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The state of engineering education made recent headline news in Connecticut when a venerable company with deep local roots announced plans to expand to the West and Midwest, initially citing the shortage of engineers in New England.

In Connecticut, 70 percent of all engineering undergraduate students, and 60 percent of graduate students, are enrolled at the University of Connecticut Storrs campus. UConn is the only public engineering degree-granting institution in the state. UConn’s School of Engineering has made exceptional strides in increasing the size and quality of our program. Since 1997, our undergraduate enrollments have increased from 800 to about 1,500 students. Our freshman enrollments in engineering have more than doubled. These dramatic increases are due to our outreach programs aimed at K-12 students and teachers, along with help from alumni and friends such as the visionary corporate leaders at United Technologies. In fact, 35 high school valedictorians and salutatorians were admitted to engineering for the fall 2004 semester at UConn.

Our success is real. To quote Dr. John Cassidy, Senior Vice President of Science and Technology at United Technologies, in the April 8, 2004 issue of the New York Times, “In the past few years we have hired more engineering graduates from UConn than any other school. The best UConn graduate is in the same ranks as a graduate from M.I.T. or Stanford or Georgia Tech or pick-your-favorite top-notch engineering school. UConn graduates are holding their own in my view, and that was not the case five or 10 years ago.” But the question remains: are we doing enough?

According to the American Society for Engineering Education, 425 B.S. degrees were conferred in engineering by all colleges in Connecticut last year. In the meantime, the Connecticut Department of Labor indicates that over 1,400 engineering jobs become available every year in the state. For every entry-level engineer produced by Connecticut’s higher education system, there are three engineering job openings within the state. At UConn, we receive three or four phone calls for every engineering student, from companies—as far away as California—seeking to hire our graduates. In fact, some Connecticut companies have been trying to fill engineering vacancies for two years. There has not been a more robust job market for young engineers at any time during the last 35 years.

According to the U.S. Department of Labor, Connecticut employs over 9,300 aerospace and mechanical engineers. At UConn, we have 20 faculty members in our mechanical engineering department (which includes aerospace engineering related courses). This is a 465:1 engineer-to-faculty ratio. Pennsylvania employs 8,400 aerospace and mechanical engineers, while its public universities have 110 faculty members in these disciplines for a 76:1 ratio. Kansas, with 2,500 aerospace and mechanical engineers, has 64 faculty members in aerospace and mechanical engineering in its public engineering colleges for a 39:1 ratio. And Montana has 320 aerospace and mechanical engineers, and a mechanical engineering faculty size only slightly smaller than UConn’s.

The extreme imbalance between the size of the industry and the size of the engineering faculty is because engineering education has never been given as high a priority in Connecticut as in other states. Although the preceding example highlights one industry, the same imbalance exists in every discipline of engineering. Because most college graduates prefer to build their careers close to home, the notion that Connecticut companies can ask the legislatures of Pennsylvania, Kansas, or Montana to pick up the tab to educate future generations of Connecticut engineers is a fantasy.

It is not too late to stop the imminent loss of high-paying engineering jobs from Connecticut that will occur if we fail to produce enough engineering graduates in Connecticut. Connecticut should be investing in engineering education to a degree that is at least on par with competing states. This requires tripling our engineering faculty numbers; only after tripling would UConn’s School of Engineering be of similar size as engineering programs at the University of Michigan, Illinois, or Purdue; all public institutions in states with multiple engineering degree-granting public universities.

Choosing to compete in our technologically-advancing world is costly. Continuing the underinvestment in engineering education in Connecticut is a clear path to economic mediocrity.

Amir Faghri
Dean, School of Engineering and United Technologies Corporation Chair Professor in Thermal-Fluids Engineering
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www.engr.uconn.edu
The Stanley Works Establishes Comprehensive Endowment

A generous $200,000 gift for endowment from The Stanley Works of New Britain, Connecticut will fund a comprehensive array of scholarships and learning opportunities for students and teachers associated with New Britain High School. The novel agreement, with a value of $300,000 after inclusion of state matching funds, forges new territory in building an educational and employment bridge between the School of Engineering, one of Connecticut’s largest high schools, and one of the state’s largest and most distinguished employers.

“We are delighted by this new alliance with The Stanley Works and look forward to many years of symbiotic relations between the company, New Britain High School and the UConn School of Engineering,” said Dean of Engineering Amir Faghri. Building a link between collegiate engineering programs and high schools has long been one of the difficult challenges facing schools and colleges of engineering nationwide. Yet this linkage is critical, most agree, as a means to increase the number of engineering graduates nationwide and thereby help the U.S. regain its preeminent role as the world’s technology leader.

The 160-year old company is a worldwide producer of tool products and security solutions for professional, industrial and consumer use. A centerpiece of the endowment is The Stanley Works Scholar Program, which will support undergraduate scholarships in engineering for students graduating from New Britain High School. The endowment agreement is augmented by significant additional funds from The Stanley Works that will support:

- Tuition for one New Britain High School teacher to participate in the School of Engineering’s da Vinci Project summer workshop each year. The program immerses junior high and high school math, science and technology teachers in fundamental engineering concepts and equips them with engineering modules that can be incorporated into their school curriculum.
- Annual support for The Stanley Works Scholar to attend the School of Engineering’s Bridge program, a residential summer program that introduces qualifying incoming freshman students to intensive math/science coursework before the start of their freshman year in engineering.
- Support for summer employment opportunities for The Stanley Works Scholars and New Britain High School teachers.
- Support for New Britain High School to introduce interested students to engineering via the classroom.
- Mentorship and leadership training programs.

Students Play Key Role in Devising Bike Plan

The University of Connecticut campus plan may soon reflect the efforts of a group of engineering students who seek to transform the Storrs campus into a more bike-friendly environment. Student officers of the Institute of Transportation Engineers (ITE) student chapter are collaborating on an ambitious plan to survey the University community relative to bicycling habits and use, recommendations for improving the bike-friendliness of the campus, concerns about bike safety and other aspects.

The effort is being spearheaded by ITE student chapter president Jeff LaMondia, chapter secretary Eric Jackson, and treasurer Craig Jordan, with guidance from associate professors of Civil & Environmental Engineering John Ivan and Lisa Aultman-Hall. Dr. Ivan is the faculty advisor to the ITE student chapter and Associate Director of the Connecticut Transportation Institute; Dr. Aultman-Hall is Director of the Connecticut Transportation Institute. The coalition effort involves the entire student chapter of ITE along with members of the Connecticut Transportation Institute, the UConn EcoHusky organization and the campus Environmental Policy Advisory Council.

According to Mr. LaMondia, the seed of the idea arose when representatives from the EcoHusky group approached the ITE student chapter for information on how bicycle transportation could be

In Memoriam: Professor Erich Richard Stephan

The School of Engineering was saddened by the death of Dr. Erich Richard Stephan, professor emeritus of Mechanical Engineering at the University of Connecticut. He taught at UConn for nearly 40 years before relocating to Port Charlotte, FL after his retirement. Dr. Stephan passed away on August 26, within two weeks of his 92th birthday. He was born in Esslingen, Germany, and emigrated to the United States with his parents at the age of 10. He was an avid sailor, designing two large sailboats and building them in his backyard. Dr. Stephan was predeceased in 1998 by his wife of 57 years, Myreta Hammann Stephan. He is survived by their three sons, Craig, Eric and Ronald, and four grandchildren. A memorial service was held in Storrs on October 30.

Continued on page 20
Construction Career Day took center stage again for the third year when 1,100 Connecticut high school juniors and seniors, as well as 250 guidance counselors, participated in the October 5 and 6, 2004 program at Mountainside Recreation Facility in Wallingford, CT. The program affords students a unique hands-on exposure to diverse careers in commercial construction. The Connecticut Transportation Institute (CTI), a center affiliated with the School of Engineering that includes faculty from the Civil & Environmental Engineering department, co-sponsored the program.

Construction Career Day featured an array of interactive exhibits, trade industry displays and hands-on demonstrations in bricklaying, concrete stamping, power sawing, drilling, rebar tying, carpentry, electrical splicing and welding. The high school students enjoyed a unique opportunity to operate heavy construction equipment—including bulldozers, excavators, bucket trucks and crane simulators—under the guidance of skilled professionals.

CTI program director Donna Shea and James Mahoney, Operations Manager for the Connecticut Advanced Pavement Laboratory, participated on the planning committee, and CTI staff members Stephanie Merrall, Mary McCarthy and Jack Stephens (professor emeritus of Civil & Environmental Engineering) volunteered during the Career Day events.

In addition to the high school students and counselors, representatives from Local Technical Assistance Programs (LTAPs) in other states also participated, with the objective of learning how Connecticut so successfully plans and executes the event. They enjoyed their involvement and offered enthusiastic praise for the Construction Career Day program.

The program’s sponsors also included the Connecticut Department of Transportation, Federal Highway Administration, Connecticut Bituminous Concrete Producers Association, Connecticut Construction Industries Association, PBE, Inc. and a number of skilled trade unions.

Mark your calendars for a fun family event you won’t want to miss. The University of Connecticut will once again welcome Connecticut’s outstanding young inventors to Storrs when the 2005 Connecticut Invention Convention (CIC) comes to Gampel Pavilion Saturday, April 30, 2005. The School of Engineering has hosted and co-sponsored the convention since 1999. The CIC is a statewide event that customarily brings more than 3,000 school-age children, parents, sponsors and judges to campus for the culminating competition of a program begun in more than 100 state schools in the late fall. During the day, the top-winning K-8 inventors from elementary and middle schools throughout the state will showcase inventions of their own design and construction before panels of judges, parents and other visitors.

The non-profit Connecticut Invention Convention is designed to encourage and develop creativity and the spirit of invention among students. Judging is performed by teams of volunteers from Connecticut companies, academia and the legal profession, who query the participating student inventors about their individual projects and assess the novelty, execution and documentation of the inventions.

CIC is run by volunteers and underwritten by grants and in-kind support from community, educational institutions, business and charitable organizations, and the University of Connecticut/School of Engineering. For information about the Connecticut Invention Convention, please contact Ramesh Malla at (860) 486-3683 or by e-mail at mallar@engr.uconn.edu. Or visit the CIC web site at www.CTInventionConvention.org.
What's in a name? A lot, when it comes to image branding and perception. So early in 2004, the Metallurgy & Materials Engineering Department undertook steps to change the department's name to Materials Science & Engineering (MSE).

The department began in 1968 as the Department of Metallurgy, a name that aptly reflected the research and teaching interests of the faculty members at the time, which revolved around metals. Later, when faculty with expertise in ceramics and composites joined the department, the name was changed to Metallurgy & Materials Engineering.

Today, the research and teaching interests of the current faculty members encompass broad areas of metals, ceramics, polymers, biological materials, and composites.

The concept of a “metallurgy” department has gradually been replaced by a more up-to-date focus on materials. So the evolution in technological focus led naturally to the name change—a “tail-wagging-the-dog” scenario, in essence.

New Name for Metallurgy Department

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Electrical & Computer Engineering Hosts REU Program

Last summer, the Electrical & Computer Engineering (ECE) Department launched an innovative Research Experiences for Undergraduates (REU) program, enabling a group of undergraduate students to engage in cutting-edge engineering research. The REU program in Electrical & Computer Engineering, sponsored by the National Science Foundation (NSF), is second within the School of Engineering; in 2002, the Chemical Engineering Department won an REU grant to develop a program centering on nanotechnology. The NSF REU in the ECE Department is a year-long program with a summer component focusing on external students and an academic year (fall/spring) component focusing on students at UConn.

The NSF REU program funds undergraduate research at designated university programs nationwide, giving students valuable exposure to the academic research environment and motivating them to consider graduate study in technical fields.

As it is being administered within the ECE Department, the three-year REU brings eight undergraduate college students from around the nation to the department each summer, and another eight UConn engineering students to the department each fall, to work one-on-one with individual faculty members for 10 weeks. The program awards participating students a stipend plus coverage of expenses associated with housing and transportation. Students work on a research project of their choice, under the supervision of a faculty member, in exciting areas such as biomedical ultrasound and optical imaging, RF power transmission, optical sensor technology, computer architecture, optical analog-to-digital conversion, semiconductor material characterization, quantum communication, and mission-specific integrated Microsystems.

To qualify, a student must be a U.S. citizen or permanent resident; a senior or junior in electrical engineering, computer engineering or a related field; and have a minimum college GPA of 3.0.

Beyond the lab-centered portions of the program, participants also attend workshops and exercises intended to improve communications skills, and workshops in which attendees explore ethical issues in science and engineering. The REU Program also offers students the opportunity to meet with industrial scientists and tour local manufacturing companies.

Associate professor Eric Donkor, who is the principal investigator on the winning NSF proposal, oversees the REU program. For details of the REU program in Electrical & Computer Engineering, please visit the website at www.engr.uconn.edu/ece/ece_reu.
For Dr. Peter Luh, complex mathematical modeling and optimization offer powerful tools for solving myriad manufacturing, design, and performance problems in our society. Dr. Luh, who is the SNET Professor of Communications & Information Technologies in the Electrical & Computer Engineering Department, is at the forefront of information technology and respected internationally for his expertise in the planning, scheduling, and coordination of design, manufacturing, and service activities to optimize system performance. He also is an expert on auctioning, load and price forecasting, portfolio optimization, and risk management for the newly deregulated power markets.

Dr. Luh is applying his complex mathematical modeling and optimization techniques to help resolve one of the major challenges involved in optimizing the generation and distribution of electricity. In a deregulated electricity market, he explains, an independent system operator (ISO) uses supply offers and demand bids from market participants to pair offers and bids in an auction mode. These auctions also set market clearing prices for market settlement. The methods currently employed by most ISOs would cause consumers to pay significantly higher costs than necessary, directly conflicting with goals set out by the Federal Energy and Regulatory Commission (FERC) to minimize consumer costs.

With funding support from the National Science Foundation, Southern California Edison, and Select Energy (a division of Northeast Utilities), Dr. Luh and his colleagues—UConn professor of Economics Vicki Knoblauch, Harvard University’s David Pepyne, and Southern California Edison’s Gary Stern and Joseph Yan—and graduate students have developed a new generation of auction methods to reduce the costs paid by consumers. Numerical testing results demonstrate that the methods are effective and near optimal, and the resulting payment costs are significantly lower than those obtained by using methods currently used by most ISOs. In addition, Dr. Luh’s efforts for Northeast Utilities include the prediction of electricity load and prices, development of optimization-based offer strategies, portfolio optimization and risk management; and previously near-optimal approaches for unit commitment, economical dispatch, hydro-thermal coordination, and purchase and sale of power.

Another of Dr. Luh’s current research projects, also funded by the National Science Foundation and partially supported by United Technologies Research Center, is on the configuration and operation of complex systems using intelligent and secure buildings (e.g., hotels, apartment complexes, and office buildings) as the problem context. Performance and safety considerations are complicated by the avenues by which people travel through buildings—such as stairs, elevators and escalators—and by ventilation, heating and cooling systems. Dr. Luh and his collaborators, UConn assistant professor Laurent Michel and associate professor Eugene Santos, both of Computer Science & Engineering, will establish methodologies that are coherent across configuration and operation phases, and across normal and emergency modes. The key idea is to synergistically integrate modeling and optimization with formal semantics and constraint satisfaction from computer science.

“If successful,” he said, “the results of this research will provide a systematic framework and a valuable set of methods for building designers, operators, and first responders for the coherent and optimized configuration and operation of buildings. The results can also be extended for the configuration and operation of other complex systems such as security monitoring, vehicles, and aircraft.”

Dr. Luh has applied his complex modeling and optimization techniques to help companies such as Pratt & Whitney, Toshiba, United Technologies Research Center, and Delta Industry optimize planning and scheduling of product manufacture and repair services, and improve on-time delivery of products.

Dr. Luh’s impact on the School of Engineering has been far reaching during his 24-year career at UConn. From 1997-2004, he was Director of the Booth Research Center (BRC), a centerpiece of the School’s computing and communication resources. At the University level, he played a key role in winning support from the National Science Foundation to link UConn with the Internet II network.

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SoEHonors

University Selects Three Endowed Named Faculty

Endowed named and chair professorships are among the most coveted, highest honors to which academics aspire. They bring prestige to a University, enhance recruitment and retention of world-renowned faculty and support fundraising efforts. Since 1998, the School of Engineering has secured funding to support 17 endowed chair and named professorships. During the fall, the University of Connecticut Board of Trustees named three engineering faculty members to endowed named and chair professorships.

In November, the Board of Trustees named Yaakov Bar-Shalom the Marianne E. Klewin Professor in Engineering. Dr. Bar-Shalom is a Board of Trustees Distinguished Professor (since 2002) in the Department of Electrical & Computer Engineering.

Dr. Bar-Shalom, who was named a School of Engineering Distinguished Professor in 1998, is a world-renowned authority in target tracking, detection, estimation and data fusion, and many aspects of random systems theory and its applications. He is widely recognized as a premier researcher in the area of multisensor/multitarget tracking. His work involves development of computer algorithms that track objects, such as airplanes in flight. His work is already being used in Boston by Logan Airport’s ground traffic monitoring system, by the Navy, and in Israeli and U.S. missile defense systems. His algorithms also drive an Australian radar system that tracks all sea and air traffic within a 2,500-mile radius.

He received his Ph.D. in electrical engineering from Princeton University in 1970 and worked as a Research Scientist/Engineer for Systems Control, Inc. in California before joining the University of Connecticut in 1976. Dr. Bar-Shalom has published prolifically in the field of target tracking, authoring more than 130 peer-reviewed journal papers and four books. He is a former Associate Editor of IEEE Transactions on Automatic Control (1976-1977) and Automatica (1978-1981). He is a frequent keynote speaker at major conferences in his field. He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), and recipient of the IEEE Control Systems Society Distinguished Member Award in 1987. Dr. Bar-Shalom served as president of the International Society of Information Fusion in 2000 and 2002.

Dean of Engineering Amir Faghri was named the United Technologies Corporation Chair Professor in Thermal-Fluids Engineering. The appointment was announced in September by Dr. Fred Maryanski, interim provost.

The chair position is one facet of a $4 million gift from United Technologies (UTC) and its Pratt & Whitney unit. Both companies are headquartered in Connecticut and have enjoyed a long history of close educational and research relationships with the School of Engineering.

Dr. Faghri enjoys an international reputation as a leader in heat transfer research, education and service. His scholarly record of over 250 publications—including 150 refereed journal articles—six books and editorial volumes, and six patents, in addition to his current service on the editorial boards of eight of the most prestigious journals in the field, attest to the quality of his contributions and to the respect he holds among his peers. His signature work, Heat Pipe Science and Technology, is internationally acclaimed for its depth and breadth of coverage, and it is the most widely used book on the subject.

Despite the many demands of his role as Dean of Engineering, a position he assumed in 1998, Dr. Faghri has remained an extremely productive researcher who has dramatically advanced the science and technology of heat pipes, which are used worldwide for thermal management in space, military and commercial applications. In the 1990’s, Dr. Faghri developed new high heat flux low-temperature miniature/micro heat pipes for commercial cooling of laptop computer chips. Most recently, he invented two innovative heat pipe cooling systems for portable fuel cell stacks. He has made significant and seminal contributions in the area of multiphase heat transfer for applications ranging from advanced cooling systems, to alternative energy systems including solar energy systems and thermal energy storage devices.

Dr. Faghri joined the University of Connecticut in 1994 as professor and Department Head of Mechanical Engineering. He was the Brage Golding Distinguished Professor in the Department of Mechanical and Materials Science Engineering at Wright State University, Dayton, OH, before coming to UConn. Dr. Faghri has received many honors and awards, including the prestigious 1998 American Institute of Aeronautics & Astronautics (AIAA) Thermophysics Award and the 1998 American Society of Mechanical Engineering (ASME) Heat Transfer Memorial Award.

Dr. Faghri received his M.S. and Ph.D. degrees from the University of California at Berkeley (1974, 1976).

In addition, the UConn Board of Trustees named Thomas K. Wood the Northeast Utilities Chair in Environmental Engineering Education. Dr. Wood is a professor of Chemical Engineering and holds a dual appointment in the Department of Molecular and Cell Biology. He received his Ph.D. from North Carolina State University in 1991 and embarked on his academic career at the University of Connecticut in 1991. He is internationally acclaimed for his depth and breadth of coverage, and it is the most widely used book on the subject.

Continued on page 12
Escabí Research May Yield Clues to Developmental Problems

In a maze of quiet labs deep in the recesses of a psychology building at the Storrs campus, assistant professor of Electrical & Computer Engineering Monty Escabí and assistant research professor Heather Read, of the Department of Psychology, apply their individual expertise toward understanding how living creatures process sound. The pair recently received a five-year, $875,000 grant from the National Institutes on Deafness and Other Communication Disorders (a unit of the National Institutes of Health) to conduct research that will shed light on how the central nervous system interprets complex sounds in the environment, such as speech, background noise and animal vocalizations.

“Animals easily detect and distinguish sounds in their environment that are important for predation, survival and reproduction,” Dr. Escabí explains. “In humans, sound recognition is particularly important in the analysis of speech and music. Communications sounds, speech and music can vary dramatically in their frequency content and temporal sequencing. How the brain is able to achieve a relatively stable representation is remarkable, given the high levels of background noise encountered in natural environments. Our most powerful supercomputers fail miserably at such simple sound recognition tasks.”

Drs. Escabí and Read are interested in understanding how individuals with certain tell-tale developmental brain damage—associated, for example, with dyslexia and other learning disorders—process sound. Dr. Escabí explains that recent studies conducted by researchers at Harvard Medical School and Beth Israel Hospital found a strong correlation between dyslexia and dysfunctional auditory processing systems, or hearing deficits. Seeking to understand how the process works, Drs. Escabí and Read are employing a variety of complex techniques, drawing from fields as diverse as engineering, physiology and anatomy.

“Our approach is centered on relating single brain cell (neurons) activity to various properties of complex sounds,” says Dr. Escabí. “These properties will then be related to the underlying brain circuitry. Neurons form the basic computing unit in the brain, much as transistors are the principal building block in computers. Yet, considering the function of individual transistors (or neurons) is unlikely to reveal the underlying function of a computer (or brain). For this reason, we must also consider its architecture. Thus our goal is not simply to understand inner workings of individual neurons, but to also characterize the collective activity from a large network of brain cells in sound analysis and recognition tasks.”

To do this, Drs. Escabí and Read are performing in vivo experiments in which they record electrical activity from single brain cells in conjunction with anatomical mapping of the auditory cortex, which is located in the temporal lobe of the brain. This involves techniques derived from signal processing, systems identification, control systems, and information theory in order to characterize how auditory neurons process the frequency range and duration of acoustic sounds. The lab setup includes an array of interconnected computers displaying various data captured in real time: a tree-like image of brain neurons, a rainbow image of the auditory cortex revealing what portions respond to specific frequencies of sound. The action revealed in these computer monitors actually transpires within a small, sound shielded room in which an anesthetized lab rat receives sound in one ear while monitors and cameras track the animal’s brain responses, mapping out what parts of the auditory cortex respond to specific sound frequencies.

Understanding how brain-damaged animals process sound is key to developing therapeutic strategies to help individuals who are hearing impaired or who suffer learning disorders, such as dyslexia, that are related to hearing dysfunction. Findings from the research, says Dr. Escabí, will support development of prosthetic technologies for the hearing impaired that artificially enhance speech and other sounds in a manner that complements normal hearing function. This would benefit today’s hearing aid and cochlear implant designs by improving their accuracy and making them resistant to background noise. Furthermore, such findings could lead to biologically inspired speech and sound recognition systems that closely mimic natural hearing processes.

Dr. Escabí joined the University of Connecticut in 2000 after earning his Ph.D. in bioengineering from the University of California at Berkeley and San Francisco. He earned his master’s degree from Columbia University in 1995.
Dangerous waste pollutants, and methods for detection, containment and remediation, were the focus of a three-day conference held at the University of Connecticut October 8-10, 2004, when 60 academics and industry representatives participated in the 36th Mid-Atlantic Industrial and Hazardous Waste Conference. The event was sponsored by the School of Engineering, the Department of Civil & Environmental Engineering, and the Environmental Engineering Program at UConn.

The conference was chaired by Dr. Amvrossios Bagtzoglou, associate professor of the University of Connecticut and co-chaired by Dr. Konstantinos Kostarellos of Polytechnic University. Recent developments in research, engineering, practice and regulation were exchanged during the conference, which included 44 papers and a selection of poster presentations. Keynote presentations were delivered by Dr. Domenico Grasso, newly seated Dean of the College of Engineering and Mathematics at the University of Vermont; Dr. Ronald Green, principal Staff Scientist at Southwest Research Institute; Dr. Hilary Inyang, Duke Energy Distinguished Professor and Director of the Global Institute for Energy and Environmental Systems at the University of North Carolina—Charlotte; and Dr. David R. Miller, professor of Natural Resources Management & Engineering at the University of Connecticut.

Papers addressed the following areas:

• Novel treatment processes for industrial waste, soil, sediments, ground water and gas-phase pollutants, including bioreactors, bioremediation and in situ technologies
• Biodegradation processes, microbiology and novel organisms
• Environmental toxicology and environmental forensics
• Water treatment and disinfection
• Integrated waste management, landfills, composting and waste-to-energy technologies
• Hudson River and New York Harbor estuary contamination
• Watershed and water quality modeling
• Sediment and contaminant transport modeling
• Pollution prevention, waste minimization, industrial ecology and sustainability

The full papers and extended abstracts were published in a CD-ROM proceedings, and selected papers will be peer-reviewed for possible inclusion in a special 2005 issue of the Journal of Water, Air and Soil Pollution: Focus on Advanced Remediation Technology, Kluwer, for which Dr. Bagtzoglou serves as Editor.

In addition to his contributions as a researcher, Dr. Luh has devoted significant time toward professional service. He currently is Associate Editor of Discrete Event Dynamic Systems, Associate Editor of IEEE Transactions on Design and Manufacturing, and Founding Editor-in-Chief of IEEE Transactions on Automation Science and Engineering (T-ASE), which was launched in 2004. The creation of T-ASE arose out of a bifurcation of the IEEE Transactions on Robotics and Automation, of which Dr. Luh was Editor-in-Chief from 1999-2003.

Dr. Luh is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE) and a Council Member of the Connecticut Academy of Science and Engineering (CASE). He is also a member of the Institute for Operations Research and the Management Sciences (INFORMS), Sigma Xi, and a senior member of the Society of Manufacturing Engineers (SME) and the Institute of Industrial Engineers (IIE). Dr. Luh received the Distinguished Professor Award presented by the School of Engineering in 2000.

He has authored or co-authored 15 book chapters, 82 journal papers, and 203 conference papers on subjects as diverse as game theory, decision-making, power systems, and manufacturing systems. Three conference papers garnered him Best Paper awards. He also received the King-Sun Fu Memorial Best Transactions Paper Award, IEEE Transactions on Robotics and Automation; Outstanding Achievement Award, United Technologies Research Center; Award of Appreciation, East of California Asian American Studies Conference; and Distinguished Service Award, IEEE Robotics and Automation Society.

He is an active researcher with more than 70 grants, totaling over $8 million throughout his UConn career, and he is co-inventor on one U.S. patent.

Dr. Luh received his Ph.D. in applied mathematics from Harvard University, and his master’s degree in aeronautics and astronautics from the Massachusetts Institute of Technology (MIT).
Consult the nation's citizenry, infrastructure and government from terrorism was the focus of the second International Conference on Advanced Technologies for Homeland Security held August 12-13, 2004 at the University of Connecticut campus in Storrs. The School of Engineering once again organized and hosted the event, which drew 350 attendees from industry, government, first-response units, and colleges and universities throughout the Northeast.

The program, staged in the School of Engineering's elegant Information Technologies Engineering building, combined talks, posters and exhibits aimed at a broad audience, including technology leaders, managers, policy makers, small and large business leaders, and emergency responders. School of Engineering Dean Amir Faghri opened the conference with an overview of the role of academic institutions in developing cutting-edge technologies that can be employed in securing the nation's citizenry, infrastructure and government from terrorism alone. He weighed in on the concept of an intelligence czar and described the daunting challenge of combining seemingly disparate intelligence details into a cohesive portrait of impending threats.

The School of Engineering's Associate Dean of Academic Affairs, Ian Greenshields, spearheaded the entire conference, which included 10 concurrent technical and policy sessions, 40 speakers and 30 poster presenters.

A variety of engineers, business leaders and government officials addressed the audience during dual, concurrent sessions over the two days, including officials from the U.S. Department of Homeland Security, DARPA, NSF, the American Association for the Advancement of Science, the Idaho National Engineering and Environmental Laboratory, the U.S. Military Academy, the U.S. Coast Guard Academy and the Connecticut Homeland Security Education Center. Subjects ranged from specific security-oriented technologies being developed by industry to methods for sensing and identification, security vs. individual freedoms to government funding opportunities. A number of the 2003 ICATHS speakers returned to Storrs for the 2004 program with more detailed information developed in the last year. Major John Buturla, formerly Director of the Connecticut Division of Homeland Security under the Department of Public Service, delivered the opening day's luncheon talk.

John Voeller, Chief Technology Officer of BV Solutions, regaled the audience with a "what I did on my summer vacation" story profiling his experience as a White House Fellow associated with the Office of Science & Technology Policy. Mr. Voeller identified three technological areas that are crucial to homeland security: dynamic surveillance, so-called "genetic databases," and active detection and disruption. Dynamic surveillance techniques would permit us to actively detect a potential weapon. Genetic databases, he explained, will allow us to automatically tag every unit, constantly feed new information into a database and trace all transactions back to their origin. Such technologies would eliminate money laundering, masking and smuggling—financial conduits that support terrorism, he observed. He cautioned that although we may succeed in developing some of these technologies, they ultimately may fail us due to our inability to coordinate complementary efforts, prevent duplication, learn from our past successes or failures, know our financial investment, or other complexities.

Bruce Schneier, founder and CTO of Counterpane Internet Security and author of seven books on the subject of homeland security, told the audience that security is a complex system, a way of thinking. "A bank vault is a wall that separates money from criminals," he said. "But lots of things are associated with the vault beyond 'how thick is that wall.' We have to think in terms of systems and interactions." A vault entails systems governing the combination, usage procedure, customer access, installation, alarms and response, and failure. He went on to say that "terrorists are like entrepreneurs, seeking to maximize their success," and that smart attackers think outside the box, cheat, and invent new crimes. Dealing with terrorism will require new strategies, a new way of thinking, and security systems that are designed for failure, he said.

Ruth A. David, President and CEO of the ANSER Institute for Homeland Security, former Deputy Director for Science and Technology at the Central Intelligence Agency, and member of the President's Homeland Security Advisory Council, asserted that terrorism and...
Top Honors for Engineering Faculty

Professor-in-Residence Anthony DeMaria (B.S. Electrical Engineering ’56, Ph.D. Engineering Physics ’65) of Electrical & Computer Engineering, received the 2004 Connecticut Medal of Technology, which recognizes extraordinary achievements by an individual from the academic or business community in fields crucial to Connecticut’s economic competitiveness. The medal, which has been presented on only three occasions, is awarded by the Connecticut Board of Governors for Higher Education with the assistance of the Connecticut Academy of Science and Engineering. The two previous recipients were Charles H. Kaman, Founder and Chief Executive Officer, Kaman Corporation, and H. Joseph Gerber, Founder, Chairman and President, Gerber Scientific, Inc.

Dr. DeMaria was presented the medal November 10, 2004 during the Alliance for Connecticut Technology Innovation Day and Award Dinner: it recognizes his life-long contributions to photonics. In addition to his duties as a Professor-in-Residence in the Electrical & Computer Engineering Department, he also is a chief scientist in the Laser Division of Coherent-DEOS of Bloomfield, CT. The company manufactures lasers for materials processing, remote sensing and infrared counter-measures and employs approximately 240 staff members. The core company was built by Dr. DeMaria in 1994 after he purchased the intellectual property (IP) of the CO₂ laser unit of Hamilton Sundstrand to start DeMaria Electro-Optics Systems, Inc. (DEOS). He served as chairman and CEO, polishing the company into the world’s leading manufacturer of sealed-off, RF excited waveguide CO₂ lasers for industrial and governmental applications. The company was purchased in 2001 by Coherent, Inc. He is a member of both the National Academy of Engineering (since 1976) and the National Academy of Sciences (1997). He is one of fewer than 100 engineers in the nation to have been named to the prestigious National Academy of Sciences.

Douglas Cooper, Department Head and professor of Chemical Engineering, was named the 2004 Carnegie Foundation for the Advancement of Teaching Connecticut Professor of the Year. The announcement was made during a November 18 media event in Washington, DC. The State Professors of the Year Award Program selects outstanding educators in all 50 states, the District of Columbia, Guam, Puerto Rico and the U.S. Virgin Islands. Award winners are chosen on the basis of their extraordinary dedication to undergraduate teaching, determined by excellence in the following four areas: impact on and involvement with undergraduate students; scholarly approach to teaching and learning; contributions to undergraduate education in the institution, community, and profession; and support from colleagues and current and former undergraduate students.

Dr. Cooper previously was chosen one of three 2003-2004 University of Connecticut Teaching Fellows in recognition of his commitment to excellence in teaching and student mentoring, for superior student advising and sponsorship, and development of a popular simulation software program for industrial process control, Control Station. Control Station® is used by 120 universities in 25 countries as an instructional aid for hands-on training in control system analysis, design and tuning. In 2001, he received one of two University of Connecticut Alumni Association Faculty Excellence Awards in Teaching, for undergraduate instruction.

Named Faculty continued from page 8

Dr. Wood has received numerous awards, including the Outstanding Junior Faculty Award, School of Engineering (2000); the Rogers Outstanding Teaching Award in Chemical Engineering, UConn (2000); and the U.S. Army Research Office Young Investigator Award (1992). He has more than 70 peer-reviewed journal articles. He has one U.S. patent and is on the editorial board of Applied and Environmental Engineering.
homeland security are problems that are here to stay and “probably will not be eliminated in our lifetimes.” Because the threat has become long-term, she encouraged attendees to consider two key attributes in developing homeland security technologies: sustainability and acceptability. Dual benefit solutions, she said, enhance their sustainability. Acceptability varies according to the climate of the times, and “to the extent citizens see benefits in their daily lives, we have a better shot at deploying solutions that become the fabric of our lives,” she said. Because we cannot create an invulnerable fortress, Dr. David said, we must find ways to reduce our vulnerability.

ICATHS’04 had a number of high profile conference chairs, including as its Honorary Chair William A. Wulf, President of the prestigious National Academy of Engineering; Honorary Co-Chairs were U.S. Congressmen Rob Simmons and Christopher Shays, both of Connecticut. The General Chair was Dean of Engineering and United Technologies Corporation Chair Professor of Thermal-Fluids Engineering, Amir Faghri.

For details of the conference, including selected PowerPoint presentations and video footage, please consult our conference website at www.engr.uconn.edu/icaths. CD-ROM conference proceedings are available by contacting Nancy Coogan at (860) 486-0883 or by e-mail at ncoogan@engr.uconn.edu.

SoENews

Engineering Welcomes Kissick as Director of Development

The School of Engineering is pleased to welcome William L. Kissick, Jr., who joined the professional staff in September as Director of Development. Mr. Kissick brings a wealth of experience spanning more than 20 years as a development officer, consultant and administrator. His professional vitae includes service at Dartmouth and Yale.

Mr. Kissick earned his B.A. degree from Denison University, Granville, OH, and his MBA in strategic planning from The Wharton School of the University of Pennsylvania. As Director of Major Gifts at Yale University, he led a team of 29 staff members in preparation for a $2 billion development campaign. During two stints at Dartmouth College, he served as Associate Dean for Development and External Relations for the Thayer School of Engineering, and earlier, as Senior Associate Director of Major Gifts for the college. At the Thayer School, he directed a $60 million capital campaign and secured a $15 million naming gift for a new Engineering Sciences Center. In his role as Senior Associate Director of Major Gifts at Dartmouth, Mr. Kissick managed the major gifts operation for 14 western states in a $425 million capital campaign. His previous experience also includes positions with Deerfield Academy, MA; Barnes & Roche, Inc. consultants, Philadelphia; St. Lawrence University, Canton, NY; and the William Penn Charter School, Philadelphia.

The role of the development officer is critical to academic institutions today. It is surprising to many parents of college students that tuition and state tax monies cover a comparatively modest portion of the day-to-day expenses involved in running an academic unit. Funding secured through development activities supports an array of programs that are vital to a university’s or school’s growth. Among these are scholarships for academically gifted students and students from underrepresented populations, special programs aimed at undergraduate retention, outreach activities targeting K-12 students and their teachers, marketing and promotion.

Mr. Kissick sees his role through a wide-angle lens that encompasses not merely fundraising, but also investment in students who will help shape the nation’s future. “If I could invest in every one of our kids, I know it would produce phenomenal dividends,” he says. He finds it ominous that the U.S. is falling behind other nations in mastery of math and science—a deficit, he says, that jeopardizes not only their ability to participate in the high-tech debates of the future but also to contribute toward improving the nation’s economic well-being.

Unlike some colleges that focus solely on education, the School of Engineering’s more expansive mission of education, research and outreach is appealing to Mr. Kissick, because it promises not only to “put educated engineers into the workstream but also push technology down the production stream.”

He was drawn to the University of Connecticut by the combination of unparalleled infrastructure investment, world-class research programs and enlightened planning for the future. “When UConn is asked ‘Where do you want to be in 10 years,’ the answer reflects an evolution from our current place, not emulation of someone else’s model,” he reflects. He also finds the University and Engineering focus on diverse populations at all levels, from the undergraduate all the way up to the faculty pools, right on target and indeed crucial to a well balanced, successful economic and social future.

The School of Engineering welcomes Mr. Kissick and looks forward to his role in advancing its multi-pronged mission in coming years.
Each year, the School of Engineering honors its top faculty members in several categories to recognize individual peers for their sustained outstanding research and teaching performance. Among these plaudits are the Outstanding Junior Faculty Award and the Outstanding Teaching Faculty Award. In addition, the School honors one staff member whose performance throughout the year greatly benefitted the entire School.

Two top-performing assistant professors were presented the 2004 Outstanding Junior Faculty Award. Michael W. Renfro of Mechanical Engineering and S. Pamir Alpay of Materials Science & Engineering. The award is presented to assistant or associate professors who have established outstanding records of scholarly achievement in research, teaching and service with the promise of continued outstanding contributions in the future. It entails a cash award of $2,000 and a grant of $5,000 for professional development, recognizes scholarly achievements in sustaining high quality research, teaching and service.

Dr. Renfro joined the Mechanical Engineering Department in fall 2002 from Purdue University, where he was a Visiting Assistant Professor of Mechanical Engineering. He received his M.S. and Ph.D. degrees in mechanical engineering from Purdue in 1997 and 2000, respectively. Since coming to UConn, Dr. Renfro has achieved an exceptional record of success in garnering research support from federal sources. He received a coveted five-year National Science Foundation Early Career (CAREER) Award in 2003, in excess of $400,000, for his research involving flame stability. In addition, he has received funding from the U.S. Air Force Office of Scientific Research, the U.S. Army and Link Foundation. Other research foci include laser-induced fluorescence, diagnostics in reacting and nonreacting turbulent flows, measurements for turbulent combustion modeling, and flow visualization. He has taught extensively in the area of thermodynamics, fluid mechanics, and heat transfer. With a scholarly record that includes more than 19 peer-reviewed journal articles, Dr. Renfro is regarded as among the most promising junior researchers in the area of combustion diagnostics and spectroscopy.

Dr. Alpay joined the Materials Science & Engineering Department in 2000 after completing a post-doctoral fellowship at the University of Maryland. He received his Ph.D. (1999) from the Department of Materials Engineering at the University of Maryland and his M.S. from Middle East Technical University in Ankara, Turkey. Dr. Alpay, whose expertise lies in electronic and smart materials, received a five-year, $500,000 National Science Foundation CAREER Award in 2002 to research and engineer artificially layered ferroelectric superlattices and compositionally graded ferroelectric films. He has launched a major effort in the area of functional thin films and phase transformations, has published more than 40 refereed journal articles as well as one book chapter, and has presented over 15 invited talks at major professional conferences. Dr. Alpay recently submitted, together with Dr. J.V. Mantese of Delphi Research Laboratories, a book entitled *Graded Ferroelectrics, Transcapitors, Transponents* as a part of the Functional Thin Film Materials to be published by Springer Verlag, selected by the editors as it pertains to the creation of a family of entirely new devices.

The 2004 Outstanding Teaching Award was presented to Sanguthevar Rajasekaran, UTC Professor of Computer Science & Engineering and Director of the GE E-Engineering Clinic. Dr. Rajasekaran received the award for excellence in undergraduate or graduate teaching, advising and development of innovative teaching methodologies. In accepting the award, he received $2,000 in cash and a grant of $5,000 for professional development. Dr. Rajasekaran earned his Ph.D. in computer science from Harvard University in 1988. Before joining UConn in 2002, he was Chief Scientist with Arcot Systems of Santa Clara, CA while on temporary leave from his faculty position in the Computer & Information Science Department at the University of Florida, Gainesville. He is an expert in the area of applied algorithms, particularly parallel, randomized algorithms and computational geometry. His work on packet routing is...
considered by peers to be seminal, and his studies in integer sorting have helped pioneer new methodologies. Dr. Rajasekaran earns top teacher ratings from his undergraduate students and the admiration and respect of his undergraduate and graduate students. Throughout his career, he has striven to secure financial support for new curriculum development, and he contributed his time as a collaborator on a recently-won $1.2 million NSF Information Technology Research (ITR) grant.

In addition to the School-wide awards, each department honored outstanding faculty for teaching and/or research contributions within their home department.

Wilson Chiu, assistant professor of Mechanical Engineering, was honored with the Outstanding Mechanical Engineering Faculty Award. Dr. Chiu is the recipient of a National Science Foundation CAREER Award as well as the Young Investigator Award from the Office of Naval Research.

Professor of Civil & Environmental Engineering John DeWolf received the C.R. Klewin, Inc. Award for Excellence in Teaching. Dr. DeWolf, whose career at UConn spans more than three decades, is a member of the Connecticut Academy of Science & Engineering and co-author (with F.P. Beer and E.R. Johnston) of the third edition of *Mechanics of Materials*, McGraw-Hill.

Laurent Michel, assistant professor of Computer Science & Engineering since 2002, was presented the Computer Science & Engineering Department Outstanding Faculty Award. He is co-author of the book *Numérica*, *A Modeling Language for Global Optimization* (MIT Press).

The Electrical & Computer Engineering (ECE) Department honored two faculty members. Professor Geoff W. Taylor received the Outstanding Research Award for his sustained research contributions in the field of optoelectronic integrated circuits. Professor John Enderle, Director of the Biomedical Engineering Program, was presented the Outstanding Teaching Award for his contributions in teaching.

The Rogers Teaching Award, which resides in the Chemical Engineering Department and whose recipient is selected by a senior class vote, was presented to assistant professor Ranjan Srivastava. Dr. Srivastava joined the department in the fall 2002 term and works in the area of biological systems at the molecular and cellular level.

Mark Aindow, professor of Materials Science & Engineering (MSE), was presented the 2004 Outstanding Department Member Award for his exceptional contributions in teaching, research and service to the MSE department.

The School of Engineering also honored former doctoral candidate Zhigang Ban of the Materials Science & Engineering Department, who received the school-wide Outstanding Doctoral Thesis Award. This honor recognized both Dr. Ban, who received his doctoral degree in 2003, and his thesis advisor, assistant professor Pamir Alpay.

George Assard, II, a computer engineer in the Engineering Computing Services (ECS) unit of the School of Engineering, was presented the Outstanding Staff Service Award for his dedicated, capable service to the faculty, staff and students of the School. Mr. Assard, who holds a B.A. from UConn, joined ECS in 2001. He manages the ECS Help Desk and oversees management and support of the computer software and hardware for the entire School of Engineering, including faculty, staff and students. Mr. Assard also oversees the Engineering Learning Center, which provides a venue for engineering faculty to train their students on more than 74 software programs. His previous experience includes employment with the University of Connecticut Student Health Services, Power Specialists Associates Inc., Lincoln Financial Group, and a consulting firm that he founded in the early 1990s, Eastern Clinical Solutions.
Mark Aindow, associate professor of Materials Science & Engineering, was appointed Editor of the Journal of Materials Science. Established in 1966, the journal is the largest of the interdisciplinary materials engineering journals and is now published by Springer.

Professor and Department Head of Computer Science & Engineering Reda Ammar, and UTC Professor of Computer Science & Engineering Sarghatevar Rajasekaran were selected as Associate Editors of the journal Computing Letters, published by VSP International Publishers, the Netherlands.

Emmanouil Anagnostou, associate professor of Civil & Environmental Engineering, and his graduate student Ryan Knox, received the American Geophysical Union (AGU) Outstanding Student Paper honors for their poster paper entitled “2004: Evaluation of Radar Rainfall Estimation in Widespread Early Spring Rainfall Events.” Ryan presented the paper during the AGU spring assembly.

Research by associate professor of Civil & Environmental Engineering Amvrossios Bagtzoglou was profiled in the U.S. Environmental Protection Agency’s August 2004 electronic newsletter, “What’s Hot? What’s New?” The research centers on application of chaotic flows for efficient groundwater contaminant remediation.

Rajeev Bansal, professor of Electrical & Computer Engineering, is editor of the recently published book, the Handbook of Engineering Electromagnetics (706 pages) published in August 2004 by Marcel Dekker, New York. The book provides in-depth coverage of fields such as wireless communications, fiber optics, microwave engineering, radar technology, electromagnetic compatibility, materials science and biomedicine.

Joseph Helble, professor and former head of Chemical Engineering, is serving a year-long sabbatical as a Revelle Fellow of the American Association for the Advancement of Science (AAAS).

His appointment in the office of U.S. Senator Joseph Lieberman (CT), who serves on the Senate Environment and Public Works Committee, involves advising the Senator on environmental issues encompassed under the umbrella of “global stewardship.”


Associate professor of Chemical Engineering Richard Parnas has been invited to join the Editorial Review Board of the Elsevier journal Composites, Part A: Applied Science and Manufacturing.

Department Head and professor of Mechanical Engineering Ranga Pitchumani was elected a Fellow of the American Society of Mechanical Engineers in recognition of his significant achievements and contributions to the processing science of materials and composites.

Ken Reifsnider, Director of the Connecticut Global Fuel Cell Center and the Pratt & Whitney Chair Professor of Design & Reliability, was elected a Fellow of the American Society of Mechanical Engineers for his fundamental contributions in the lifetime prediction of advanced composite materials. In addition, Dr. Reifsnider and Nigel Sammes, United Technologies Chair Professor in Fuel Cell Technology, report that the first issue of the Journal of Fuel Cell Science & Technology was released in November. Dr. Sammes is founding and chief Editor of the new ASME journal, which is published quarterly, and Dr. Reifsnider is Associate Editor.
Dr. Sammes also received an Environmental Protection Agency (EPA) 2004 GreenCircle Award for “contributing significant time to environmental instructional programs,” and his involvement on the Connecticut climate change stakeholder group.

Interim Department Head and professor of Materials Science & Engineering Leon Shaw was elected a Fellow of ASM International, “For significant contributions to the fields of synthesis and processing of composites and nanomaterials.” ASM International is the leading professional society of materials engineers and scientists. In addition, Dr. Shaw was co-inventor (with R.-M. Ren and Z.-G. Yang) on U.S. patent (number 6,793,875), “Nanostructured Carbide Cermet Powders by High Energy Ball Milling” awarded September 2004.

Guiling Wang, assistant professor of Civil & Environmental Engineering, was recently appointed Associate Editor of the Journal of Geophysical Research Biogeosciences (JGR-Biogeosciences). Her term extends December 2004 through December 2007. JGR-Biogeosciences is a new, interdisciplinary journal that seeks to understand the functions of Earth systems across multiple spatial and temporal scales.

Peng Zhang, assistant professor of Mechanical Engineering, was received the American Society of Mechanical Engineers (ASME) Melville Medal in 2004. The Melville Medal is the highest ASME honor for the best original paper (not published elsewhere) that has been published in the ASME Transactions during the two preceding calendar years.

The innovative breast cancer research of Quing Zhu, associate professor of Electrical & Computer Engineering, was profiled in the September 2004 issue of the journal Molecular Imaging Outlook, a publication of Diagnostic Imaging.com. Dr. Zhu’s research, conducted in collaboration with physicians at the University of Connecticut Health Center and Hartford Hospital, involves the fusion of ultrasound and optical imaging to diagnose aggressive breast cancers.
School Welcomes New Faculty

In September, the School of Engineering welcomed seven new faculty members.

The Civil & Environmental Engineering Department welcomed Lanbo Liu, formerly with the University’s Department of Geology & Geophysics (dissolved by the University in 2004), who joined the department as an Associate Professor, and Jeong-Ho Kim, who assumed the position of assistant professor.

Dr. Lanbo Liu earned his M.S. degrees in geophysics at Peking University (1981) and in civil and environmental engineering at Stanford University (1992). He earned his doctorate in geophysics at Stanford University in 1993. He completed a post-doctoral Carnegie Fellowship at the Carnegie Institution of Washington and joined the University of Connecticut in 1995. Dr. Liu is Associate Editor of Geophysics, the Society of Exploration Geophysics journal. His interests lie in subsurface imaging through geophysical surveys for engineering and environmental purposes, and numerical modeling of wave propagation. His work on sound source detection in urban environments has generated wide public interest and was cited by the New York Times, Discover magazine, and other domestic and international popular science media.

Dr. Jeong-Ho Kim completed his M.S. and Ph.D. degrees at the University of Illinois, Urbana-Champaign in 2000 and 2003, respectively. He received several awards during his academic career, including the Ambassadorial Scholarship Award, presented by Rotary International; the Young Researcher Fellowship Award in the Second MIT Conference; and the inaugural ASME PTC 60 Student Benchmark Competition Award in the Seventh U.S. National Congress on Computational Mechanics. His research interests include computational fracture mechanics, functionally graded materials, finite element methods, fuel cells, bone, micromechanics models, structural analysis and nonlinear analysis.

The Mechanical Engineering Department welcomed Horea Ilies in the capacity of assistant professor. Dr. Ilies completed his M.S. degrees in mechanics and mechanical engineering from the University of Wisconsin - Madison. Before joining the University of Connecticut, Dr. Ilies gleaned industrial experience for several years with Ford Motor Company, where he was involved in research, manufacturing, and product design and development. He is co-inventor on one U.S. patent and several patent disclosures. His research interests include geometric and physical computing, shape synthesis and geometric reasoning, and theoretical and computational aspects for systematic mechanical design and manufacturing.

The Materials Science & Engineering Department greeted two new faculty members, Bryan Huey and Rampi Ramprasad.

Assistant professor Bryan Huey, who earned his M.S. and Ph.D. degrees from the University of Pennsylvania, joined the department in July. Dr. Huey also completed post-doctoral studies at Oxford University, the EPFL Department of Physics in Switzerland, and the Ceramics Division at the National Institute of Standards & Technology (NIST). His interests include scanning probe microscopy for voltage mapping at the nanometer scale; ultrasonic force microscopy to investigate nanoscale mechanical properties of nanocomposites; in vitro scanning probe microscopy to study the mechanics of biological structures; and piezo-force microscopy for quantitative measurements of ferroelectric thin films. He has authored more than 20 scholarly journal publications and two major book chapters. Dr. Huey runs the NanoMeasurement Labs in the Institute of Materials Science, which houses three new microscopes designed to promote nanoscale education and research at the undergraduate and graduate levels.

The department also welcomed assistant professor Ramamurthy (Rampi) Ramprasad, who earned his M.S. and doctoral degrees in Materials Science & Engineering at the Washington State University (1992) and the University of Illinois, Urbana-Champaign (1997), respectively. Dr. Ramprasad completed a post-doctoral fellowship at the Department of Physics & Astronomy at the University of New Mexico. He began his professional career as a Senior Staff Scientist in 1998 with Motorola’s R&D laboratories, Tempe, AZ, and was a Principal Staff Scientist from 2001-2004. He has authored/co-authored more than 22 peer-reviewed journal articles and filed four patents.

The Electrical & Computer Engineering Department welcomed assistant professor Yunsi Fei. Dr. Fei earned her M.S. in electronics engineering from Tsinghua University, China (1999), and her M.A. and Ph.D. degrees in electrical engineering from Princeton University (2001 and 2004). Dr. Fei’s research interests encompass embedded system and integrated circuit design automation, power analysis and optimization of ICs and systems, mobile computing systems, high performance and low power computer architecture, and hardware/software co-synthesis. She is a reviewer for ACM Transactions on Design Automation of Electronic Systems and a number of symposia and conferences.

Zhijie “Jerry” Shi joined the Computer Science & Engineering Department as an assistant professor. He earned his Ph.D. and M.A. degrees in electrical engineering from Princeton University in 2004 and 1999, respectively, and his M.S. in computer science from Tsinghua University, Beijing, in 1996. Dr. Shi’s research interests include computer architecture, cryptography, computer security, algorithms and digital circuit design. He has 10 scholarly papers published in technical journals and conference proceedings.
George Abe (M.S. Mechanical Engineering, ’85) is President and CEO of Cambridge Research, Inc. in Woburn, MA.

Matthew Adiletta (B.S. Electrical Engineering, ’85) is Director of Communication Processor Architecture at Intel in Hudson, MA. Mr. Adiletta is an Intel Fellow, and holds over 100 patents.

Robert Becker (B.S. Computer Science and Engineering, ’82) is Senior Vice President of Engineering & Operations at Mercury Computer Systems, in Chelmsford, MA. Previously, he was Vice President of Engineering at Microtech Systems (now part of 3M) and at PictuTel.

Allen N. Bickel (B.S. Chemical Engineering and Chemistry, ’79) MBA, is Director of Sales & Marketing for DYNEX Technologies, Capital Genomix, Inc., Chantilly, VA, which was divested from Capital Genomix in October 2004.

Robert Beinstein (B.S. Civil & Environmental Engineering, ’99) P.E. is employed with Cabrera, Inc., of East Hartford, which is a specialized radiological and environmental consulting firm.

Les Boette (B.S. Chemical Engineering, ’68) is the chief plant engineer for American Foam Technologies, Lewisburg, WV.

Elaine Brodeur (B.S. Mechanical Engineering, ’68) was recognized as an outstanding course leader by the American Institute for Chartered Property Casualty Underwriters and the Insurance Institute of America.

David Burns (B.S. Computer Science and Electrical Engineering, ’77) is chief executive officer of Copernic Technologies Inc., Boston.

Jeffrey M. Campbell (M.S. Chemical Engineering, ’94) was tapped to join the research unit of Hunter Manufacturing’s Applied Research Center, Edgewood, MD, which develops new technologies and materials that will form the basis for improved nuclear, biological and chemical collective protection equipment and systems.

Anthony D’Andrea (B.S. Civil Engineering, ’72) is chairman of the Connecticut Board of Examiners for Professional Engineers and Land Surveyors.

Thomas Doggart (B.S., M.S. Mechanical Engineering, ’87, ’94) founded a metallurgical engineering company, Nomad Metallurgy Inc. of Fort Mill, SC.

Joel Douglas (B.S. Civil Engineering, ’77) was selected one of Medical Device & Diagnostic Industry magazine’s 100 notable people. He is a co-founder and chief technology officer of MysticMD, Inc. He holds 60 U.S. patents.

Michael Field (B.S. Mechanical Engineering, ’75) is Senior Vice President of Marketing, Sales and Customer Support at Pratt & Whitney, East Hartford, CT.

Anthony Gazikas (B.S. Mechanical Engineering, ’81) is Vice President of Development Informatics at Pfizer in New London, CT.

William Hewitt (M.S. Mechanical Engineering, ’68) was appointed to the Board of Trustees of the Medical University of South Carolina, and is Chairman of The Citadel’s School of Business Advisory Board.

Brian Hoffman (B.S. Mechanical Engineering, ’86) is Vice President of Operations at the Danaher Corporation in Massachusetts.

Britt Johnston (B.S. Computer Science and Engineering, ’85) is Chief Technology Officer at PeerDirect in Bedford, MA.

Michael Lombardi (B.S. Civil Engineering, ’96), P.E., was elected Vice President and Secretary of the University of Connecticut Engineering Alumni Society’s Board of Directors. He is Manager of Civil Engineering & Business Development with BL Companies, a Meriden, CT-based architectural, engineering and environmental sciences consulting firm.

Craig Lund (B.S. Electrical Engineering, ’82) is Vice President and Chief Technology Officer at Mercury Computer Systems in Chelmsford, MA.

Tom Martin (M.S. Electrical Engineering, ’71; Ph.D. Electrical Engineering, ’74) is President and Chairman of the Board of Phonon Corporation in Simsbury, CT.

Charles Roche (Ph.D. Mechanical Engineering, ’94) an engineer with Pratt & Whitney, East Hartford, joined the adjunct faculty of the University of Hartford and is chairman of the mechanical engineering advisory board of the University of Massachusetts — Lowell.

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In Memoriam: Joseph Stern

It is with great sadness that we note the death in November of alumnus Joseph Stern (B.S. Electrical Engineering, ’44), an esteemed friend of the School who, with his wife Claire and daughter Linda Johanna, established the Joseph L. Stern, Claire Morris Stern and Linda Johanna Stern Scholarship Fund in 2003. Mr. Stern was president of Stern Telecommunications Corp. (STC), New York City, a communications systems consulting company he founded in 1975. During his rich career, Mr. Stern worked with RCA, the Army Signal Corps, and CBS, which he joined in 1946. As Vice President of Engineering for CBS, he was responsible for developing TV studio and transmitting facilities, including the Empire State Building plant, planning for the World Trade Center facility, and 12 other plants located in North and South America and in Israel.

He worked on the development of color TV systems and converted all of the CBS transmitting plants to broadcast color. In 2003, Mr. Stern was inducted into the School of Engineering’s Academy of Distinguished Engineers.
better used on campus. The coalition developed a survey intended to better understand how students, staff and faculty view the Storrs campus’ current suitability for bike use and how the campus could be adapted to enhance bicycle use and safety.

“Bikes are an important form of transportation that is generally underrepresented at the UConn Storrs campus. We hope to integrate the bicycle culture into the greater University community in a manner that ensures greater safety, convenience and friendliness for bike riders,” said Mr. LaMondia.

Surveys were distributed in dining halls, the UConn Co-op, at bus stops and other venues as well as online during November. Members of the ITE student chapter tallied and analyzed the results, and Mr. LaMondia and Mr. Jackson presented the group’s findings before the University Master Plan Advisory Committee. The team also provided the committee a written report that included a section, prepared by undergraduate Craig Jordan, detailing how 10 other universities located throughout the Northeast have encouraged bike use on their campuses. It is hoped the Committee will act on the coalition’s findings in early 2005.

Andrew T. Rose (B.S., M.S., Civil & Environmental Engineering, ’85, ’86), was awarded a Gerald R. Seeley Fellowship by the American Association of Engineering Educators (ASEE). He is an assistant professor of Civil Engineering Technology at the University of Pittsburgh at Johnstown. He received his Ph.D. from Virginia Polytechnic Institute.

Bill Summers (B.S. Chemical Engineering, ’84 MBA, has been named Global Sales Director – Informatics, Thermo Electron Corporation. He formerly was Vice President of Sales for chemicals/pharmaceuticals with Aspen Technology.

Michael Townsend (B.S. Mechanical Engineering, ’83 MBA, is president of Polytec, Inc., a manufacturer of laser-based measuring instruments in Auburn, MA.

Clement Valerio (B.S. Electrical Engineering, ’70; M.S. Electrical Engineering, ’76; Ph.D. Electrical Engineering, ’84) is Vice President of Research and Development at Phonon Corporation in Simsbury, CT.

Mark Vergnano (B.S. Chemical Engineering, ’80) is Vice President and General Manager of DuPont Nonwovens in Wilmington, DE.

Karl R. Wurst (M.S., Ph.D. Computer Science & Engineering, ’91, ’04) received tenure and was promoted to Associate Professor of Computer Science at Worcester State College and has been appointed Chair of the Computer Science Department.

Z. Jane Wang (M.S., Ph.D., Electrical & Computer Engineering, ’00, ’03) assumed a position as assistant professor in the Electrical & Computer Engineering Department at the University of British Columbia.