

New Laboratories: College Celebrates with Ribbon-cutting Ceremony



Engineering researchers at the University of North Texas have new, cutting-edge equipment and laboratory space to discover new biomaterials and to test the latest in energy-efficient products.

The College of Engineering celebrated the opening of 30,000 square feet of state-of-the-art research laboratory and teaching space at a ribbon-cutting ceremony on March 25 at Discovery Park.

The primary focus of the labs will be in the areas of alternative energy, renewable bio-composite materials, data visualization in computational fluid dynamics, friction stir processing with metallic alloys, and

advanced manufacturing. The new labs include the Experimental Mechanics and Rheology Laboratory, Chemical Scale-Up Laboratory, Computational Modeling Lab, Energy Storage Lab, and Biofuel Engineering Lab.

The new laboratory space will be beneficial to the research of several of the College's departments including biomedical engineering (see page 3), engineering technology, materials science and engineering, and mechanical and energy engineering.

Speakers at the ceremony included Dr. Neal Smatresk, President of the University of North Texas, Dr. Warren Burggren, Provost and Vice President for Academic Affairs, and Dr. Tom McCoy, Vice President for Research and Economic Development.

After the ceremony, guests toured the new lab areas, and university and industry officials visited lab space under construction.

(from left) Engineering Ambassador Pratheesh Varghese, Dr. Nigel Shepherd, Department of Materials Science and Engineering Interim Chair, Costas Tsatsoulis, College of Engineering Dean, Dr. Neal Smatresk, President of the University of North Texas, Dr. Yong Tao, Department of Mechanical and Energy Engineering Chair, Dr. Tom McCoy, Vice President for Research and Economic Development, Dr. Warren Burggren, Provost and Vice President for Academic Affairs, and Engineering Ambassador Sandra Ruiz.



(from left) Dr. Yong Tao, Landon Sproull, Chief Engineer, Peterbilt, and Darrin Siver, Vice President and General Manager, Peterbilt.

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MESSAGE | *from the Dean*

The College of Engineering focuses not just on pursuing academic and research excellence but also strives to create knowledge and innovations that contribute to the greater good and to provide our students with an education that helps them become thoughtful, engaged citizens, contribute to a healthier environment, and achieve a brighter economic future.

In order to increase research opportunities and to attract high quality faculty and students, the College of Engineering is building new facilities and renovating existing laboratory space. The front page of this newsletter highlights the completed renovation of 30,000 square feet of state-of-the-art research laboratory and teaching space. During the ribbon-cutting ceremony, Neal Smatresk, President of the University of North Texas, said “We are opening up something that will open up new avenues of research for us.” Other avenues of research that will be beneficial to industry are also opening up such as the construction of a new facility that will house labs for structural testing and manufacturing.

These recently completed facilities have expanded the research capabilities of our faculty such as Armin Mikler, Yan Huang, and Yan Wan. These faculty members are contributing to society in strategic research areas such as medicine and complex information systems. Similarly, our students won awards at the LeadingAge HackFest for developing apps to enable seniors to live independently. We are also building on research collaborations and education that benefits healthcare with our new department: Biomedical Engineering.

This focus on socially-relevant projects and education also is reflected in the NSF TUES award that will support undergraduates learning and conducting tasks such as instrument troubleshooting and structural testing of buildings and bridges. Another goal of this project is to spark an interest in Engineering among middle school students.

The College of Engineering is also seeking to promote teaching and learning on a global level. For example, we continue to work with our international partners in Mexico to attract more Mexican graduate students to UNT and to build student and research exchange programs as well as joint research programs funded by our respective governments..

In this newsletter, you also will read about more successes/accolades of our students. Adriana Blanco received a national General Electric Women’s Network scholarship from the Society of Women Engineers. Joshua Urbanovsky, a student in the College of Business and College of Engineering, was honored as one of the state’s top business students.

At the College of Engineering, we are passionate about promoting the achievements of our faculty and students so that they can bring a wellspring of research leadership and innovation to their projects, programs and careers. Through partnerships with each other, industries and our communities, we make a positive impact on the larger North Texas region and beyond. Let us know how we can work together to create opportunities for success.



Dr. Costas Tsatsoulis, College of Engineering Dean, is being presented a gift by Arnoldo Solís Covarrubias, Managing Director of ITS (Instituto Tecnológico de Saltillo). (From left to right) Armando Nuncio González, Provost of ITS, Covarrubias, Juan Antonio Sánchez Fernández, Deputy Director for Planning and Outreach of ITS, and Tsatsoulis.

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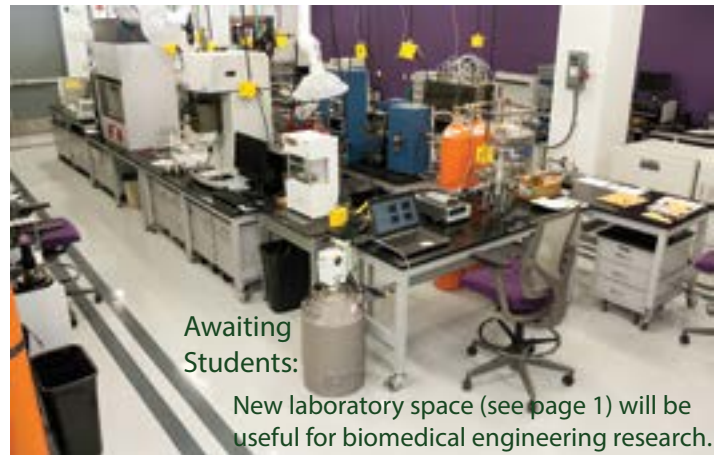
College Launches Biomedical Engineering Degree Program

The College of Engineering now offers bachelor's and master's degrees in biomedical engineering.

The Department of Biomedical Engineering is the college's sixth department, with focus areas including biomedical instrumentation, biomechanics and bioinformatics. The new department fits in well with the College's other programs, and several faculty members have a background in biomedical engineering, including the Associate Dean for Undergraduate Studies, Dr. Vijay Vaidyanathan.

"Students who enroll in the new biomedical program will learn from engineering faculty who are world-renowned for their expertise in the biomedical engineering field," said College of Engineering Dean Costas Tsatsoulis. "Students also will have the opportunity to collaborate on research projects with faculty at the UNT Health Science Center in Fort Worth."

As the number of older Americans continues to increase, demand also is rising for medical devices, equipment and technologies. This demand also has created an increase in job opportunities for biomedical engineers. The U.S. Labor Department expects biomedical engineering to become the fastest growing engineering field over the next decade. According to Labor Department data, biomedical engineering jobs have experienced



Awaiting Students:

New laboratory space (see page 1) will be useful for biomedical engineering research.

growth rates of more than 70 percent in recent years.

A student graduating from the College's biomedical engineering program will be well rounded and will have the engineering skills and expertise to work in industry, hospitals, or research institutions. The College of Engineering has started accepting first-time-in-college freshmen for the Fall 2014 semester. Transfer students will begin to be admitted in 2016.

Bjarne Stroustrup, C++ Founder, Visits UNT for Lecture



The College of Engineering hosted Bjarne Stroustrup, University Distinguished Professor and holder of the College of Engineering Chair of Computer Science at Texas A&M University, on October 11, 2013. Dr. Stroustrup invented the C++ programming language and spoke to an almost packed house of CSE students, alumni and faculty on "The Essence of C++ with examples in C++84, C++98, C++11, and C++14."

He examined the foundations of C++, stating that he was looking for type safety, resource safety, performance, predictability, teachability, and readability. He also discussed what separates C++ apart from other languages, as well as challenges for the programming language. Following the talk, Stroustrup met with CSE faculty, alumni and students at a reception.

Other speakers and guests are being scheduled. For information about these talks and other events, visit <http://engineering.unt.edu/events>.



(Top photo) Bjarne Stroustrup makes his presentation; (bottom photo, from left) Dr. Miguel Garcia-Rubio, College of Engineering Associate Dean for Outreach and International Relations, Stroustrup, and Dr. Barrett Bryant, Computer Science and Engineering Chair.

UNT Explores Research, Student Recruitment Opportunities in Mexico



(Top photo) Dr. Hassan Takabi, Assistant Professor in the UNT Department of Computer Science and Engineering; Dr. Shengli Fu, Interim Chair of the UNT Department of Electrical Engineering; Dr. Luz A. Torres Méndez, CINVESTAV Saltillo; Dr. Wonbong Choi, Professor in the UNT Department of Materials Science and Engineering; Dr. Jorge López Cuevas, Chair of the CINVESTAV Saltillo Department of Ceramics; Dr. Costas Tsatsoulis, UNT College of Engineering Dean; Dr. Francisco J. Varela, CINVESTAV Saltillo; Dr. Yong Tao, Chair of the UNT Department of Mechanical and Energy Engineering; and Dr. Miguel Garcia-Rubio, UNT College of Engineering Associate Dean for Outreach and International Relations; **(Bottom left photo, from back row to front row)** Gloria Natividad Beltrán del Río, UNT-ITS (Instituto Tecnológico de Saltillo) liaison; Edgar Manuel López, Deputy Director for Administration of ITS; Juan Antonio Sánchez Fernández, Deputy Director for Planning and Outreach of ITS; Takabi; Choi; Armando Nuncio González, Provost of ITS; Garcia-Rubio; Arnoldo Solís Covarrubias, Managing Director of ITS; Tsatsoulis; Tao; and Fu; **(Bottom center photo)** Garcia-Rubio; Choi; Dr. Martha Leal González, Director of Planning, Graduate, Outreach and International Cooperation of IITT (Instituto de Innovación y Transferencia de Tecnología); Tsatsoulis; Tao; Fu; and Takabi; **(Bottom right photo)** Tsatsoulis and Dr. Felipe Rubio Castillo, Managing Director of Centro de Ingeniería y Desarrollo Industrial (CIDESI).

A University of North Texas (UNT) delegation led by the Dean of the College of Engineering, Dr. Costas Tsatsoulis, visited Mexico Feb. 3-7 to develop faculty research collaborations and to explore student exchange programs. The delegation visited the Centro de Investigación y Estudios Avanzados (CINVESTAV) in Saltillo, the Instituto Tecnológico de Saltillo (ITS), the Instituto de Innovación y Transferencia de Tecnología (IITT) of Nuevo León, and the Centro de Ingeniería y Desarrollo Industrial (CIDESI) of Querétaro.

The visit's objectives were to:

- Build new research relationships between UNT and institutions in Mexico;
- Attract high quality students to the College's graduate programs through the Summer Undergraduate Program in Engineering Research (SUPER); and
- Explore 2+2 or 3+2 undergraduate programs in which students undertake part of their studies at one institution and complete their degree at another institution.

At CINVESTAV Saltillo, the UNT delegation was hosted by Dr. Jorge López Cuevas, Chair of the Department of Ce-

ramics. The visit focused on materials science and alternative energy. Dr. Francisco J. Varela of CINVESTAV Saltillo is collaborating with UNT on a research project in energy efficient buildings and communities. Also, CINVESTAV is working on robot systems for undersea applications and autonomous drone systems. The latter is an area of possible collaboration with UNT's Electrical Engineering Department.

At ITS, the UNT delegation was hosted by Ing. (Ing. indicates professional title of engineer) Arnoldo Solís Covarrubias, Managing Director of the ITS. Of particular interest to both institutions was the establishment of a 2+2 program in Electrical/Electronics Engineering and research collaborations in optimization and control systems. ITS undergraduate students are participating in SUPER at UNT's Discovery Park campus. Conversations between Ing. Arnoldo Solís Covarrubias and Tsatsoulis centered on exploring a collaboration model in which research projects established between ITS and its industrial partners link with UNT researchers.

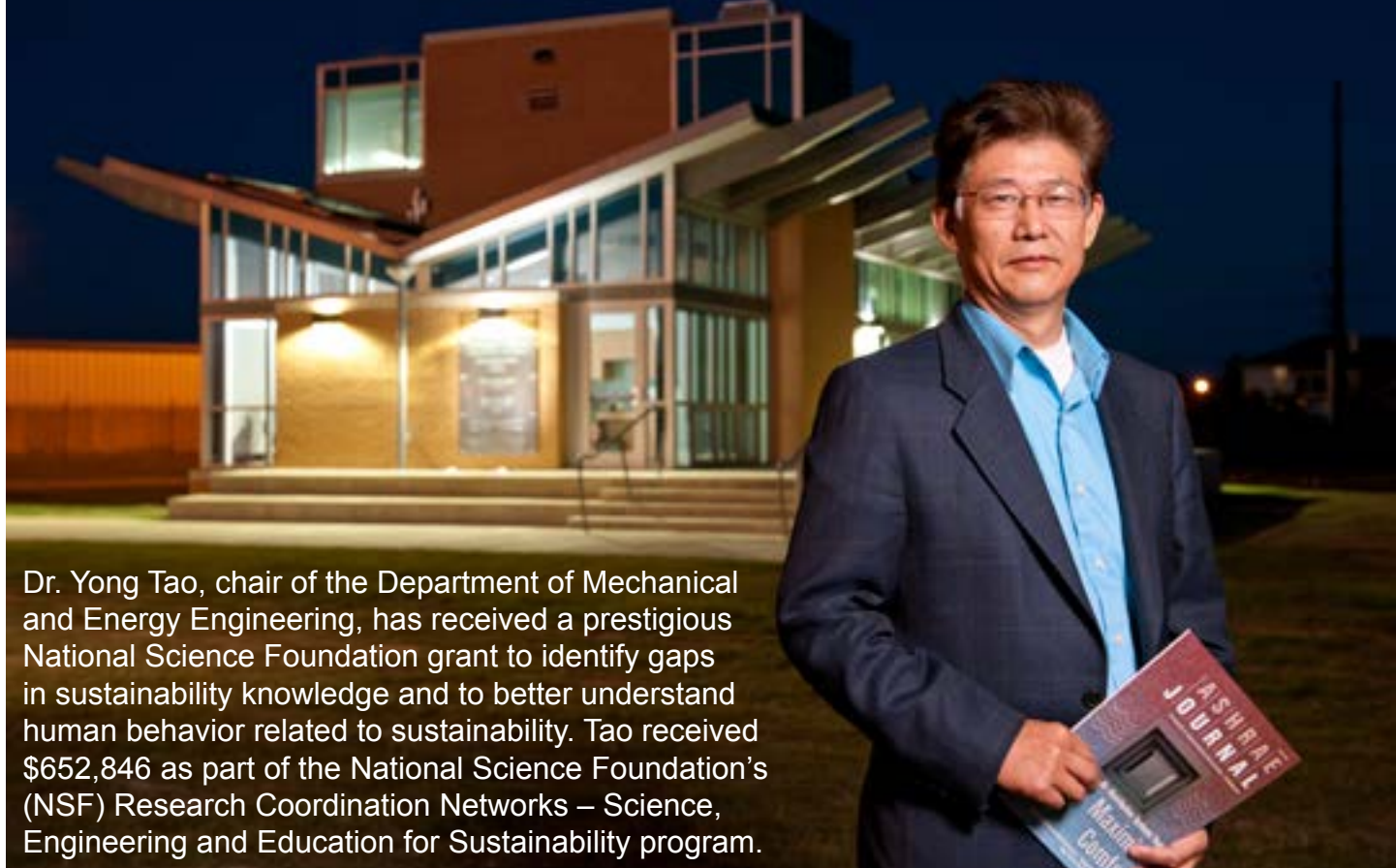
At IITT, the UNT delegation was hosted by Dr. Jaime Parada Ávila, President

and CEO of IITT, and Dr. Martha Leal González, Director of Planning, Graduate, Outreach and International Cooperation of IITT. Parada indicated that a new binational fund (FOBECI) has been established by the U.S. and Mexico. Its purpose is to promote collaborations in science, engineering, and innovation. It is an opportunity for UNT to fund collaborations across the U.S.-Mexico border. The UNT delegation also met with researchers from several area research institutions, including the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), which indicated that it would be interested in exploring 2+2 programs in engineering with UNT.

At the Centro de Ingeniería y Desarrollo Industrial (CIDESI), the UNT delegation was hosted by Dr. Felipe Rubio Castillo, Managing Director of CIDESI. Conversations focused on materials testing, wireless sensor networks applications, oil industry robotic applications, and signal processing for CIDESI's medical instrumentation prototypes.

Representatives of the universities are reciprocating UNT's visit.

Sustainability Research Professor Receives NSF Grant



Dr. Yong Tao, chair of the Department of Mechanical and Energy Engineering, has received a prestigious National Science Foundation grant to identify gaps in sustainability knowledge and to better understand human behavior related to sustainability. Tao received \$652,846 as part of the National Science Foundation's (NSF) Research Coordination Networks – Science, Engineering and Education for Sustainability program.

The Science, Engineering and Education for Sustainability (RCN-SEES) track represents an NSF-wide activity seeking to foster interdisciplinary research and education that advances sustainability science and engineering as an integrative approach to the challenges of adapting to environmental, social and cultural changes associated with growth and development of human populations, and attaining a sustainable energy future.

The project, titled “Predictive Modeling Network for Sustainable Human-Building Ecosystems,” will bring together about a dozen researchers from engineering, construction, computer science, environmental science, business, architecture and social science backgrounds who focus on sustainability. The researchers have experience and access to data from various sustainable building projects and will work together to identify and fill in knowledge gaps.

“Uncertainty in human behavior – or why people use energy the way they do – can affect energy consumption by 40 to 60 percent,” Tao said. “We can design

energy-efficient buildings and create new technologies, but without a strong understanding of these issues in human behavior, as well as government policy and business, those technologies won't be put to their best use.”

The outcome of this research collaboration will lead to the development of an innovative, new interdisciplinary area, “Sustainable Human-Building Ecosystem,” and will enable the development of new theories and methods that could help city planners and political and financial decision makers develop the most balanced sustainable solutions for both human and natural environments.

Tao has more than 20 years of experience in researching energy engineering, thermal sciences and renewable energy sources. He is the director of UNT's Zero Energy Laboratory (in above photo). The Zero Energy Laboratory is the only laboratory of its kind in Texas and is a testing ground for current and future sustainable technologies. For more information, visit <http://engineering.unt.edu/mechanicaland-energy/zero-energy-research-lab>.

UNT recognized for sustainability by The Princeton Review four years in a row

The University of North Texas (UNT) will be included in the 2014 edition of The Princeton Review's “Guide to Green Colleges.” This marks the fourth year in a row that UNT has been included in the guide.

The guide recognizes institutions of higher education in the U.S. and Canada that demonstrate notable commitments to sustainability in their academic offerings, campus infrastructure, activities and career preparation. The guide is released in collaboration with the U.S. Green Building Council – the organization that oversees the Leadership in Energy and Environmental Design (LEED) ranking system.

For additional information about UNT's sustainability efforts, visit <http://sustainable.unt.edu>.

Software to Help Emergency Planners Develop Stronger Response Plans

Officials in charge of organizing response plans and resource distribution strategies in preparation for major emergencies, such as terrorist attacks or disease outbreaks, will soon have a new resource for identifying problem areas and strengthening response plans.

Dr. Armin Mikler, Professor in the Department of Computer Science and Engineering, received a nearly \$800,000 grant from the National Institutes of Health to develop a computer-based system that will help emergency planners identify vulnerable populations, such as those with no access to vehicles or who cannot leave their homes, and modify response plans accordingly.

Mikler is working with Tarrant County Public Health on the project, which involves the use of a computer system named “RE-PLAN” (Response Plan Analyzer).

“The Centers for Disease Control and Prevention mandates that all counties have to prepare for adverse events, and our RE-



PLAN system can serve as a very useful interface for identifying problem areas and better preparing for emergencies,” Mikler said.

Tarrant County Public Health Preparedness Planner Mark Fulmer said that the system offers a wide variety of interactive tools to help planners prepare for different scenarios, such as major highways becoming inaccessible and causing resource deliveries to reroute.

“Plans are most successful when plenty of data is available for research and testing,” Fulmer said. “The RE-PLAN system’s benefits really boil down to being a strong source of information that we

can use to evaluate and test plans, which is essential before any incident actually occurs.”

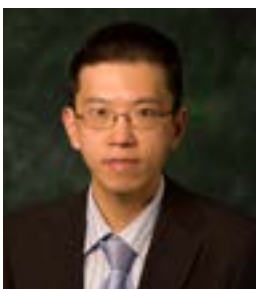
Mikler is working with Dr. Chetan Tiwari from UNT’s College of Arts and Sciences; Drs. Tamara Schneider and Renee Bryce from UNT’s College of Engineering; and Dr. Suhasini Ramisetty-Mikler from the UNT Health Science Center on the project.

NSF Grant to Help Make Laser Nano-Manufacturing More Cost Effective

Two UNT researchers received a National Science Foundation Civil, Mechanical and Manufacturing Innovation grant that will make laser nano-manufacturing more simplified and cost effective for industries to use.

Increasingly sophisticated devices and the trends toward decreasing component sizes and energy consumption of products are placing an increasing demand for innovations in nano-manufacturing. The commercial applications of laser nano-manufacturing are growing, but the field is challenged by issues such as how to reduce cost and how to increase accuracy.

Drs. Yuankun Lin (first photo) and Hualiang Zhang (second photo) received more than \$310,000 for their project, Collaborative Research: Digitally Addressable and Scalable Laser Fabrication of 3D Gradient Index Nanostructures and Nanophotonic Circuits. The project will involve the integration of advanced numerical tools with laser nano-manufacturing techniques. The numerical tools, called transformation optics, will be used to calculate three-dimensional structures with pre-determined optical functions.



The designed structures will be fabricated by multiple laser beam-enabled patterning techniques. According to the researchers, this process will enable high-precision and rapid production of nanostructures with pre-designed optical properties. A large number of functional nanostructures will be produced by rapidly changing the numerical coding information. The techniques will also be used to fabricate optical circuits by adding light paths and controlling the light inside.

The results of this research will lead to improvements in the design of optical devices and the development of an advanced laser fabrication capability. According to the researchers, these new digital design and fabrication tools will enable the rapid design, verification, and fabrication of functional nanostructures and devices for telecommunication, sensing, and imaging applications. The digital display-enabled laser fabrication technique will significantly simplify the laser nano-manufacturing process and improve the process control. The single laser exposure and large-volume patterning process will reduce the manufacturing cost, making the process industrially and technically attractive.

Winners Selected in International Student Competition on Cold-Formed Steel Design

Students from eight universities in the U.S., Canada, China, Iran, and Thailand put their creativity and problem-solving skills to the test in the 2013 International Student Competition on Cold-Formed Steel Design.

The competition, hosted by the University of North Texas, helps promote a professional interest in cold-formed steel, an economical and recyclable construction material, by encouraging the participation of students in any major who are creative and eager to learn new technologies. The competition was launched by Dr. Cheng Yu, Associate Professor in the Department of Engineering Technology.

The top three students were recognized with a plaque and monetary award. The top 10 students also received a one-year Cold-Formed Steel Engineers Institute membership.

The sponsors of the competition are the University of North Texas, National Science Foundation, American Iron and Steel Institute, and Cold-Formed Steel Engineers Institute. In 2010, Yu was awarded the prestigious National Science Foundation CAREER award for a five-year research project to study the design of cold-formed steel shear walls.

For additional information on the competition, please visit <http://cfscompetition.unt.edu>.

Researcher Developing Location-based Social Media Search Function

Dr. Yan Huang, Associate Professor in the Department of Computer Science and Engineering, is developing a location-based social media search function that will allow users to search for and find more information about events around them than ever before.

For many social media platforms today, a user can search for an event at a location using keywords such as “Concerts in Denton, Texas.” The problem with keyword-based searches is that only social media updates and webpages containing those exact words will be found.

However, with Huang’s algorithm, a user could search for “Concerts in Denton, Texas,” and find social posts about concerts that originate from Denton, Texas, even when the poster did not mention Denton in the post.

Huang is developing a robust model for detecting events that incorporates check-in data, text data and a user’s hometown



location in their social profiles to solve that problem. The model will predict user locations using postings on social media platforms and the locations referenced in text on social platforms; the model will also rely on how people connect on social networks.

“A tremendous amount of information is being shared every day on social media platforms, including information that is valuable to others such as events, gatherings or even natural disaster occurrences,” Huang explained. “With this algorithm, a user will be able to search for events, and results will include tweets or other social updates that may not explicitly mention a location.”

Huang’s research is funded by a Department of Defense grant. She is working with Rada Mihalcea, associate professor in the Department of Electrical Engineering and Computer Science at the University of Michigan.

NIST Grant Awarded for Research on Complex Information System Failures

Predicting or managing the global behavior of complex information systems, such as the Internet, computing grids, and clouds, can be difficult. Even a minor disturbance in an information system’s environment can lead to large-scale and costly failures. A 2011 survey of 200 companies by CA Technologies found that more than \$26.5 billion in revenue is lost each year because of Information Technology (IT) downtime. CA Technologies also reported that IT outages are frequent and lengthy, and this problem can cause substantial damage to a company’s reputation, staff morale, and customer loyalty.

Dr. Yan Wan (to the right in the photo), assistant professor in the Department of Electrical Engineering, received a National Institute of Standards and Technology (NIST) grant to work on developing the fundamental knowledge and effective tools to measure, predict, and control catastrophic run-time failures in complex information systems. The mission of NIST, a non-regulatory federal agency within the U.S. Department of Commerce, is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve quality of life.

The challenges in addressing run-time failure stem from the size, complexity, and uncertainty of large-scale complex networks and the limited time in which a response can be successfully implemented. Wan said that while humans designed these systems, the immense flow of data coming into these systems makes them hard to predict. Even when measures are taken to address a run-time failure, such as using back-up servers when one goes down, the problem can be made worse if the cause of the failure is not addressed. She said that the uncertainty caused by users and input needs to be understood instead of just considering it as noise. The uncertainty can then be managed to a certain



degree. Previous systems she has developed will help determine the uncertainty’s impact on the system.

This research seeks to use early warning signals exhibited during the run-time pre-failure stage to speed up the onset of the response period. In particular, uncertainty evaluation and prediction triggered by the early signals provide vital information for the design of optimal controllers to avoid failure.

“Instead of addressing network failure management problems at a data packet level, we view complex information systems as dynamical systems described by mathematical hybrid dynamical flow network models and use the systems and control theory to detect, predict, and control failures in an highly uncertain environment,” Wan said.

According to Wan, this research could contribute to the foundation of managing general complex networks and have a broad impact on complex network applications such as traffic management and power grid management.

Wan and graduate student Junfei Xie (to the left in the photo) are working on this project. Xie joined the Department of Electrical Engineering in fall 2012. During her first year of graduate study, she investigated the novel mobility frameworks for airborne networks that are realistic in capturing unique smooth airborne mobility patterns and are simple enough for the analysis and design of networking protocols. Xie’s results have contributed important fundamental knowledge to the emerging field of airborne networking. She has received a UNT Master’s and Doctoral Fellowship, 2012-2014, and a Top 10 @ UNT Sherman Barsanti Inspiration Award, 2014.

Wan was invited to the SmartAmerica Challenge Kick-off Workshop held in The White House Complex on Dec. 12, 2013. This event was hosted by the White House Presidential Innovation Fellows with help from NIST.

Student Awarded Scholarship from Texas Business Hall of Fame Foundation

Joshua Urbanovsky, a student in the College of Business and College of Engineering, was honored as one of the state's top business students at the Texas Business Hall of Fame 31st Annual Induction Dinner on Nov. 14, 2013, in San Antonio. Urbanovsky earned a \$10,000 scholarship, which he plans to use to help pay for his doctoral degree in computer science at UNT. Urbanovsky is the son of Connie and Joe Urbanovsky and graduated from Granbury High School in 2009.

The foundation annually awards one scholarship to an undergraduate or graduate student studying entrepreneurship at each of the program's 21 participating Texas universities.

On the same evening that Urbanovsky received his award at a gala with more than 1,000 attendees, he witnessed the induction of several Texas legends into the Texas Business Hall of Fame.



"Finding out that I had received the Texas Business Hall of Fame Scholarship left me in complete disbelief," Urbanovsky said. "To be considered and honored in the same scholar class as the rest of the students who received this award, along with the Texas legends who were inducted into the Hall of Fame, is indescribable."

Urbanovsky is pursuing a bachelor of science degree in computer science and a bachelor of business administration degree in entrepreneurship.

"I have been fortunate to be a part of my two favorite programs at this university, the engineering and business colleges," Urbanovsky said. "This hybrid of education and the effort from great professors who have each made a lasting impact on me has prepared me for this achievement."

The Texas Business Hall of Fame Foundation is a nonprofit organization of business leaders throughout the state.

Student Selected For Scholarship by Society of Women Engineers

Adriana Blanco, a senior studying electrical engineering at UNT, was selected by the Society of Women Engineers to receive a national General Electric Women's Network scholarship. Additionally, she was also selected by GE for an internship with GE Transportation – Incremental Train Control Systems in Melbourne, Fla., which she completed over this past summer.

Blanco described the internship as "a wonderful experience. It allowed me to work alongside full-time engineers and kind of see what a day is like working [there]."

Blanco used the \$5,000 scholarship to help fund her continuing dual degrees in Electrical Engineering at UNT and Mathematics at Texas Women's University (TWU) throughout the 2013 – 2014 school year. She graduated



from both colleges in May 2014. After-graduation plans include relocating to Erie, Pa., to participate in GE's Edison Engineering Development Program (EEDP). EEDP is a prestigious program, and only allows a small number of intelligent and hard-working graduates to participate. The graduates receive a great deal of technical training in a work environment. Over the course of the program, accepted applicants rotate to various positions within GE, gaining valuable work experience.

The UNT-TWU dual degree program began in 2007, initially offering only the same degree Blanco received. However, the program has since expanded to offer additional options and allows for engineering students to enjoy the best benefits of both UNT and TWU's academic offerings.

Computer Science and Engineering Students Earn Awards at HackFest

Five University of North Texas students, including three Computer Science and Engineering students, reaped awards at the first LeadingAge HackFest, held on Oct. 25 – 27, 2013, in Dallas for designing technological tools that can be used to improve the lives of older adults.

First place — Global EngAge

David Adamo Jr., a doctoral student in computer science, and his four teammates from other universities clinched first place with a videoconferencing app that allows seniors to connect with others even if they can't leave their homes. Seniors can virtually attend community events through the app. The first-place team received \$5,000.

"All of this technology already exists. We just created something to make it incredibly easy to use," Adamo said. "Simplicity was the most important concern."



People's Choice Award — AMAZE

Quentin Mayo, a UNT student working on a doctoral degree in computer science, and Mahsa Kia, an undergraduate studying computer engineering at UNT, served on the four-person AMAZE team that earned the People's Choice Award for creating a tool that sends a text message when a senior takes his or her medication.

"We are trying to enrich lives," Mayo said. "We want to give them positive encouragement to take their medication on

time. They get a reminder to take medication through a text, and then they are connected through a call with another person."

The People's Choice team earned \$1,000.

"Winning this award meant that we got heard and that our product will hopefully one day help the elderly in order to extend their lives even more," Kia said.

Researchers Receive NSF TUES Award for Undergraduate Learning Project

Undergraduate construction engineering and electrical engineering technology students will benefit from the interdisciplinary teamwork and hands-on learning experiences under coursework that will be developed under a National Science Foundation Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics (NSF TUES) award.

The goal of the NSF TUES project, titled “A New Interdisciplinary Technology Education Strategy Using State-of-the-art Wireless Sensor Networks,” is to create a model course that will involve hands-on construction of a wireless sensor network and onsite structural testing of the University of North Texas’ (UNT) Apogee Stadium, the first newly constructed collegiate football stadium in the nation to achieve the highest level of LEED (Leadership in Energy & Environmental Design) certification.

“The new UNT Apogee Stadium is the second largest construction project that has recently been undertaken in the north Texas area, with the Dallas Cowboys Stadium in Arlington being the largest. Residents in this area are proud and very well aware of this project. Enabling UNT undergraduate students from construction engineering technology and electrical engineering technology to work collaboratively on this structure will be an exceptional educational vehicle,” said Dr. Zhenhua Huang, Assistant Professor in the Department of Engineering Technology and principal investigator (PI) of the project. In addition to Dr. Huang, the project will be undertaken by Drs. Elias Koungianos



Students perform field measurements of the Old Alton Bridge, which connects the cities of Denton, Texas, and Copper Canyon, Texas. These field measurements were part of a case study of the educational strategy that will be pursued in the NSF TUES project.

and Shuping Wang, also of UNT’s Department of Engineering Technology.

Undergraduate students from construction engineering and electrical engineering technology will work collaboratively on items such as wireless sensor network construction, laboratory validation testing, on-site structural testing, instrument troubleshooting, and test data processing and analysis throughout the duration of the class.

The anticipated outcome of this project is that by working with other disciplines on collaborative, hands-on projects, students will learn not

only the application of theoretical knowledge to practical applications but also the communication skills needed to be a contributing team member or a leader in an interdisciplinary project.

“Opportunities for hands-on activities on real projects, especially on a well-known and interesting building or bridge structure, should spark students’ interest and help them learn to apply their knowledge quickly, shortening the difficult transition to real world projects,” Huang said.

In addition, the project includes field trips and other outreach activities for middle and high school students from north Texas to provide an introduction to careers in construction and electronics. The researchers will work with Hispanic students from Calhoun Middle School in Denton, Texas, and with the Texas Girls Collaborative Project in an effort to interest the students in pursuing a career in construction and electronics.

College of Engineering Advisory Board Meeting, May 16, 2014

From left to right in photo:

Bill Kahn, Peterbilt Motors Co.

Don Burgio, Verizon

Jeremy Green, Zodiac Seats

Lettie Haynes, BNSF Railway

James Gibson, L-3 Communications

Larry Eckersley, Freese & Nichols, Inc.

Jason Cinek, TDIndustries

Michael Severson, Bell Helicopter

Etta Clark, PepsiCo and College of

Engineering Advisory Board Chair

Costas Tsatsoulis, Dean of the College of

Engineering

James Warden, Acacia Research Group

Jeannie Shackelford, Lockheed Martin –

Aeronautics Company

Chris Pearce, Cisco Systems

Lee Palmer, Hitachi Consulting

Landon Sproull, Peterbilt Motors Co.

Mario Garza, AT&T

Advisory Board members not in the photo:



Craig Berry, Siemens PLM Software, Inc.

Rick Beutter, Stryker Communications

Charlie Campbell, Labinal

Bill Lawrence, B. Lawrence Consulting

Ashley Ledbetter, CBS ArcSafe, Inc.

Casey Litaker, Triumph Aerostructures-

Vought Commercial Division

Robert Lucas, Zodiac Aerospace

Sean McMenamin, Peerless

Manufacturing Co.

James Stikeleather, Dell

John Turner, Odyssey Aerospace

Jim Womack, Cowtown Angels

Development Officer's REPORT

What is your fondest memory of your studies at North Texas:

- taking notes in class,
- getting a fulltime job,
- receiving an A on an exam,
- reviewing notes with classmates,
- discovering full comprehension of a topic, or
- finally achieving your desired result on a problem?

Some or all of those experiences were posted as memories by graduates at our recent commencement ceremony. As a result of your contribution, we are able to provide financial assistance to more students this year. Please know that your gift also enables students to:

- attend local and regional professional engineering society activities,
- participate in national and international competitions, and
- travel to national and international conferences.

Our Recent Graduate Advisory Board, led by Devin Joll, 2012 BA Information Technology, has recruited the following alumni to mentor high school prospects and current UNT students, to assist with career mentoring and networking, and to maintain communication with faculty:

- Anna Barren, 2012 BS Mechanical and Energy Engineering,
- Ademola Fawibe, 2011 MS Computer Engineering,
- Beth Keswani, 2008 BS Electrical Engineering,
- Chris Lewton, 2011 MS Computer Science,
- Tandy Lofland, 2006 BS Computer Science,
- Adam Marlowe, 2009 BS Electronics Engineering Technology,
- Jeff McKee, 2013 BS Mechanical and Energy Engineering,
- Pawan Nerusu, 2006 MS Materials Science and Engineering,
- Nergis Soylemez, 2006 BS Electronic Engineering Technology,
- Christian Winter, 2006 BS Electronic Engineering Technology, and
- Patrick Zimmerer, 2013 MS Engineering Systems.

In addition to working with current and future UNT students, our alumni are staying connected. Along with recent gatherings in Austin, Houston, and Silicon Valley, Joe and Brenda Longoria, both 1984 BS Computer Science alumni, hosted Atlanta, Ga., area alumni at their home as did Larry



Dr. Barrett Bryant, Computer Science and Engineering Chair, and Devin Joll.



Dr. Seifollah Nasrazadani, Christian Winter, and Nergis Soylemez.



Sullivan, 1992 BS Computer Science, with Seattle, Wash., area alumni.

Our alumni look forward to seeing you at a tailgating tent on Saturday, Sept. 6, 2014, when UNT hosts SMU at the first home football game at Apogee Stadium. You will also have a chance to join in the fun at out-of-town games. Austin-area alumni will gather prior to the kickoff of the UNT vs. UT game in Austin on Saturday, Aug. 30, 2014; Houston area alumni will tailgate prior to the game against Rice on Saturday, Oct. 25, 2014; and San Antonio area alumni will gather prior to the game against UT-San Antonio on Saturday, Nov. 29, 2014.

Chris Pearce, 1990 BS Computer Science, led our effort to rally support for the UNT Capital Campaign and enlisted the following:

- Cari C'deBaca, 2011 BA Applied Arts and Sciences,
- Jay Chenault, 1984 BS Industrial Technology,
- Etta Clark, 1980 BS Computer Science,
- Steve Eaton, 1986 MS Computer Science,
- Kathy Foster, 1979 MS Computer Science,
- Devin Joll, 2012 BA Information Technology,
- Larry Sullivan, 1992 BS Computer Science,
- Michael Webb, 1997 BS Computer Science,
- Jennifer Williams, 2011 BS Electrical Engineering, and
- Troy Wolf, 1983 BS Industrial Technology, 1993 MS Engineering Technology.

As this is written, we have reached 94 percent of our goal of \$11 million. Progress reports were delivered at gatherings in Dallas/Plano, Fort Worth/Arlington, and Denton.

It's not too late for you, your family, your graduating class, or your company to name a class or lab!

On behalf of the students who benefited from your generosity, thank you!



Brenda Longoria and Joseph Longoria.



Etta Clark (center), Director of Information Technology for PepsiCo and Chair of the College of Engineering Advisory Board, with PepsiCo scholarship recipients Mayaria Johnson (left), computer science student, and Jeremy Gonzales (right), computer engineering student.

*With Green Pride,
Reginald Grant*

In The News

Following the recent crash of Malaysian Airlines flight 370, Dr. Krishna Kavi, professor of the Department of Computer Science and Engineering and Director of the Net-Centric Software & Systems Center, has been interviewed about his “glass box” technology. Kavi was first quoted by the New York Times in an article from 2009 after Air France Flight 447 crashed into the Atlantic Ocean. In July 2010, Kavi wrote “Beyond the Black Box,” which was published in IEEE Spectrum. Since the disaster, Kavi has been quoted in articles from Al Jazeera America, Medium.com, Discovery News, and The New York Times. Kavi also was interviewed for a NBC 5 news segment.

To see additional media coverage related to the College of Engineering, visit <http://engineering.unt.edu/category/news-tags/news>.



Your Support of the UNT College of Engineering Makes a Difference

To find out how you can contribute to successful programs such as Robocamp (photo), please visit https://development.unt.edu/givenow/givenow_ceng.php. For a description of scholarships, go to <http://engineering.unt.edu/students/scholarships-and-grants>.



Connect with us at:

Facebook: <http://www.facebook.com/untengineering>

Twitter: <http://twitter.com/UNTEngineering>

YouTube: <http://www.youtube.com/user/UNTEngineering>

We would like to hear from our alumni. Please help us tell the story of the College of Engineering and promote the achievements of our alumni by completing the form at <http://engineering.unt.edu/alumni-update>.

