AUDIOLGY FROM AFAR - ECU researchers begin testing equipment enabling remote hearing exams

An East Carolina University researcher hit a milestone this March in his ongoing work to develop software and portable hardware that will enable audiologists to conduct hearing tests remotely.

Dr. Jason Yao, an associate professor in the Department of Engineering, has created software that enables an audiologist to see a patient and conduct two types of hearing tests via website. His work builds on the research of Dr. Gregg Givens, an audiologist and chair of ECU’s Department of Communication Sciences and Disorders.

With Yao’s software, a patient needs a qualified person to facilitate the testing, an audiometer - a piece of hearing test equipment the size of a saucer - and the portable console device Yao built. That device consists of a small rectangular box that relays the data between the patient and medical site. In the prototype, it’s hooked to a webcam and keyboard so the patient and audiologist can easily communicate during the test.

“The joke is that the audiologist could be in his chair at the beach, still making money,” Yao quipped. “The reality, however, is that implementing the research could bring convenient, preventative medical care to people in rural areas and underserved populations.”

Yao’s work is funded, in part, as a pilot project for Operation Re-entry North Carolina. With this technology, returning soldiers could be tested for hearing deficiencies - often a result of proximity to bombing and gunfire - without coming to campus.

“Traditionally, a patient has to go to the hospital,” he said. “Now they can stay at home or go somewhere close.”

“Engineering is something where you can create things to help people’s lives” Yao added.
A new East Carolina University graduate program capitalizing on continued growth in the information technology sector will begin accepting students this fall.

A master of science in network technology was approved in February by the UNC Board of Governors. It will be offered through the College of Technology and Computer Science’s Department of Technology Systems and will be available online to students worldwide through remotely accessible labs.

The network technology degree will meet two specific needs, according to Dr. T.J. Mohammed, chair of the department. First, it will be a degree graduates can easily market to potential employers because of the recognizable name. This differs from the existing master’s in technology systems degree, Mohammed said, which will continue to accept students.

The Bureau of Labor Statistics also identifies information technology jobs, network analyst and network administrator positions as “key growth” areas over the next decade. “This field is going to be in demand,” Mohammed said. “It’s a really hot area... an area of high need.”

The new program encompasses several existing concentrations within the College of Technology Systems – digital communication, computer and network management, information security – and adds a newly-created concentration in web technology. Earning a master’s degree in this field will enable ECU students to more easily pursue management positions at major IT corporations, Mohammed said, as well as give them the ability to teach courses in the discipline either at a community college or university.

The program will be created and taught with existing resources, but also with the support of technology, open source and cloud computing industries including Red Hat, Cisco, EMC, HP and VMware. “We’ll be able to prepare people to help North Carolina’s economy,” Mohammed said. “By collaborating closely with these industries, we get to be in step (with the latest technology).

“This degree...will provide global exposure for ECU.”

– Kathryn Kennedy,
ECU News Services

The Bachelor of Science in Industrial Technology (BSIT) Transfer Program is a degree completion curriculum designed for students who have been awarded a qualified Associate in Applied Science (AAS) degree in an industrial or technical related field. The courses completed in the qualified technical AAS degree provide the foundation and half of the courses required in the major for the Industrial Technology degree. This BS degree program has the flexibility to allow students to tailor a curriculum to their specific career goals. The Bachelor of Science in Construction Management (BS CMGT) also has a pathway for qualified AAS degrees to finish their four-year degree with ECU. The College of Technology and Computer Science has been working with the North Carolina Community College System over the past decade and more recently have created strong collaboration with local community colleges to help provide a smooth transition from a two-year to a four-year institution. Admission into ECU has always been a hurdle to overcome for students who have earned an AAS degree. Several members of the Department of Technology Systems worked with colleagues in Admissions to revise the admission requirements for certain technology and industrial-related Associate in Applied Science (AAS) transfer students. The committee was careful to ensure that any changes would be in compliance with our university’s accrediting body, SACS (Southern Association of Colleges and Schools). They made sure that courses coming from the two-year institutions were deemed acceptable for transfer in terms of course content and comparable learning outcomes.

The new admissions policy is now in effect and has been applied to students applying for admission to the Spring 2013 semester. There is excitement about this new policy and the positive affect it will have on ECU’s relationship with the North Carolina Community College System and their students. David White, Dean of the College, states, “This is also a positive implication for economic development as it will better train workers in North Carolina’s industries across the state, since six of the eight concentrations can be taken online.”

The committee identified 49 AAS degrees that were in line or had comparable outcomes to the Bachelor of Science in Industrial Technology and four AAS degrees in line or had comparable outcomes with the Bachelor of Science in Construction Management. By better articulating our AAS transfer requirements and policies, we not only seek to meet SACS requirements, but also to remove barriers for AAS transfers and provide a smooth and more transparent pathway into ECU with the Bachelor of Science in Industrial Technology and the Bachelor of Science in Construction Management.
College Outreach Addresses a Grand Challenge

“Making a college choice is a huge, very personal decision.” That is the opening line of my presentation when in front of student groups. And it truly is just that! As I began my new job in August for the College of Technology and Computer Science as “Public Relations Coordinator and Student Recruiter,” I was thrilled at the possibilities ahead of me. Addressing one of the College’s grand challenges of “making the college more visible and recognized” was right up my alley!

I have spent the last three years recruiting for only the Department of Engineering. The relationships that I have developed in high schools during that time proved to be beneficial as I began to recruit for all four departments in the College. In my opinion, recruiting is more than just talking to potential students, but also sharing information about our degree programs with teachers, counselors, and even parents. It also involves inviting all of these interested parties to campus to see firsthand what TECs has to offer.

During the Fall 2012 semester, I spoke to approximately 3,200 high school students at twenty different high schools. This Spring, I will visit close to fifteen high schools and five community colleges and hope to speak to some 2,000 students by the end of May. I not only share with them about our specific program offerings, but I provide important career information, median salaries earned with our degrees, and tips on how to be successful at ECU or anywhere students may choose to pursue their post high school education. I explain the strongest selling points of our programs and then invite them to campus for an Open House, STEM Day, TEAMS competition, or even an individual tour with their parents if they so desire.

I am convinced that in a world of massive emails and information overload available on the web, that specific information delivered face-to-face, and a personal invitation to visit campus is still perhaps the most effective method of student recruiting.

During the spring, I have also spent a good deal of my time ‘spreading the word’ about all the good things TECs has going on. I have continually written articles and news releases for distribution to multiple media outlets with the help of ECU News Services’ Kathryn Kennedy. The partnership that I have with University public relations staff is essential to ensuring that our alumni, current students and faculty, as well as the local community are aware of the many successful faculty projects, student accomplishments, student and faculty awards, and industry partnerships that are aiding in the visibility of TECs. I often update our College Facebook page and Twitter account as well. There is never a shortage of things to write about or pictures to display, which reflects the commitment to student success and faculty involvement that is found in our College.

If you have high school contacts that I can use to gain access into a particular school, please contact me and let me know. Or, if you have suggestions for articles, news releases, or other college visibility stories, please share them with me.

Thank you for your support of my efforts!
On February 20, 2013, the College of Technology and Computer Science hosted its third annual Career Networking Day at the Murphy Center for students and faculty. Fifty-two companies with 120 company representatives from all over NC, the southeastern US, and as far away as West Palm Beach, FL, and Cleveland, OH, participated in the event where both students and faculty were able to network with industry representatives about employment, internships, co-ops and other career opportunities. Approximately 350 students from the College, including Computer Science, Construction Management, Engineering, and Technology Systems attended. The students were able to share resumes and some were able to have a first, brief interview with company representatives. The Networking Day has seen a tremendous increase in both business and student participation over the last three years.

One important aspect of the Career Networking Day is the opportunity for faculty to interact with industry partners at a luncheon that was also held that day. The luncheon provided an opportunity for information sharing with respect to our curriculum, our development, and the needs of industry. Dr. David White, Dean of the College of Technology and Computer Science stated, “One of our College’s strengths is our active engagement with industry. This is critical to the success of our students and our college. We enjoy holding this event each year and look forward to having more companies represented next year.”

On February 1, 2013, over 300 high school students from twenty schools reaching from Eastern NC to the Piedmont attended the second annual ECU High School STEM Day. These students came to learn more about studies and careers in the disciplines of Science, Technology, Engineering, and Mathematics. The students participated in engaging, hands-on learning activities that spanned 12 departments from the Colleges of Technology and Computer Science, Arts and Sciences, and Education.

Students and their teachers and counselors had a great campus experience, including lunch at Todd Dining Hall. Students reported that they learned a great deal and many indicated their intention to pursue STEM education opportunities. Angelo Collins, Director of the Center for STEM Education at ECU stated, “For many of the high school students, this was their first visit to a university campus and the activities allowed them to imagine themselves as college students.” Not only were students able to see exciting activities, but they were also able to meet faculty, talk with current ECU students who are enrolled in STEM degree programs, and hear about career opportunities available right here in Eastern NC.
Engineering Students Participate in Collaborative Effort to Submit a Campus Stormwater Improvement Plan

Sophomore Engineering student, Melissa Wilson, and freshman Engineering student, Abdul Jabr, volunteered to develop a campus stormwater management project for the EPA’s Rainworks Challenge competition. These students worked as part of a collaborative effort with five other students, including an undergraduate student from Environmental Health, a graduate student from Geological Sciences, and three PhD students from Coastal Resource Management. The students designed two stormwater wetlands for areas in front of and behind our very own science and Technology building. Dr. Eban Bean, Engineering professor, advised the students during the project.

ECU is one of the largest contributors of stormwater to green Mill run, which flows along 10th St. and under College Hill Dr. The students designed wetland areas to capture and treat a portion of campus stormwater runoff that currently flows directly into Green Mill Run, which leads to erosion and poor water quality. The design would not only reduce the rate of stormwater, but also would treat stormwater and improve campus aesthetics. Dr. Bean states, “I was extremely pleased with how well the project turned out and how each person was able to make significant contributions, especially with the multi-disciplinary backgrounds and varying levels of training and time in college.” Wilson commented that she enjoyed working with graduate students and learned “how much work and design goes into just one project.” Jabr stated that he learned the practical concept that “the more diverse your team, the better the ideas you can come up with.” Both Wilson and Jabr shared the notion that it was also a great way to meet other people, gain experience that was related to the field of engineering, and work on a unique project that affects their own community. The students even involved the Dean of the College of Technology and Computer Science in the project. Wilson interviewed Dr. David White for the video portion of the project.

TECS Honors Freshmen at ECU EXCELS

In February, the College of Technology and Computer Science had over 100 students and their families attend the annual ECU EXCELS ceremony in the atrium of the Science and Technology building. ECU EXCELS honors first-time freshmen and transfer students who earned a 3.0 GPA or higher in their first semester. 120 students made the honor roll, Dean’s list, or Chancellor’s list during the Fall semester. Dean David White presented each student a certificate for their exemplary academic performance. The students participated in a scavenger hunt to mingle with other students, faculty and administrators. Parents were able to tour the Science and Technology building and enjoy some refreshments afterwards. The ceremony encourages students to continue their successful academic accomplishments throughout the rest of their time at ECU.
Construction Management Students Compete in National Competition

Six of ECU’s Construction Management students competed in the National Association of Home Builders Student Chapters Residential Construction Management Competition (RMC) as part of the International Builder’s Show in Las Vegas, Nevada from January 22-24, 2013.

The students are juniors and seniors who volunteered to participate and compete against other Universities across the nation. The team members include: Brandon Haddock, Brantlee Jobe, Matthew Lorbacher, Chris Pecorino, Collin Silverthorne, and Kaitlyn Umphlet. Each team was asked to design a residential development of a piece of land that spanned an 112 acres, and included a portion that was zoned for commercial use. The project description is below:

“In order to build this property, you need to acquire the necessary financing to purchase the land, develop the property and build the homes. You currently control the property and the land has an assumed market land basis of $4.5 million. To obtain financing, you must prepare a construction estimate / budget; construction schedule; cash flow projections; project management and organization; marketing and risk analysis; project site plan and land development plan; and green building initiatives.”

The students spent hundreds of hours during the Fall semester, including their Christmas break, designing the residential area and designing a presentation for the competition. They consulted with a local developer and engineers to get feedback on their proposal. After arriving in Las Vegas, the team then presented their design proposal before a panel of five judges who are currently top contractors and developers from across the nation. Every team member had to speak before the panel.

The ECU team placed 13th out of 31 schools. This year’s team is the first team to compete in over two years for ECU. Team member and senior Matthew Lorbacher commented that “it was a great real-world learning experience that you can’t always get in a classroom. It showed me how competitive it is in this business and how important it is to have every detail correct.”

One of the College of Technology and Computer Science’s industry partners, Caterpillar, helped to fund the travel for the students. Ron Sessoms, Teaching Instructor in the Department of Construction Management and Advisor to the team traveled with them. “The experience is unbelievable for these students” Sessoms stated. “In the designing of the project, they extend the knowledge of what they have learned in the classroom.”

David White, Dean of the College, said “Competitions are great learning experiences for our students. We are proud that our team carried on the tradition of excellence and leadership that is associated with Construction Management at ECU.”

The students had one day that they were also able to tour while in the Las Vegas area. The students traveled to see the Hoover Dam, a magnificent example of a massive construction project.

STUDENT HIGHLIGHTS

Scott Barber, Technology Systems and Honors College student, had his manuscript, “History of Passive Solar Energy” recently published in an undergraduate research journal titled Explorations, the Journal of Undergraduate Research and Creative Activities for the State of North Carolina. Scott is an Architectural Design major and his paper stemmed from a research project in the Honors Seminar, Living Green: The World between Technology and Humanity.

Ten ECU students majoring in Design received national recognition for work completed during the Fall 2012 semester. The students competed in the American Design Drafting Association’s (ADDA) Design Drafting contest. These students are as follows: A-RES Architectural Residential Design Drafting: Board of Governors, Chris Morgan, Board of Directors, Cory Shank. A-COM Architectural Commercial Design Drafting: Board of Governors, William Pate; Board of Directors Anthony Undag; Presidents, Thomas Shreve and Alan Mabe (tie). A-MECH Machine and Mechanical Working Drawings: Board of Directors, Bebhanub Rucgardsib; Presidents, Chris Senior. A-OPEN: Board of Governors, Brandon Hackney; Board of Directors, Camille Mauban.

Two Engineering students, Melissa Wilson and Abdul Jabr, voluntarily worked with an interdisciplinary team of students from Environmental Health, Geological Sciences, and Coastal Resource Management to develop a campus stormwater management system for the EPA's Rainworks Challenge competition.

Harrison Forest, Information Computing Technology, has earned a position as a co-op for Cisco CALO (Customer Advocacy Lab Operations) in San Jose, California for the spring semester 2013. Harrison did such an outstanding job during his Fall semester co-op for Cisco Systems in RTP, they offered him this extended co-op position in California. Harrison is taking classes on line while working in California.

Six graduate students in Software Engineering have achieved their CTFL (Certified Tester, Foundation Level) professional certificates. The students have become ISTQB certified software testers. The students were given the option to take the exam after completing the software engineering course. SENG 6265 “Foundations of Software Testing.” These students are as follows: Michael Ellis, Pouyan Ghasemi, Andrea Grumbles, Khoei Nazasa Kamali, Swetha Mahendrakar, and Oleksii Starove.

Nine students from Information Computing Technology have been hired to work at the CALO (Customer Advocacy Lab Operations) lab for Cisco in RTP for the summer. These students include: Brian Huynh, Richie Mahaffey, Kyle Clark, Jimmy Banks, Dominique Wilkins, Leah Morse, Touseef Bhatti, Charles Alvarado, and Garren Baker. Cisco in RTP currently has eleven students employed as co-ops there this spring: Mandy Delmaine, Victor Acevedo, Jeff Gordon, Chase Deeney, Len Prince, Tyler Jeffords, Joseph Letizia, Wesley Austin, Jeremy Baldwin, David Ludington, and Nathan Schomburg. These positions are highly competitive and offer important work experience for our students, which in turn, makes them more competitive in the job market upon graduation.
**Research Success in TECS**

Program diversity in the College of Technology and Computer Science is a plus when it comes to research funding opportunities. Specifically, the departments of Computer Science, Construction Management, Engineering, and Technology Systems can respond to agencies interested in a wide range of topics and over the past three years, college faculty have obtained funding from federal and state agencies, foundations, industry and professional organizations.

A number of the TECS projects focus on expanding the use of current technologies. For example, Mark Angolia (Technology Systems) was funded by the Proctor & Gamble Fund to examine the use of technology to improve inventory control. Dr. Peng Li (Technology Systems) has engaged in a project that will integrate virtualization and cloud technologies with Hewlett-Packard equipment to provide online learning experiences to students worldwide. Dr. ChengCheng Li (Technology Systems) has also obtained funding from HP. His project aims at exploring the potential use of cloud computing to create a cyber platform that will be used for science, technology, engineering and mathematics entrepreneur training.

College faculty also have been successful in securing funds to support students. Dr. Evelyn Brown (Engineering) obtained National Science Foundation undergraduate scholarship funding for N.C. residents majoring in engineering. Dr. Erol Ozan (Technology Systems) was awarded funds from the Department of Defense to fund graduate students in the Information Assurance Program. Related to students, Dr. Eric Connell (Construction Management) was awarded funding from National Housing Endowment to develop a residential curriculum for a graduate certificate and a specialization within the Master of Construction Management. Resource utilization problems are another area of focus. Dr. Paul Kauffmann (Engineering) led a large, multi-year project to assist the Department of Transportation with their fleet management performance monitoring. Dr. Tarek Abdel-Salam (Engineering) recently began work on an Environmental Protection Agency project that examines approaches to greening coastal vacation rental properties. Dr. Mike Behm (Technology Systems) is engaged in safety research that focuses on prevention through design and utilization of the hierarchy of controls. Behm aims to determine how prevention has changed the way organizations are problem solving and taking corrective actions in incident investigation and analysis. Dr. Leslie Pagliari (Technology Systems) has led ECU’s work on the “Upgrade and Save,” which since 2007 has helped over 950 homeowners realize significant energy bill savings largely due to a switch from furnaces to heat pumps.

North Carolina’s role in bioengineering and biopharma is expanding with N.C. Biotechnology Center funding. Dr. Loren Limberis (Engineering) has received funding to conduct research on integrating photosensitive plant proteins into biobased devices designed to be controlled using different wavelengths of light.

Finally, two TECS faculty are serving as leads that are part of projects on ECU’s Operation Re-Entry North Carolina project. Partnering with ECU audiologists, Dr. Jason Yao (Engineering) and his group have been funded to develop web-based systems to promote remote hearing tests for returning soldiers. Dr. Nasseh Tabrizi (Computer Science) is designing a virtual environment to be used by rehabilitation personnel to find hazards within the homes of returning disabled soldiers.

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**FACULTY HIGHLIGHTS**

**Dr. TJ Mohammed** has been named Department Chair for Technology Systems. Dr. Mohammed has held the interim position for the past two and a half years. He has been a faculty member at ECU for the last 16 years.

**Dr. Qin Ding** (Computer Science) has been selected as the 2012-2013 ECU Scholar-Teacher Award. The award recognized outstanding faculty member who integrate scholarship and teaching. Dr. Ding has also been published online in the Bioinformatics journal for her ongoing research and mirCancer paper. The paper was coauthored by Dr. Ding and several of her students. A printed version will be published soon.

**Dr. Nasseh Tabrizi** (Computer Science) has been recognized for his ongoing research as part of a National Science Foundation grant which investigates the advantages of virtual reality systems in education in NC. (http://whichwaync.com/2012/07/19/mind-blowing-research-brings-1-billion-to-the-state/).

**Dr. Michael Behm** (Technology Systems) was recently named as the Joint Coordinator of the Working Group on Safety and Health in Construction with the CIB. It is an international leadership opportunity. Dr. Behm was also a Plenary Speaker and closing day roundtable panelist at the Safety Institute of Australia National Safety Convention held in Melbourne, Australia in March 2013.

**Dr. Hamid Fonooni** (Technology Systems) recently received the 2013 Dr. William E. Tarrants Outstanding Safety Educator Award which is the highest award granted to safety educators by the American Society of Safety Engineers (ASSE). The award recognizes his work in teaching, research, and service to ASSE.

**Dr. Richard Monroe** (Technology Systems) was a moderator for the Logistics Panel for the NC State of the Region conference in March 2013. His presentation was on “Major Trends in Logistics and the Supply Chain.”

**Dr. Rebecca McDonald** (Construction Management) has recently been recognized as an inductee to the Chancellor’s Leadership Academy (CLA). This is the fourth member of the CMGT faculty that has been selected.

**Dr. Junhua Ding** (Computer Science) has received an NSF REU (Research Experiences for Undergraduates) award. This is the first time ECU has been selected as a site for an REU. The REU is titled “Software Testing: Foundations, Tools and Applications.” The award is effective for three years, beginning April 1, 2013 and is in the amount of $358,676.

**Mr. David Bucci** (Advising Center) has been selected to serve on the ACPA External Relations Advisory Board (ERAB) which supports and advises the Director for External Relations on the Governing Board and the Executive Director of the ACPA.

Three of our TECS Advisors have been nominated as finalists for the NACADA (National Academic Advising Association) Regional Awards. Mr. David Bucci is a finalist for Outstanding Advisor and Ms. Kiya Bolds and Ms. Christina Ragone were finalists for the Outstanding New Advisor award.
Letter to Alumni and Friends

Since May of 2008 I have had the honor of serving this extremely impressive college as the Major Gifts Officer. What has impressed me the most is the leadership in place and the successful alumni we graduate. Through your support we have been able to increase our alumni percentage that make an annual gift, expand on our network with industry partners, strengthen our lab endowments, increase the number of scholarships, and communicate more effectively with alumni and donors. THANK YOU!

While we continue to face challenges in the face of looming budget cuts, it becomes more evident that our college is a pillar and a strategic priority of the university and workforce. Now more than ever, we need our alumni to support

the college and continue moving us forward. Here are three ways in which you can help support the college:

1. Give- No Gift is too small
2. Volunteer- connect the college to a business that would be interested in our graduates or might be interested in investing in one of the many priorities of the college
3. Advocate- In a recent survey of ECU alumni, the loyalty scores of our graduates in comparison to those at 200+ other institutions shows that Pirates are very passionate about this institution.

This past February I had an opportunity to accept a position here at East Carolina University as the Gift and Estate Planning Officer. I accepted this position knowing I would still have the opportunity to serve this college in another capacity in working with alumni and friends who may consider this college as one of charitable interest when making decisions on planned giving. I look forward to sharing different ways to give in future newsletters and would encourage you to explore our website and contact me if you would like to discuss ways to support the college. Planned giving information can be found at http://www.ecu.edu/devt/ and you may continue to reach me at wardmi@ecu.edu or by phone at 252-328-9566.

Go Pirates!

Michael Ward,
Gift and Estate Planning Officer
East Carolina University

STUDENT HIGHLIGHTS, CONTINUED FROM PAGE 6

Nine students from Information Computing Technology recently competed in the Virtual Qualifying Round for the Mid-Atlantic Collegiate Cyber Defense Competition. These students include: Antonio Ascencio, Jimmy Banks, Tammy Battle, Lindsey Esslinger, Chance Hinchman, Eric Howard, Patrick McKoy, Charles Ogles, and Dallas Puett.

The following Engineering students received Undergraduate Research and Creative Activity Awards in Spring 2013 from the Office of Undergraduate Research, Division of Research and Graduate Studies: Rana Abdel Salam, Biomedical Engineering; Leela Goel, Biomedical Engineering; and Richard Steiner, Biomedical Engineering.

Lisbeth Sora, BSIT Student with an Information and Computing Technology concentration, has accepted a 10 week summer internship position with the NASA Langley Aerospace Research Student Scholars (LARSS) Program.