

Vol. 4, Number 1 | Winter 2011

tech

QUARTERLY

The Magazine of Forsyth Technical Community College

in this issue:

LIGHTS, CAMERA, SECURITY ~ *Inside President Obama's Visit*

HOLD ON TIGHT ~ *A Racing Legend Honored*

WHO'S WATCHING YOU? ~ *Cybersecurity Is Serious Business*



Our Sputnik Moment

**PRESIDENT OBAMA VISIT SPOTLIGHTS TECHNOLOGY & INNOVATION
AT FORSYTH TECH**



Look what you helped create!

Last September, we kicked off our 50th anniversary celebration with the dedication of the new Alumni Oval, a place on Main Campus for students, staff and faculty to sit, reflect and enjoy a few moments in the sun.

We could not have completed the Oval – or do many of the things we do – without your support, and the need for that support is greater than ever.

Show your support for Forsyth Tech by purchasing a brick in the Alumni Oval. Bricks are \$50 for an individual or \$150 for a company and may be inscribed with a message of up to three lines. To order a brick, visit www.forsythtech.edu/alumni or contact Angela Reece at 336.734.7618 or areece@forythtech.edu.



From the President | *In the Spotlight*

Dr. Gary M. Green



These have been exciting times at Forsyth Tech. What better way to showcase our celebration of 50 years of service to the community than with a visit by the President of the United States?

Most Americans know by now that as 2010 wound to an end, President Barack Obama chose Forsyth Tech as the setting of a speech designed to rally Americans to a new “Sputnik Moment.” As the President eloquently said, this is a time when, like in the late 1950s, the nation needs to come to an increased consciousness of the whole issue of competitiveness. He came here to tell the Forsyth Tech community and the nation his vision of preparing the ideal creative, innovative, competitive workforce.

He did not choose Forsyth Tech just because we are celebrating our anniversary. The President and his staff had heard good things about the way we have used federal stimulus money to put people back to work. They knew that we are doing things consistent with what the administration believes is necessary to prepare the workforce of the present and the future.

That is at the heart of our mission at Forsyth Tech. We are dedicated to doing whatever is necessary to make this area, this region and this country more competitive industrially and scientifically. The policymakers talk and plan; we are on the ground in the community colleges, preparing people for those jobs that are going to drive the economy of the future. At Forsyth Tech, we are determined to prepare an innovative and creative workforce, the most productive workforce anywhere.

In this issue, you will read about how this determination plays out with our students, faculty, staff and alumni, as well as with the greater community. Our cover story highlights the innovation and technology that brought the President here.

We have a very practical reason for being pleased that Forsyth Tech has been in the national spotlight. We are glad that the taxpayers and government officials had such an opportunity to see the many good things that the programs they support here are doing.

As we head into our second half-century, we at Forsyth Tech are grateful for that support and excited about what the future will bring.

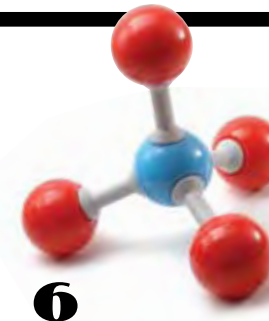
The days when Forsyth Tech was called the community’s “best kept secret” seem ancient history. First, President Barack Obama came to the campus for a major speech in December that was publicized across the United States and beyond. Then he invited a biotechnology student to be a featured guest at his State of the Union Address in January – and he praised her and Forsyth Tech by name. If the editors of this issue of Tech Quarterly ever wondered how the college would fare in the international limelight, those questions were ably answered as faculty, staff, students and alumni opened doors to labs, classrooms and offices. The whole country toured Forsyth Tech’s biotechnology labs along with the President, and we were equally impressed by what’s going on in nanotechnology and information technology, as well as by innovations in teaching from medical disciplines to manufacturing. And then there are the ways Forsyth Tech is using new technology to enhance the learning environment. All the while, the college continues doing what it’s long done: preparing workers for the community’s jobs, whatever they may be. We are proud of Forsyth Tech’s evolution from “secret” to showplace.



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Forsyth Tech is proud to be part of the North Carolina Community College System, with 58 institutions serving more than 800,000 students annually. North Carolina Community Colleges are creating success in our state by:

- Offering hope for a better future through vocational training and education
- Providing opportunity by making higher education available to all citizens
- Generating jobs by creating a skilled workforce for business and industry

Forsyth Tech welcomes diversity and is dedicated to meeting the needs of students with disabilities, as mandated by the Americans with Disabilities Act. For more information, please contact Sarah Hawks, Coordinator, Disabilities Services Office, at 336.734.7155 or shawks@forsythtech.edu.



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6 { On the Cover

Why did President Barack Obama come to Forsyth Tech to give a major speech about global competitiveness and preparing the workforce of the future? Because Forsyth Tech has emerged as a model of the sort of innovative teaching and cutting-edge technology that the President sees as the keys to future success. From nanotechnology and biotechnology to the latest developments in more traditional fields, Forsyth Tech is leading the way.

16 { Preparing for a President

A lot goes into getting ready for a visit from the President of the United States, but Forsyth Tech had the benefit of experience. Enjoy some behind-the-scenes insights.

32 { Only in America

Start your engines and read about the dinner in January, held at the Richard Childress Racing Complex in Welcome, NC, that honored Mr. Childress for the many ways he gives back to the community, including his generous support of Forsyth Tech.



DataMax Foundation Supports JobsNOW

The DataMax Foundation has awarded Forsyth Tech a \$50,000 grant to fund scholarships for JobsNOW students. DataMax, a financial firm in Winston-Salem, is a longtime supporter of the college. In 2007, the company awarded Forsyth Tech \$250,000 for campus development and scholarships.

A New Center for Stokes County

In November, the Stokes County Commissioners approved the allocation of \$6 million for Forsyth Tech to build the Forsyth Tech Stokes County Center on the college's Meadows site near Walnut Cove. Construction will begin in January 2013.



Celebrating a Valued Partnership

In November, Goodwill Industries of Northwest North Carolina honored Forsyth Tech as its 2010 Agency Partner of the Year. In bestowing the award, Goodwill President Art Gibel said, "Goodwill's partnership with Forsyth Technical Community College enables us to collectively strengthen our impact in the community and assist more individuals and families in reaching financial stability."



We're Ultraproud of These Ultrasound Students

Melissa Culler, a student in Forsyth Tech's Medical Sonography program, is the recipient of the first Gulfcoast Ultrasound Institute (GUI) Outstanding Student Sonographer Award. Located in St. Pete Beach, FL, GUI is a nationally known provider of training and education for the ultrasound profession. In honoring Melissa with the award, GUI officials noted her 4.0 grade point average, her first-place finish in the North Carolina Ultrasound Society's Scientific Exhibit Competition and her having secured a student position at Forsyth Medical Center as a sonographer. And Melissa isn't the only Forsyth Tech student to be recognized. Two others – Susan Burke and Krystal Ellison – were among the top 10 finalists for the award.



They're Lining Up to Be Linemen

Overall, the JobsNOW initiative at Forsyth Tech has been a tremendous success, with many graduates finding employment right away. But in terms of sheer graduate-to-employment ratio, nothing can match the new Electrical Lineman program. The first class of 11 students recently graduated, and 100 percent of them were immediately offered jobs! The January class had the maximum number of students allowed – 20 – and the March class is also expected to be full. This is another example of Forsyth Tech doing what it was created to do – training the workers needed to fill the jobs in demand.

March Cyber Madness

Forsyth Tech's eight-person CyberWatch team is heading to the 6th Mid-Atlantic Collegiate Cyber Defense Competition Regional Finals March 10-12 at the Johns Hopkins University Applied Physics Lab in Laurel, MD. The team, led by Shawn Toderick, the coordinator of Forsyth Tech's Information Systems Security Program, was one of eight among 22 teams from two- and four-year colleges and universities to advance to the regionals. Some of the teams included graduate students. The first round of competition took place over two weeks in January. For information on how to protect yourself, see our interview with Terrence Lillard, an Information Security, Cybercrime and Computer Forensics instructor, on page 28.



And the Winner Is ... Forsyth Tech!

Forsyth Tech's marketing efforts continue to win praise and awards. The most recent honors came from the National Council of Public Relations in the form of seven 2010 District 2 Medallion Awards. The school's website – www.ForsythTech.edu – won a Bronze award, as did *Tech Quarterly* and the latest incarnation of the Forsyth Tech viewbook. A series of direct-mail brochures earned a Silver award. Gold awards were received for the popular Forsyth Tech billboard campaign and for a series of ads that ran in local high school newspapers. But that's not all. The school's website also won a Silver W3 Award from the International Academy of the Visual Arts, an organization that recognizes the best in websites, web videos and online marketing campaigns. Created in conjunction with the school's marketing partner, The Bloom Agency, all of these materials have also been winners in a much more basic way – bringing positive attention to Forsyth Tech and making more people aware of everything the school has to offer.



Popular Science

One of the most successful aspects of Forsyth Tech's 50th anniversary celebration has been the SciTech Lecture Series. These lectures have drawn large and enthusiastic crowds, according to Russ Read, Executive Director of the National Center for Biotechnology Workforce and organizer of the series. Free and open to the public, all lectures are held in Ardmore Auditorium on Main Campus, starting at 4 p.m. The final two lectures in the series are:
~March 17, Dr. J. Donald deBethizy, CEO, Targacept, on "The Targacept Story: From the Bench to the Clinic."
~April 21, Graduates of Forsyth Tech's biotechnology program on "Tech Life Post Graduation."

We hear **santa is hiring.** Global Logistics at ForsythTech *More Than You Know*

You don't have to **go away** to get somewhere.

Looking at college? Forsyth Tech offers you a real home field advantage with more than 100 different educational and career paths, plus small classes, low tuition and great instructors. Come to Forsyth Tech to get the education and training you need to go wherever you want in life.

To learn more call 336-734-7556 or visit www.ForsythTech.edu.

ForsythTech *More Than You Know*



The Bid-Ness of Education

Forsyth Tech's 50th Anniversary online auction ended November 30, 2010, and was a huge success. In all, the 63 items sold brought in more than \$11,000 in bids, with the largest single bid being \$6,300 for a fishing trip to Alaska donated by the law firm of Womble Carlyle Sandridge & Rice. The money will be used by The Foundation of Forsyth Tech to support student scholarships and faculty development.



A Great Tribute to a Great Friend

Paul Richard "Dick" Wilson is a man who understands the importance of service. For 20 years – through World War II, Korea and Vietnam – he served his country as a machinist in the Air Force. After he left the Air Force and moved to Stokes County, Mr. Wilson found another way to serve – as a volunteer in Forsyth Tech's GED class. He not only helped start the class, he also went on to volunteer twice a week for 22 years, tutoring students in reading, math, language, social studies and science. Honored with the North Carolina Medallion Award for Outstanding Volunteer Service in 2008, Mr. Wilson has now been honored more personally. His good friend Tony Chappell, the teacher for the GED program, has created a scholarship in Mr. Wilson's name that will be awarded annually to a student in the Machining Technology program. Mr. Wilson and Tony worked together for five years, developing what Tony calls a "ham and eggs" relationship. When health problems made it impossible for Mr. Wilson to continue as a volunteer, Tony wanted to do something to honor his friend's long military service and his service to Forsyth Tech. A scholarship in Machining Technology fit both criteria, and this fall, the first recipient of the Dick Wilson Scholarship was selected – Justin Hoyle. Mr. Wilson's service to Forsyth Tech continues, thanks to the generosity of one of the many friends he made in his years of helping others.



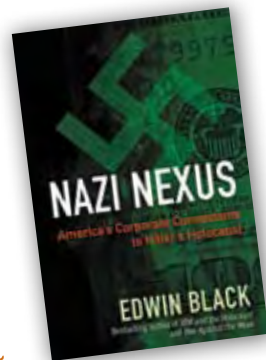
An Encore Performance

In our fall 2009 issue of *Tech Quarterly*, we told you about The Star Catchers, a group of performers made up of Forsyth Tech Compensatory Education students from Stokes County. And in our last issue, we told you about their command performance for Governor Beverly Perdue in Raleigh on the Fourth of July. Well, the Governor enjoyed their visit so much that she asked them to perform at a Christmas open house at the Governor's mansion on December 11, 2010. "We were greatly honored to represent Forsyth Tech at this prestigious occasion," said Adult Literacy Coordinator Paul Kindley, who traveled with the group. First Gentleman Bob Eaves (top left) joined the Star Catchers for this photo.



Not Much Room for Improvement

You can't do better than 100 percent, and that's exactly what Forsyth Tech students have achieved in three areas. The most recent class of paralegal graduates achieved a perfect 100 percent passing rate on the state certification exam, and so did the school's latest LPN graduates and MRI graduates. Meanwhile, 96 percent of registered nursing graduates passed their certification test, Forsyth Tech's highest cumulative score to date. This is even more remarkable given that the test plan changed for this group, adding even more difficulty.



Hard but Important Words to Hear

Best-selling author Edwin Black spoke at Forsyth Tech last fall as part of the college's 50th anniversary lecture series. Mr. Black spoke about his book *Nazi Nexus: America's Corporate Connections to Hitler's Holocaust*, which details how several large American corporations helped the leaders of Nazi Germany accomplish their goals. The Blynn Holocaust Collection at Forsyth Tech sponsored the lecture.



A Man of Influence

The Triad Business Journal named Forsyth Tech President Dr. Gary Green as one of the Piedmont Triad's "Most Influential People for 2011." This is the third year in a row Dr. Green has earned this distinction. In listing its reasons for including Dr. Green on this prestigious list, *The Business Journal* cited the important role the school's worker-training programs played in attracting Caterpillar's \$426 million factory as well as Dr. Green's leadership in growing the school's high-tech programs, such as biotechnology and nanotechnology, to offer training in new industries.



ForsythTech Receives a \$40 Million Grant

Siemens PLM Software, a business unit of the Siemens Industry Automation Division and a leading global provider of product lifecycle management (PLM) software and services, has awarded Forsyth Tech an in-kind software grant with a commercial value of more than \$40 million. This is the largest single grant of this kind the school has ever received. The grant, made through Siemens PLM Software's Global Opportunities in Product Lifecycle Management (GO PLM™) program, will provide the school with software introducing students to product design, development and manufacturing processes technology used by the world's leading manufacturing companies. This software, to be incorporated into the Mechanical Engineering Technology and Machining Technology curricula, will be especially important in training those hired at the new Caterpillar facility, as Caterpillar relies on Siemens PLM Software NX™, a comprehensive digital product development solution, for its programming. Todd Bishop, Program Coordinator, Mechanical Engineering Technology, applied for the grant and will serve as a liaison between Siemens and Forsyth Tech.

A Growing Reputation

As more and more people in the Triad discover the quality and variety of degree programs at Forsyth Tech, more and more people are choosing to continue their education at the school. The final enrollment in degree programs for the spring 2011 semester was 9,839 students, an increase of 3.26% over spring 2010. This represents the single largest spring enrollment in degree programs in the college's history.





President Obama wanted the right setting for a speech to rally this generation of Americans to their “Sputnik Moment.”

Forsyth Tech’s growing national reputation for preparing the workforce of today and tomorrow made the school a logical choice.

The President aimed to raise Americans’ awareness of the challenges of global competitiveness. He wanted to demonstrate that to be able to compete in the future, the American workforce must include people who have been trained to work with cutting-edge technology. Not just the people with Ph.D.s who head laboratories and corporations, but also those who work for them at many levels and must be knowledgeable, creative, flexible and ready for the fast pace of innovation.

When he walked through labs and classrooms at Forsyth Tech, President Obama saw that workforce of the future. He saw students from diverse backgrounds. Some were decades older than others. Some were fresh out of high school; others had many years of experience in traditional industries before finding themselves out of a job. Some already had college degrees, even advanced degrees.

One thing they all had in common was a determination to learn the innovative, sophisticated skills that would help them get good jobs in industries that are thriving and growing – the jobs that will drive the economy of the future. Another common bond was that they were all finding the teachers, the equipment, the vision and the support they need at Forsyth Tech.

Tomorrow’s Jobs Today

Forsyth Tech offers numerous traditional programs. Many of them, such as those in the medical fields, are incorporating the latest technology so that graduates will be ready to step into emerging jobs. And not all innovations – or all jobs – are in high-tech fields with unfamiliar names. There is healthy demand for highly skilled workers in advanced manufacturing jobs, and Forsyth Tech is training welders, machinists, design technicians and others to fill those needs.

But it’s in the newer fields that Forsyth Tech is gaining national attention as an innovative leader in preparing that highly competitive workforce for the future. Biotechnology, nanotechnology, digital design, clinical health, green and sustainable practices – these are fields that offer abundant possibilities for jobs and economic progress.

Working with industry leaders in Winston-Salem and Forsyth County and beyond, Forsyth Tech’s leaders have been out in front, developing the programs needed to keep the labs, medical centers and industries running productively in the future.

Biotechnology

For Alan Beard, the chairman of Forsyth Tech’s Department of Biotechnology, President Obama’s “Sputnik Moment” visit was personal and immediate: Trailed by an army of cameras and reporters, the President visited Alan’s lab, where second-year students were working with cell culture and recombinant DNA. When President Obama spoke to him, Alan began to respond: “And then these boom microphones came down, and instead of me talking just to him, I was talking to the whole planet.”

But that was OK. There’s plenty to say about the Biotechnology Department. Alan was struck by how the President asked students about their backgrounds.

“He was interested in the diversity of our students,” Alan said. “That’s what our program is all about.”

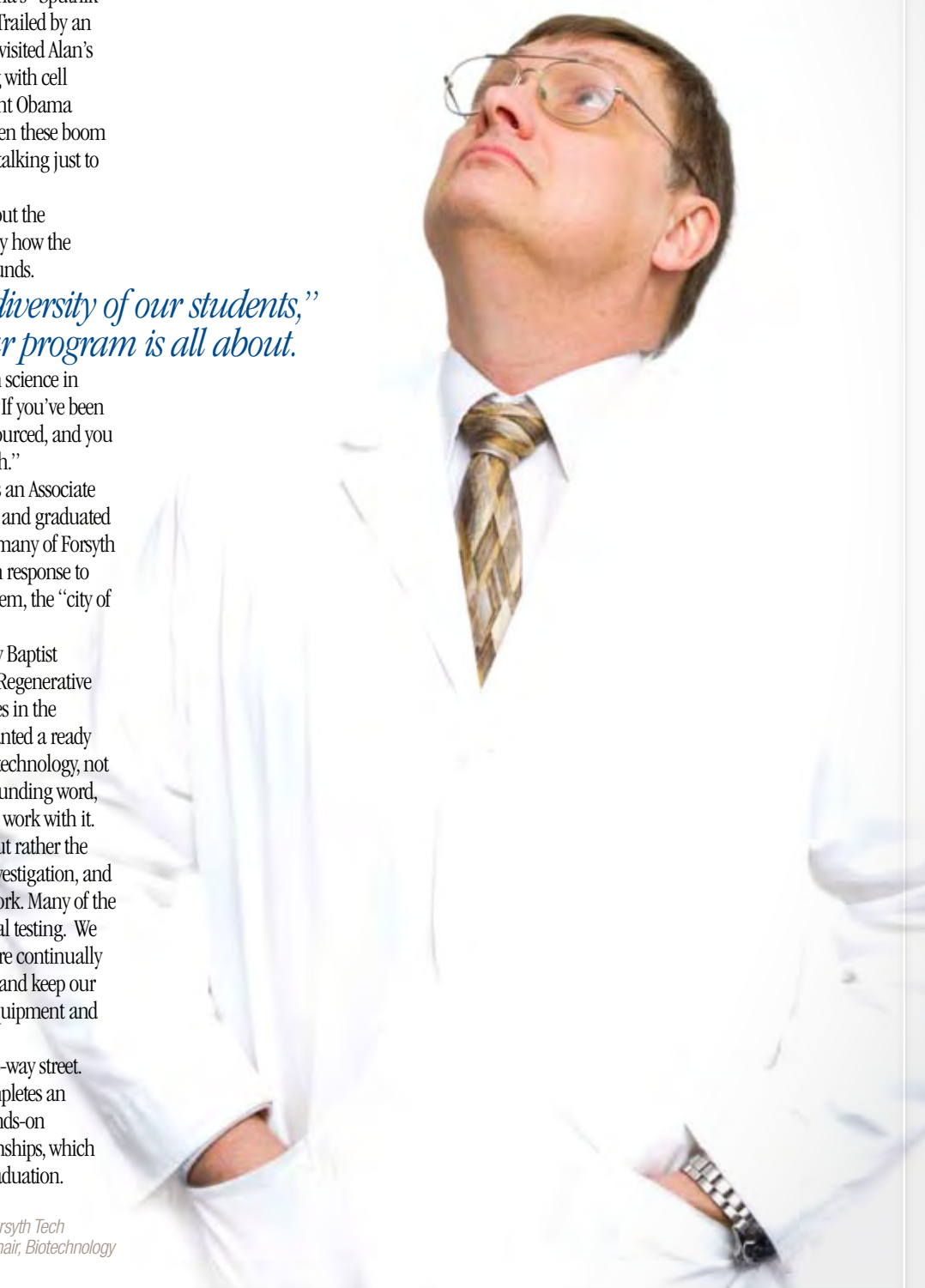
The program is open. If you didn’t take much science in high school, we’ll give you a refresher course. If you’ve been working for 25 years in a job that’s been outsourced, and you need help with math, we’ll teach you the math.”

The biotechnology program, which offers an Associate of Applied Science degree, got its start in 2002 and graduated its first students in the summer of 2003. Like many of Forsyth Tech’s programs, biotechnology was started in response to requests from the community in Winston-Salem, the “city of arts and innovation.”

Employers such as Wake Forest University Baptist Medical Center, The Wake Forest Institute for Regenerative Medicine, Targacept, Inc., and other businesses in the developing Piedmont Triad Research Park wanted a ready supply of skilled biotech workers. “I teach biotechnology, not rocket science,” Alan Beard says. “It’s a big-sounding word, but it is technology, and you can be trained to work with it. We are not training the Nobel Prize winner, but rather the technician. The Ph.D. directs the principal investigation, and the technician is needed to do the basic lab work. Many of the local jobs involve basic research and analytical testing. We work pretty closely with local employers. We are continually adapting our curriculum to meet their needs and keep our students current with state-of-the-art skills, equipment and instrumentation.”

The college-industry relationship is a two-way street. Every Forsyth Tech biotechnology student completes an internship in which he or she can put that hands-on education to work. Local employers offer internships, which can help students land a full-time job after graduation.

*Alan Beard, Forsyth Tech
Department Chair, Biotechnology*





Extended Network

Alan Beard's Biotechnology Department fits smoothly into statewide and national efforts to develop the workforce of the future. The meshing is all the easier because both the NC Community College System's BioNetwork and the National Center for the Biotechnology Workforce are affiliated with Forsyth Tech.

Doug Drabble started working as Forsyth Tech's Pharmaceutical Center Director three and a half years ago after two decades in the pharmaceutical industry. This year, he became Director of the BioNetwork and Life Science Initiatives, and he still works closely with Forsyth Tech, as well as with the state's other six BioNetwork centers. When he's not in Raleigh, his office is in the Richard Dean Building in the Piedmont Triad Research Park – a booming scientific and industrial park on the edge of downtown Winston-Salem.

The BioNetwork's two main missions dovetail neatly. It gives regulatory, analytical and operational training to workers already in the life sciences industry. That might mean developing short courses to help life science companies meet FDA requirements, or helping employees master their company's new high-tech equipment.

And as Doug Drabble and the BioNetwork see the needs of the state's industries, they get ideas for new curriculum courses for Forsyth Tech and other community colleges.

When Doug was still on staff at Forsyth Tech, he realized that a range of industries across the state needed employees with analytical training. Not just the pharmaceutical industry but also those that deal in chemicals, cosmetics, healthcare and other fields needed people who could use highly sophisticated instruments to analyze small molecules.

There didn't seem to be any comprehensive facility offering that kind of training, so Doug put together a plan for one. Grants and donations helped build

a 4,300-square-foot center in the Triad Research Park with 1,800 square feet for hands-on analytical training with the latest equipment. Since the center opened in July 2009, it has trained about 2,500 people (and has contracts to train several thousand more).

Income from training for companies goes to scholarships for community college students and teachers, who can get the same innovative training at no extra expense. Doug said that more than 100 students have earned a certification of completion for the analytical training. "We are able to support that student who is looking for training or personal development to help get that job at the end of the road," he said. It could be the difference between getting a job or not.

"That's what we do. We are here to support the community college system and to support every student as well."

Doug Drabble, Director of BioNetwork and Life Science Initiatives, NC Community College System

"Reach for the Stars"

Russ Read was not surprised when he learned that President Obama was coming to Forsyth Tech. From his office on the fifth floor of the Tech Building on Forsyth Tech's Main Campus, he directs the National Center for the Biotechnology Workforce (NCBW). He knows firsthand the reputation Forsyth Tech has as a model of technology and innovative education. Russ is a liaison between Forsyth Tech and the state's community college system, and Washington and the rest of the nation. Created in 2004, NCBW was financed for its first four years by a High Growth Grant from the U.S. Department of Labor. The state picked up the tab after that, and NCBW is now an important part of BioNetwork.

NCBW's goal is to help develop best practices for curriculum and continuing education that meet the needs of those doing the hiring and those whom they will hire in the fields of biotechnology, pharmaceuticals and life sciences. In September 2010, the center and the Manufacturing Institute in D.C. announced an alliance to develop the workforce of the future in those areas.

As part of that effort, Russ tracks what becomes of graduates of Forsyth Tech's biotechnology program. What he finds is encouraging. A number of two-year graduates go on to get four-year degrees elsewhere. But of those who want biotechnology jobs, "most of them got jobs," he said. There are *plenty of jobs for skilled people who know how to use sophisticated technology* and how to work as part of a team – both areas that Forsyth Tech focuses on.

One reason for the success is that "North Carolina is a biotech state – the jobs are here," Russ said. The internships and close relationships with employers in Winston-Salem and the Piedmont Triad region help. And so does Forsyth Tech's approach to hands-on, practical, real-world training.

"We train a mixed lot of students," he said. "Often, we find that people who were good at working with tobacco, textiles or furniture are also good working with biotechnology."

"Forsyth Tech has been ahead of the curve in biotech training," Russ said. "Dr. (Gary) Green (the president) is always reaching, encouraging people to go to the next level, to go as high as you can. We just reach for the stars here, and it seems to work."

Russ Read, Executive Director, National Center for the Biotechnology Workforce of BioNetwork at Forsyth Tech



If you ask Dr. Kevin Conley “Just what is nanotechnology, anyway?” he tends to dodge the question. Maybe Kevin, the coordinator of Forsyth Tech’s 6-year-old nanotechnology program, would rather talk about the positive things nanotechnology does for our economy and society than offer possibly confusing details about how and why nanotechnology reduces one of the three dimensions of matter to 1,000 or fewer atoms.

Here’s how Kevin describes his own job: “I make high-tech jobs for Americans.” Here’s how he describes nanotechnology: “Nanotechnology in North Carolina uses systems of biology with chemical structures and devices from physics to do engineering in biological and material systems for the promotion of the state’s economy in an ethical fashion that is good for people and the environment.”

Whew.

Nanotechnology, he says, uses all the sciences. Students of nanotechnology also must learn about economics and ethics. The focus is “on getting the job done, not just throwing a set of tools at something.” The tools, however, are undeniably cool. Nanotechnology uses extremely tiny machines to get its jobs done, whether the job be speeding the creation of pharmaceuticals for better healthcare, creating better solar cells for a greener future, or any of seemingly limitless possibilities.

At some point, Kevin said, his students usually say something like,

“Holy cow! I am working with millions of dollars worth of equipment looking at atoms!”

Two-year community college programs in nanotechnology are uncommon. Forsyth Tech has the only two-year degree program in the Southeast. Kevin believes it’s a logical fit for the community, because North Carolina and the Triad are leaders in biotechnology and nanotechnology.

Students in the program are diverse, with the average age being 33. They are linked, Kevin said, by the need for a job, and by a fascination with the sciences and what nanotechnology can do. Every student must take biology, chemistry and physics, and learn about regulatory issues and intellectual property law. Every graduate must also work an internship.

“Everything I do is preparing to hand off my students to good jobs in industry,” Conley said.

“I Make High-Tech Jobs for Americans”



Dr. Kevin Conley, Forsyth Tech Program Coordinator, Nanotechnology

Serious about Gaming

“I come to work, and I just play every day,” said Herb Burns, Department Chair, Architectural & Construction Technologies. So do the 20 or so students who are fortunate enough to study in the two-year applied science program. Visit their lab, and you will see them drawing on electronic sketch pads, creating films with scary monsters, playing highly sophisticated video games of their own creation and even popping figures out of a 3-D printer that looks a bit like a vending machine.

The play is serious, though.

It’s all about jobs of the future.

One need look no further than the Forsyth Tech website to see one of the practical applications of what DEA students are learning: A team in one of his classes formed a mock animation company called Shock Treatment and produced from start to finish “The Story of You,” a recruitment video.

Creating and playing video games is one of the attractions of the program, and Herb said that some students may find work along those lines. Or they might create a fun “app” that can be played on a smartphone, and develop a lucrative small business.

But they also learn about “serious gaming,” a rapidly growing field that provides, among other things, games that are used to train medical professionals, first responders and the military. Last year, some Forsyth Tech students participated in a consortium modeling surgical instruments for a surgical training game.

There is a wide range of other real-world uses for the skills the program teaches. Movies and cartoons use animation, of course, but so do TV commercials and just about anything that portrays motion.

The art of 3-D modeling also has wide applications. Recently, some of Digital Effects and Animation Instructor John Kelly’s students worked with an international team of researchers to build 3-D models of buildings in an ancient village in Abu Dhabi, which became part of a virtual reality of the village.

The program takes advantage of what Herb describes as a “very collaborative community” in the Winston-Salem area, working with the Center for Design Innovation as well as Wake Forest and Winston-Salem State universities and the University of North Carolina School of the Arts.

Herb Burns, Forsyth Tech Department Chair, Architectural & Construction Technologies



Computerized Simulators

The way Dr. Jan Overman sees it, sophisticated technology has made healthcare training safer for patients and less terrifying for students. Jan, Forsyth Tech's Dean of Health Technologies, considers the simulation lab a revolutionary change in the way people are taught to provide a range of medical services.

When Jan was in nursing school, she said, students usually practiced on one another as they learned various procedures. That meant they were practicing mostly on young, healthy people. Today, patients in hospitals are very ill. The simulated patients – highly computerized, much more than just mannequins – in the lab can be programmed to present the real problems that healthcare workers will encounter on the job.

The simulator's pulse, respiration rate, heart rate and other factors can be set to offer challenges that require the student to use critical thinking to make the correct choice about treatment. Then the instructor can use a printout to review, for the whole class, how the student made the decision.

"This is a wonderful way to teach complex healthcare scenarios," Jan said.

Simulators range from infants to adults. They can simulate the birth process with the mother or baby in distress, or simulate an intravenous stick for a dehydrated geriatric patient with rolling veins. Students can decide how best to treat the individual patient – without dealing with a living human while they are still learning. Simulators are a new and invaluable bridge between classroom instruction and treating real people.

Forsyth Tech is hardly the only community college to use simulators in its healthcare education, but Jan said its approach is unusual. Rather than just buying expensive equipment that faculty may not use, Forsyth Tech established a position, coordinator of the simulator lab. The coordinator makes sure that instructors know how to use the simulators effectively.



Dr. Jan Overman, Forsyth Tech
Dean, Health Technologies

Tech Revolution, Updated

In the Thomas H. Davis iTEC Center, Jim Pierson makes sure that programs that are now the granddaddies of innovative technology – computers and the Internet – stay ahead of the curve. He is constantly working with the industry locally and nationally to make sure that Forsyth Tech is training students for the jobs of the future in database management, information security, Web technologies, programming, network technologies and computer information technology.

In each area, he keeps his eyes on the marketplace and his ears open for the latest buzzwords. Take "virtualization," for example, the creation of virtual computing environments that are more efficient than traditional ones. Workers may have their own monitors but be connected to a server somewhere else. At Forsyth Tech, students learn how virtual labs work, even as they learn specific information using them.

The iTEC Center partners with companies like Microsoft, Red Hat and Cisco, using their latest products in "academies."

Pierson is developing training in programming mobile devices so that students will be able to tap into the lucrative markets for "apps."

The Center is developing a new program in Healthcare Business Informatics, in line with President Obama's call for more efficient and useful handling of healthcare records.

Pierson is also heavily involved in making sure that Forsyth Tech practices what it preaches: It does not just teach about innovations and new technologies; it also makes use of them in its teaching methods and operations.



Jim Pierson, Forsyth Tech
Department Chair, Thomas H. Davis iTEC Center



The Big Picture

That's an area that comes under the supervision of Rachel Desmarais, Forsyth Tech's Vice President of Planning & Information Services. It's important, Rachel said, that Forsyth Tech teaches by example. Of course, great effort goes into making sure that students are taught using the latest in innovative technology, whether it be virtualization, distance learning, whiteboards or something as simple as electronic "clickers" that help students respond to teachers' questions in class.

Rachel is always thinking about ways to make students' total college experience better, through wireless hotspots where they can get online, communal areas where they can gather to work on projects, or "electric juice bars" where they can charge their devices. Forsyth Tech's diverse students don't always have access to computers, so more computer labs with easy access are essential.

Beyond all that, she believes it's crucial that students see that Forsyth Tech lives what it teaches. That can mean doing things in a greener and more sustainable way. Existing buildings can be made more energy efficient. Some new ones will be built with some form of LEED (Leadership in Energy and Environmental Design) certification.

"Learning really occurs at the intersection of the personal experience and the technology," Rachel said. "We don't want to do one at the expense of the other. Here at Forsyth Tech, it all goes together."

Rachel Desmarais, Forsyth Tech
Vice President, Planning & Information Services



More Than You Know

A Leg Up on Getting a Good Job

When Steven Crawford graduated from the University of North Carolina at Chapel Hill in May 2010, he knew a couple of things he did not want to do.

He did not want to go straight into graduate school, even though that's what many of his classmates at Carolina were planning. And he did not want to join the ranks of college graduates who were unemployed in a tough economy.

So Steven took a different approach: He applied to Forsyth Tech's two-year nanotechnology degree program. Now, because he was able to transfer many credits from Carolina and he's taken substantial course loads, he's on track to graduate again in May 2011. This time, he will add an associate's degree to the bachelor's degree on his resume.

And, given the track record of Forsyth Tech's nanotechnology program, he has reason to believe that he may also have a good job offer by that time.

Steven doesn't regret his four years pursuing a B.A. degree in biology at Carolina. "You get a really good general and theoretical basis in biology there," he said. "It prepares you for graduate school. But it doesn't really prepare you for an actual job. Graduates with bachelor's degrees in biology are a dime a dozen. To get a job, you need more practical preparation."

That belief is what brought him to the nanotechnology program. "I wanted to get out and get working somewhere and get some practical experience," he said. "If I do want to go back for a master's degree later, I will know what I want to focus on."

Steven's pleased with what he's found at Forsyth Tech. His studies are similar but different. The biology he's learned is useful, and he's learning applications for it in nanotechnology.

He knows a lot of people would consider the path he's taken "very unorthodox," but it makes sense to him. This spring, he will participate in a co-op education program in which he'll get practical experience at a company in the area that uses nanotechnology. Forsyth Tech is fortunate to have more than enough of such companies in Winston-Salem and the Triad that welcome its students. Crawford knows that a number of Forsyth Tech's internships and co-op positions have turned into regular jobs after graduation.

His dream entry-level job would be to work in a research or a forensics lab. "I want something where when you get into work every day, it's not the same old, same old," he said. Later, he might aspire to be a lab manager.

Driving to Forsyth Tech's Main Campus daily from his home in Kernersville has been a very different college experience from living on campus in Chapel Hill for four years. But different can be good. "At Carolina, there might have been 200 people in a lecture, while now Dr. (Kevin) Conley might have fewer than 10 in a class. Forsyth Tech's program is a lot more intimate, and we get more practical and hands-on experience," he said. "This program is certainly a lot cheaper than grad school, and it's arguably just as good for your resume."

"Some people might say coming to Forsyth Tech after Carolina is a step down. I look at it as a leg up – a leg up on getting a good job."

Steven Crawford,
Forsyth Tech
Nanotechnology
Student





Behind the scenes of Forsyth Tech's six-day whirlwind of preparations for President Obama's visit

Preparing *for a* President

President Obama's 54-minute visit to Forsyth Tech (which included a tour of this biotechnology lab) was preceded by an exhaustive but exhilarating week of planning and organization.

When you learn you have company coming to visit, you know you might need to spruce up a bit, right?

But when the company is the President of the United States, the sprucing has to be taken to a whole new level. Not only do you have to make a good impression on the President; you have to make a good impression on the White House staff, the Secret Service and the nation.

The behind-the-scenes hostess in chief was Dr. Green's Executive Assistant Sherri Bowen. She was first to get the message. "It was an awesome feeling," she said recalling the first call that came from the White House. "The White House staff had actually left a voice message Monday evening (November 29). It sounded like someone setting up a speaking engagement at first, but we quickly knew this was a much bigger deal."

Dr. Green had asked for a presidential visit about six months earlier, and he says he was not surprised that President Obama took him up on the offer. Ironically, Dr. Green was in Washington, D.C., on business when the call from the White House reached Sherri in Winston-Salem.

Dr. Green says he had good reason to expect success. It was clear that Forsyth Tech had made good use of federal stimulus money, and it had demonstrated more than other colleges in the state the ability to put people back to work using that money. The school has been working with national industrial advocate groups to certify skills for a manufacturing workforce, and Forsyth Tech's 50th anniversary provided a great stage to present it all.

"President Obama came here because we have been forward thinking about preparing people for the work of the future, and preparing the local and regional workforce," Dr. Green said. "We have been successful at this and have gotten attention at the regional, state and national levels for our success."

And there were other reasons to expect a presidential visit. President George W. Bush had made a similar trip in 2003, and the Obama White House staff had indicated that Forsyth Tech proved itself as a good place to highlight the education and job training topics the administration wants to focus on in the coming months. The visit was also seen as a possible framing event for January's State of the Union address.

Because President Bush had been here, the staff knew what to expect and thought there was a reasonable chance. "They do look for places to go," Dr. Green said. As it turns out, that previous presidential visit experience came in handy, and the Forsyth Tech teams were able to gear up quickly.

Details, Details...

Less than 24 hours after Sherri received the initial White House message, an Obama administration advance team was on the ground to begin touring the campus. "They were great," Sherri said. "All the time they were trying to emphasize that they wanted the visit to have the least amount of student impact possible. We did our best to minimize campus impact, but only could to a point." It was decided that the West Campus and one other building would be shut down for the visit.



Sherri Bowen



Dr. Green takes President Obama and Governor Perdue on a tour of the Forsyth Tech biotechnology lab facilities.

Chronology of a Presidential Visit

TUESDAY, 11.30

11:00 a.m.: The first White House message reaches Dr. Green's Executive Assistant, Sherri Bowen. Within minutes, Sherri notified Dr. Green about the White House contact with an urgent but "nonemergency" text message. Ironically, Dr. Green was in Washington, D.C., at the time. By noon, a White House team leader had already contacted Sherri again to begin coordinating details.

WEDNESDAY, 12.01

9:00 a.m.: First White House team arrives in Winston-Salem. Team members and Secret Service agents immediately begin to tour Forsyth Tech's Main Campus, checking every building location. The sweep is repeated two hours later. Late that afternoon, Dr. Green called his cabinet, security, facilities and communications teams together in the Allman Center Board Room to begin preparations.

THURSDAY, 12.02

9:00 a.m.: White House Staff, Forsyth Tech team members, Secret Service and local law enforcement meet at the Bob H. Greene Hall Auditorium to discuss plans for the President's remarks, taking measurements and examining the layout of the building and the room. In only an hour, a decision is announced that the West Campus gym will be used for the President's remarks. (This complicates the visit because the President will now be visiting two locations.)

12:30 p.m.: Forsyth Tech maintenance crews begin covering the gymnasium floor, detail cleaning, painting and grounds work at the Main and West campuses. In the meantime, White House staff, Forsyth Tech team members, the Secret Service and local law enforcement meet in the Technology Building. The decision is made to cancel classes in the Technology Building and West Campus to minimize student impact.

1:30 p.m.: Security meeting and briefing in Winston-Salem police department auditorium. All local law enforcement agencies represented, as well as local emergency medical services and Secret Service. The meeting is standing room only. Elsewhere, Sherri Bowen, Dawn Mitchell and the White House crowd control director meet to discuss the number of tickets available for the remarks section of the President's visit.

FRIDAY, 12.03

10:00 a.m.: White House staff members begin meeting with vendors and college maintenance staff to prepare stage, seating, lighting, temporary power and barriers. Three hours later, Dr. Green meets with the White House team and begins another tour of the lab facilities. That evening, the White House staff determines the seat count for the gym.



“If you can do this, you can do *anything*.”

President Obama takes the stage to deliver his remarks at the West Campus gym.

“It’s a lot of work,” Sherri recalled. “There are details we had to deal with that you might never think of. Maps, building details and more. There were the phone calls – starting the phone tree – arranging volunteer schedules – working out a lottery for tickets to the President’s speech, and making sure the Secret Service agents got all the information they needed for their plans. With the first advance team, there was already a Secret Service detail on hand taking careful notice of every building, every hallway and every doorway.”

Forsyth Tech’s security chief Renarde Earl is actually an old hand at this level of security. He’s been on hand for three other presidential or vice presidential level visits. He admits there are a lot of details he can’t discuss, but he can describe how thorough the security teams are. “The Secret Service and the White House have a template for trips like this that guides them through the timeline,” Renarde said. “Those advance teams are checking things out long before Air Force One is on the way.”

Local law enforcement was doing its part as well. In the days leading up to the President’s arrival, literally hundreds of local law officers were getting new assignments and making plans for everything from traffic management to building security. All of that took careful organization that started with a mass briefing in the 100-seat Winston-Salem police department auditorium. “It was amazing to see all of those security teams in one place,” Renarde recalled. “There were agencies represented there ranging from the Secret Service to the Forsyth County Sheriff’s Department to our campus security, as well as the Winston-Salem PD and emergency medical teams. We were all in that auditorium at once. It was standing room only.”

Welcome to the Press Corps - Hold Your Positions Please

There were new experiences for those on the receiving end of all that planning and security, too. Local freelance photographer Steve Cash, who has worked with Forsyth Tech before, called it, “interesting.” Steve was lucky enough to be the only North Carolina photographer taking photos of the President during the biotech laboratory part of the tour.

“I had to go through quite a bit to get credentialed as a photographer for the event,” Steve said. “The whole Secret Service thing was like nothing I’d ever done before. They ‘wanded’ me, and took pictures with my cameras to make sure they worked. Apparently, I became part of the press corps for the day, part of the 20 or 30 people who travel with him (the President) everywhere he goes.”

Steve says he attended about four briefings with Secret Service to go over the press corps rules. In addition to being quiet and respectful among the other photographers, he was told that “jostling is OK, but no body contact trying to find your place.” Steve says “jostling” for position was never an issue. “There was a video camera three inches from my face,” he grinned. “It was tight, but it was OK. Once I got into the first space, I had a pretty good position, and I didn’t need to move. That was good because they told me that once you’re in your place, you don’t move.”



Renarde Earl

SATURDAY, 12.04 **10:00 a.m.:** The weekend begins with Forsyth Tech teams pulling together a list of audience names, and the White House staff setting up curtains in the Technology Building to shield outside visibility. By noon, vendors have begun construction on the stage for the President, and risers for the crowd. And the Secret Service repeats a series of campus and building walk-through tours.

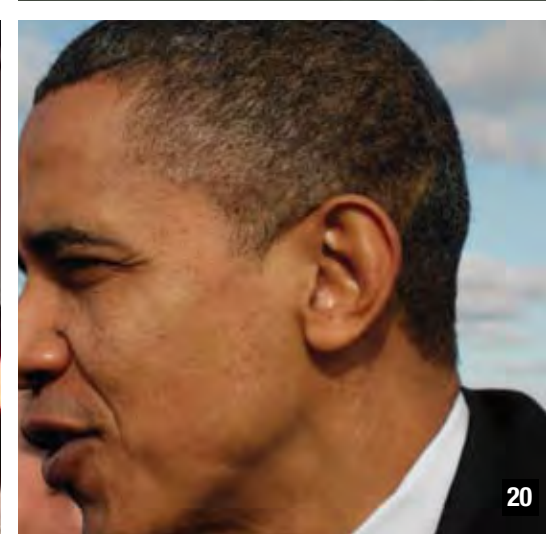
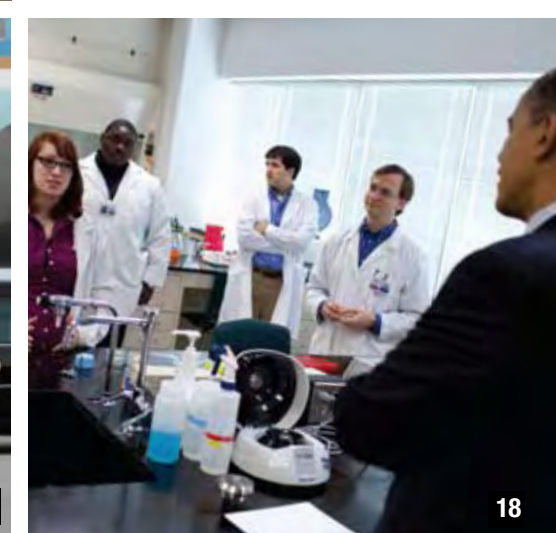
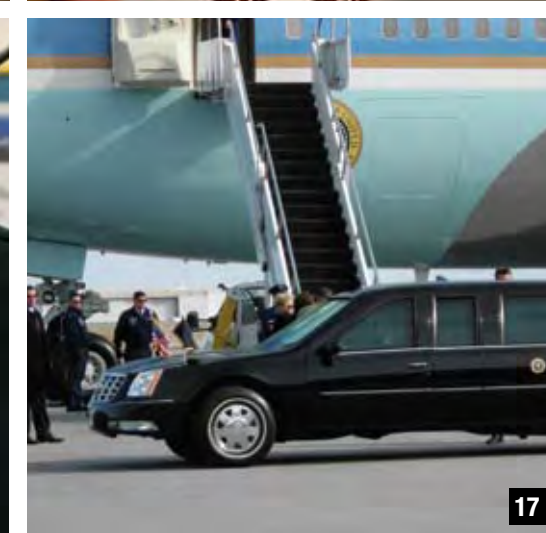
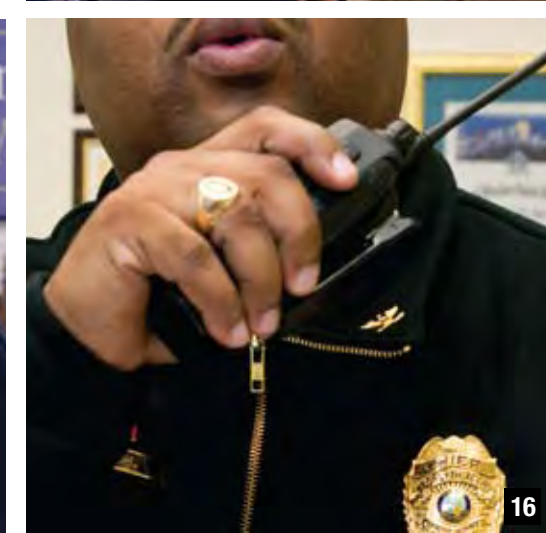
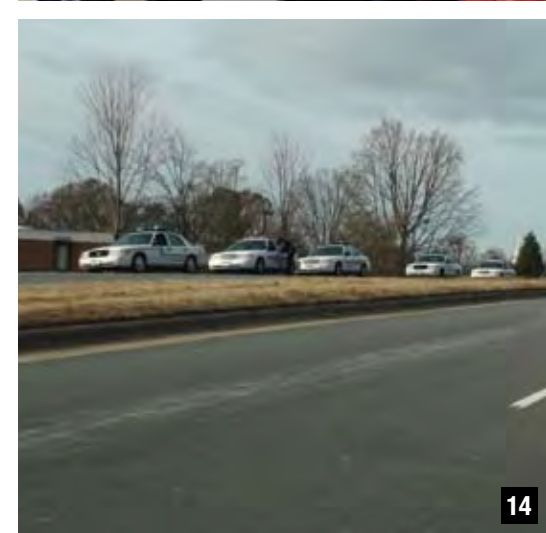
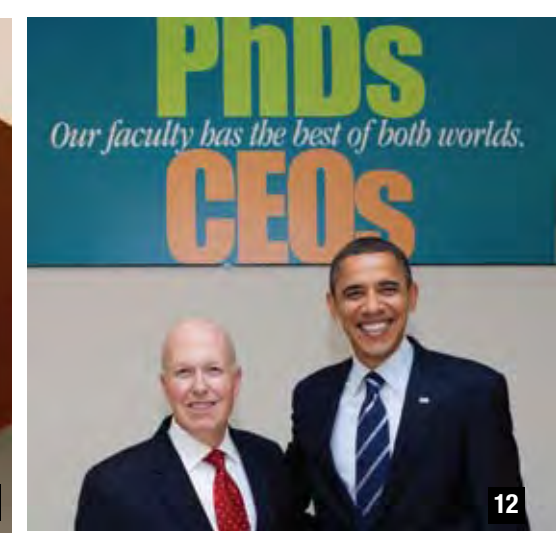
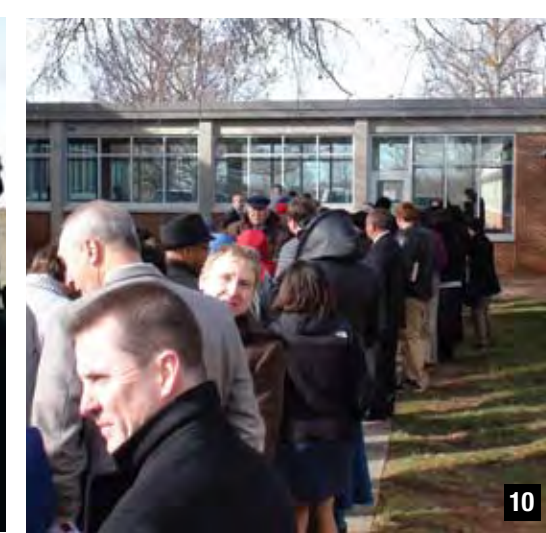
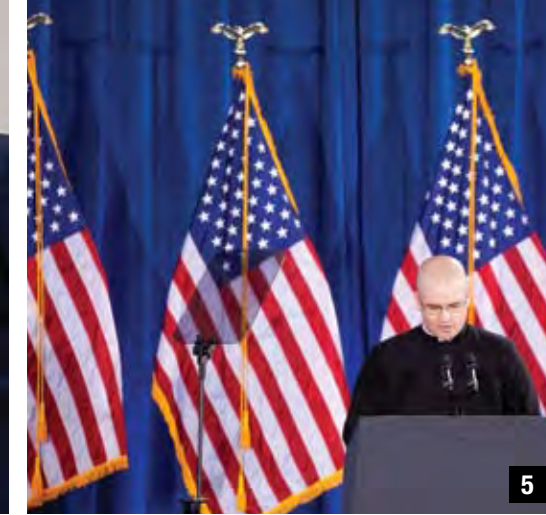
SUNDAY, 12.05 **12:00 p.m.:** By midday Sunday, some Forsyth Tech staffers learn whether they’ll be able to attend the President’s remarks after names are drawn at random. Ticket distribution continues through the afternoon while Secret Service supervisors begin their overview of the many earlier campus sweeps.

MONDAY, 12.06 **5:00 p.m.:** Dr. Green begins local television interviews regarding the President’s visit, while an additional security briefing is organized for all law enforcement and Secret Service agents. Within two hours, volunteers begin to take their posts, and law enforcement blocks campus traffic. One hour later, ticket distribution for the audience begins at Bob H. Greene Hall as security teams with bomb-sniffing dogs sweep the West Campus.

9:15 a.m.: President Obama receives the Presidential Daily Briefing in the Oval Office and then leaves the White House en route to Andrews Air Force Base. Meanwhile, on the West Campus, doors open for ticketed guests in the gymnasium.

10:05 a.m.: The President departs Andrews Air Force Base en route to Greensboro. One hour later, Air Force One lands at PTI Airport. Within minutes after the landing, the presidential motorcade is on its way toward Winston-Salem.

11:45 a.m.: The President begins his tour of the Forsyth Tech biotech labs and then makes his way to West Campus, where he delivers his remarks to Forsyth Tech faculty and staff. One hour and 10 minutes later, President Obama is flying back to Washington, D.C.



DECEMBER 6, 2010 1 > Sherri Bowen working the phones while preparing for the President's visit. 2 > The White House press pool documents every minute of the visit. 3 > Armed security teams guard every entrance to the Technology Building as Dr. Green (lower left) prepares to greet the President. 4 > President Obama greets Forsyth Tech staff upon his arrival at the Technology Building. 5 > Convocation in the West Campus gym before the President's remarks. 6 > More than 300 ticketed guests wait for the President's arrival. 7 > Marine One leaves the White House at 9:50 a.m. en route to Andrews Air Force Base. 8 > President Obama examines a cell culture experiment firsthand on the biotech lab tour. 9 > Some Forsyth Tech faculty received special security clearance to greet the President upon his arrival at Piedmont International Airport. 10 > Ticketed guests wait for security checks outside on the West Campus. 11 > Local photographer Steve Cash shows off his White House press credential. 12 > The White House press pool captures a photo of Dr. Green and the President soon after his arrival on campus. 13 > The White House press corps follows the President on his biotech lab tour. 14 > Local law enforcement on Silas Creek Parkway provides another layer of security in front of the Technology Building. 15 > President Obama delivers his remarks on the West Campus. 16 > Chief of Campus Police Renarde Earl is in constant contact with the Secret Service during the visit. 17 > The presidential motorcade begins in front of Air Force One at PTI Airport. 18 > President Obama takes time to speak one-on-one with biotech students. 19 > More than 60 local media outlets take their positions to cover the President's speech. 20 > President Obama moves from Air Force One to a limousine as the motorcade prepares to leave for Forsyth Tech. 21 > President Obama greets ticketed guests after his remarks on the West Campus.

More Than You Know



For Biotech Student Paul Street, Not Just Another Day in the Lab

So let's say the leader of the Free World walks into your classroom. What do you chat about?

"One guy asked him about college football," said biotech student Paul Street. "That kind of set the mood before he started asking more serious questions about what would make it easier for us to get a degree while working and having a family."


Paul was one of the students President Obama spoke with in the Technology Building. In fact, Paul had the opportunity to explain an extremely complex cell culture experiment in a scant few minutes. "When I was explaining about the cell culture, he was looking through the microscope and said 'It's alive!'"

"We had talked about the experiment in class before," Paul said. "It worked out surprisingly well for being on the fly. Mr. (Alan) Beard's class had prepared me pretty well for it."

Paul already has a biology degree from Wake Forest. He's taking

this class to gain more extensive lab experience. "I've learned a lot," Paul said. "Employers in this field aren't looking for a lot of experience in the classroom; they're looking for experience in the lab. My degree has mostly field work. If you can't do hands-on science, you can't do science."

Paul is a member of the Army. His talk with President Obama was also a chance for him to size up his Commander in Chief. "He's taller than I expected," he mused. "You usually see him with Secret Service agents, and they are generally pretty tall. Pretty nice guy."

"We were told to only expect very quick handshakes before he left," Paul recalls. "But he came in there with Governor Perdue and Dr. Green, and shakes hands and spends five minutes talking to Mr. Beard and Dr. Green, and another five minutes talking to me about cell culture. Wow, we didn't expect that. We were pleasantly surprised." 




"That's me!"

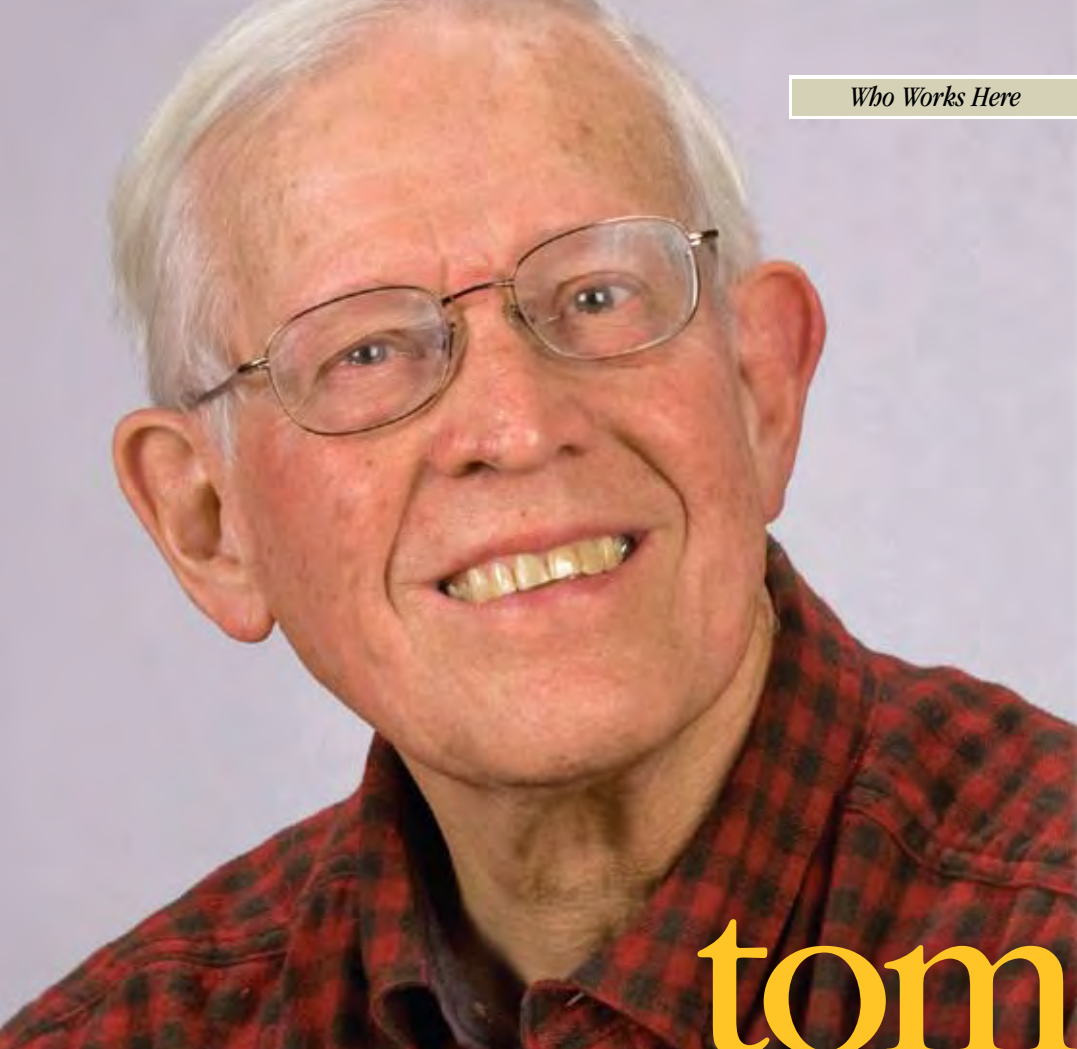
Kathy Proctor in the Spotlight at the State of the Union Address

On January 25, 2011, Kathy Proctor became, for a few days at least, the most famous student at Forsyth Tech – and Forsyth Tech became the most famous community college in the United States. That was the day President Barack Obama mentioned her and the school in his State of the Union address, and she was shown on TV sitting in the First Lady's box. The mention of her name so surprised Kathy that she turned to the people sitting next to her and said, "That's me!" This act of genuine emotion struck a chord, and soon Kathy was all over TV and the Internet, as was Forsyth Tech. (This was, by the way, the first time a community college has been mentioned by name in a State of the Union speech.)

Who is Kathy Proctor? She is a 55-year-old mother of two who, after working in the furniture industry for more than 30 years (and often being laid off as her employers went out of business), returned to school in 2009 as a biotechnology student. She met the President during his December tour of Forsyth Tech's biotech labs and impressed him when she said she was getting her degree not just for a better job, but to inspire her twin daughters, Megan and Amanda. The President even quoted that remark in the State of the Union speech.

During Kathy's once-in-a-lifetime trip to the State of the Union address, she not only met the President, but also North Carolina Senator Kay Hagan, First Lady Michelle Obama, and, during a reception at the White House, First Dog Bo. She even got to spend an extra night in Washington, as a snowstorm grounded planes on Wednesday. But she was back in class by Friday. "I'm ready to get back to normal," she told one reporter. "I have a test to make up."

The speech Kathy heard that night in Washington was a lot like the one the President gave in December at Forsyth Tech. In fact, that December speech was, in many ways, a first draft of the State of the Union. The term "Sputnik moment," for instance, was introduced in the Forsyth Tech speech, as were many other themes addressed by the President on January 25. To compare the two speeches, go to the Forsyth Tech website, www.ForsythTech.edu, and click on the banner that says "President Barack Obama Visits Forsyth Tech." There you can read the December speech. Then click on the link that says "Meet Kathy Proctor." On that page is a link to the State of the Union address. Oh, and there's also a lot more information about Kathy, and her rapid rise from student to star! 



Who Works Here

First in an Era of Firsts

As part of the International Geophysical Year in 1957, the United States was busy preparing to orbit a satellite, and do it before the Russians did. Needless to say, the Russians put Sputnik into orbit well before the American program launched its first satellite.

Eventually, in 1958, the United States was finally able to launch Explorer One into orbit. Tom was the first person to track Explorer One, America's first satellite, as it made its first orbit overhead, at his Army tracking station on Kwajalein Island in the South Pacific.

tom
roth

Program Coordinator, Electronics Engineering
& Biomedical Equipment Technologies

College students might take for granted that their instructors know the subject matter they teach. Tom Roth's Electronics Engineering Technology students might not realize that their instructor not only knows his subject, he had a hand in making our modern electronic culture what it is today.

Tom is an Elkin native. He graduated from Rice University (in Texas) in 1960. At the time, the Cold War was dragging on and entering a nerve-racking phase in which the United States and Soviet Union were aggressively working on missile technology just before the beginning of the space race. Becoming an engineer was natural. During his time in the military in the Army Map Service, he helped build what would become the United States' first satellite tracking stations. He also worked to build one of the first room-sized vacuum tube computers.

At the time, Tom says, he never thought about teaching. Later on, as an engineer doing textile research and development,

he would learn what was needed for each job: Get it done, then move on to the next job or assignment. "I'd get a job done and never do it again," he said. "Then I thought, what am I going to do with all I've learned? I was building war stories, let me tell you."

"I applied for this teaching job in 1983, and those war stories have sure come in handy," he quipped. "These days, when students ask me why we take certain precautions or follow certain rules, I have a wealth of stories to tell them about what happens when you don't follow those rules.

"I am always struck by the diversity of this place," he said. "So many of my classes are filled with people from all walks of life, in every stage of life. I really enjoy it." ☺

Biotechnology wasn't even a word when Jon Fowler realized his love for living things. "I always liked biology as a kid," he said. "I guess I was in seventh grade and just started to love it. My parents didn't get me chemistry sets or anything like that; I just really loved the classes. I never thought of it as a career."

Instead, his career thoughts were with the military. After leaving his home state

of Michigan and joining the Army, Jon went through Airborne School and Special Forces training at Fort Bragg. He and his wife fell in love with the North Carolina lifestyle. "We love the coast," he said.

But hard times were around the corner for them. In 2008, Jon lost his job at Freightliner because of a layoff and had to consider his options. A biotech degree from Forsyth Tech grabbed his attention. "I always liked biology, and this was an opportunity," he said. "Instead of having a job, I'd have a career."

"I'm 42, so I'm an older student," Jon said. "But I've met a lot of nice people; interesting people on all parts of life's journey. The instructors are very knowledgeable, and you can tell they are committed to their field. They're not there just to collect a paycheck; they're there to teach."

Jon lives in Iredell County, and drives about 50 miles each day to get to class. "I download some of the books and the recorded lectures, and listen to them on the road," Jon said. "It's a nice break from everything, and it helps me study. It's sure not as bad as driving into Charlotte!"

Jon is on schedule to graduate with his biotechnology degree after completing a student co-op program this summer. Jon says he won't celebrate with the other graduates when his classes end in May. "I want to wait to do that until I'm done with the summer co-op," he mused. "Superstitious, I guess. I don't like celebrating until I'm really finished."

He hopes to work in pharmaceuticals somewhere on the East Coast near his daughter. ☺

Who Goes Here

jon
fowler

Student, Biotechnology

Middle-Age Mountain Man

As a biotech student, Jon's interest in nature takes him outdoors a lot. "I do a lot of mountain biking," Jon smiled. "I live next to 17 miles of trails, and because of my age, I surprise the people at the bike shop a lot. When I bring the bike in (it's always broken), they'll say 'I wanna ride with you!'"

"Mountain biking is a chance to get out there and just let your mind go," he said. "You get on the trail, and you can just take the time to think."



Cybercrime Prevention:

“Elementary, My Dear Watson.”

An Interview with Terrence Lillard

Instructor of Information Security, Cybercrime and Computer Forensics

Q Terrence, do ordinary people need to be worried about cybercrime and identity theft?

A Yes. We all need to become detectives, and we all need to become better custodians of our data. We have to be more mindful of what we say on our websites, what we tell others, what others put on their websites about us, what we put on others' sites, and who is watching us.

Q Are there more bad people trying to harm us now than in the past?

A The problem is not that people are worse now, or that there are more psychopaths or sociopaths. It's that the Internet has increased our exposure to those who want to harm others or take something from others. Before the Internet, I might have seen 200 people in various places in the course of a busy day. On the Internet, I'm seeing millions of people a day, and they're seeing me.

Q Just what is cybercrime?

A Cybercrime is any form of crime in which a computer or any technological device such as a smartphone is used to commit a crime locally or remotely, like via the Internet. Cybercrime could include stealing information on the computer itself, or using a computer to store plans or other data to be used in a crime.

Q How about when the computer is actually used to commit the crime?

A Hacking into someone else's computer system to steal data or cause problems is a type of cybercrime. Another form of cybercrime occurs when people use computers to pirate intellectual property and for copyright infringement. When people download music or movies and sell it to others, that's cybercrime.

Q What about cyberbullying?

A Yes, this form of cybercrime is prevalent among teenagers, and many states have laws against it. It's also cybercrime when someone uses technology and the Internet to commit traditional crimes such as hate crimes, dissemination of child pornography, Internet fraud and stealing money or customer information. Identity theft is a type of cybercrime.

Q How do you define identity theft?

A Traditionally, the term has been used to describe any use of stolen personal information. Alongside identity theft is identity fraud, which is fraudulent use of identifying information of a real or fictitious person. It's one thing to steal the personal information and another to use it.

Q Why do people commit identity theft and identity fraud?

A The most common reason is to steal credit or money. This happens when someone steals and uses your credit card information, for example, or uses your credit information to open an account. There are other reasons, too. One is to help illegal immigrants cross the border or gain employment. Another is for criminals to obtain gainful employment and pass background checks. Individuals are committing identity fraud when they develop a virtual reality, maybe on a dating site – making themselves taller, richer, younger, more educated.

Q Is identity fraud difficult to accomplish?

A Some types can be surprisingly easy. The most difficult is to assume the complete identity of another individual.

Q How do cybercriminals get this kind of information?

A Every way they can. It's important to understand that there are two major ways to get your information. One

is directly from you, and the other is from groups or agencies that have databases that include information about you.

Q How can I control those groups or agencies?

A Be assertive. Find out how government agencies, schools and colleges, businesses, nonprofits and medical institutions you deal with protect your information. Try to deal with ones that follow best security practices to keep your information safe. There are cases here in North Carolina where people have hacked into a college or university system to obtain information about students or faculty. In Texas, a hacker hacked into an organ donor database. Everyone must be careful.

Q What can I do to keep criminals from getting information directly from me?

A Shred your mail and old bills. Have your financial institution change the account number on your credit card, maybe once a year. Don't use your personal credit card to order things online. Instead, use a prepaid gift card for ordering, or set up a special credit card with low available credit, so that if the number is stolen, not much can be charged. Check your bills and statements. Check your credit reports. Deal with financial institutions that check for fraud regularly. Know the procedures so you can act quickly if you suspect illegal activity.

Q What about passwords?

A You have to fight human nature. Criminals know that it's human nature to want a password that's easy to remember, and it's human nature to want to use the same password over and over. Criminals are good at figuring out common, predictable human behavior. So we should have different types of passwords for different accounts. Don't use the same password for your bank account for anything else. And change passwords periodically. The longer you keep the

same one, the greater the chance it will be compromised. The same goes for your Personal Identification Number you use with a debit card.

Q Are there things I can do to keep criminals from getting information from my computer?

A Use only trusted computer systems. Don't keep personal data on the hard drive of the computer you use to connect to the Internet. Download personal data to a thumb drive or external hard drive.

Q What about when I'm online?

A Never click on anything in an e-mail or online that you are not absolutely sure about. Most computers have anti-virus software that keeps worms and viruses from getting in, so the criminals have to trick or lure you to come out to their bad sites. Keep your computer's security system patched and up to date, but also be very careful about what you click on. Just because an e-mail may look as if it's from someone you know doesn't mean it's safe. That person could be a victim.

Q Is it bad to post personal information on Facebook and other social networking sites?

A You should be careful about what you post and about what other people post about you. If you tell people you are on vacation, you are telling criminals you are not at home. Not all "friends" are friends.

Q Is it risky to use applications?


A Not all apps are developed as securely as we would like. Some, especially free ones, are out there solely

for the purpose of stealing information. Before installing any apps on your system, check them out. Google them. Ask others who have used them. If there's a problem, you can usually find out.

Q Speaking of Facebook and other social networking sites reminds me that we spoke of cyberbullying. What can parents do to protect children?

A First and foremost, have a good relationship with your child, so the child will come to you if there is a problem. Some type of supervision is very important. Some parents do not allow children to take the computer into the bedroom; they make them use the computer where others are around. Know what your child's school is doing to deal with this issue. Kids need to know that they are not in this alone. Parents should also make children understand that things placed in cyberspace are permanent.

Q This is all pretty scary, but I don't have anything valuable on my computer. Can I just not worry about cybercrime?

A Remember, a hacker can use your computer to attack somebody else. Most criminals do not want to get caught. If it looks like the cyber attack on the White House came from your computer, guess who the feds are coming to visit: You! 

When he's not teaching Information Security, Cybercrime and Computer Forensics courses in Forsyth Tech's Thomas H. Davis ITEC Center, Terrence Lillard is an information technology security and computer forensics consultant.

“Only in America”

Forsyth Tech Celebrates

RICHARD CHILDRESS

Winner, Leader, Team Builder

On January 20, 2011, as part of Forsyth Tech’s 50th anniversary celebration, The Foundation of Forsyth Tech held a dinner honoring legendary NASCAR owner Richard Childress, namesake of the school’s Race Car Technology program. Held at the Richard Childress Racing complex in Welcome, the dinner featured several prominent speakers and a video created for the event that detailed some of the ways Mr. Childress has given back to the community, including his work in the area of wildlife conservation, creating the Childress Institute for Pediatric Trauma at Wake Forest University Baptist Medical Center, and of course his generous support of Forsyth Tech. More than 300 people attended the event, with the proceeds going to support the Foundation’s funding of scholarships and faculty development.



Richard Childress (left) talks to Bill Wilder (center) and Randy Butner (right). Bill, who has taught at Forsyth Tech since 1968, developed the curriculum for the Race Car Technology Program, and Randy, a longtime friend of Mr. Childress, is the current Program Coordinator. In his remarks, Mr. Childress spoke directly to both men, thanking them for all they have done for Richard Childress Racing by providing the trained personnel his company needs to build and maintain competitive race cars.



WXII news anchor Cameron Kent (left) emceed the event. He also interviewed Mr. Childress for a piece on the WXII news later that evening. The famous #3 car driven by Dale Earnhardt, a seven-time NASCAR Sprint Cup champion, is seen in the background.



Forsyth Tech President Dr. Gary Green gave the crowd an overview of the college’s progress in the last 50 years, noting that it has gone from offering simple automotive technology courses in 1960 to having the state’s largest Race Car Technology program today, along with such cutting-edge programs as nanotechnology and biotechnology.



This working Sprint Cup race car was built entirely by students in the Richard Childress Race Car Technology Program over a five-year period and was on display during the event. Mr. Childress stated that this student-built Forsyth Tech car is the same quality as any car built by Richard Childress Racing, which is testimony to the excellence of the program. “I’m really proud to be part of the Race Car Technology Program and to have our name associated with it,” he said.



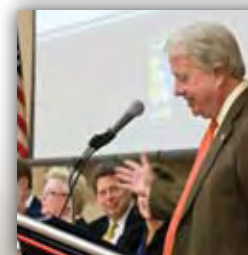
In his remarks, Richard Childress spoke of the opportunities that were given to him to succeed through perseverance and hard work. “Only in America could a kid with a dream do this,” he said. He also pointed out all that Forsyth Tech has accomplished during Dr. Green’s tenure as President, and said that the school plays an important role in the economy of the region. “They supply a lot of jobs to our community and improve our quality of life,” he concluded.



The crowd enjoyed watching a video prepared for the event that highlighted some of Richard Childress’ charitable accomplishments. Shot while Mr. Childress was out of the country in order to surprise him, the video featured interviews with some of the people who know him best, including his lifelong friend Danny “Chocolate” Myers (on screen).



Jeff McFadden, Chairman of the Forsyth Tech Board of Trustees, told the crowd about the growth of the Richard Childress Race Car Technology Program and the men behind it – program creator Bill Wilder and current Program Coordinator Randy Butner. Mr. McFadden pointed out that both men have, for many years, raced cars at local tracks, allowing them to give students a real-world perspective that goes beyond simple classroom instruction.



Murray Greason Jr., President of the Board of Directors for The Foundation of Forsyth Tech, spoke about the important work the Foundation does to ensure that every student at Forsyth Tech gets the best possible education, such as providing funds for scholarships, new equipment, and staff and faculty development.





Molecule Manager

Sometimes the biggest opportunities come in the smallest packages

Terry Witherspoon has not only seen the future; he works there every day.

He's quick to say that he doesn't know all the forms the carbon nanotubes he works with will eventually take, but he's sure some exciting innovations are on the way.

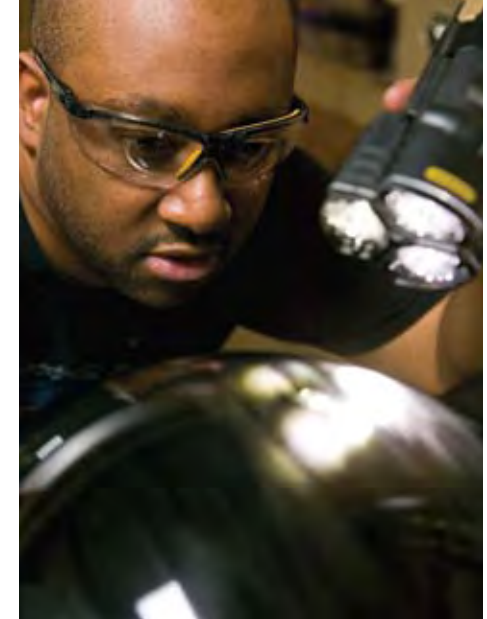
Those nanotubes are only a few carbon molecules wide, and spectacularly strong. Some engineers expect them to revolutionize almost every kind of technology.



"It's still one of those things where the kinks have to be worked out," Terry said. "Just when that's going to happen, I don't know. Maybe in five or 10 years, we can mass produce this stuff, and it'll create a lot of jobs. Just the research in general will create a lot of jobs. It's pretty amazing. I see the stuff we covered in school and see the applications. This is one of the only jobs I've ever had where you get to work hands-on with the theoretical."

Terry is not able to discuss some of his work as a production technician at Nanotech Labs in Yadkinville because the company works on a lot of confidential government contracts. What he can talk about is the work on the research applications for those carbon nanotubes. Even there, Terry sees a challenge.

"It's actually hard to find a lot of practical applications for the nanotubes because they're so new, and it's hard to mass produce some of the products that use them," he said. "But the opportunities are exciting. A lot of what we're working on is really interesting stuff. Some of the applications are things you wouldn't think of." The applications include mixing the nanotubes with conventional materials to make them much tougher, which drastically limits wear and tear. Others offer novel protection from ultraviolet rays.





Bumpy Start

Terry's road to the future started with a rough patch. After six years as an engineering technician at RF Micro Devices in Greensboro, he lost his job in a companywide layoff in 2008. He decided to start over at Forsyth Tech. In order to qualify for government assistance in retraining, Terry had to study a completely different field. What that would be, he didn't know.

Enter Nanotech Program Coordinator Kevin Conley, who happened to walk by when Terry was looking at a bulletin board full of training options. "Kevin asked me if I'd ever heard of nanotech," he recalled. "Kevin told me, 'If you haven't made up your mind what to take, I'm having a meeting if you're interested.' Well, I went to the meeting, and he explained the program and how it was growing. I decided to give it a try."

That meeting may have been a turning point, but it wasn't a magic bullet. Terry was still out of work. "That lull between school and a job is really hard," he said, thinking back to 2008. "You're drawing unemployment, and there were just no jobs. Even when I was in school, I was still looking. You still need insurance. I was going through a divorce at the time, too. It was rough."

Terry remembers that the first couple of semesters weren't easy. "But once I got in the groove, it wasn't so bad." Terry says he owes a lot to Kevin. "Kevin kept me on track and made sure I was taking the right courses. I have to give him that credit." He also credits his fellow students. "In our group, there were seven of us. We all helped each other. We had the same classes and got together to study."

Terry wrapped up his associate's degree in nanotechnology in two years. But again, no magic bullet. "After school, that was another stressful situation," he said. "You start looking for a job again, and you see the market just isn't very good. But Kevin was setting up co-op opportunities for the students. He had discovered two jobs up at Nanotech Labs, and I was able to get one of them."




The finished product. Carbon nanotubes don't look like tubes at all to the naked eye. They are so tiny that they resemble flecks of black powder.

The future is worth the effort

Terry says despite the troubled road to his position at Nanotech Labs, he has no regrets. With a relatively small workforce, each staff member plays many different roles.

"No day is the same," Terry said. "I've worked in the lab where they actually produce the nanotubes, and where they do the experiments. The program I went through has tremendous potential. The field is just so broad. The skills you get you can apply to other things as well."

Terry says his daily drive to and from work offers him about 45 minutes each way to reflect over the last two troubled years, and the brighter future before him. "I'm 44 years old now, and I never really thought I would be in a position to be starting over from scratch," he reflected. "I'm hoping I'm in a place where I can help them discover something great and finish out my career there. I'd really like to do that." 

Why I Support Forsyth Tech



"If you give money to Forsyth Tech, you get more bang for your buck than with anything else you can do." – Ben Vernon

Ben Vernon likes the personal touch. When he gives money to good causes, he likes to know who will be putting that money to work. He likes to know what the money accomplishes.

That's why Mr. Vernon enjoys giving money to Forsyth Tech's Stokes County programs and students.

"If you give money to Forsyth Tech, you get more bang for your buck than with anything else you can do," he said.

Mr. Vernon is used to parceling out money. His aunt, the late Lemma M. Apple, established the Ben R. and Lemma M. Apple Foundation in 1987 to help disadvantaged citizens of eastern Stokes and western Rockingham counties, where she and her husband had lived their whole lives.

As the foundation's senior trustee, Mr. Vernon makes most of the decisions about grants. He likes what happens when he deals with Forsyth Tech.


When Ann Watts, Director of Operations for Forsyth Tech's Stokes County Center, and Paul Kindley, the Stokes County Coordinator for Adult Literacy, came to him a few years ago with a request, he was ready to listen.

He'd worked with them before. "I knew we could count on them to give us a good accounting, and I knew the money would be well used," he said.

It helped that their proposal was directed at a cause that's important to Mr. Vernon: job training. They wanted money for scholarships to help students get fast-track, short-term training in specific skills that employers are looking for.

So far, money from the Apple Foundation has helped 241 students participate in fast-track programs, including JobsNow.

Mr. Vernon knows that Paul Kindley and Ann Watts will give him timely and accurate reports. "The person-to-person relationship we have is so important. We think this is the most effective way we have to help the community. We are able to talk directly to the people who administer the grant. It's not like putting money into a big, black hole," he said.

"We are thankful to Forsyth Tech for helping us make a grant that was so successful. I think other foundations should know that giving money to Forsyth Tech is like hitting a home run." 

How You Can Support Forsyth Tech

Forsyth Technical Community College serves more than 50,000 students annually in degree, diploma and certificate programs, as well as continuing education courses. To make educational opportunities widely available, and to meet the needs for a well-educated, skilled workforce, Forsyth Tech depends on private contributions from people like you.

The Foundation of Forsyth Tech, a nonprofit organization, is the fundraising arm of the College. Your gift to Forsyth Tech through the Foundation will support:

- > Scholarships for deserving students
- > Technology for classrooms, labs and shops
- > Professional development grants for faculty and staff

Your Gift Creates a Strong College and a Strong Community

Choose your level of support:

President's Club	\$10,000 and up
Pinnacle Club	\$5,000 – \$9,999
Pacesetter's Club	\$1,000 – \$4,999
Directors	\$500 – \$999
Leaders	\$250 – \$499
Champions	\$100 – \$249
Friends	Up to \$99

Give online: Use your credit card to make a secure donation at www.forsythtech.edu/support/giving-to-forsyth-tech.

Send a check: Make your check payable to Forsyth Tech Foundation. Mail to The Foundation of Forsyth Tech, 2100 Silas Creek Parkway, Winston-Salem, NC 27103-5197.

Get more information: Learn about gifts you can make in honor of or in memory of individuals, matching gifts, charitable trusts and bequests, and gifts of stocks and property. Call Dr. Sharon B. Covitz, Executive Director, The Foundation of Forsyth Tech at 336.734.7520 or email scovitz@forsythtech.edu.

The Foundation
of Forsyth Tech

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In Focus



The Interactive Forest – Any time of the year, visitors hiking through Paul Kindley's land on the slopes of Moore's Knob (the highest mountain in Stokes County on the western edge of Hanging Rock State Park) can experience gorgeous vistas, nature's quiet serenity – and whimsical signage. Paul, who is Forsyth Tech's Stokes County Coordinator for Adult Literacy, has created The Interactive Forest on his property as an ode to his love of the power of words to inspire and evoke emotion. Here, Paul shares his wit with his winter installation, "*Flat Screen TV Tuned to The Nature Channel.*" 