expanded its 2014 summer course offerings, introducing nearly 150 new Science, Technology, Engineering & Math (STEM) and college prep classes. The college also broke its summer term into two sessions for the first time. This expanded, more flexible schedule was designed to meet the needs of rising high school juniors and seniors, high school graduates, and college students wanting to earn high school and college credit while on summer break.

The additional course offerings were made possible by an expansion of state funding. Legislators felt that additional funding for summer sessions would allow community colleges to enroll more students in STEM courses and help create the educated, skilled workforce needed to attract technology-focused businesses to the state.

To generate awareness for the expanded summer program, the college launched a "Summer's Cool @ Forsyth Tech" marketing campaign that included direct mail, outdoor, online and TV advertising, as well as social media posts.

SUMMER'S cool @

ForsythTech
Education For Life

Our Distinguished Faculty

Four Forsyth Tech faculty members have recently celebrated well-deserved professional honors.

Gisele Taylor-Wells, a program coordinator in the Interior Design department, has been named the Community Green National Chair for North Carolina. Community Green is a program created by the Center for Green Schools at the U.S. Green Building Council to support community colleges in educating the next generation of green building professionals. In this role, Gisele will help Forsyth Tech play a key role in promoting and improving green building education.

Spanish instructor Laura Hortal has been invited to join the Two-Year College Executive Team for Region VII of NAFSA: Association of International Educators. Founded in 1948 as the National Association of Foreign Student Advisers, NAFSA is a leader in creating opportunities for Americans to study abroad, participate in scholarly exchange programs, and study foreign areas and languages. As part of the Region VII Executive Team, Laura will have opportunities to enhance her abilities as an educator and help Forsyth Tech maintain the highest level of education quality.

In May, the recipients of the C. David Kepple, Jr. Memorial Faculty Award were announced. Established in 1999 to honor David Kepple, who served on the college's Board of Trustees, the award recognizes an outstanding faculty member. This year, there were co-recipients: Betsy Zook, program coordinator of Human Services Technology, and Jennifer Lowe, an instructor in the college's Developmental Education department. We congratulate them both!

Game *Winner*

Christopher Reyes, a Forsyth Tech student studying business at Copenhagen Business Academy (Cphbusiness) in Denmark, recently joined with some fellow students to participate in an event called the Microsoft Imagine Cup Innovation Competition. The team was required to develop a new app and present a business plan to potential investors showing how the app could make money. Christopher and his team created a traveling/gaming app that allows tourists to explore cities or countries through a variety of quests that take them to local attractions, businesses and so on. By turning the act of exploration into a game, the app is designed to appeal to the target audience of travelers ages 15 to 45.

Christopher and his team (shown in the photo above, with Christopher at far left) won the competition at Copenhagen Business Academy, which qualified them for the national competition, facing teams from across Denmark. In late April, Christopher and his team won that competition as well. For winning the college and national competitions, the team received Microsoft merchandise and recommendations from Microsoft executives.

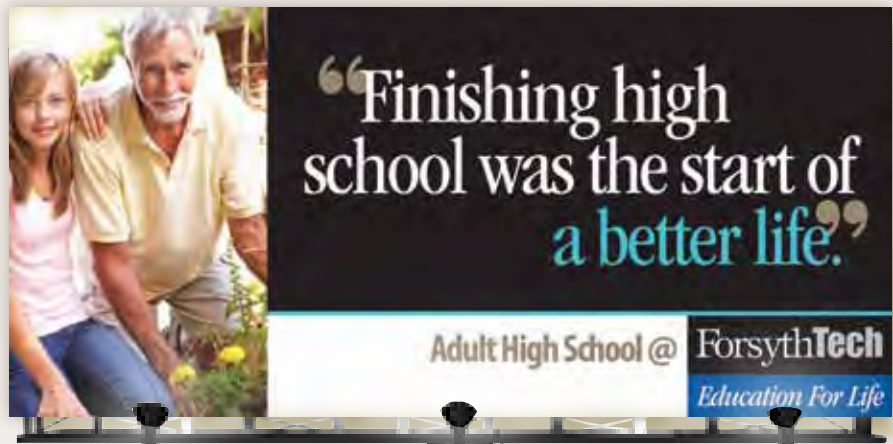We congratulate Christopher on his success!

On A Mission

Last year, Forsyth Tech changed its official mission statement to read, "Forsyth Technical Community College provides students with flexible educational pathways to a competitive workforce for the community and global economy." Earlier this year, the college launched a new marketing and branding campaign designed to support this new mission statement.

The first part of the new branding was the introduction of a new tag line – Education For Life. The goal of the new tag line is to tell people that Forsyth Tech offers education that will benefit them and make their lives better, while also conveying the idea that Forsyth Tech offers educational opportunities for people at virtually every stage of life.

The new marketing campaign, which launched with direct mail, print and outdoor advertising, features real people and testimonials from them. The goal is to make the college more attractive to those seeking higher education and better career opportunities by presenting relatable messages and people. The new campaign was created in conjunction with The Reuben Rink Company (formerly The Bloom Agency).

ForsythTech
Education For Life

Need employees good at problem solving?
Problem Solved!

"Finishing high school was the start of a better life."

Adult High School @ **Forsyth**Tech
Education For Life

A Fine Showing

On Tuesday, April 29, the college held its second annual Fine Arts Showcase in the West Campus auditorium. The Showcase featured artwork and performances by students pursuing an Associate in Fine Arts degree at Forsyth Tech. Though only in its second year, the Associate in Fine Arts program has already grown to have 65 students enrolled.

A New Home In Stokes County

Forsyth Tech's new Stokes County Center just outside Walnut Cove, shown here in an architectural rendering, is on schedule to begin construction early next year and be completed by mid-2016. The building will be the college's first permanent facility in Stokes County, and will help meet the educational needs of the county's growing population. The location of the center is currently the site of a temporary facility, which is home to Stokes Early College High School and offers college credit and adult education classes in a variety of areas. The new center is being financed in large part by $6 million received from Stokes County.

"No Sinkers"

On Friday, April 25, 16 Forsyth Tech second-year mechanical engineering students participated in the annual Cardboard Boat Regatta on Belews Lake. The students paired up to build eight boats from single-ply cardboard, liquid nails, duct tape and waterproof paint, and then used them to sail around a three-buoy course. Forsyth Tech instructors judged the entries on appearance, construction, imagination, load-carrying ability and the quality of the students' construction log. The project also counts for a percentage of the students' grade in a Strength and Materials class taught by Don Solomon. According to Solomon, this year's regatta was a great success as there were "no sinkers."

Full House

On Saturday, April 26, Forsyth Tech held an Open House on Main Campus, allowing prospective students (and in many cases their parents) to visit campus and learn about a variety of different career-focused programs, as well as financial aid and college transfer options. Visitors enjoyed live music and refreshments, and were able to attend sessions offering information on programs in areas as diverse as manufacturing, healthcare, cyber crime, plumbing, carpentry, biotechnology and many other fields. Well over 350 people attended the event, with the opening session at Oak Grove Auditorium.

Hackers and Crackers and Spies, Oh My

Forsyth Tech Is Training Cybersecurity Crime Fighters

The crime scene looks like one ripped from an episode of *CSI*.

Yellow police tape criss-crosses the front door.

Inside, steely-eyed detectives sweep every inch of the crowded, darkened room looking for signs of a hostile environment or anything that seems out of place.

Having delivered a search warrant, the rubber-gloved forensics investigator is now identifying and tagging potential evidence that she will later document. She still has to take photos of the evidence before drawing a detailed picture of the crime scene. She will then place each piece of evidence in its own container and take it all to the crime lab for processing.

The crime? A bank robbery.

The method? The hacking of an individual's online bank account through a personal computer.

The location? A Forsyth Tech cyber crime simulation classroom on Silas Creek Parkway.

Hackers and other intruders aren't the only threats to a technology system. Another aspect of protecting technology for which companies must prepare is the effect of natural and human-induced disasters on technology infrastructure. Fires, earthquakes, floods and cyberattacks could potentially destroy an organization's technology infrastructure if processes, plans and procedures for disaster recovery and technology continuation aren't in place. Forsyth Tech's Information Systems Security program trains students to become disaster recovery technicians.

"Cybersecurity is the top field for workers right now."

~ Deanne Wesley – Information Systems Security program coordinator

With continued advances in security technology, hackers are stepping up their game, but it's not slowing them down. The cost of cyber crime in the U.S. has increased to around $100 billion per year.*

Here is a list of just some of the high-profile data security breaches from the past 18 months that demonstrate no one is safe from the threat of cyber crime.

> Hackers broke into an Adobe database and gained access to millions of customer records, including encrypted passwords.
> A temporary bug in Facebook's Download Your Information Tool shared email addresses and/or phone numbers of 6 million users.
> Target, Neiman Marcus and Michael's experienced data breaches that affected more than 100 million customers.
> The Syrian Electronic Army gained control of the Associated Press' Twitter handle and claimed that two bombs exploded in the White House, causing the stock market to plummet $136 billion in three minutes.
> AOL and eBay experienced mass intrusions of their networks, compromising names, email addresses, passwords, contact answers to security questions and birthdates.
> The Heartbleed bug attacked nearly 500 million secure web servers and services, potentially exposing millions of individual passwords and credit card numbers.

Students in Forsyth Tech's Cyber Crime program are taught how to investigate computer crimes, including issuing warrants, gaining knowledge about the forensic standards for properly seizing and recovering computer evidence, retrieving information hidden on a hard drive or phone, and aiding in the prosecution of cybercriminals. Classes in criminal justice and criminology are an essential part of the curriculum.

Cyber crime is booming, thanks to the growing number of hackers who are using increasingly sophisticated techniques

to wage war on the world of cyberspace. Like water flowing around a river rock, cybercriminals quickly come up with new ways around any obstacle put in their path. While this is bad news for just about everyone who uses any kind of electronic device, it's great news for anyone interested in a career focused on preventing cyber crime, tracking down perpetrators and protecting information systems.

According to the Bureau of Labor Statistics, careers in network systems and information security are expected to grow by 53 percent through 2018, creating a huge demand for a skilled, qualified cybersecurity workforce.

Forsyth Tech is helping to fill this pipeline through its state-of-the-art Cyber Crime Technology and Information Systems Security programs. While these two industries are related, they are different.

"In short, information systems security involves locking down vulnerabilities in advance to prevent hacking," says Dr. Deanne Wesley, coordinator of Forsyth Tech's Information Systems Security program and instructor for Business Information Technology. "Cyber crime focuses on investigating crimes against security systems after the systems have been breached."

In the Information Systems Security program, students learn how to create and design a network using firewalls, routers, software and hardware to protect the system and keep intruders out. As they discover through real-world, hands-on simulations, an unprotected system is vulnerable to cyberattacks, hackers or simple electronic or mechanical failures.

*2013 Center for Strategic and International Studies and McAfee joint study

"Cybersecurity is the number one issue for the state of North Carolina," says Deanne. "This is the top field for workers now, and we're training the cybersecurity workforce of the future. Our students often have jobs before they graduate. They leave not just with a two-year degree and work experience through work-based learning opportunities – they also graduate with the valuable Security +Plus certification, which makes them an even more valuable addition to an organization's IT security team."

Forsyth Tech has been ahead of the curve when it comes to anticipating the need for providing education and training in the growing industries of information systems security and cyber crime. The college introduced its Information Systems Security program 10 years ago and its Cyber Crime program in 2011.

"When we introduced our Cyber Crime program three years ago, we were the first community college in the state to offer this degree," says Jim Pierson, department chair for Thomas H. Davis *i*TEC Center, the college's information technology center. "We saw this as a growing industry, but we had a difficult time proving it because local companies and banks didn't want to admit they had security problems, which made it difficult for us to document the true need."

"We were the first community college in the state to offer a cyber crime degree."
~ Jim Pierson – department chair, Thomas H. Davis iTEC Center

Only 20 students per year are admitted to the college's Cyber Crime program. As part of their admission process, students must sign an ethics agreement, equivalent to medicine's Hippocratic Oath, where they promise to use their knowledge of cybersecurity honestly.

"When our cybersecurity students graduate, they are often hired into entry-level, tech-support jobs and for a good reason," says Jim. "Information security personnel are naturally suspicious. They don't automatically give new hires immediate access to their organization's secure networks. New employees must work hard to earn the trust of their employers first before they can start moving up the food chain in network security positions."

To ensure the college is offering the most up-to-date cybersecurity curriculum, Forsyth Tech belongs to CyberWatch, a national consortium of educational and other professional partners based at Prince George's Community College in Largo, Maryland. CyberWatch is set up to help build the information security workforce.

"Since 2005, CyberWatch has provided solutions to national cybersecurity educational and workforce challenges by leveraging its extensive network of academic institutions, government entities and private industry partners," says Casey W. O'Brien, executive director of CyberWatch. "Programs like Forsyth Tech's provide tremendous value to students and industry by focusing programmatic outcomes on skills acquisition and validation, both through formal and information educational experiences, that prepare students to enter the workforce ready to contribute on day one."

High Honors

Three years ago, the first year the college offered its Cyber Crime program, a team of Forsyth Tech computer network security students earned a regional honor and national respect. The college's Cyber Defense team took third place in a field of eight regional finalists in the CyberWatch Mid-Atlantic Collegiate Cyber Defense Competition. Each team had to defend its simulated computer network against two days of relentless computer attacks from a much larger team of hackers. Forsyth Tech was the only community college that finished in the top three and was recognized for performing at the same level or higher than four-year schools.

The Psychology of Infiltrators

According to Dan Hutcherson, program coordinator for Cyber Crime, hackers are motivated by different desires, including intellectual challenge, financial gain, espionage, political activism and even revenge.

Hackers can be categorized into three general types – and not all of them are bad.

White Hats are the good guys. They try to break into networks to see if everything is set up securely. Pen Testers are examples of White Hats – they are hired by companies to find vulnerabilities and make recommendations on how to better protect networks. **Black Hats** are malicious hackers – they are spies and cyberterrorists, and work with an alternative purpose, which is often politically motivated. **Gray Hats** are hackers whose allegiances are unclear. They might work as a White Hat during the day and a Black Hat at night.

While the term "hacker" is generally used to describe anyone involved in perpetrating computer attacks, the industry has developed its own set of terms to describe attackers, based on levels of expertise and motivations:

> **Hackers:** Not necessarily malicious in nature, as these are people who like testing hardware or software to see what a product's true limitations and/or capabilities are

> **Crackers:** Similar to hackers but their purpose is malicious in nature

> **Script Kiddies:** Not skilled attackers but are able to run someone else's published code

> **Spies:** Skilled attackers who have the ability to remain hidden

> **Insiders:** The most overlooked category but often the largest source of attacks because these can include user error or malicious action by those with a certain level of trust within an organization

> **Cyberterrorists:** Ideologically driven attackers with a higher level of skill

> **Cybercriminals:** Profit-seeking attackers with higher level of skill

Cyberethics: A Blend of Old Values and a New Medium

The Internet has become an indispensable tool of everyday life. When people go online, they can feel invisible and become capable of doing things they wouldn't do in public, including things that are wrong and illegal. Issues related to these considerations have given rise to the emerging field of cyberethics, the study of ethics as it pertains to computers, including user behavior and what computers are programmed to do, and how this affects individuals and society.

Dan Hutcherson, program coordinator, Cyber Crime, points out that people blame technology for creating problems. "There is nothing wrong with technology," he says. "It's how we use technology that is creating the problems. Technology enables people with nefarious ideas to express themselves. People also like to blame technology – such as Twitter and Facebook – for creating forums for personal expression that may be offensive.

"People don't realize the repercussions of what they post online. If someone who has a Facebook account today commits a serious crime in 20 years, the history of that person's Facebook posts will remain in Facebook's cloud forever. That won't go away. This history could be used to make a case against someone years later. This raises a dilemma: Can you predict what someone will do in the future based on what they've done in the past and posted on social media? If so, how do we/should we use that information? It becomes a security issue and can force us to become judgmental. It begs lots of ethical questions for which we don't yet have answers."
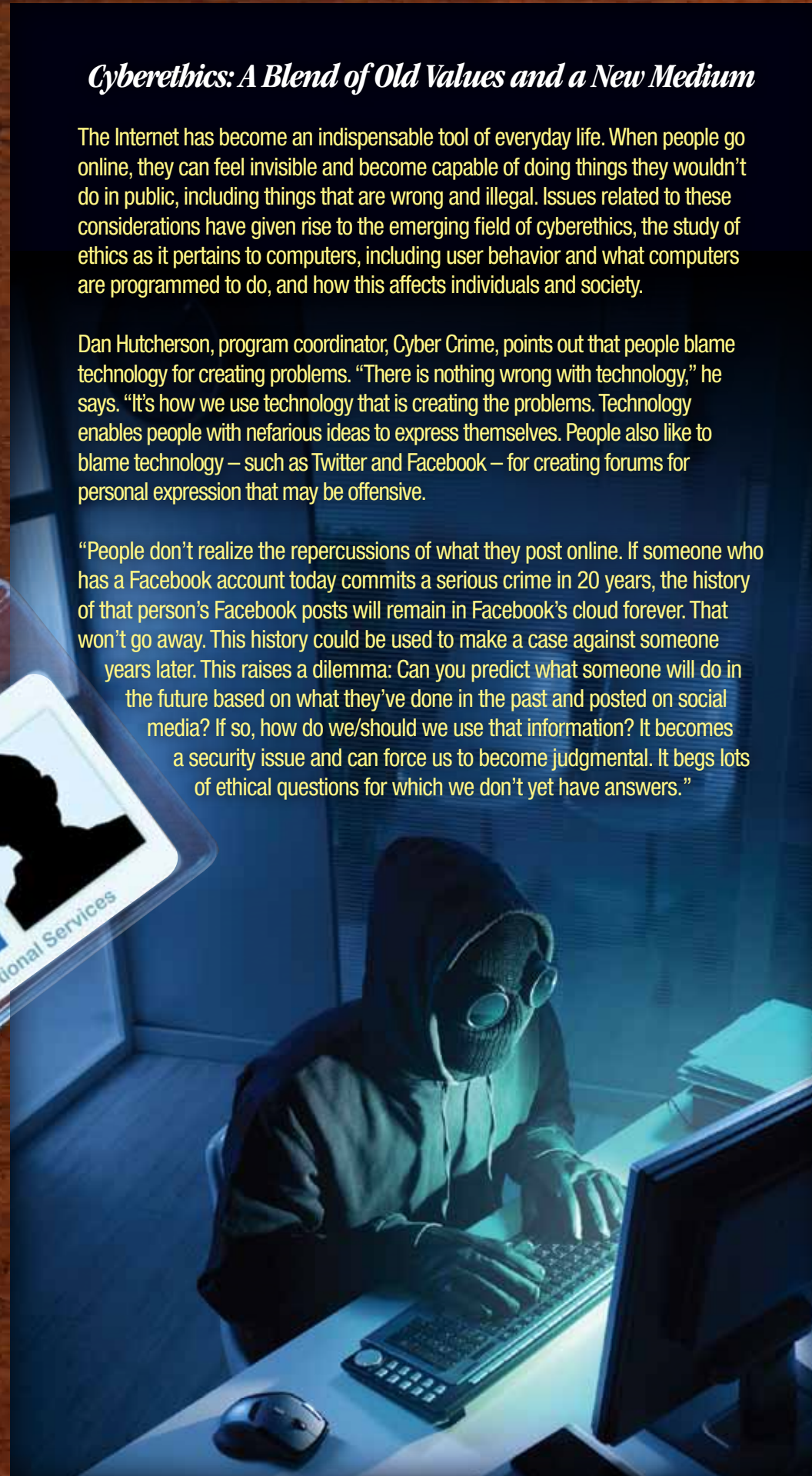
Affiliation with CyberWatch gives students the opportunity to participate in annual competitions in Digital Forensics, Cyber Defense and Security Awareness where they can test their knowledge, skill, teamwork capabilities and network with leading industry employers.

Deanne serves on the Security Curriculum Task Force for CyberWatch. She reviews best-practice cybersecurity curriculums with an eye to centralizing and sharing the best of the best with member schools across the country.

"Forsyth Tech received money in the spring of 2014 from CyberWatch through a National Science Institute grant that paid our senior-level security students to work on a cybersecurity project," says Deanne. "This opportunity gave these students an experiential and valuable learning experience, allowing them to apply the skills they're learning in the program."

Given the strength of Forsyth Tech's Information Systems Security and Cyber Crime programs, the college is seeking recognition as a Center of Academic Excellence, as designated by the U.S. Department of Homeland Security (DHS).

"We will know by next summer if we have qualified," Deanne says. "If we do, it will be a huge benefit for our students: They will receive a certificate from DHS when they graduate, indicating they received their training at a Cyber Security Center of Academic Excellence.

"In addition, this designation will make Forsyth Tech security students eligible for four-year scholarships from DHS. They'll be able to use this money to pay for their two-year A.S. degree at Forsyth Tech and their B.A. degree if they transfer to a four-year school after graduation." ⒡

"There is nothing wrong with technology – it's how we use technology that is creating the problems."

~ Dan Hutcherson – program coordinator for Cyber Crime

Dan Hutcherson
Faculty
ForsythTech
Community College
Instructional Services

2014 Graduates Enter A
WORLD
of
OPPORTUNITY

Todd Grace graduated with a degree in Nursing following a 25-year career in the warehouse industry, and is currently working in the neuro unit at Wake Forest Baptist Medical Center. His wife, Angela Grace, also a Forsyth Tech student, was one of the commencement Marshalls at Todd's graduation. As students, Todd and Angela made education a priority in their busy lives, a message that has not been lost on their three children ages 17, 15 and 12.

Nakisha Sarpy graduated with high honors and a degree in Respiratory Therapy. She came to Forsyth Tech to retrain for a new career after losing her job as project manager with a local company that downsized. She plans to enter a four-year university in the fall of 2015 to complete a bachelor's degree in respiratory therapy.

Mark Cobb received his degree in Heavy Equipment and Transport Technology. He entered Forsyth Tech after an injury he sustained in his previous career as a transmission lineman forced him to stop working. Mark lives in Ellenboro in Rutherford County. He found out about Forsyth Tech's program by word of mouth. For the two years he studied at Forsyth Tech, he kept his camper parked at a campground in Surry County, where he lived Monday through Friday. On Fridays, he'd make the 2-1/2-hour drive home for the weekend and return to the campground on Sundays.

James Maxey, a veteran suffering from post-traumatic stress disorder, was awarded an A.A.S. degree with his psychiatric service dog, Lyle, at his side. This year, Forsyth Tech honored veterans for their service and for completing their education by giving them a red, white and blue cord to wear over their graduation gown. Lyle, who received his training through Patriot Rovers, a nonprofit organization, is named for a soldier who died in service to our country.

More than 6,000 family and friends were on hand at the Joel Coliseum on May 8 to honor the 1,003 graduates participating in Forsyth Tech's 2014 commencement ceremony. J. Walter McDowell, chairman of BEST NC and retired CEO of Carolinas Banking for Wachovia, was the commencement speaker, and he congratulated the class, saying, "**Each of you has taken a giant step into a world of opportunity.**"

Mr. McDowell encouraged the class to take the time to explore what makes them happy. Self-awareness, he explained, is the key to unlocking potential. "Stay in the game and persevere," he advised.

He inspired the graduates with a quote from [the author, philosopher, theologian, educator and civil rights leader] Howard Thurman, "**Don't ask what the world needs. Ask what makes you come alive, and go do it. Because what the world needs is people who have come alive.**"

Many of this year's graduates have already accepted the challenge to "come alive." Here are just a few of their stories. Ⓕ Ⓣ

Justin Dorsey (left) and his classmate, **Randy Maynard** (right), earned their degrees in Broadcasting and Production Technology. As teammates, they came in first in the Skills USA state competition in late April and will participate in the national competition this summer. Justin accepted a job working for Clear Channel in promotions and production. He was born with a "radio voice" but learned quickly at Forsyth Tech that "having God-given talent isn't all you have to know" to make a career in broadcasting. Randy now works for Forsyth Tech as a media specialist editing audio and visual productions. He found a way to balance school, work and family while a student, spending any spare time he had with his 5-year-old son.

Dani Winter was the salutatorian at this year's Early College of Forsyth graduation. While attending Early College, she also served as captain of the Reynolds High School track team, her home high school. On May 8, she obtained her high school diploma as well as an A.A. and an A.S. degree from Forsyth Tech. Dani received a prestigious Park Scholarship from NC State, where she will enter this fall as a college junior. Dani plans to study biological engineering. She also received the YWCA of Winston-Salem's 2014 Women of Vision Student Leadership Award.

JAMES COOK
Dean of Learning Technologies

James Cook, Dean of Learning Technologies at Forsyth Tech, is a great believer in the community college system. He is a community college graduate himself, having received an associate degree from Fayetteville Technical Community College before earning his bachelor's in Computer Science at UNC-Pembroke and a master's degree in Instructional Technologies from East Carolina.

"I see community colleges as a pathway for those that either have had struggles preventing them from going straight to a four-year university, need an avenue to obtain a trade to support themselves and/or their families, or have been displaced and are seeking education to return to the workforce with newfound skills and job opportunities," he says.

He understands the need for such pathways firsthand. His mother — a single parent — received her associate's degree in Early Childhood Education from Fayetteville Tech while James was in high school. "She always taught me about the value of education," he says.

James didn't set out to make education his life's work, however. "I had no clue I would get into distance education as a career. My passion growing up was graphic design." But a mentor at Fayetteville Tech, Wanda Jones, hired him to work as an instructional technician in a computer lab while he was taking classes there. That led him into computer programming, instructional technology and a new career path.

Now, as Dean of Learning Technologies at Forsyth Tech, he works toward the goal of providing quality education for all students in a variety of ways: online classes, TV classes, videos to supplement face-to-face classes, and more. He serves primarily in a developmental and administrative role, but wants to get back into the classroom. "If I'm going to promote best practices and strategies for teaching and learning, it's best to still be teaching," he says with a laugh.

Going the Distance

After graduating from UNC-Pembroke, James worked at Bladen Community College, where he met another mentor, Ann Russell, Dean of Distance and Evening Programs. "I was her technical support technician for distance education," he says. "That's where my love for online learning began." Soon James became a distance learner himself. Through a fully online degree program at East Carolina, he was able to earn a master's degree in Instructional Technologies, and he is currently using distance learning to obtain a Doctorate in Educational/Instructional Technology from Boise State University. Ⓕⓣ
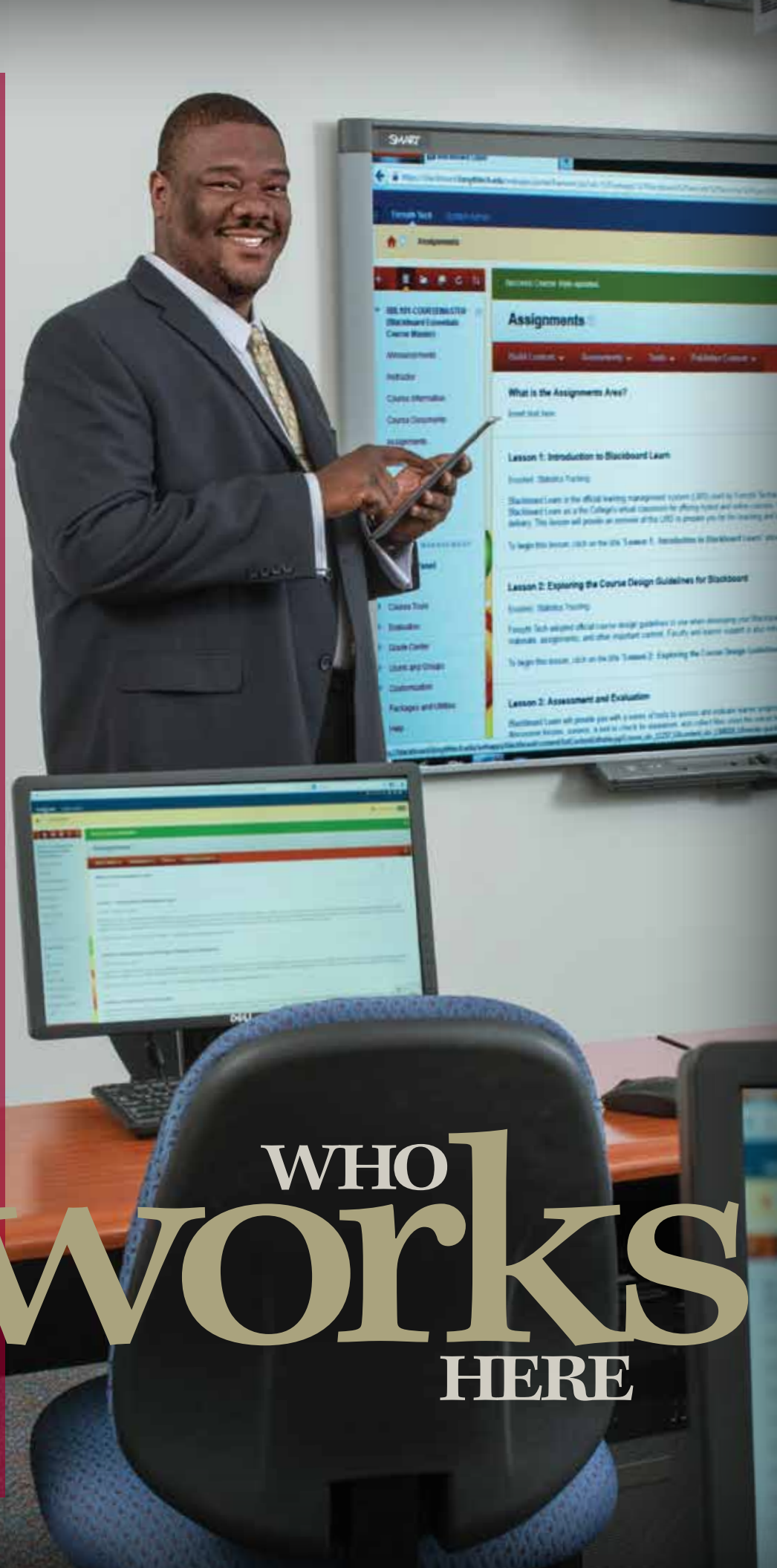
WHO
works
HERE

SAM MARZKE
Student, Automotive Systems Technology – Toyota T-Ten

Sam Marzke likes getting a little dirt under her fingernails.

Back home in Indiana she planned to be a pharmacist, but a pharmacy tech course at her local community college quickly made her realize that wasn't the right path. "Working in a lab in a really clean environment didn't appeal to me," she says.

Then, on a whim, she took an auto repair class, and it turned out that did appeal to her. "When I took the auto class, I was like, 'Oh, cool, a job where I get paid to get a little dirty? Yeah, I could do that!'"

An uncle in Winston-Salem heard about her new career goal, and told her she needed to come down and get her training at Forsyth Tech's new state-of-the-art Transportation Technology Center. She came for a visit, took a tour of the facility and knew her uncle was right.

"I saw the first big bay, and my jaw dropped. The main big bay has twice as many lifts as my old school, the room with the alignment racks has five more lifts, and there's also the area for Race Car Technology, the Diesel Technology area, the body shop. It's incredible. I said, 'I have to come here!'"

She moved down and a year later started classes in the Automotive Systems Technology – Toyota T-Ten program. When she graduates in May 2015, she'll be prepared to take certification exams that will qualify her for employment at Toyota and Lexus dealerships nationwide.

It's a career she expects to last. "After all," she says with a laugh, "people are always going to need their car fixed!"

Riding High

While Sam may spend her days working on engines with 175 horsepower, a one-horsepower form of transportation is what she enjoys most.

She began taking riding lessons a few years ago and has continued with them since moving to North Carolina. "It's a recent hobby that I really, really love," she says.

A summer spent working with a trainer and attending horse shows cemented her love of riding. "I definitely decided that I wanted horses," she says, "so I needed to find a career that could support that desire." Now, thanks to her Forsyth Tech training, she'll have just that. Ⓕⓣ

WHO goes
HERE

STEP by STEP

Issoufou Ibrahim
"My plan is to go as far as I can."

When Issoufou Ibrahim came to this country in 2009, he wasn't sure what path his life would take, but he knew one thing: He wanted to help people. "When I see people who need help, who are sick, I want to help them," he says, adding that his ultimate goal is to be a doctor.

But he knew that whatever educational and career pathway he took to reach that goal, he had to do it one step at a time. The first step, he realized, was learning English. "My first language is French," he says, that being the language of Niger, his native country. "I went to Forsyth Tech to learn English as my second language."

He began taking English as a Second Language (ESL) courses at Forsyth Tech, and working with Juanita Murphy, an instructional coordinator in the Adult Literacy department. After finishing the ESL program, he wanted to continue his education, and Juanita steered him toward the Certified Nursing Assistant (CNA) program.

The CNA program is offered through the college's Economic and Workforce Development (EWD) division, and is one of many EWD courses that teach students the skills needed for an entry-level position in a field like healthcare, construction, auto repair and so on. Issoufou completed the CNA program with an A and passed the North Carolina licensing exam with a perfect score.

But he isn't stopping there. He has taken the next step and will be entering Forsyth Tech's Associate Degree Nursing program in the fall. Then, in December, he will be shipping out with the United States Navy, where he plans to continue his studies. "My plan is to go as far as I can," he says.

A pproximately 6,000 adults come to Forsyth Tech each year for basic adult education classes that are the first step toward a better life. Offered under the Career and College Readiness (CCR) umbrella, these programs include: English as a Second Language (ESL); Basic Skills Programs (BSP) to strengthen math and language proficiency; Adult High School (AHS); High School Equivalency (HSE), which prepares students to take the GED® exam; and the Career Readiness Certificate (CRC), which gauges a student's skill level in key areas.

But where do these students go from there? For some, that is the end of their journey. But more and more, the college is attempting to bridge the gap between this first step and the next logical step – a more focused educational pathway that will provide the skills these students need to pursue a lifelong career path. ⓕ

Vanessa Tuttle
"I knew I had to get a degree."

Vanessa Tuttle's first step was completing high school. Vanessa left high school because she didn't like the environment, but knew she needed her diploma to get a job. So she earned her diploma through Forsyth Tech's Adult High School.

She found different jobs, but eventually realized that "if I wanted to have stable employment for the long term, I had to get a degree." So she returned to Forsyth Tech and entered the Pharmacy Technology program.

Vanessa had always been interested in working in a pharmacy, but "just never thought it was something that I could do." When she began taking courses in Pharmacy Technology, however, she discovered it was not only something she could do, but something she was good at doing.

Vanessa earned a diploma in Pharmacy Technology in 2012 and decided to go on and earn an associate degree, which she completed the next year. It was a practical decision. "The diploma was great, and it was going to get me into the workforce," she says, "but I thought with a little bit more of a push I could have a degree that would really look good on a résumé and be the difference in getting a higher salary."

Now, having completed two degrees at Forsyth Tech, she wants to take the next step and earn a bachelor's degree. She's currently taking college transfer courses and plans to attend UNC-Greensboro. "Completing the Pharmacy Tech program gave me the confidence to continue with my education," she says.

Michael Harris
"We're building bridges."

Issoufou's transition from ESL to EWD to a curriculum program and Vanessa's transition from AHS to diploma to associate degree are examples of how Michael Harris, dean of the Career and College Readiness programs, and his staff are helping students move from the first step to the next step in their educational journey. "We're building bridges," he says.

Michael and staff members like Juanita Murphy provide one-on-one advice and guidance to students. They determine their strengths and find their passions, then steer the students into pathways that will help them achieve their career goals. They even help students choose the right courses, and may also provide career assessment advice that can determine areas a student may need to strengthen, such as math or reading.

They also help find the money to pay for EWD and curriculum classes. While most CCR programs are free or cost very little, EWD and curriculum classes can strain the budget of someone who may be unemployed or making minimum wage. If that's the case, Forsyth Tech advisors work with students to find funds available through government, local and Forsyth Tech Foundation grants and scholarships that can help cover the cost. Issoufou, for instance, was able to take the CNA courses thanks to a Lawrence E. Pope Foundation scholarship.

The results of their efforts are encouraging. In 2013, Forsyth Tech had 728 GED graduates and 76 AHS graduates. Of those 804 students, 238 – nearly a third – went on to continue their education at Forsyth Tech.

Not every student who takes a CCR course at Forsyth Tech goes on to further his or her education, but every student has the opportunity to do so. Michael, Juanita and many others at the college are working hard to make sure every student is able to take advantage of that opportunity, one step at a time.

Update: Arthur Saunders

In last year's Spring/Summer issue of *TQ*, we profiled Arthur Saunders, a great example of the type of step-by-step transition we are discussing here. A formerly homeless man, Arthur earned his GED® at Forsyth Tech and went on to enroll in the college's Radio & TV Broadcast Technology program. We are happy to report that Arthur graduated with the class of 2014, earning an Associate in Arts degree, and is continuing his education at Winston-Salem State University, majoring in Communication. He will begin classes there in the fall.

If you would like to read Arthur's full story, past issues of *TQ* are available online at www.forsythtech.edu.

Biotech Trek

Forsyth Tech Helps Unleash the "Inner Scientist" for Three Career Changers

Cindy Zimmerman worked in the auto parts business for 11 years. Tom Eaton was a university lecturer, and spent 20 years in operations management for two large companies and his own small print company. Jim Crawford worked in management for 20 years, and was laid off three times due to a downsizing, a takeover and a closing.

Cindy, Tom and Jim each arrived at a point in their earlier careers when they realized their professions were no longer serving them. Independently, they reached out to their local community college to explore possible educational and job options. All three ended up studying biotechnology at Forsyth Tech around the same time. They are now colleagues, applying skills from previous jobs to their current ones, supporting each other in the biotech field and loving every moment of their new-found careers. Ⓕ

Cindy Zimmerman
Lab Technician,
Wake Forest Institute for Regenerative Medicine

Science and research always fascinated Cindy. When she left the auto parts business, she enrolled in the medical assisting program at her local community college. An instructor encouraged Cindy to switch to biotechnology. She spent one year at that college before transferring into Forsyth Tech's biotech program for the second year, which included an internship in a Wake Forest lab.

"During my internship, I helped a researcher conduct research on vascular disease," Cindy says. "That's when I discovered I loved the fine detail of dissection and microscope work. I knew I wanted to do research, and I wanted to do it at Wake Forest."

When she graduated in 2006 with her A.A.S. degree, she went into industry, working as a microbiology technician for a contract pharmaceutical company.

Two-and-a-half years later, she learned about an opening at the Institute for Regenerative Medicine (WFIRM), working in the lab of one of the world's foremost researchers in regenerative medicine, Dr. Tony Atala. Cindy jumped at the chance to get back into research.

She credits Forsyth Tech with helping her break into this field. "Forsyth Tech gave me the science background, knowledge of cell culture and lab techniques, and the foundation for working in a research setting," she says.

Skills from her prior career in auto parts have transferred over. "I spent a lot of time doing inventory control in my old job. I actually use that training now to maintain inventory.

"Forsyth Tech gave me the foundation for working in a research setting."

"This is a great field for anyone with an aptitude for math and detail work. You also have to be patient – research takes a long time."

Tom Eaton
Lab Operations Manager,
Wake Forest Institute for Regenerative Medicine

Tom majored in biology at UNC-Wilmington and got his master's degree in ecology from NC State. After serving as a biology and botany lab lecturer at UNC-Wilmington, he spent 20 years in operations management for two Fortune 500 companies and ran his own small print communication company. After a while, his interest ran thin.

When his wife said, "You love to be around science," that got him thinking about biotechnology. "Breaking into biotechnology seemed like a mountain too big to climb," Tom says. So he looked to Forsyth Tech for help and was surprised by what he learned.

"Forsyth Tech put it all together for me."

The biotechnology faculty saw in Tom's background many relevant skills. They developed a customized, 1½-year course plan to bring Tom up to speed with current technologies and help him obtain a certificate to demonstrate competency.

"Forsyth Tech put it all together for me," says Tom. "They knew I had enough science to know what's important, and my industry experience was a plus."

Tom obtained a summer internship at WFIRM, where he remained until a lab technician position opened up. Then the lab doubled in size, and Tom's position grew with it. He now serves as a conduit between the faculty and the lab technicians.

"I took a nontraditional path to get here. I wouldn't have this job were it not for Forsyth Tech."

After seven years at WFIRM, Tom's enthusiasm for his job remains high. "I am still passionate about the work I'm doing at WFIRM," he says.

"This is my fourth career. This is the most enjoyable one. I'll be here until they kick me out."

Jim Crawford
GMP Operations/QC/R&D, KeraNetics, LLC

Jim is passionate about technology and lifelong learning, and is committed to having fun doing what he loves. This spring, at the age of 64, he inspired all who know him when he received his master's degree in bioethics from Wake Forest University.

Armed with an undergraduate degree in biology and 20 years in corporate management, Jim enrolled in Forsyth Tech's biotechnology program in 2004, having decided he wanted to pursue a career that matched up with his personal interests.

As part of his training, Jim took an internship with WFIRM and fell in love with the research environment. He was hired full time when a lab position opened up in 2005.

Jim always knew he eventually wanted to work with a biotech spinoff and development company, and expressed that goal while working at WFIRM. Four years later, a professor formed a spinoff called KeraNetics, remembered Jim's long-term goals, and asked Jim to join him.

"Make sure you share your goals whenever you can," Jim advises. "Someone will hear about it and may be able to open a door for you.

"I was hired because I came across as a team player, and I have fun, because I'm doing what I love," he says. "Getting a job isn't just about the ability to do a job."

The biotech field, Jim points out, is constantly evolving, and job-seekers have to evolve with it. Early on, the A.A.S. can get you in the door, but keeping credentials

"Forsyth Tech's training is second to none."

current is critical. "If you haven't used your degree in seven years, you don't have credentials," he says.

"My A.A.S. degree from Forsyth Tech re-established 'employment relevancy' for my original bachelor's in biology earned way back in 1973. It breathed new life into my previous education."

"Forsyth Tech's training is second to none."

Jim is already putting his master's degree to work: This fall, he will teach a new course at Forsyth Tech: Bioethics.

GREAT GRADS

Forsyth Tech's biotech program, one of the best in the state, introduces students to cutting-edge research through internships with local labs. Often those internships lead to job offers after graduation.

"We continue to be amazed by the graduates of the Forsyth Tech Biotechnology program who have joined our institute," says Anthony Atala, MD, director of the Wake Forest Institute for Regenerative Medicine.

"This is a high-quality program whose graduates are prepared to make important contributions to our mission. Thanks to our partnership with Forsyth Tech, we can count on having a talented pool of biotechnology personnel to meet our employment needs."

FORSYTH TECH'S STATE-OF-THE-ART TRANSPORTATION PROGRAM SHOWS ITS

MUSCLE

Under threatening skies, 70 show cars, with engines revving, pulled into the parking lot of Forsyth Tech's Transportation Technology Center, the most advanced automotive training center of its kind in the southeast.

The cars and their drivers were participants in the college's first-ever "Open House and Cruise-In" in May. By all accounts, the event was a roaring success.

With beach music blaring, members of the community showed up to wander around the lot, admiring "under-the-hood" handiwork, and studying masterfully and carefully detailed bodies and interiors. Many of these cars were headed for demolition before being rescued by new owners with the eye and skill for transforming mangled masses of metal into things of beauty. Cruise-ins are a way for owners to demonstrate their pride and show off their refurbished works of art.

Many of the visitors and car owners took tours of the college's Transportation Technology Center throughout the cruise-in to introduce themselves to this state-of-the-art facility, which offers programs in race car technology, collision repair and refinishing, automotive systems, heavy equipment and transport technology, motorcycle maintenance, and recreational vehicle maintenance and repair. Many were impressed by the scope of the center's program offerings as well as its cleanliness and inviting atmosphere.

The Culture of Cruise-Ins

Cruise-ins are a phenomenon with their own culture, which includes the ceremonial revving of engines upon arrival, and the requisite beach music to evoke the fun and comfort of times past. They evolved from car shows where prizes are given out for "best-in-class" vehicles. Along the way, owners decided they wanted a different venue that wasn't focused on competition but built around fellowship, camaraderie and good food.

"With cruise-ins, there are no losers," according to Randy Butner, coordinator for Forsyth Tech's Race Car Technology program. "Show car owners go to cruise-ins simply as a way to show off their cars and spend time with other people who also share a love of cars. Some of these folks spend all week polishing their cars to get them ready for the next cruise-in."

The cruise-in atmosphere is family-friendly. Owners create a casual "back porch" kind of feel by setting up lawn chairs that often color coordinate with their show vehicles, pulling out coolers of food and drink, and sitting or standing around talking to other car enthusiasts, discussing a just-added accessory or new car project they're starting up.

Two things are for sure: Cruise-in car owners are justifiably proud of their vehicles, and plans are already being made for Forsyth Tech's second cruise-in next year. (FT)

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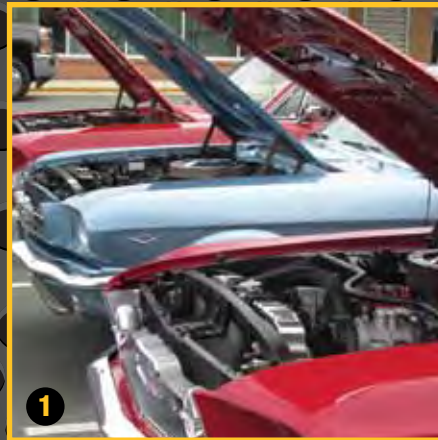
1. Vintage Mustangs x 3 = 3 x the fun. 2. A 2006 SSR Chevy truck engine is done in snappy blue and gold. 3. Cruise-in visitors were welcomed by Transportation Technology Center staff. 4. Cruise-in cars look as good inside as they do outside. 5. Many cruise-in visitors toured the Transportation Technology Center. 6. With hard work, even a VW Bug can be turned into a high-performance show car. 7. This fully loaded dragster arrived in its own trailer. 8. Cameron Butner, Randy Butner's nephew, refurbished this '69 Chevrolet C-10 for his "first ride." 9. Leonard Kiser, dean, Engineering Technologies, cares for his deployed military son's '14 Ford GT Mustang. 10. Forsyth Tech students helped restore this beautiful 1950 Chevy truck. 11. This classic Ford Starliner was only produced for two years – 1960 and 1961.
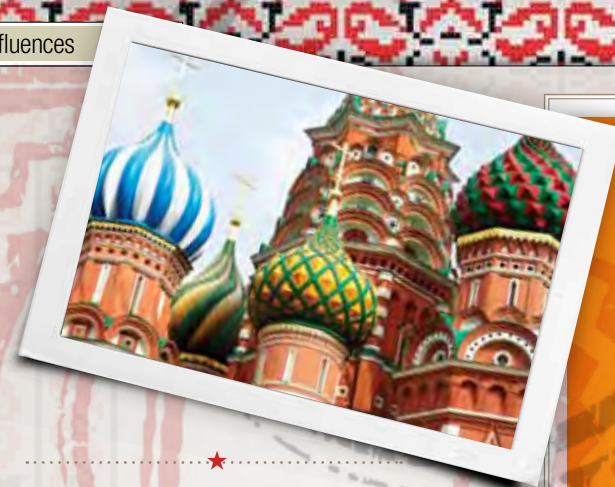
Diplomatic Community

Herb Burns Takes U.S. Educational Ideas to Russia

Forsyth Tech's own Herb Burns was one of only five college leaders recently selected to represent the United States at the 2014 Russia Community College Administrators Seminar. The first two weeks of April, the group toured four cities in Russia: Kaliningrad, St. Petersburg, Arkhangelsk and Moscow.

The trip was part of a prestigious Fulbright Foreign Scholarship Program, making Herb a Fulbright Scholarship recipient. The purpose of the Fulbright Program, established in 1946, is to increase mutual understanding between the people of the United States and the people of the more than 150 participating countries.

A Gap In The System

The goal of the trip was to allow community college administrators from the U.S. to interact with their counterparts at Russian universities. America's community colleges have a unique collaboration with industrial and manufacturing companies, often designing customized training to prepare students for specific work.

Russia, however, has a gap in their educational system. Based primarily on federalized universities, the Russian educational structure has nothing comparable to our community colleges, and so there is interest in looking at the U.S. Community College educational system to prioritize Russian technical education.

From Kaliningrad To The Kremlin

The first city visited, Kaliningrad, is known as the "City of Amber," because bits of the golden fossilized resin can often be found on local beaches. There Herb visited Kant Baltic Federal University, where he toured simulators for ship navigators at Kaliningrad State Technical University, home to the Baltic Fishing Fleet State Academy and the Federal Fisheries Agency. Herb described these simulators, used to train navigators on large tanker and cargo ships, as "unbelievable." The student stands on the bridge of a ship, recreated in a huge room, with all the controls in front of them. Projected on the surrounding windows are simulations of the ship on a particular waterway. Herb describes how, using state of the art technology, they can simulate any sea location on the earth and any kind of weather or water conditions — rough, smooth, lightning, hail, and so on. Facing such real world simulations, the students are able to learn how to navigate through those situations. According to Herb, this type of training is only available two places in the world, which makes the opportunity to experience it all the more unique.

In the next location, St. Petersburg, Herb explored the "Fab Lab" at State Polytechnical University, which manufactures materials with experimental 3-D printers. 3-D printing is one of the key technologies being utilized in today's advanced manufacturing. Herb and his group also visited Smolny College, home to a Fine Arts Academy, and their final stop in St. Petersburg was the University of Information Technologies, Mechanics and Optics, also called University ITMO. There, among many visual displays, he saw the world's largest hologram, along with a hologram of a frog that appeared so real he was tempted to try to touch it.

Next the group braved the cold in Arkhangelsk, north of the Arctic Circle, touring the Northern (Arctic) Federal University, before ending the trip in the capital city of Moscow at Krasnogorsk State College.

No Foreigner To International Travel

Herb has taught at Forsyth Tech for more than 30 years. Currently he is department chair, Design Technologies, and program coordinator, Digital Effects & Animation. He is also no foreigner to international travel. Since 2000, he has lectured on digital architecture in Finland, as well as made visits to Belarus and Russia; he co-led a U.S. delegation of faculty and students from Forsyth Tech and NC business representatives in Ulyanovsk, Russia; and he was instrumental in developing Forsyth Tech's Global Action Plan and continues on its committee. To make his travels more productive, Herb has taken advantage of Russian language classes offered at Forsyth Tech and is a member of the Russian Language Club.

Crossing Borders To Create Bonds

In 2005 Herb initiated the first international agreement of cooperation between Forsyth Tech and Mogilev Technical College, Mogilev, Belarus. In fact, it was the first international agreement of any kind for Forsyth Tech.

In March 2014, Herb Burns and Forsyth Tech colleague Todd Shoaf, program coordinator, Architecture Technology, traveled to Mogilev, Republic of Belarus to renew the Memorandum of Understanding between Forsyth Tech and the College of Architecture Construction, part of Belarusian-Russian University.

Because Todd will be assuming responsibility for collaboration in the future, it was important that Herb introduce him to the new director. Herb and Todd both gave lectures to architecture students in addition to meeting and discussing potential projects, such as setting up quarterly video conferencing between students to exchange knowledge and skills. 🅕🅣

The Fulbright Russian Community College Administrators Seminar group on a bridge in Kaliningrad, along with Polina Babushkina, program coordinator and assistant to Joel Ericson, director of Fulbright Program in Russia.

(Above) Herb Burns standing in front of the fourth largest rotunda in the world, located at Moscow University; (Right) A hologram of a frog at University ITMO in St. Petersburg; (Below) Herb Burns and Todd Shoaf at a playground in Belarus that looks like The Kremlin.

(L to R) Herb Burns; Kaliningrad State Technical University; Herb and his fellow community college administrators in front of a statue of philosopher Immanuel Kant at Kant Baltic Federal University in Kaliningrad, Russia.

Savvy Secrets of Cybersecurity From Dan Hutcherson, Forsyth Tech Program Coordinator, Cyber Crime

Net Safety

The media's been full of stories lately about major cybersecurity breaches, such as what happened to Target, where hackers gained access to the credit card numbers of millions of customers. As individuals, why are stories like these important?

The Target story shows how vulnerable our world is today to cyberattacks. Most of us own some sort of electronic device, such as a computer, laptop, smartphone or tablet. Each one of these devices is vulnerable to a cyberattack – hackers and cybercriminals are out there 24/7 trying to exploit any vulnerability they can. They're going after big corporations as well as individuals. You don't want to make it easy for them. You want to keep your devices as safe as possible.

What can we do to protect our accounts?
For better or worse, the security industry often uses passwords. Passwords usually establish some form of complexity, instructing you to use upper/lowercase, numbers, letters and symbols when setting up new ones. These requirements do add some strength to passwords but also make them harder to remember. People are giving up monitoring their passwords and are using the same password for all accounts, and they're leaving themselves vulnerable. As a result, absolutely do not use the same password for all your devices, accounts or different websites you visit.

Why is it a bad idea to use the same password?
While passwords are getting stronger if you add complexity, they're also getting easier to crack, because they're shorter. Sometimes, you're only allowed to use 12 characters per password. If a hacker cracks one of your passwords, some of your personal information will be exposed. The hacker will then use that information to methodically test the same password on any other accounts in your name to see how much more information can be accessed. Cybercriminals are clever – and very patient.

What advice should we follow to keep our passwords safe?
Change your passwords on all accounts every two to three months. These days, the best password is a long one – the longer the better, because it makes it harder to crack. Turn your passwords into sentences. For example, if you like sports, use a sentence like this on one of your accounts: "This is my ESPN secret." Use a technique or formula you can use to vary each of your passwords in a way that will make them easy to remember but harder to crack.

What about antivirus protection?
Having antivirus protection on all electronic devices is another absolute must. Mobile phones are one of the most vulnerable devices out there right now. In general, they don't come with antivirus and firewall protection by default. At a minimum, you should load antivirus software on your phone – you can choose from one of the free options out there.

What are examples of free antivirus apps for Androids and iPhones?
Three of the most popular ones right now are AVG, Avira and Lookout. New ones are being developed daily. Keep in mind that just because an app's in the Play Store (for Androids) or App Store (for iPhones) doesn't mean it's legitimate. There are so many things we have to keep in mind when trying to keep our electronic devices safe. One basic thing all mobile device owners should do is enable the lock/password feature on their phone. This stops the convenience-based thief who steals your phone to resell it on ebay, because the lock feature prevents access.

SIMULATED CYBERATTACK: NO FORSYTH TECH
EMPLOYEES WERE USED IN THE RE-CREATION OF THIS SCENARIO.

WORDS
OF WARNING

Many of the following terms may sound familiar – and some are often used interchangeably. In fact, each one is a form of cyberattack that can affect your computer or mobile device. The prevalence of security risks makes the installation of antivirus software a must for all operating computers and mobile devices. Here is a description of each term:

Adware
Software that is downloaded to your computer to show you advertisements, including pop-ups, with the intent of monitoring your actions; could be the start of more malicious activity, such as identity theft

Malware
Short for "malicious software" and incorporates all malicious forms of code; used to disrupt computer operation, gather sensitive information or gain access to a computer

Social Engineering
A nontechnical attack compromising people or procedures, often using psychological manipulation, as when "your" bank calls asking you to confirm your account and Social Security numbers by phone or you receive an email letter from a foreign country asking you to send money

Spyware
Software that monitors user actions for a malicious purpose, often gathering information and sending it to another entity without a user's consent

Trojan Horse
Malicious code that is embedded within another fully functional application that, when executed, carries out actions determined by the nature of the Trojan, typically causing loss or theft of data, and possible system harm

Virus
Malicious code that is attached to a host and often requires user action to spread without user's consent; when executed, replicates by inserting copies of itself into other computer programs, data files or hard drive; viruses often perform a harmful activity, such as stealing hard disc space, corrupting or accessing private data or spamming contacts

What about Wi-Fi?
Huge vulnerabilities exist with Wi-Fi technology. Many of us have Wi-Fi connections on our home computers, but we don't have a user name or password. It's important that you set up a secure wireless network on your home computer – protect your home computer like you would your mobile phone.

What about using wireless network hotspots in restaurants or airports?
When you're accessing the Internet while sitting at a McDonald's or Panera Bread, you're at the mercy of what they want to control on your phone, tablet or laptop. And there could be someone sitting in a nearby seat who is operating a rogue Wi-Fi connection and eavesdropping on your activity – anything could happen if you use a bogus Wi-Fi connection. The best advice here is don't connect to any unsecured Wi-Fi hotspot without knowing what you're connecting to.

Is it OK to keep Wi-Fi connections on all the time?
Whenever you're not using the wireless signal, such as Wi-Fi, mobile data or Bluetooth, you should disable them. If they're enabled, you're vulnerable.

Are safety practices for mobile devices similar to computers?
Definitely. And much of it is just common sense. For example, disconnect from the Internet if you're not using it. Don't open up random emails or click on random URLs, unless you know the information is coming from a reliable source. Keep your system updated with new patches issued by your operating system, such as Windows. Also, remove cookies and history from your computer, because they lead a direct path to your door, telling advertisers as well as those with malicious intent where you've been and what your interests are. Firefox, Safari and Internet Explorer can all be set to auto delete cookies every time you close your browser.

What is one of the biggest security issues out there today?
Right now, there are serious concerns about the "lock" icon displaying on websites, which, up to now, has been pretty good at assuring those websites are secure. When you go to a website and provide confidential information, such as your credit card number, you usually will see the lock as well as a URL in the browser that begins with "https." However, with the release of the Heartbleed security bug in April of this year, the lock icon no longer guarantees a site is secure. Heartbleed exploited security features on major websites worldwide and has the security world scrambling. Consumers can protect themselves from Heartbleed by changing their passwords frequently and knowing which sites are vulnerable, because Heartbleed will be around for a while.

Where can consumers find out which sites are affected by Heartbleed?
You can go to https://filippo.io/Heartbleed/ to check if a site is affected by Heartbleed.

You hear a lot about the "cloud" these days. What is the cloud exactly?
Cloud storage is a new application to an old idea. It involves creating a centralized location for storing and processing data that can be grabbed from any device anywhere. The data storage is hosted by third-party vendors, such as Microsoft, Google or Amazon. So, rather than storing information on a computer hard drive or an office server, you can store information at a data center. While this sounds wonderful in theory because storage capacity can be almost limitless in a "cloud," someone else is controlling your data – you're giving up trust and a certain measure of security. A larger organization may not have your best interests at heart. We're moving toward the cloud for convenience, but it comes at a price: Information is more exposed. (FT)

Gordon Pfefferkorn:
Why I Support Forsyth Tech

Gordon Pfefferkorn, president and owner of The Pfefferkorn Agency, has spent his life creating opportunities for others. It's a philosophy of living that has served him well.

The Pfefferkorn Agency had its start in the late 1920s as Winston-Salem Bond & Mortgage, a small mortgage company founded by Mr. Pfefferkorn's father that originated and sold loans to insurance companies.

Following his graduation from Chapel Hill in 1952 and a brief stint with a manufacturing company, Mr. Pfefferkorn returned to his home town of Winston-Salem. He joined his father in running the mortgage company at a point in time when home ownership opportunities started to expand exponentially following World War II. In 1960, the company changed its name to The Pfefferkorn Agency.

Over the next 40 years, the agency grew from three employees to 37 and increased its portfolio 300-fold. Mr. Pfefferkorn attributes his agency's success to a simple business model and a philosophy of building personal relationships with clients that created opportunities for them to become homeowners.

The successful 70-year-old mortgage company caught the eye of BB&T, and in 2002, the bank acquired the agency.

That's when Mr. Pfefferkorn realized it was time to express appreciation.

"When we sold the agency to BB&T, we made a lot of money," Mr. Pfefferkorn says. "I felt an obligation to put the money back into the community, and give back to the people who helped make our agency so successful."

Mr. Pfefferkorn, and his wife, June ("Tommye"), who recently passed away, decided to make education the focus of their philanthropy by establishing the L. Gordon and June D. Pfefferkorn Scholarship, which provides financial support for Forsyth County residents attending Forsyth Tech and is administered by The Winston-Salem Foundation.

Following an initial grant that funded scholarships for two students, Mr. Pfefferkorn recently made a large gift to his existing fund to provide additional student scholarships, starting in the fall of 2014.

"I don't know exactly why I chose to fund scholarships," Mr. Pfefferkorn says. "I don't like funding brick and mortar. The scholarships provide a direct connection to the college where they have daily contact with students.

"I'm a great believer in Forsyth Tech. I'm vitally interested in what they are doing in our community. I want to support students who can't get massive scholarships at four-year universities and those who can't get support otherwise."

Mr. Pfefferkorn's generosity will create opportunities for generations of Forsyth Tech students. His most recent gift provides nine full two-year scholarships to students attending or enrolling at Forsyth Tech, support that's designed to last in perpetuity. (FT)

> "I'm a great believer in Forsyth Tech. I'm vitally interested in what they are doing in our community."

The Foundation
of Forsyth Tech

You can make a difference in the lives of students

Establishing a scholarship is one of the most meaningful ways an individual or organization can make a difference in the lives of our students. Your gift can provide an opportunity for deserving students to receive an education that would otherwise be out of reach. Tuition costs continue to rise and even the smallest gift helps.

To learn more about how you can help, **contact Angela Bryant, Director of Annual Giving and Scholarships** at 336.734.7618 or abryant@forsythtech.edu.

Give online @ Foundation.ForsythTech.edu or by mail:
Forsyth Tech Foundation, 2100 Silas Creek Parkway, Winston-Salem, NC 27103-5197

What does Forsyth Tech cost?

Here are examples of typical costs for a Forsyth Tech student in a nine-month academic year, to show how your gift can help:

Each 3-Hour Course	$214.50
Fees	$208.00
Books & Supplies	$1025.00

Your gift creates a strong college and a strong community