

# ENGINEERING & TECHNOLOGY TIMES

FALL 2015

News and Notes from the College of Engineering and Technology

Dedicated to Student Success, Regional Transformation and Public Service

## INNOVATORS IN ACTION: Academy Introduces Advanced Manufacturing Concepts, Careers

Rising seventh-grader Alyssa Mayo had never built a robot much less programmed one to move, turn and scoop up a ping pong ball.

But she and 40 other middle school students in Pitt, Beaufort and Edgecombe counties had the opportunity at the first Advanced Manufacturing and Innovation Academy held at East Carolina University June 15-26.

Hands-on activities engaged students like Alyssa while introducing them to science and technology careers and advanced manufacturing concepts that they might not have considered before.

Funded through a \$1.25 million Golden LEAF Foundation grant, the academy is part of a larger initiative that opened pilot entrepreneurship, science, technology, engineering, art and design and math or eSTEAM labs in four middle schools last year. More labs will open this fall with the goal to provide an effective education-to-workforce pipeline to address the growing shortage of eastern North Carolina advanced manufacturing workers and entrepreneurs.

Approximately 40 teachers worked side by side with middle school students in the ECU College of Engineering and Technology to

assemble and program a robot to navigate through a maze. “How they will do that? We didn’t plant the seeds. It’s up to them,” said Teresa Ryan, assistant professor of engineering.

Alyssa, who attends Bethel School, connected the wires and battery holder and attached wheels to a robot that she helped build with Daeshawn Smith, a rising seventh-grader at Ayden Middle School, and Shelley Tripp, a seventh and eighth-grade science teacher at Bethel School.

They named their robot “Tadbot,” which was moving well on test runs through the maze.

The final races happened on June 26, the last day of the academy, when teams of two to four took turns sending robots through a walled, U-shaped course to be scored on three things: time, completion and picking up a ping pong ball about midway through and carrying it to the finish. The objective was for the winning robot to autonomously navigate the maze from the start line to the finish line in the shortest amount of time.

“This is all totally new (to me) but all of the people here are here to help,” Alyssa said. “The robots have been my favorite part of the camp.”

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Middle schoolers at the Manufacturing and Innovation Academy at ECU watch as a robot makes its way through a maze.



Middle school girls learn about epigenetics, or how the environment affects the way genes are expressed in individuals. (Photo by Margaret Turner)

## STEM Event Focuses on Girls

Most people use their foot to crush a soda can, but middle schoolers participating in East Carolina University’s STEM Girls Conference got to use an Instron universal testing machine to complete the task.

Held Friday in the Science and Technology Building, the STEM Girls Conference is a day-long event for eighth grade girls from all the district’s middle schools. Eight girls from each school were chosen to participate in a series of four labs that demonstrated each of the branches of STEM — science, technology, engineering and math. All of the labs were taught by female professors and graduate students.

The soda can-crushing lab demonstrated how much force it takes to cause different types of cans to “buckle.”

Three types of cans were used — an empty soda can, a pineapple can and a full soda can. Before they were placed in the machine, the girls guessed how much pressure each could withstand. Then their guesses were tested. The empty soda can

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## Biomedical Engineering Graduate Students Attend State Meeting



Left to right: Daniel Vargas, Dr. Barbara Muller-Borer, Elizabeth Weaver, Jadesola Olaoye, and Dr. Colleen Janeiro.

Three graduate students in the biomedical engineering program recently attended the North Carolina Tissue Engineering and Regenerative Medicine Society's meeting in Winston-Salem. Daniel Vargas, Elizabeth Weaver, and Jadesola Olaoye attended with engineering faculty members Dr. Barbara Muller-Borer and Dr. Colleen Janeiro. Vargas presented a poster at the event regarding his research topic titled Electrospun Scaffolds: Assessing in situ chemical crosslinking for poly(ethylene Oxide)/ $\beta$ -lactoglobulin nanofibers.

## Community College Statewide Event Held at ECU

The Department of Technology Systems hosted a Bachelor of Science in Industrial Technology (BSIT) Transfer Day event for community colleges to learn more about the program. Nearly 75 community college faculty and administrators from across the state attended the one day event.

The BSIT is a degree completion curriculum designed for transfer students who have an AAS degree from a community college and are interested in pursuing a four year degree in a technology field. There are currently over 500 students enrolled in the program. Courses are offered both online and on campus to meet the needs of students who may be working full time, yet have the desire to further their education.

The event shared important transfer requirements with the faculty and offered a tour of the technology labs for interested faculty.



Left to right: BSIT Advisors Jason Denius, Christina Ragone, and Dr. TJ Mohammed, department chair. Denius and Ragone were the event organizers.



In November, the ECU student chapter of ATMAE attended the annual conference and robotics competition in Pittsburgh. This year's competition included an obstacle course and relay race. Both proved more challenging than years past, but the team represented ECU well. Team members pictured are pictured above. Back row: Dr. Jimmy Linn (faculty advisor); James Powell, Ric Davis, Garret Stoud. Front row: Amy Frank (faculty advisor), Joshua Stevens, Brandalyn Watts, Jackson Reckord. Team members not pictured: Matthew VanFosson and Bahirah Siddiqi.



# Message from the Dean

## *Your College is Growing and Making a Difference!!*

Greetings to all our alumni and friends from ECU's College of Engineering and Technology! Your College is having another great year as you can see when you peruse the articles included in this edition of the College newsletter.

We admitted the largest group of new majors that I can recall and our College now has over 2800 undergraduate students! This is an increase of about 400 students in the past year alone. I want to particularly thank our faculty and advisors who have worked so hard to make sure that all our students receive a great education that leads to a great job or graduate school. In September, the Robert and Betty Hill Celebration of Excellence brought our scholarship donors together with the students who received the awards. I am proud to say that we now offer almost 50 scholarships to our students. But we need more support for these bright students. I envision an annual celebration of 100 scholarships! We can do this together so please consider supporting one of our scholarship funds or consider creating a scholarship. Keep in mind that most of our student majors have to work to pay for school, so even a small scholarship makes a big difference.

We believe the College should help our K-12 schools to better prepare students in the STEM fields. This past summer, we hosted about 85 middle school students and teachers for the Advanced Manufacturing and Innovation Academy. This extensive summer experience was supported by a grant from the Golden LEAF and by a generous gift from KCST (Keihin Carolina Systems Technology). Keihin paid for all the lunches for our groups. We really appreciate the great support! We will offer the Academy again this summer! We are also seeking funding to support a summer residential engineering camp for high school students. In October, we hosted over 100 middle school girls and their teachers at our STEM Girls event. High School STEM Day will happen in April. These efforts bring

hundreds of young folks to campus to learn about engineering and technology.

This spring we will focus attention on our research efforts and our work to bring more research funding into the College. There are very high expectations for Engineering and Technology as a driver of externally-funded research at ECU. We embrace this expectation and we will work to make it happen. We appreciate the great support from our Provost and Chief Research Officer. Our Center for Sustainability will re-focus its work on sustainability-related research and outreach. Our CITE program (Center for Innovation in Engineering and Technology) is also an important aspect of our outreach as it provides a portal for our faculty to be engaged in industry work.

You may see me in another capacity this spring as I have accepted an additional role as Interim Dean of the Honors College. This begins in January 2016. I remain fully committed to being Dean of the Engineering and Technology, but I am looking forward to "wearing two hats" and serving this great university as best I can.

As you can see, the College is positioned to continue great things in the future. We want to be a driving force for regional prosperity as we focus on innovation, entrepreneurship and economic development. To do this, I respectfully ask you to support our students and faculty. Help us continue to deliver the programs that allow our students, our region, and our great state to prosper!

- David M. White, Dean



*David White, Dean  
College of Engineering  
and Technology*

## STEM CAREERS, CONTINUED FROM FRONT PAGE

was crushed at 98 pounds of pressure, while a full soda can withstood up to 756 pounds. The pineapple can buckled at 620 pounds.

ECU Professor Teresa Ryan, who operated the machine, said the experiment, which concluded with the full soda can exploding, is a fun and relatable way to show how engineers work.

"That process of making a hypothesis and testing it, that's science, that's what we do," she said.

ECU's Center for STEM Education has held the STEM Girls Conference for five years. Cindy Putnam-Evans, a biology professor and an organizer of the conference, said eighth grade is an important year for this program because studies show girls lose interest in science and math between middle and high school.

"One thing is to give them an introduction to what STEM is," Putnam-

Evans said. "We want them to get the message that girls can do STEM by showing them women who are successful in STEM fields. Another thing is to encourage them to sign up for those higher level math and science classes in high school."

During the science session, students built creatures out of marshmallows and other edible items based on alleles, or variations of a gene, given to them by their instructors. Even those who had the same alleles came up with creatures that looked different. The lab demonstrated epigenetics, the study of how environmental factors affect the way genes are expressed in individuals.

"Even though genes might be the same, they look different because different people put them together," said fourth-year graduate student Samantha Sellers, who helped teach the class. "It's a really good way to demonstrate the effects of environmental factors."

Meanwhile, in the math lab, students used algebraic equations to decode secret messages, and they even made up their own.

Technology systems professor Janet Sanders had students divide smarties by color, take note of the different number of each color in each package and discuss how the production processes could be optimized to reduce those differences.

"I want to get them excited about and get them thinking more about how things are made," she said.

Grifton School student Makayla Buckalew, who plans to become a doctor, said it was interesting to learn how science and math can apply to real-life jobs.

"It's fun to learn about STEM and see what the different fields would be like," she said.

- Holly West,  
*The Daily Reflector*



## FACULTY HIGHLIGHTS

**Dr. Venkat Gudivada**, department chair for computer science, has a book titled *Cognitive Computing: Theory and Applications* recently accepted by Elsevier. Gudivada is a co-editor for the book. He has also been selected as a co-guest editor for the September 2016 issue of *IEEE Transactions* on “big data.”

**Dr. George Wang**, associate professor in construction management, recently published a book chapter titled Ethics for Construction Engineers and Managers in a Globalized Market in the book *Engineering Ethics for a Globalized World*. Wang also became a US Citizen this summer.

**Dr. Donna Hollar**, associate professor in construction management, was awarded a national safety and health credential by OSHA’s Directorate of Training and Education. Hollar earned the “Public Sector Safety & Health Fundamentals for Construction” certificate in recognition of individuals who have completed additional occupational safety and health training. Hollar is an OSHA authorized construction trainer for construction safety courses.

**Dr. Leslie Pagliari**, associate dean of academic affairs, and **Dr. Mark Angolia**, assistant professor in technology systems, recently authored a paper

titled, “The Path From Industry Professional to Assistant Professor.” The paper was selected as Best Overall Paper for PIC V for ASEE. Pagliari and Angolia will present at the 2016 ASEE conference.

**Dr. Gudivada** coauthored a research paper titled “Understanding Search-Engine Optimization.” *IEEE Computer*, Issue 10, Vol. 48, pp. 67 - 76, October 2015.

**Dr. Sergiy Vilkomir** has been invited to be a member of the program committee of the following conferences: The 28th International Conference on Software Engineering and Knowledge Engineering (SEKE 2016), July 1 - July 3, 2016, Redwood City, CA and the 11th International Conference on Software Engineering and Applications (ICSOFT-EA 2016), in July in Lisbon, Portugal.

**Dr. Mark Hills** presented a paper titled “Variable Feature Usage Patterns in PHP” at the 30th IEEE/ACM International Conference on Automated Software Engineering (ASE 2015), 9 - 13 November 2015 Lincoln, Nebraska, USA. **Dr. Hills** also presented an extended abstract titled “Supporting PHP Dynamic Analysis in PHP AiR” at the Workshop on Dynamic Analysis at the Systems, Programming, Languages and Applications: Software for Humanity

(SPLASH) conference, in October, in Pittsburgh, PA.

The paper “Effectiveness of Multi-Device Testing Mobile Applications” by **Sergiy Vilkomir, K. Marszalkowski, C. Perry, and S. Mahendrakar** was published in the Proceedings of the 2nd ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2015), May 16-17, 2015, Florence, Italy, pp. 44-47, in conjunction with the 37th International Conference on Software Engineering (ICSE’15). The paper has been presented by Dr. Vilkomir.

The paper “Relationship between pair-wise and MC/DC testing: Initial experimental results” by **Dr. Sergiy Vilkomir** and D. Anderson was published in the Proceedings of the IEEE 8th International Conference on Software Testing, Verification and Validation Workshops (ICSTW 2015), 13-17 April 2015, Graz, Austria.

**Dr. Gudivada** coauthored a chapter titled “Big Data Driven Natural Language Processing Research and Applications” for a research monograph. The monograph is titled “Big Data Analytics,” edited by V. Govindaraju and V. Raghavan and C. R. Rao, and published by Elsevier. pp. 203 - 238, July 2015.

## INNOVATORS IN ACTION, *CONTINUED FROM FRONT PAGE*

Tripp, an ECU alumna, said her school is scheduled to get an eSTEAM lab in the fall. “We’re just trying to expose the kids to more hands-on and future work-ready careers,” Tripp said. “They get to interact with kids from other schools and they get to work with something they don’t usually work with.”

She said it was her first time writing code too. Participants were using Arduino, an easy-to-use and accessible system, to program the robots, Ryan said.

“Sometimes the students are diving in and really engaging in it, or sometimes it’s been the other way around,” Ryan said. “It’s been a good balance on the instructional side.”

Jason Wade, a teacher at Ayden Middle School, said students enjoy the collaboration and unique activities that his school’s eSTEAM lab provides. “It’s totally different than any class they’re taking.”

Another outcome of the academy, organizers hoped, was to erase the

concept of manufacturing as a dirty, greasy occupation. “We’re showing them it’s not necessarily how it is,” Ryan said.

Participants learned how robotics and 3-D printing ties into advanced manufacturing production and saw concepts in practice by touring Greenville’s NACCO Materials Handling Group, which makes industrial lift trucks.

Half of each academy day was spent at ECU’s Willis Building, where students and teachers worked on design and entrepreneurship aimed at moving products to market. There they learned how to translate design, problem solve and communicate the value of their ideas, said Wayne Godwin, director of the innovation design lab and associate professor of art at ECU.

“Introducing students and teachers to eSTEAM concepts and the principals of integrated innovation allows them to develop new ideas and deliver viable



Left to right, Shelley Tripp, a teacher at Bethel School, keys in information for a robot she built with rising seventh-graders Daeshawn Smith and Alyssa Mayo during the inaugural Advanced Manufacturing and Innovation Academy held at ECU. The entrepreneurship, science, technology, engineering, art and design and math or eSTEAM academy was funded by a \$1.25 million Golden LEAF Foundation grant. (Photo by Cliff Hollis)

21st century solutions,” Godwin said.

Keihin Carolina Systems Technology, a leader in the advanced manufacturing electronics industry based in Tarboro, provided lunches for participants each day.

– Crystal Baity,  
ECU News Services



## STUDENT HIGHLIGHTS

**Emily Ayscue**, 2014 graduate of the masters in sustainable tourism, recently had an article accepted in *Tourism Geographics* titled "Forecast and Weather-Related Information Used among Coastal Tourism Businesses." The article is based on her thesis and is co-authored with Drs. Scott Curtis and Burrell Montz (ECU Geography) and **Dr. Huili Hao** in the Center for Sustainability.

**Erin Harris**, 2013 graduate of the masters in sustainable tourism, had an article titled "Incentive Programs: Consumer-Driven Solution in Sustainable Tourism" accepted for publication in *Tourismos: An International Multidisciplinary Refereed Journal of Tourism*.

**Annie Patrick**, graduate student in Network Technology, was awarded the "best tagline/title" in the Three Minute Thesis (3MT) competition in October. Patrick's thesis is titled, "Is there an App for That? A qualitative Study of Baby Boomers' Adoption of Healthcare Apps for Smartphone Devices."

**Seth Butler** and **John Dixon**, both Computer Science seniors, were awarded an all expenses paid scholarship to attend the ACM SIGPLAN conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH) conference and

Programming Languages Mentoring Workshop, in Pittsburgh, PA, in October.

**Ms. Galen Pennell**, a Computer Science senior, presented her research at Sigma Xi Student Research Conference held in Kansas City, Missouri, October 23-24. Her presentation was titled "Empirical Investigation of Pair-wise Testing for Mixed Logical Expressions." This research was performed under the guidance of **Dr. Sergiy Vilkomir**. Ms. Pennell started this research in Summer 2015 under ECU Computer Science REU program funded by the National Science Foundation, with **Dr. Junhua Ding** as the Principal Investigator. She continued her research in Fall 2015 semester as a member of Software Testing Research Group.

Five engineering students, **Keleigh Britt**, **Leela Goel**, **Devin Guthrie**, **Helen Nguyen**, and **Alan Register**, all attended 10 week summer Research Experience for Undergraduates (REU) programs across the nation. Ms. Goel and Mr. Register attended the REU at ECU titled, "Biomedical Engineering in Simulation, Imaging, and Modeling." Ms. Britt attended the REU titled, "A Multiscale Approach to Biomechanics" at Virginia Tech in Blacksburg, VA. Ms. Nguyen attended an REU titled

"Healthcare Systems Engineering Institute" through Northeastern University located in Boston, MA. Finally, Mr. Guthrie attended the REU Rolls-Royce project titled "Inertial Particle Separator Designs" at University of Virginia in Charlottesville, VA.

**Shawn Braddy**, a graduate student in Software Engineering did an internship at Boeing this past summer. He was selected for the Boeing IT Intern Profiles on Boeing's website.

Biomedical engineering graduate students, **Bryce Cranwell**, **Blair Weaver**, **Daniel Vargas**, and **Jade Olaoye** attended the Southeast Biomedical Engineering Regional Conference with program director and faculty member, **Dr. Barbara Muller-Borer**, in Raleigh in October, as well as the North Carolina Tissue Engineering and Regenerative Medicine Society's meeting in Winston-Salem. Ms. Olaoye's poster was titled, "Frequency Domain Spectral Analysis of Calcium Signals: Power Spectral Density & Spectral Coherence Analysis." Mr. Vargas' poster was titled, "In situ chemical crosslinking for poly(ethyleneOxide)/b-lactoglobulin electrospun nanofibers," and Ms. Weaver's poster was titled, "Objective Measurement of Peripheral Edema in Heart Failure Patients."

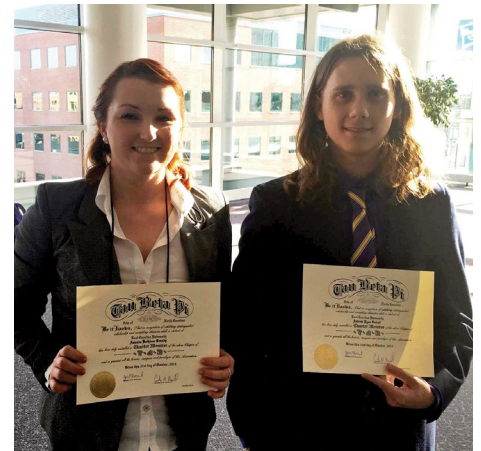
## ECU Engineering receives approval for national engineering honor society, Tau Beta Pi

ECU was recently granted approval to offer a chapter of Tau Beta Pi, which is the only engineering honor society that represents the entire engineering profession. It is also the nation's second oldest honor society, which was originally founded at Lehigh University in 1885.

Dr. Ricky Castles, faculty advisor for ECU's Engineering Honor Society, accompanied the current president, Andrew Cutrell, and vice-president, Amanda Grandy, to the Tau Beta Pi convention in Providence, Rhode Island. A petition was presented there and approved nearly unanimously. The ECU chapter will be known as North Carolina Zeta, which indicates that we are the sixth chapter created in North Carolina. Other chapters include NCSU, UNC-CH,

Duke, UNCC, and NC A&T.

According to Castles, ECU has had an Engineering Honor Society for 5 years in hopes of being granted a chapter of Tau Beta Pi. Tau Beta Pi recognizes outstanding engineering students who are in the top eighth of the junior class or top fifth of the senior class, and who have demonstrated exceptional talent in the classroom, and also exhibited exemplary character. A formal petition was presented to Tau Beta Pi in the spring and included letters of support for Chancellor Steve Ballard, Dean David White, engineering department chair, Hayden Griffin, the eleven engineering faculty members who are members of Tau Beta Pi, and letters of support from members of the Engineering Advisory Board.



**Amanda Grandy and Andrew Cutrell at the TAU Beta Pi convention** (Photo by Dr. Ricky Castles)



## Department of Computer Science



*Dr. Venkat N. Gudivada  
Department Chair*

Dr. David White, Dean of the College of Engineering and Technology, is pleased to announce Dr. Venkat N. Gudivada as new department chair for Computer Science, effective, July 1.

Gudivada is an educator, researcher and industry practitioner. He has more than 30 years of professional experience in academia and industry. His experience includes data management, information retrieval, machine learning, image and natural language processing, cognitive computing, high performance computing and personalized eLearning.

Gudivada joins ECU after serving as interim chair and professor of computer science at Marshall University. He previously worked at the University of Michigan, University of Missouri (now Missouri University of Science and Technology) and Ohio University. He has extensive financial industry experience as well.

Gudivada has published more than 80 peer-reviewed articles about his nationally-funded research on search engine optimization, data management systems, and big data. He has served on program committees of numerous computer science conferences, as a guest editor for IEEE Computer Society and delivered keynote presentations at international conferences.

Gudivada has extensive experience in developing innovative academic programs, courses and curricula. He is proficient in continuous academic quality improvement, and program accreditation. He has developed successful approaches to student recruitment, mentoring, engagement and retention. He also has expertise in online course development and delivery. He has won awards for teaching and research.

He received his Ph.D. and M.S. degrees in Computer Science from the University of Louisiana at Lafayette. He earned his M.S. in Civil/Structural Engineering from Texas Tech University and B.S. in Civil Engineering from JNT University.

White wishes to thank Dr. Karl Abrahamson, for his leadership and service during the nearly five years that he served as interim department chair for such an extended period of time.

## Department of Construction Management



*Dr. Syed M. Ahmed  
Department Chair*

The academic year 2015-2016 started off with significant increases in our undergraduate (BSCM) and graduate (MCM) programs enrollment. This is the first year we are rolling out our revamped BSCM curriculum with 120 credits required for graduation. All our classes are mostly full and full-time and part-time faculty are busy in their instructional activities. We have started the search for a new tenure-track faculty to start in August 2016. The search is going well and we expect to hire an outstanding individual for the position next year. Given below are some events that have occurred this fall semester. We look forward to a great year and thank everyone for their support.

September 2nd - The Construction Management department held its annual "CMGT Welcome Back Cookout".

October 24th - ECU Construction Management department greeted students and parents at East Carolina University's Fall Open House.

October 30th - The Fall Industry Advisory Board Meeting was held at the Greenville Hilton from 10am-3pm. Mr. Dave Simpson - President & CEO of Carolinas AGC was the guest speaker at the event. A total of approximately 90 guest attended the fall IAB meeting.

November 6th - Construction Management celebrated 31 years at ECU with an Alumni Social looking back at the history of our program and celebrating the progress we've made over time.

November 20th - BlockFest 2015 - Presented by Adams/Oldcastle. ECU CMGT students participated in the second annual BlockFest event. Prizes and gifts were given to the winners in different categories by Adams/Oldcastle.

**ABOUT TECSCONNECTS**—TECS CONNECTS is published by the office of Marketing and Communications. You can read TECS CONNECTS online at [www.tecs.ecu.edu](http://www.tecs.ecu.edu). For more information about this publication, please contact Leslie Pagliari at [pagliaril@ecu.edu](mailto:pagliaril@ecu.edu) or Margaret Turner at [turnerm@ecu.edu](mailto:turnerm@ecu.edu).



## Department of Engineering



*Dr. Hayden Griffin  
Department Chair*

As I have said for the past five years, ECU Engineering continues to grow. Fall 2015 started with 615 undergraduates. We have now graduated a total of 321 engineers who are employed across the country in a wide range of industries. Our graduates are continuing to get good jobs and attend good graduate schools. Two recent graduates have been accepted to the ECU School of Dental Medicine.

We have several new faculty this year, a combination of new hires and replacements for faculty who left ECU. We have reinforced our strengths in the areas of solid mechanics, machine design, lean six sigma, and other industrial engineering topics. As we continue to grow, we will require additional faculty across all of our concentrations and in the engineering core. We continue to have a super group of faculty who are dedicated to the success of our students, both during and after their graduation.

The outcomes of our fall 2014 ABET visit are very positive, with some guidance for our planned continued growth, and we are in the process of implementing some of their suggestions. Our next visit will be Fall 2020.

Our newest concentration, Environmental Engineering, started in fall 2015 with the offering of two courses, "Water Quality," and "Air Quality Engineering." The first graduates from that concentration should be in May 2017. The concentration focuses on environmental topics that are highly relevant to eastern North Carolina.

We recently petitioned Tau Beta Pi, the Engineering Honorary Society, to convert the ECU Engineering Honor Society to a chapter of Tau Beta Pi, and our request was approved. We will be North Carolina Zeta. Graduates who were inducted into the ECU Engineering Honor Society can be inducted into Tau Beta Pi. We will be contacting them to make arrangements to do this in the spring. Tau Beta Pi is the second oldest honor society in the nation and is the honor society that covers all engineering disciplines. This is a huge step for our relatively new program, and it will result in national recognition of the members of NC Zeta.

Per the ECU strategic plan, "Beyond Tomorrow," we are continuing to grow toward the goal of 1,000 undergraduate students, doing our best not to damage the small-school feel of our department as we grow. We are not going to reduce the number of laboratories or the number of times our students stand up and give technical presentations to various audiences. Those professional skills are, in large part, what differentiate our students from graduates of other programs where the size of the classes prevents that sort of training.

To find out more about our Engineering program, please take the time to visit us at <http://www.engineering.ecu.edu>.

## Department of Technology Systems

Season's Greetings from the Department of Technology Systems (TSYS)! Our department continues to provide undergraduate and graduate education in key technology areas that lead to successful careers.

This fall, we are happy to report that our Master of Science program in Occupational Safety (MSOS) is now accredited by the Applied Sciences Accreditation Commission (ASAC) of the Accreditation Board for Engineering and Technology (ABET). In addition, five of our undergraduate degree programs (BS in Design, BS in Industrial Distribution and Logistics, BS in Industrial Engineering Technology, BS in Industrial Technology, and BS in Information and Computer Technology) and two master's degree programs (MS in Network Technology and MS in Technology Systems) are already accredited by the Association of Technology, Management, and Applied Engineering (ATMAE).

We are also happy to report that the department created the first Professional Science Masters (PSM) degree program at ECU. The PSM designation, which is currently aligned with our MSNT degree program, is an "innovative approach [that] encourages graduate students to pursue advanced training while simultaneously developing workplace skills" (see: <http://www.ecu.edu/cs-cet/techsystems/msnt.cfm>).

The department welcomed two new tenure track faculty members (Dr. Ranjeet Agarwala and Dr. Tamer Omar), at the beginning of the fall semester 2015. Dr. Agarwala, who received his PhD in Mechanical Engineering from NC State University in 2014, teaches courses in the Design and Industrial Engineering Technology areas. Dr. Omar received his PhD in Electrical and Computer Engineering from Iowa State University also in 2014. He teaches courses in the Information and Computer Technology area.

The department also welcomed Ms. Cindy Lowery, a new Administrative Support Associate, to support graduate programs. Ms. Lowery is the point of contact for inquiries regarding our graduate degree and certificate programs, and may be reached via e-mail at [LOWERYCI@ecu.edu](mailto:LOWERYCI@ecu.edu), or by telephone at 252.328.9653.

Speaking of graduate programs, please help us to spread the word about our programs that are available completely online. Our current offerings include master's degree programs in Network Technology (MSNT), Occupational Safety (MSOS), and Technology Systems (MSTS); and 12-credit graduate certificate programs, namely Computer Network Professional, Cyber Security Professional, Lean Six Sigma Black Belt, and Website Developer.



*Dr. Tijjani Mohammed  
Department Chair*



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## You Make a Difference!

On behalf of the College of Engineering and Technology, I would like to thank you for your continued support by the giving of your time, resources, and financial gifts. Through your support to ECU and CET, you are enabling a level of excellence that will have an increasingly positive impact on student success as well as regional transformation. We simply could not operate as we do without your help.

The College of Engineering and Technology was able to award \$62,960 through 43 scholarships for the 2015/2016 academic year by way of annual gifts and endowed scholarships. These scholarships are important to our students and CET in many ways. Student debt loads are increasing each year and many of our students graduate with a large amount of debt. Scholarships help to reduce that debt and allow our students to enter the workforce and begin to contribute financially to society much sooner. Many of our students work several jobs over the course of their college years to pay their own way. This is certainly not to be seen as a negative, but it can often negatively affect academic performance by detracting the student from time needed to study and learn. The support of our alumni and friends truly helps our students to be more successful

and therefore helps CET in efforts to be a national model for student success.

It is estimated that over sixty percent of our students at ECU qualify for some level of financial aid. With nearly 2,500 students in the College of Engineering and Technology there is a good chance that we have many more students that could benefit from additional scholarships. If you are interested in supporting scholarship pools for Computer Science, Construction Management, Engineering, and/or Technology Systems, please visit [www.ecu.edu/give](http://www.ecu.edu/give) to make a gift online, or feel free to give me a call at any time. If your interest is in naming a scholarship and having an opportunity to set certain criteria, or would like to find out more about the many types of scholarships that we have, please send me an email or give call to set up a time for us to visit. It would be my pleasure to provide you with the information necessary to make an informed decision.

As you think about your future level of giving, I would ask you to consider your gift as an investment; an investment in our faculty, staff, students, and our region. As always, there are many areas to support within CET, but scholarships and priority funding for Dr. David White, Dean, and his department chairs have become

increasingly important in recent years as we continue to grow as a college. These gifts can also be made online as well, or by contacting me by email or phone. Your support makes a tremendous difference! Thank you!

As the end of 2015 approaches, many of you may be thinking about making an end-of-year gift. ECU will be closing for Winter Break on December 24th, so please make sure that all checks are postmarked no later than December 31st.

Lastly, it is so very important for us to be able to stay connected with our alumni and friends. Thank you to Gregory Poole Equipment Company for continuing to provide the financial support to make this newsletter publication possible.

Thank you!

Scott Snead  
Major Gifts Officer  
College of Engineering and Technology  
252.328.9580 • [sneadsc@ecu.edu](mailto:sneadsc@ecu.edu)



*Scott Snead*