

TECS NEWS

Keihin Carolina Systems Technology provides scholarship funds



Keihin employees visiting the college.

Keihin Carolina Systems Technology (K-CST) of Tarboro, NC, has provided a scholarship fund for students who will transfer from Edgecombe Community College to the College of Technology and Computer Science at East Carolina University. Chris Eckhardt, Vice President and Chief Operating Officer of Keihin's Tarboro, NC manufacturing plant, has established this fund to facilitate regional growth by helping students continue their education and remain employed locally. Eckhardt said, "We intend to partner with both

of these colleges to help provide an educational pathway for local students who want to pursue a technology based education."

This scholarship fund is intended for students who are from Edgecombe County that show interest and promise in technology or engineering. After completing their first 2 years at Edgecombe Community College and earning an AAS degree, students that are awarded scholarships would complete their BS degree with the College of Technology and Computer Science in programs within the

Department of Engineering or the Department of Technology Systems. As Keihin announced their intentions, Dr. David White, Dean of the College, began working with Dr. Deborah Lamm, President of Edgecombe Community College, and her staff, to develop a detailed plan for this gift to insure maximum benefit for students, K-CST and both educational institutions.

"It's important to develop local resources for local companies," said White, "The College is committed to supporting economic development in eastern North Carolina, and this generous gift from K-CST will help develop

talent that is already a part of the region and will stay in the area to help develop and grow new industries."

This scholarship will provide partial funding for two students per semester while they attend the College of Technology and Computer Science. First awards will be made in the spring of 2012 for students entering ECU in the fall of 2012. Keihin has also recently provided funding to support an instrumentation lab in the Science and Technology Building on campus at ECU.

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Gregory Poole



Behm Spends Time in Singapore

In April 2010, Mike Behm, Associate Professor of Occupational Safety in the Department of Technology Systems, received a phone call from a colleague at the National Institute for Occupational Safety and Health (NIOSH) about a group of workers hanging over the edge of a 10 story building hoisting a lawnmower up to the roof. Behm had been working with NIOSH for the past five years on its Prevention through Design and Safe Green Jobs Councils. That April 2010 phone call led to a question that then led to research – how are green roofs being safely designed and integrated into the built environment so that workers can build and maintain them. Through a small grant from Virginia Tech, Behm visited 19 green roofs in the US in 2010 to observe designs and understand necessary installation and maintenance tasks. During the project’s literature review, he discovered Singapore’s Centre for Urban Greenery and Ecology’s (CUGE) Safe Design Guideline for Rooftop Greenery, and its fellowship opportunities. Singapore is transforming itself from a “Garden City” to a “City within a Garden”. Skyrise greenery, as it is labeled there, is quickly becoming a standard part of the built environment. Recognizing that workers must safely maintain vegetation and that the design of the built environment influences worker behavior, CUGE published its safe design guidelines in 2010.

Mike spent two months this past summer as a Research Fellow at CUGE in Singapore studying safety aspects of skyrise greenery systems, which included roofs, walls, and ledges. Working with researchers and skyrise greenery



Green roof installation crew.

professionals, he conducted site visits and interviewed design professionals and landscape companies about their experiences in working with green roofs and walls. He is currently helping revise standards for rooftop greenery and assisting to develop new standards for the safe design and management of vertical greenery systems. The site visits allowed Behm to observe how worker safety and access is integrated into skyrise greenery systems at the design stage. For example, an access way, French doors, and a guardrail camouflaged by the plants were designed into a vertical greenery system allowing easy and safe worker access. The result was a green wall that was properly maintained and provided the designer’s vision on aesthetics for the building occupants. Behm said, “When safe design thinking is integrated into the design phase of projects, advances will occur for worker safety across the life cycle but may very likely also impact cost, quality, and schedule.” But even more so than the research, it is the experience of living in another country, even if for a short



A steep green roof at a university.

time, that gives one a different perspective and adds life value to bring back to the classroom and campus. Behm says, “By listening to and experiencing unique perspectives, you are better able to critique your own perspective for continual improvement.”

Behm returned to Singapore to deliver two workshops at CUGE and a keynote presentation at the Workplace Safety and Health Council Construction Safety Forum in late November. Additionally, a seminar was held on campus and is available via ECU’s Global Classroom as a live streamed lecture.



Message from the Dean *You Make A Difference!*

On October 6, 2011, I had the opportunity to attend the inauguration of Dr. Tom Ross, new President of North Carolina's public universities. It was inspiring to see past Presidents Bill Friday, Dick Spangler, Molly Broad and Erskine Bowles at the event. In his address, Dr. Ross mentioned several key points that will help shape the direction for ECU and the other 15 institutions in the system. I was pleased to hear his comments since I think we are poised to excel as a University and as a College under his direction.

Dr. Ross said that it is our time to redefine ourselves and decide how to retain the essence of what we do best - teaching, research, and public engagement - but to do so in new and different ways that are relevant to the lives of our people and that add real value to the state and the nation. Dr. Ross went on to identify six key focus areas.



David White, Dean, College of Technology and Computer Science, with President Ross at Spring Commencement.

1. We must start with a new and heightened focus on academic success and academic accountability.
2. We must find new ways to help finance our programs and our operations.
3. We must become more innovative and nimble.
4. We must refine our academic priorities and identify programs of excellence. We cannot be everything to everybody.
5. We must recognize our duty to serve all students, not just the traditional 18-year-old recent high school graduate.
6. We must do even more to unleash our faculty's brainpower and creativity in a more strategic, targeted fashion to help solve some of our state's and our world's toughest problems.

These actions called for by our new President are ones that our College can directly impact in a positive way. The College continues our focus on "students first" and supporting our students and faculty as they work to improve our region's communities and the state, particularly our efforts to enhance economic development and prosperity. We will continue to find new ways to finance our programs. Many of you reading this are contributing significantly to that goal. We serve our traditional undergraduates who arrive on campus

right after high school, but we also provide access to educational opportunities for those in the workforce and the military through our excellent distance education programs. We are working with our community college partners to ensure that clear pathways are available for transfer students who want to access our programs. Our future, often called the "new normal," will find us refining our focus on our programs of excellence, and looking even more carefully at every dollar we spend to ensure we are doing the most with our diminishing state resources. Overall, our College will be successful as long as we remain committed to contributing to the common good, developing new leaders, and serving in ways that enhance the quality of life for the people in our communities. In fact, I think you will see evidence of all these commitments in this newsletter!

Let me close by inviting you to visit our new website at www.ecu.edu/tecs and learn about all the great things going on in the College! Take a moment to send us updated information on where you are and how you are doing. We want to stay in touch with you because YOU MAKE A DIFFERENCE!

I hope you have a great holiday season!

Sincerely,

David M. White
Dean

Did You Know?

ECU mentioned among top 10 schools for software engineering at http://education-portal.com/articles/Top_Schools_for_Software_Engineering.html

Software engineering program selected as Best Buy at <http://www.geteducated.com/online-college-ratings-and-rankings/best-buy-lists/online-engineering-masters>

Computer Networking Management program selected as Best Buy at <http://www.geteducated.com/online-college-ratings-and-rankings/best-buy-lists/online-masters-computer-science-it-degree>

ECU Research to Inform State Decisions on Highway Construction

By Rachel Castro, ECU News Services

A two-year research project at East Carolina University is turning up information that could help North Carolina tone down the roar of tires on busy highways.

A \$218,000 grant to the Department of Construction Management is funding a study of tire and pavement noise in the state. The findings, said Dr. George Wang, the principal investigator of the project, will help guide state decisions about the best pavement for road building in the state.



ECU graduate Richard Shores prepares a noise meter for a road test. Shores assisted in the highway noise research while a graduate student at ECU. (Photos by Cliff Hollis)

“This work has laid a cornerstone for future determination of the most cost-effective and durable quiet pavements suitable for use by the North Carolina Department of Transportation,” said Wang, an ECU construction management professor.

“The project will provide a valuable tool in the reduction of pavement noise for certain pavement types found throughout the state,” he said. Noise can be detrimental to human health. It has been known to cause hearing impairment, sleep disturbance, cardiovascular effects, psychophysiological effects, psychiatric

symptoms, myocardial infarction and impact fetal development.

The study will be completed by the end of the year. Information collected has enabled the research team to develop a data collection system for measuring pavement noise.

Traffic noise is considered an environmental impact; it affects where and how highway systems can be built or expanded, Wang said. Pavement noise is a crucial aspect of traffic noise. Identifying a quieter pavement is critical to reducing the impact of roads, he said.

The team has been testing nine different types of pavement on approximately 70 highways and about 30 counties in North Carolina.

“Being able to identify these quiet roads is important to reduce traffic noise levels in urban areas and improve the quality of living for those affected by noise pollution,” said ECU graduate Richard Shores of Apex, who worked with Wang throughout the study.

“Our research trips took us to every border of North Carolina; to the beach, Tennessee, Virginia and to South

Carolina,” Shores said. “After all the measurements were done, we worked on data analysis to rank the different types of pavement on how loud they were.”

The data is categorized based on pavement type, age and testing speed.

The last step is to organize the entire project into a report for presentation to the NCDOT, Shores said.

Shores said he feels more confident in his abilities to manage large projects after working on the research study. “Working to set up equipment, properly planning testing procedures and performing data analysis are all critical aspects of any physics based job,” he said. Shores obtained an undergraduate degree in physics and a masters of science in medical physics before graduating in May.

North Carolina is one of eight states participating in the Federal Highway Administration’s Pooled Fund Study on tire-pavement noise, and is the only state in the Southeast participating.

The research was funded by the NCDOT.



Data collection equipment measures pavement noise while a vehicle travels down the highway.



PCC, ECU Sign Agreement Regarding Engineering Transfer

Pitt Community College and East Carolina University have signed an agreement that creates a pathway for the college's pre-engineering transfer students to move on to the university and complete a four-year engineering degree. The articulation was signed at PCC, during a special ceremony attended by administrators and faculty who played key roles in creating the pact.

Through the agreement, PCC students who complete the Pre-Engineering Associate in Science degree—or accrue enough hours in the curriculum—can transfer into ECU's Department of Engineering for the continuation and completion of their engineering studies. Graduates from ECU's program will be awarded a Bachelor of Science in one of the following concentrations: Biomedical Engineering, Bioprocess Engineering, Electrical Engineering, Industrial and Systems Engineering or Mechanical Engineering.

PCC President G. Dennis Massey said the PCC-ECU articulation deals with an area of college transfer not well covered by the statewide Comprehensive Articulation Agreement regarding transfer between the North Carolina Community Colleges and the University of North Carolina System.

"It was extremely important to us and to our students to build upon a long relationship with ECU's College of Technology and Computer Science," Massey said. "... PCC understands and values college transfer. It's a very productive relationship, and we welcome more partnerships with other departments at ECU."

Calling the PCC-ECU engineering agreement a "milestone," ECU Engineering Professor Paul Kauffmann said the articulation would benefit students educationally and professionally. He called the partnership "a pathway for people to pursue a better career and better life."

Dr. Marilyn Sheerer, ECU Provost and Senior Vice Chancellor, agreed and said it was important for Eastern North Carolina that PCC and ECU "grow engineers together." Like Massey, she said the time had come to look more closely at other possible opportunities for the two schools to work together.

PCC launched its Pre-Engineering Associate in Science curriculum at the start of the Fall 2009 semester to give students an opportunity to complete the first two years of an engineering degree at a lower cost before transferring to a four-year institution for a bachelor's degree.

One graduate of PCC's program, Ash Smith, was



ECU Provost and Senior Vice Chancellor Marilyn Sheerer, left, and PCC President G. Dennis Massey sign an agreement between the two schools regarding transfer of engineering students.

featured in the college's Career Focus magazine earlier this year. Smith received a degree from Pitt in 2010 and moved on to ECU in pursuit of a bachelor's degree in engineering.

An excellent student at PCC, Smith has continued to achieve academic success at ECU. He says Pitt prepared him "very well" for his ECU coursework, noting that he has already received a pair of certificates from East Carolina's engineering and physics departments in recognition of his Honor Roll status at the university.

Wanda Yuhas, executive director of the Pitt County Development Commission, attended the signing ceremony and said producing future engineers like Smith would help the region attract new industry. She said the PCC-ECU engineering articulation would be an important selling point for the Pitt County area, adding that it would create

"It was extremely important to us (PCC) and to our students to build upon a long relationship with ECU's College of Technology and Computer Science"

wealth not only for future engineering graduates, but for the community in general.

For more information on transfer programs, please call the College Advising Center at 252.328.9301 or go to <http://www.ecu.edu/cs-tecs/advising/staff.cfm> to find out your advisor depending on the program of your choice.



Department of Computer Science



*Dr. Karl Abrahamson
Interim Department Chair*

Greetings from Computer Science. The Department offers four degrees. They are as follows:

- BA in Computer Science
- BS in Computer Science
- MS in Computer Science
- MS in Software Engineering

In each of these degree programs our focus is to

maintain and improve the quality of our graduates. This term we are strengthening the BS in Computer Science degree to require Databases and Analysis of Algorithms. We are also strengthening the BA in Computer Science by introducing a second Data Structures course suitable for practitioners. The MS in Software Engineering continues to grow. We are pleased to announce two new software engineering courses entitled Cloud Computing and Security Engineering. Our graduate software engineering degree is listed as one of the ten best in the nation by education-portal.com. In addition, an undergraduate concentration in software engineering is currently under development.

We are also continually encouraged by the number and quality of incoming students. The department now has over 250 undergraduate majors and over 70 graduate students, and the student chapter of the Association of Computing Machinery (ACM) has about 70 active members. Jacob Pennock, a graduate student, has received two prestigious awards for his progress on computer game development.

The department continues to do research in strategic areas related to Computer Science. Department research includes a grant used for development of training software for doctors and nurses who are making visits of homebound patients, as well as another project involving training for caregivers of patients with Alzheimer's disease. In addition, Dr. Vilkomir was recently invited to the Google Test Automation Conference.

Our students are still our most valuable resource. Our graduate students have written three theses on cloud computing in the last five months, and an undergraduate student is working on web mining for forms of cancer. More information is available at <http://tecs.ecu.edu/csci>. Please take time to learn more about us!

Department of Construction Management



*Dr. Syed M. Ahmed
Department Chair*

Greetings from the Department of Construction Management!

We are pleased to welcome our new faculty, Ms. Rebecca MacDonald and Dr. Kamallesh Panthi. As with all beginnings, there are changes. Thus, it is our pleasure to acknowledge the career decisions of Drs. Lu and Sylvester, which will allow them to grow within the international construction industry and academic administration, respectively. Their personal successes, along with full renewal of our accreditation, verify the quality and relevant education provided to our undergraduate and graduate students.

In addition, the educational quality of our graduate and undergraduate programs is enhanced by many faculty activities that occur throughout the year, including, but not limited to:

- Curriculum updates in residential and commercial construction
- Development of Honors College course in sustainability
- Industry interaction within the classroom
- Visits to the state and federal agencies
- Participation on editorial boards of international journals
- Journal and conference presentations
- Acquisition of state-of-the-art software to assist courses
- CMGT summer study abroad program for Summer 2012
- Research and teaching collaborations with University Departments
- Growth of the graduate program to include an on-campus program

In closing, we are pleased to announce that the UNC General Administration has given approval to begin advanced planning for the CRAFT laboratory which will assist construction equipment courses offered in the department and to the general public.

We welcome your input and ask that you spread the news about our degree opportunities. For more information about our program, please visit our departmental website at <http://www.tecs.ecu.edu/cmgt>.



Department of Engineering



*Dr. Hayden Griffin
Department Chair*

Greetings from the Department of Engineering. We are pleased to announce that we started fall 2011 semester with 400 students in the program, a significant growth from just over 300 in the fall semester of 2010. We brought in 161 new students in fall 2011, 29 of whom are transfer students. In general, transfer students are doing very well.

We have just signed articulation agreements with Lenoir Community College and Pitt Community College, and we have others in the process of being developed. These agreements provide students with needed information regarding completion of courses at a community college in order to transfer to ECU Engineering and exactly what credits they will receive for their work.

Our new electrical engineering concentration has been approved. The first course in the new electrical engineering concentration will be taught in Spring 2012, and we expect our first graduates by Spring 2014.

We have seen the benefits of our scholarship programs as some excellent students have joined us as a result of scholarship opportunities provided.

Our graduates are getting very good jobs, and the ones who have been working for a while are making excellent progress in their careers, moving into positions of more responsibility.

Development of the MS in Biomedical Engineering continues, and the program has been labeled as the top priority at ECU for new program development.

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

Department of Technology Systems



*Dr. Tijjani Mohammed
Interim Department Chair*

A very warm hello from the Department of Technology Systems (TSYS), formerly the Department of Industrial Technology (ITEC)! Our department prides itself in the creation and delivery of both on campus and online courses and programs that help drive the economic prosperity of Eastern North Carolina, as well as the entire state of North Carolina.

Our department now offers five undergraduate, and two graduate degree programs, and has an enrollment of more than 1000 students. We are also in the final stages of creating a new master's degree program in Network Technology (MSNT). We anticipate enrolling students into the MSNT late next year.

Our undergraduate programs are accredited by the Association of Technology Management and Applied Engineering (ATMAE), formerly the National Association of Industrial Technology (NAIT). Additionally, the department has earned a designation as one the National Centers of Excellence in Information Assurance Education (CAEIAE) by the National Security Agency (NSA) and Department of Defense (DoD). This designation allows our students to compete for the DoD Information Assurance Scholarship Program (IASP), which provides funding support for students pursuing undergraduate, graduate, and PhD programs.

Alliances with regional and statewide business and industry allows our faculty to receive timely and beneficial input into our programs to insure that our graduates are prepared to assume challenging positions, meet regional needs, as well as compete in a global economy. These alliances also provide opportunities for our students to participate in industry internships and work on real world problems via capstone projects.

Please stay in touch and let others know about the opportunities in our department! You can learn more about the Department and connect with us by visiting our website at <http://www.tecs.ecu.edu/tsys>.

ABOUT TECSCONNECTS—TECS CONNECTS is published by the College of Technology and Computer Science Deans Office. You can read TECS CONNECTS online at www.tecs.ecu.edu.



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From the Major Gifts Office

It is always a privilege to thank the many alumni, donors, and industry partners who continually give their time and resources to allow our students a more enriched experience while here at ECU. As I reflected on this edition of TECS Connects, we should be reminded of how private support impacts our students, region and state.

We celebrate the Keihin gift which will enable us to award a number of scholarships and endow a lab, we see how the research in Construction Management has an indirect impact on all of us benefiting from transportation as well as the environment, and we see growing partnerships with community colleges and industry leaders as well as growing alumni support. Regardless of gift amount, every dollar makes a difference. Over the last three years we have been asked to make cuts of nearly \$125 million with a \$42 million reduction this year alone. While times remain challenging for us all,

this remains an opportunistic time to invest in education and I would encourage you to continue your support.

As we approach the end of 2011, I hope you will consider our college as an opportunity for a charitable donation when making decisions for year end giving. If I can be of assistance please do not hesitate to contact me at 252.328.9566 or wardmi@ecu.edu. Please visit our website at <http://www.tecs.ecu.edu> to update your information with the college and university. In our spring edition we will have an article submitted by Assistant Vice Chancellor of University Development and Planned Giving, Greg Abeyounis, regarding the Leo Jenkins Society and estate planning. As our Second Century Campaign comes to a close, having exceeded its goal of \$200 million one year ahead of schedule, we have seen our planned gift pipeline increase significantly.

Lastly, the college wishes to



Dean David White and Major Gifts Officer, Michael Ward

acknowledge Gregory Poole's continued sponsorship of TECS Connects allowing us to mail this newsletter to college donors. We would not be able to mail this newsletter to our supporters without the generosity of Gregory Poole Equipment Company.

Thank you.

Michael Ward
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