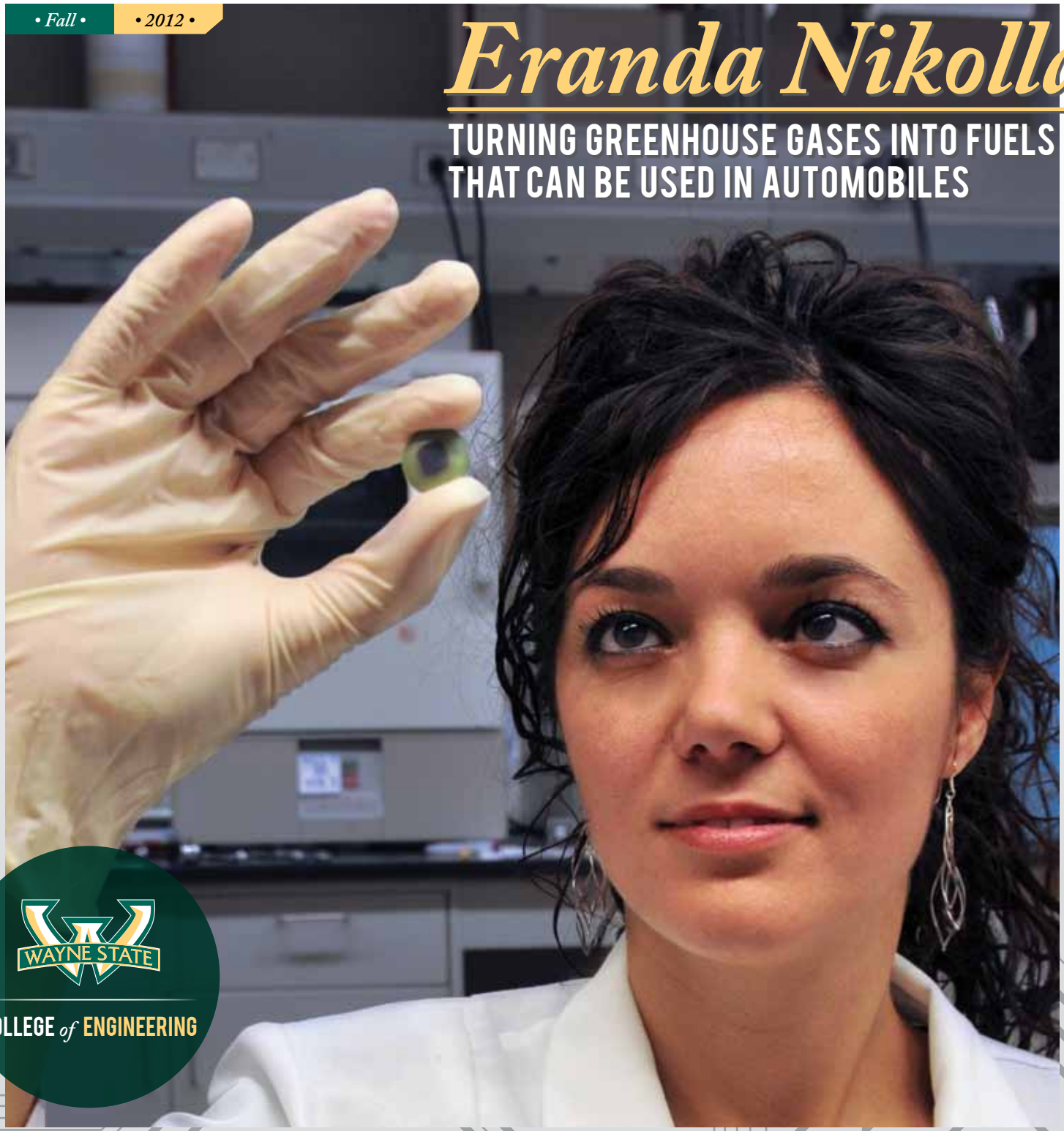
EXEMPLAR

• Fall • • 2012 •

Eranda Nikolla

TURNING GREENHOUSE GASES INTO FUELS THAT CAN BE USED IN AUTOMOBILES



WAYNE STATE
COLLEGE of ENGINEERING

Exemplar is published for alumni and friends of the College of Engineering.

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GREETINGS FROM THE DEAN

Dear alumni and friends,

On behalf of the Wayne State College of Engineering, I am pleased to present this edition of *Exemplar* magazine. We have experienced great successes over the past year — including a more than 20 percent growth in undergraduate enrollment and nearly 10 percent growth in graduate enrollment — and are thrilled to share some of those with you in this publication.

One of my priorities as dean is to enhance the College's already strong reputation as a leader and pioneer in green technologies. We have great strength and promise in this area, with the innovative research, evolving courses, practical experience and internship opportunities, and more to make this priority a reality. As part of this initiative to bring awareness to all our College of Engineering community does, this edition of *Exemplar* focuses largely on our efforts in green technologies.

Our faculty is on the forefront of green technologies in many ways. Whether they are identifying new fuel resources, powering buildings and cities with alternative energy, creating greener products, enhancing the green supply chain, increasing energy storage, optimizing sustainable water transmission and delivery, or more, our faculty members are making a name for the College on the national and international stage. Take, for instance, Assistant Professor of Civil and Environmental Engineering Jaewon Jang, whose research on methane hydrates was one of just 13 related projects recently funded by the Department of Energy, or Associate Professor of Computer Science Weisong Shi, who is minimizing energy consumption of mobile devices. Or, the work of chemical engineering professors Simon Ng and Steven Salley, who developed NextCAT, Inc., to commercialize a class of catalysts that enable biodiesel producers to convert cost-effective raw materials into biodiesel. This edition of *Exemplar* highlights just a few of our many green expert faculty members.

Green technologies span across a variety of engineering disciplines, and we are focused on providing our students with the greatest opportunities possible throughout all our departments. Our students learn from expert faculty members — more than one-third of whom conduct green research. Our students have access to student organizations, competitions and internships that help foster a greater understanding and exploration of alternative energy, green technologies and sustainability. They also learn and conduct research in a LEED-certified facility.

The College of Engineering plays an integral role at the University in this area. Additionally, the University as a whole has led and undertaken many efforts to help showcase Wayne State's role as a green leader. Some of the University's many green projects and initiatives include the creation of the Urban Watershed Environmental Group, the Water@Wayne seminar series, Zipcar and Zimride programs, the Sustainability@Wayne recycling effort, the Switch It Off energy conservation campaign, and green roofs. As you can see, Wayne State and its College of Engineering are leading the way in green technologies. Our students, faculty and alumni are engineering Detroit — and their world — each and every day.

We hope you enjoy this issue of *Exemplar* magazine. Please be sure to read our Year in Review section to get a greater sense of the many additional successes the College community has celebrated throughout the year, such as the hiring of three remarkable researchers and scholars — Xue-wen Chen, Juri Gelovani and Joseph Hummer — as department chairs. It is indeed a great time to be a Wayne State engineering alumnus, student or friend.

Farshad Fotouhi
Dean, College of Engineering
Wayne State University

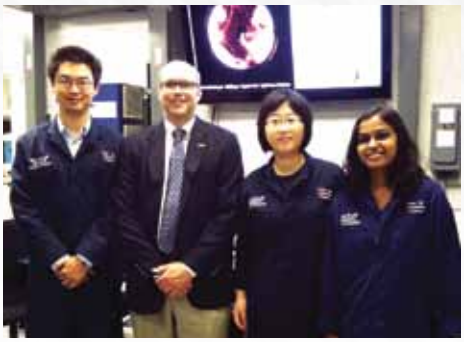
THE WAYNE STATE COLLEGE OF ENGINEERING: A POWERHOUSE IN *green* TECHNOLOGIES

- Wayne State's College of Engineering is a primary, go-to center for alternative energy and electric-drive vehicle education, curriculum research and development in Michigan.
- The College is home to the nation's first electric-drive vehicle engineering program and alternative energy technology master's degree program.
- Many of our faculty members conduct research at the National Biofuels Energy Lab.
- Our Center for Automotive Research conducts interdisciplinary research on alternate and renewable fuels and biofuels.
- The College has invested $1.2 million in new equipment for alternative energy research.
- The Department of Energy, the National Science Foundation, the Michigan Department of Environmental Quality — and many more — support and partner with the College in its green research, symposia and conferences.
- A large percentage of courses offered at the College infuse green technologies and sustainability into classroom learning.
- More than one-third of full-time College of Engineering professors conduct green research with their students.
- We support innovation and entrepreneurship, providing students, alumni and faculty with services and connections to help commercialize green technologies and launch businesses.
- We have alumni in every state and 48 countries, many of whom are focused in the areas of alternative energy and sustainability.

DEPUTY SECRETARY OF ENERGY VISITS WSU, MEETS WITH COLLEGE OF ENGINEERING STUDENTS

College of Engineering students met with Deputy Secretary of Energy Daniel Poneman for a roundtable discussion in May. Poneman spoke on the importance of supporting students in their pursuit of affordable higher education and STEM-related degrees in order to secure good jobs, strengthen U.S. competitiveness in the global clean energy race, and advance an "All of the Above" energy strategy.

MORE THAN 1/3 OF FULL-TIME COLLEGE OF ENGINEERING PROFESSORS CONDUCT *green* RESEARCH



Faculty members conducting green research projects:

Emmanuel Ayorinde, nondestructive evaluation

Amar Basu, biotechnology for renewable biofuels, environmental sensors for preventing invasive species in the Great Lakes

Kenneth Chelst, alternative energy technology

Wen Chen, electric-drive vehicle engineering, alternative energy storage

Mark Ming-Cheng Cheng, battery materials, battery diagnosis and characterization, environmental sensors

Ratna Babu Chinnam, sustainable supply chains, design for sustainability

Hamidreza Chitsaz, optimization of algae for biofuel production

Da Deng, energy storage, green chemistry, environmental remediation

Ana Djuric, production planning for green manufacturing

Sorin Draghici, power-efficient processing on large servers and distributed computing environments

Nathan Fisher, power-aware real-time and embedded computing systems

Naeim Henein, alternative fuel engine testing

Yinlun Huang, sustainable product and process engineering, manufacturing sustainability, sustainable nanotechnology, material and energy system integration

Marcis Jansons, advanced engine combustion

Kyoung-Yun Kim, alternative energy technology, electric-drive vehicle engineering, sustainable product development

Jerry Ku, alternative energy technology, electric-drive vehicle engineering

Ming-Chia Lai, bio-fuel combustion and emissions, fuel cell, fuel reforming, alternative energy technology, electric-drive vehicle engineering

Gene Liao, electric-drive vehicle engineering, hybrid vehicle powertrain, advanced energy storage systems

Feng Lin, electric-drive vehicle engineering, hybrid systems, smart grids, alternative energy

John Liu, electric-drive vehicle engineering, advanced embedded systems

Shawn McElmurry, urban agriculture, water quality, sustainable energy

Grace Metri, energy efficiency of data centers

Carol Miller, streamflow, landfill management

Leslie Monplaisir, product development for alternative energy technology, design for sustainability

Alper Murat, sustainable logistics and green supply chain management

Simon Ng, alternative energy technology, electric-drive vehicle engineering

Eranda Nikolla, chemical, electrochemical and photochemical routes for energy conversion and storage

Robert Reynolds, social sustainability, including urbanization and built environments, terrestrial hazards and disasters, and land use and landscapes of production

Steven Salley, alternative energy technology, electric-drive vehicle engineering

Nabil J. Sarhan, energy-efficient automated video surveillance systems

Weisong Shi, power and energy efficiency of networked computer systems and applications

Gina Shreve, biotechnology for biofuel production, environmental sensors, aqueous waste stream minimization and remediation

Harpreet Singh, intelligent approaches in improving in-vehicle network architecture and minimizing power consumption in combat vehicles, energy saving in Army vehicles

Chin-An Tan, motion-based energy harvesting

Caisheng Wang, electric-drive vehicle engineering, alternative energy storage systems

Le Yi Wang, alternative energy technology, electric-drive vehicle engineering, smart grids

Jim Woodyard, thin-film photovoltaics

Hwai-Chung Wu, green and sustainable building and pavement materials

Xin Wu, lightweight material and life cycle analysis

King Hay Yang, crashworthiness of lightweight materials to reduce vehicle weight

Qingyu Yang, reliability and optimal maintenance, sustainable product manufacturing

Ece Yaprak, electric-drive vehicle engineering

Chih-Ping Yeh, electric-drive vehicle engineering, advanced energy storage systems

Hongwei Zhang, wireless sensing and control networks for smart electric grid

EcoCAR 2 team revs up in second year

Wayne State University's EcoCAR 2 team — Michigan's only competing university team and one of just 15 teams throughout North America — successfully earned its spot in the second year of the EcoCAR 2: Plugging in to the Future competition. After a year of planning and designing, the team is now implementing its parallel through-the-road (PTTR) architecture. Accompanied by WSU President Allan Gilmour, College of Engineering Dean Farshad Fotouhi, and EcoCar 2 Faculty Advisor Jerry Ku, the EcoCAR 2 team received its Chevy Malibu and celebrated the support of its team sponsors at a June event.

"I'm getting hands-on experience as the EcoCAR 2 team captain. And I'm already working full-time as a battery engineer at ALTe Powertrain Technologies as I finish my degree."

— Idan Regev, alternative energy technology student

ECE STUDENTS WIN $50,000 IN MICHIGAN CLEAN ENERGY CHALLENGE

Three electrical and computer engineering doctoral students won the $50,000 first prize in the Michigan Clean Energy Venture Challenge for their unique energy-harvesting technology.

The annual challenge, established by the University of Michigan and DTE Energy, encourages students from Michigan colleges and universities to grow clean-energy solutions into thriving businesses.

Students Yating Hu, Hongen Tu and Junhui Zhao were notified of their win in February 2012.

Photo by Marcin Szczepanski/ University of Michigan, COE Multimedia Producer

DISCOVERING GREEN ENERGY CONVERSION AND STORAGE SYSTEMS

Dwindling fossil fuel resources and high greenhouse gas emissions have increased the need for more efficient and environmentally friendly energy conversion and storage systems.

Eranda Nikolla, chemical engineering assistant professor, is hoping to improve energy efficiency and more.

Her goal is to improve energy efficiency and storage — and lessen environmental pollutants and emissions — through the development of robust electrochemical and photochemical energy systems.

The highly sought-after scholar, who received a number of professorship offers after receiving her doctorate degree in chemical engineering from the University of Michigan, has been researching fuel cells and renewable energy systems since beginning her graduate program at the University of Michigan. While at U of M, she earned the prestigious Distinguished Dissertation Award for her thesis. She then moved to the California Institute of Technology as a postdoctoral scholar to work on chemical processes for conversion of biomass into useful fuels and chemicals.

"Engineers create our future in nearly every sense of the word."
– Nikolla

"It is much more efficient to convert chemical energy to electrical energy using electrochemical systems as opposed to combustion systems that we currently use," she said. "Fuel cell vehicles on the market today, while impressive, are still in their infancy and tend to be more expensive than standard vehicles. Motivated by this fact and the desperate need for more energy efficient systems, my research focuses on the development of robust, affordable and abundant materials for photo-electrochemical energy conversion and storage systems."

The Nikolla group combines theoretical and experimental approaches in her research to design active and stable materials for energy systems.

"Development of robust materials for renewable energy conversion and storage systems would make automobiles, homes and our daily lives much more energy efficient and environmentally friendly," said Nikolla, who currently leads a research team of two doctoral students, one master's student and two undergraduate students.

"We are currently working on recycling atmospheric CO2, a greenhouse gas, into fuels that can be used in automobiles. We are also working on developing renewable energy conversion systems involving solar energy and biomass. Our research approach allows us to develop a fundamental understanding of these processes that can be utilized as a tool to develop robust materials," said the passionate expert, whose research could have significant implications for consumers, corporations and suppliers here in the United States and abroad.

Between her research, teaching, supervising and finding funding for her lab, Nikolla also makes a point to promote STEM disciplines to young women.

"Engineers create our future in nearly every sense of the word. I want to make sure high school students, especially young women, know what kind of careers are available in engineering."

A SOUTHEAST MICHIGAN ADVANCED ENERGY STORAGE SYSTEM INITIATIVE PARTNER

Wayne State University is a partner of the collaborative Southeast Michigan Advanced Energy Storage System Initiative (AESSI), which received a $2.1 million federal grant last year as part of President Barack Obama's Jobs and Innovation Accelerator Challenge. The initiative aims to create new jobs and technologies related to rapidly emerging advanced energy storage systems in Southeast Michigan. The Division of Engineering Technology is responsible for delivering professional development courses in six topics critical to AESSI: Fundamentals of Electrochemistry for Battery, Advanced Battery Systems for Vehicle Electrification and Hybridization, Advanced Energy Storage Systems, Introduction of Battery Management Systems, Battery Manufacturing, and Safety of High Voltage Battery.

MINIMIZING ENERGY CONSUMPTION OF MOBILE DEVICES

Mobile phone applications help us find directions, read the latest headlines, play games and stay connected on Facebook, but these applications can take a toll on the battery life of mobile devices, ultimately increasing our energy consumption. Weisong Shi, associate professor of computer science and director of the Mobile and Internet SysTems Laboratory (MIST), has created a service called "Bugu" for mobile devices (such as smartphones and tablets), that aims to decrease energy consumption of applications.

Bugu has two main components: the client side analyzes the power behavior (or the patterns of energy consumption) of applications that are installed on a mobile device, and the Bugu server provides users with an overview of this power behavior. A user installs Bugu on a mobile device, and the Bugu server, located in the computer science server room, analyzes the power behavior data of the device's applications.

Shi and computer science doctoral students Youhuizi Li and Hui Chen believe that Bugu will benefit three groups: end users, mobile application developers and system developers.

"As an end user, we want to know which applications are more energy-friendly," said Shi. "Application developers want to know why their applications consume the amounts of power that they do. System developers, who look at the big picture of how applications and a mobile system work together, want to understand energy consumption of running applications so that they can then optimize whole system energy consumption."

The overview of power behavior that Bugu provides will allow end users to select applications that are more energy-friendly and will allow application and system developers to better understand energy consumption and optimize their products for better energy efficiency.

The Bugu service is now available to the public and can be found at **codegreen.cs.wayne.edu/bugu.**

WATER@WAYNE SEMINAR SERIES FEATURES ADJUNCT PROFESSOR KURT HEISE

Adjunct Professor Kurt Heise presented "The Detroit Water and Sewerage Department (DWSD) – The Political and Environmental Impact of a Utility in Transition" as part of the Water@Wayne seminar series in April 2012. Heise discussed the provision of water and sewerage services, which are among the most contentious political and environmental issues in Southeast Michigan.

Enhancing the green supply chain

Ratna Babu Chinnam, industrial and systems engineering professor and graduate program chair, likes solving complex puzzles.

His research, which focuses on supply chain management, sustainability and operations management, has helped businesses and corporations save money, improve quality and enhance efficiency for more than a decade.

Combine his passion for problem solving, a keen interest in operations management and a growing concentration on green technologies, and it is easy to see why Delphi Automotive contacted Chinnam directly for assistance nearly six years ago.

Delphi, at the time, was developing its remanufacturing business that focused on re-using old products. They were interested in Chinnam's advice on how to better manage the reverse supply chain.

"In growing their new business, they wanted to make sure they maintained their reputation by not running out of product for customers and at the same time maintain profit margins. They wanted guidance on operations, inventory and timing the launch of products," Chinnam said.

Chinnam's group delivered. He and his doctoral students built models to give them guidance on how to estimate flows and manage production. His students, who both have recently become faculty members at prestigious institutions in Turkey and India, completed dissertations using Delphi data sets to develop decision support models.

Specifically, they developed models to optimize the product launch timing for new products, better anticipate product returns from customers, and install the right production capacity for remanufacturing.

Those models, dissertations and guidance have helped Delphi's reverse supply chain business ensure appropriate remanufacturing capacity and efficient delivery of products. Delphi's reverse supply chain business now operates with more than 1,000 employees.

Chinnam's experience with Delphi, according to the India native and Rochester, Mich., resident, was just the beginning for his research into green supply chains. Though focused on a wide variety of research projects — streamlining patient flows at hospitals, more efficiently moving just-in-time freight, developing tools for automotive companies to manage product assortments — he is well aware of the growing need for green supply chain and operations management research. He serves as one of the two North American editors for the new *Journal of Remanufacturing*.

He said, "People's perceptions are changing. They're saying, 'Where did this product come from? How is it made?' More people are interested and caring about more sustainable practices, and there's more pressure on companies to be good corporate citizens. That, and the fact that supply chains have become unsustainable as they currently exist. There is a greater need for local production and improved supply chain sustainability."

Without a doubt, Chinnam's research will help shape the future of green supply chain management.

COLLEGE OF ENGINEERING CELEBRATES LEED SILVER CERTIFICATION

The Marvin I. Danto Engineering Development Center (EDC) was designated a U.S. Green Building Council LEED Silver Certified facility — the first Wayne State University building to receive the honor. The 82,500-square-foot building, completed in 2009 at a cost of $27.3 million, provides an advanced technology facility for engineering research on WSU's Midtown campus. Leadership in Energy and Environmental Design certification is achieved by meeting specific requirements in five environmental categories — site development, water savings, energy efficiency, materials selection and indoor environmental quality. In April, Wayne State unveiled a plaque in recognition of the EDC'S LEED Silver certification.

SELECT RECENT GREEN RESEARCH AWARDS AND TECHNOLOGIES

Unlocking new energy resources
Assistant Professor Jaewon Jang received a two-year, $178,000 grant from the U.S. Department of Energy to aid in the search for methane hydrates in oceans and permafrost, such as the Gulf of Mexico and Alaska's North Slope.

High-strength material advancements may lead to new, life-saving steel
Professor Susil Putatunda and a group of college researchers are addressing the need for structural components that are lighter and stronger, improve energy efficiencies, reduce emissions and pollution, increase safety and cost less to produce. His group has been working to create advanced materials with high-yield strength, fracture toughness and ductility. Their efforts have led to the development of a new material consisting of bainitic steels and austempered ductile iron that has all these characteristics, ultimately resisting fatigue that can cause fractures in materials often with catastrophic consequences. The austempering process is a more energy efficient heat treatment process that does not require post-heat treatment, therefore leading to additional energy savings. This technology is ideally suited for cast steel parts and is currently in the manufacturing validation development stage at a steel casting plant.

Manufacturing innovation through sustainable design
Professor Ratna Babu Chinnam was awarded a $99,990 grant for his project, "Pan-American Advanced Studies Institute on Manufacturing Innovation through Sustainable Design." Chinnam will collaborate with Karl R. Haapala (Oregon State University), Gul Okudan Kremer (Penn State University), and Ivan E. Esparragoza (Penn State University) on the project.

Inventing a greener cement
Associate Professor H.C. Wu (Wayne State) and the NTH Consultants of Detroit jointly filed a utility patent for a product called Detroit Cement. The team says the new formulation, created with the help of a Phase I Small Business Innovation Research grant from the National Science Foundation to NTH, is more environmentally friendly and less costly than traditional cements, while exhibiting improvement in several key performance characteristics.

Advancing biofuel catalyst technology
NextCAT, Inc., a Wayne State University startup company, received a Phase II Small Business Innovation Research (SBIR) award from the National Science Foundation (NSF) in the amount of $498,830. This brings NextCAT's total grant funding to $1.5 million. NextCAT is working to advance a biofuel catalyst technology developed at the National Biofuels Energy Laboratory at Wayne State University.

Preventing invasive species in the Great Lakes
Assistant Professor Amar Basu, in collaboration with WSU School of Medicine Professor Jeffrey Ram, received an $800,000 award from the Great Lakes Protection Fund for their work with environmental sensors for preventing invasive species in the Great Lakes. Professor Basu is also working on a project with WSU School of Medicine Professor Thomas Holland on biotechnology for renewable biofuels, developing an optical microplate, a high throughput screening device that can be used to optimize light conditions for maximizing the production of lipids in algae. WSU Technology Commercialization is managing Basu's technologies and a PCT patent application has been filed on his optical microplate invention.

DAPCEP, ESFB HELP EDUCATE HIGH SCHOOL STUDENTS ON RENEWABLE ENERGY ALTERNATIVES

Engineering Student Faculty Board members are playing an active role in the community. President Norm Dotson, for instance, is currently the engineering instructor for the Detroit Area Pre-College Engineering Program (DAPCEP), where he has two sections of 30+ high school students (66 students total). The focus of this semester's program is renewable energy alternatives. One of the program's first projects will be to build and operate small fuel cell vehicles (hydro, solar, and hybrid cell vehicles).

Improving battery performance

The use of battery systems in hybrid and electric vehicles offers a cleaner alternative to gasoline-powered cars. However, these battery systems present unique challenges due to the fluctuating characteristics of the numerous battery cells that comprise an entire battery system.

Le Yi Wang, professor of electrical and computer engineering, alternative energy technology and electric-drive vehicle engineering, and his collaborators, Electrical and Computer Engineering Professor Feng Lin and Associate Professor Caisheng Wang, are looking to find better ways to study and enhance battery management systems.

In the Electric-Drive Vehicle Control and Integration Laboratory (EVCIL), Wang and his team are developing new methods and algorithms that collect data on the individual cells within a battery, and derive their models for monitoring, diagnosis and control. By modeling batteries, primarily lithium-ion, and integrating them into a vehicle powertrain model, Wang wants to understand how the batteries impact overall system response, such as stability, power efficiency, reliability and cost.

"Our goal is to make a physical system perform better, more reliably and efficiently, by using more advanced modeling and control methods," said Wang. "We look at how the battery's dynamic behavior and power electronics work with the vehicle and seek to determine how they could work together as a whole system rather than just components."

Because the characteristics of a battery system change while it is in operational use, due to aging, changes in operational conditions and variation in chemical properties, Wang hopes to develop a real-time automated battery characterizer that will capture individualized characteristics of each battery cell during battery operations and support adaptation of battery management strategies.

"Battery cells have diversified characterizations even when they are new, and change their dynamics during operations due to operating conditions and aging," said Wang. "Real-time battery characterizers are essential for managing battery systems safely and efficiently for vehicle applications."

"I entered the Wayne AET program to be part of the ever-increasing movement toward sustainability as not only an environmental issue, but also a business objective. The AET program introduced me to current topics in alternative energy, while also preparing me with a variety of analysis, research and project management techniques. The job I ended up getting was advertised to me by my professor, and the engineer I replaced happened to be sitting near me as I was preparing for an interview. Wayne got me in the right room with the right people, after preparing me with the necessary skills and knowledge to work with electrified vehicles."

— *Chris Fortin, Ford Global Electrified Fleet Data Analyst and 2012 AET alumnus, pictured with one of the 21 PHEV Escapes from the fleets he manages*

Keeping our parks and beaches clean




During the summer months, Michigan's beaches frequently close due to water contamination. This is often the result of stormwater runoff, or what happens when rain picks up bacteria and chemicals from streets, parking areas, or other developed land and washes these pollutants into nearby water sources. Shawn McElmurry, assistant professor of civil and environmental engineering, is working with the Huron-Clinton Metropark Authority (HCMA) to reduce, capture and treat stormwater runoff at the Lake St. Clair Metropark through the implementation of green infrastructure.

According to McElmurry, the beach at Lake St. Clair Metropark has experienced closures due to elevated levels of the bacteria E. coli since 1994, a partial result of stormwater runoff carrying seagull and waterfowl excrement from the parking lot to Black Creek, which discharges adjacent to the park's beach.

Working under a grant obtained by HCMA from the U.S. Environmental Protection Agency's Great Lakes Restoration Initiative, McElmurry and his Environmental Chemistry Research Laboratory (ECRL) are responsible for monitoring the stormwater runoff and evaluating the effectiveness of a new drainage pattern for the parking lot.

"By reducing contaminants discharged from the parking area to Black Creek, it is anticipated that this project will help reduce the number of beach closings at the park, increase flow to the Point Rosa Marsh and generally increase water quality within the Black Creek," said McElmurry.

McElmurry and his team installed a real-time monitoring system, which can be viewed online (v4.wqdata.com/webdblink/ecrl.php), to measure stormwater flow and general water chemistry (such as pH). The concentration of other chemicals (e.g., heavy metals) and E. coli are also monitored.

Ultimately, the new green infrastructure will direct runoff through a system of vegetated swales, a more environmentally-friendly alternative to storm sewers that employs vegetation, and detention areas to the Point Rosa Marsh, a 96-acre marsh adjacent to the park. The swales and marsh act as natural filters for the water, and the drainage system will benefit the marsh by adding needed water.

"Michigan's greatest assets are its beaches and water," said McElmurry. "Projects such as this help to safeguard this invaluable resource so that my children and my children's children will be able to enjoy the same waters that I was able enjoy while growing up."

McElmurry works closely with two students on the project. Master's degree student LaTonya Waller is interested in how pollutants are transported during stormwater runoff events. Her research aims to improve the functioning of green infrastructure and mitigate the impact of stormwater pollution. Amelia Davis, an undergraduate student, spent the summer conducting laboratory analyses that will prove crucial to the success of the project.

WAYNE STATE CO-HOSTS 'GREAT LAKES WEEK'

Former Vice President Al Gore's Special Presentation to the International Joint Commission Biennial Meeting was held as part of 2011 Great Lakes Week.

Six environmental organizations convened in Detroit and at Wayne State to discuss the future of the Great Lakes. Conference hosts included the International Joint Commission, U.S. Areas of Concern Program, the Great Lakes Commission, the Healing Our Waters-Great Lakes Coalition and Environment Canada.

Wayne State faculty and students from various colleges were engaged in the event. The Urban Watershed Environmental Research Group (UWERG) worked with the International Joint Commission on a series of events.

WAYNE STATE HOSTS greenUp

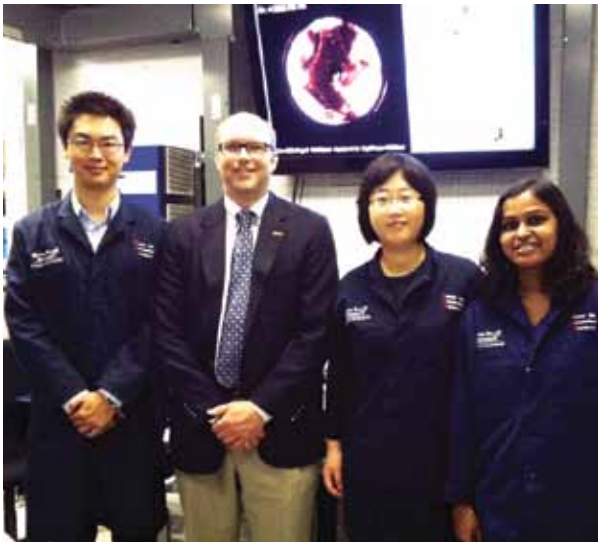
The Michigan Department of Environmental Quality and Wayne State University hosted the 2012 Michigan Green Chemistry and Engineering (GreenUp) Conference on Oct. 26 on Wayne State's campus.

The conference showcased how green chemistry and engineering are contributing to revitalization in manufacturing by using less toxic materials in the design and production of goods.

More than 140 manufacturers, researchers, chemists, engineers, industry CEOs, students, educators, entrepreneurs, decision makers and policymakers attended the conference. They learned how green chemistry and engineering can protect human health and the environment while helping businesses create new markets, reduce costs and gain a competitive edge.

Keynote speaker Bob Peoples, former director of the American Chemical Society

GreenUp Best Poster Award winner Elvan Sari (center), a Wayne State chemical engineering doctoral student



Assistant Professor **Marcis Jansons** is pictured here (second from the left) with undergraduate student **Jinqiao Wang**, who is developing an infrared optical technique to measure rapidly varying surface temperatures inside engine cylinders so that computer simulations may more faithfully model combustion processes; doctoral student **Kan Zha**, who is developing combustion diagnostic techniques to observe and better understand soot formation processes during engine combustion so that low-emissions engines may be developed; and master's student **Tejaswini Kamble**, who models chemical kinetics of autoignition processes to develop means of controlling advanced, efficient and low-emissions engines.

POWERING THE FUTURE

As a child in China, Caisheng Wang walked two miles past a series of high voltage transmission lines to get to school.

"I was fascinated by the big towers," he said. "They made me think bigger. I decided I wanted to do something special in life, something that not everyone could do. I chose high voltage/power as my career choice."

Fast forward a few decades and he remains captivated by all things energy.

Wang — who got into his first-choice university for his undergraduate and master degrees, joined and then held a vice department chair position at an electric power research institute in China, and earned his doctoral degree in renewable energy systems and alternative energy at Montana State University — serves as associate professor of electrical and computer engineering at the College of Engineering.

His research, funded by the National Science Foundation, the Department of Energy, and more, aims to create and store energy in a clean and sustainable way. According to Wang, his goal is to make a difference — whether that's helping provide power to a small community during a blackout, or ensuring better battery performance for electric-drive vehicles.

"There's a common issue of energy storage in electric vehicles and in renewable energy sources. Many vehicles, for example, have oversized batteries because manufacturers are not confident in battery performance. And, for renewable energy, solar panels tend to be intermittent and depend on weather conditions. We need better charging and power management strategies."

One of Wang's strategies has resulted in the development of a small microgrid.

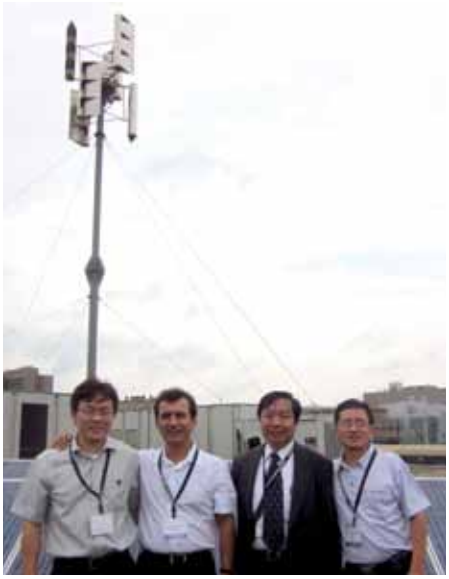
"Our wind turbine, which sits on top of the Engineering Technology Building, is a 5 kW vertical turbine. Energy acquired by the turbine, combined with energy from parallel solar panels, charges a battery pack that is then converted into AC. The output of that powers a computer lab. If battery voltage drops to a certain level, we switch back to the grid so as not to hurt the battery. The model is to always use renewable energy first. It's been a very reliable power source thus far."

Wang's microgrid project supports his overall goal of using smaller, sustainable generation sources to maintain power during outages, which could have a significant impact on consumers.

Though his research is very promising, Wang is well aware of some hurdles standing in the way of mass utilization.

"It is still cheaper to use coal and natural gas, even though they are producing more emissions. There is also an issue with stability when we talk about a renewable energy system. I am confident, though, that with more stringent policies on emissions it will eventually make sense to go with renewables. And, I am hopeful that with smart grid technology we will see a more reliable system with communication capability, real-time measurement, control strategy and more storage devices."

Other projects the father of two is working on with his students and colleagues include: recycled materials for stationary energy storage, real-time system optimization for sustainable water transmission and distribution, and battery management.



Caisheng Wang, Ghadir Radman (Tennessee Technological University), Eduard Muljadi (National Renewable Energy Laboratory) and David Gao (University of Denver)

Alumna
Cristina Piluso
works toward a sustainable future

Cristina Piluso, market development manager at BASF's Polyurethane Systems division, has two professional goals: to bring polyurethane products to market and, in doing so, to create a more sustainable future.

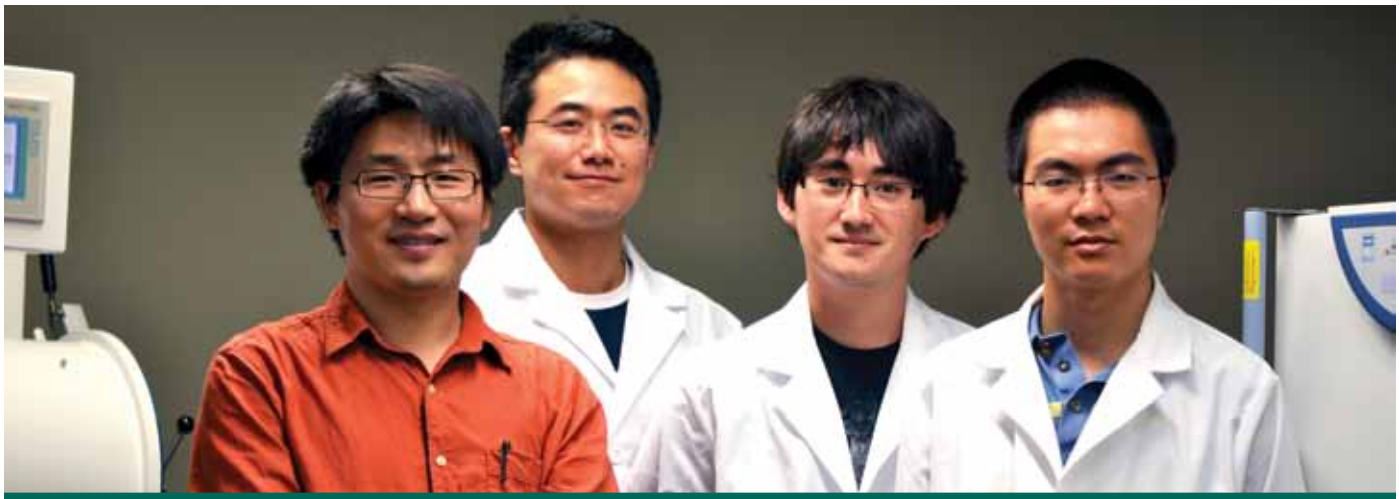
In her role at BASF, Piluso identifies new opportunities for the use of polyurethane, a durable and versatile product that can be used to provide energy savings, lightness and longevity. In addition to seeking out new markets for polyurethane, Piluso also carries out sustainability initiatives as the North American polyurethane representative of BASF's Clean Energy Team, which targets the wind and solar energy markets. She also holds the position of treasurer of the American Institute of Chemical Engineers Sustainable Engineering Forum.

Piluso views her career as a way to make a tangible impact with her advanced education in chemical engineering and materials science.

"I have always had an interest in utilizing my strong engineering and technical background in helping fulfill customer needs and consumer requirements," said Piluso. "I think it is fulfilling to be able to combine my analytical skills with strategy to drive market acceptance, especially in terms of sustainability."

Piluso, who holds a bachelor's degree, master's degree and Ph.D. in chemical engineering from Wayne State, credits her education for contributing to her success.

"The experience of graduate school helped me to understand the importance of setting realistic goals and expectations," said Piluso. "Additionally, the interactions I had with peers, professors and colleagues during my time at Wayne State further developed my social skills and confidence."

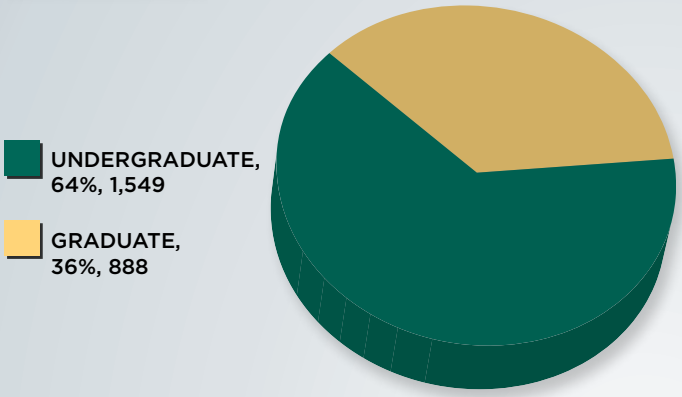


Assistant Professor of Chemical Engineering and Materials Science Da Deng investigates green energy storage materials for next-generation electrochemical energy storage devices. His team's goals are to improve electrochemical performance in terms of specific energy, power density, safety, and cyclability, as well as to reduce their overall environmental footprint and cost. The next-generation electrochemical energy storage devices his team develop will play important roles in personal mobile electronic devices, electric/hybrid vehicles and green energy (solar and wind) storage.

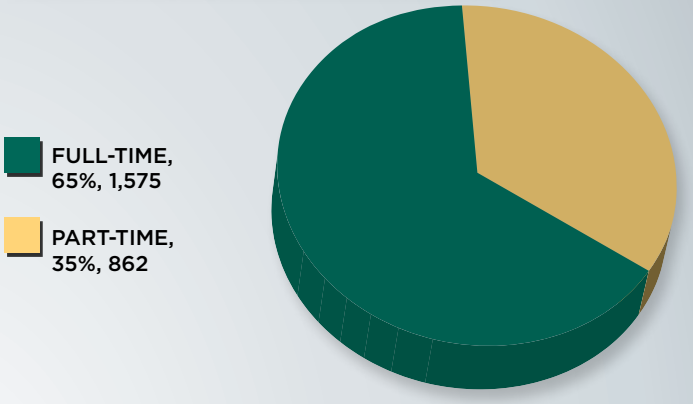
From left to right: Da Deng, Xinghua Meng, Kevin Charette and Jian Zhu

FALL 2012 COLLEGE OF ENGINEERING ADMISSIONS STATISTICS

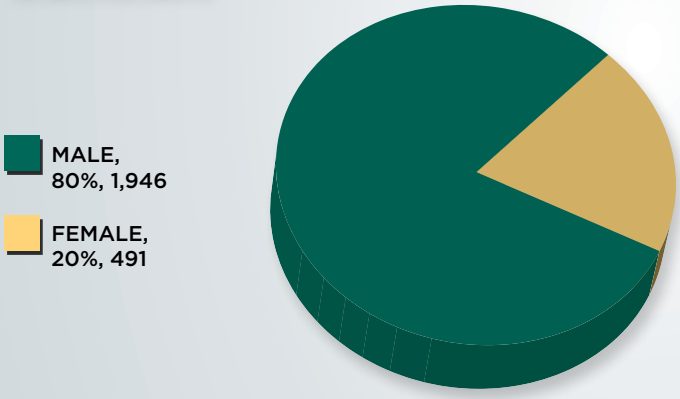
DEGREE



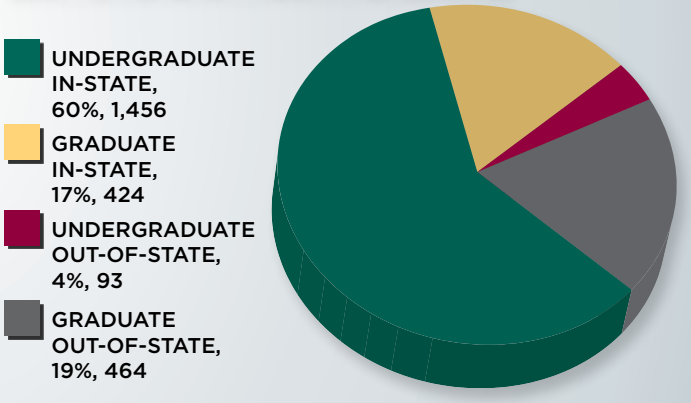
FULL-/PART-TIME



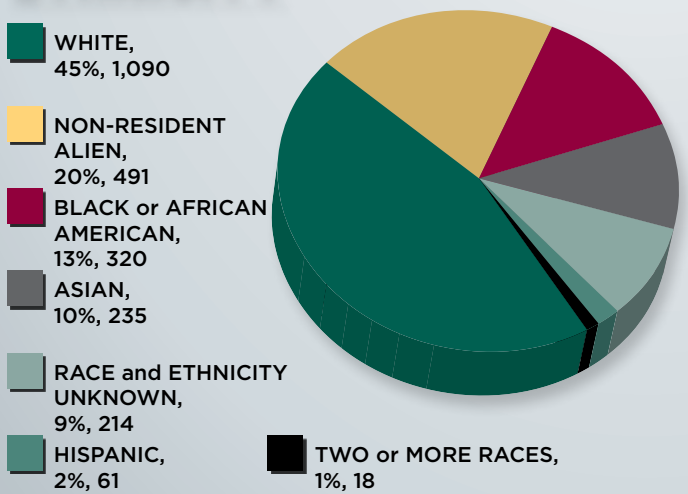
GENDER



IN-/OUT-OF-STATE



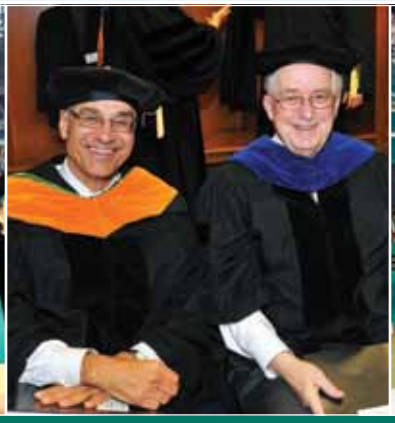
ETHNICITY



Professor **Jeffrey Potoff** was named director of early engineering programs for the College of Engineering. In addition to his role in the Department of Chemical Engineering and Materials Science, Potoff now leads the College's efforts in developing the talent pool of incoming professional-level engineering students. He will be responsible for assessment and improvement of both the College's Engineering Bridge Program for pre-engineering students as well as the Basic Engineering course sequence. Potoff will work closely with Associate Dean R. Darin Ellis and the College's team of academic advisors.

Congratulations, graduates!

The College of Engineering awarded a total of 130 bachelor's degrees, six graduate certificates, 231 master's degrees, 31 post-master's degrees and 50 doctoral degrees in December 2011, May 2012 and August 2012 combined. The May ceremony took place at Ford Field.



Students inducted to Order of the Engineer, POET

The College of Engineering held the Order of the Engineer and Professional Order of Engineering Technology ceremonies on Friday, May 4, in the General Lectures building. At the ceremony, engineering technology graduates received a pin to commemorate their induction and graduates of other engineering departments received a ring.







COLLEGE-WIDE HIGHLIGHTS

- Michigan Epsilon, WSU's chapter of the Tau Beta Pi engineering honor society (1), received the 2011 R.C. Matthews Outstanding Chapter Award from Tau Beta Pi. The award recognizes outstanding college service and university extracurricular activities during the 2010-11 academic year. In an award letter to Michigan Epsilon, the Tau Beta Pi award committee commended the chapter for its newsletter, fundraising efforts, tutoring program, and ability to induct many new members while upholding high initiation standards.
- Wayne State engineering students took part in the 2012 North American International Auto Show (NAIAS) at Cobo Hall in Detroit. Thirteen members of the WSU Formula Society of Automotive Engineers team (2), along with their 2011 formula race car, attended the two-week event, promoting their team, the College and University.
- The Wayne State chapter of the National Society of Black Engineers in February organized a trip to the Henry Ford Museum in Dearborn, Mich., with youth participants from the WSU NASA Science, Engineering, Mathematics and Aerospace Academy (SEMAA). Thirteen students from the organizations visited the museum.
- Detroit-area youth built solar- and battery-powered LEGO cars as part of the Detroit Area Pre-College Engineering Program (DAPCEP) at the College of Engineering (3). The summer enrichment project was part of a four-week program that exposed 24 metro Detroit seventh-grade students to courses in engineering, math, writing and Microsoft technology on Wayne State's campus.
- Participants in the Michigan Department of Transportation Youth Development and Mentoring Program (MDOT YDMP) (4) visited the College of Engineering in July to learn more about careers in engineering. MDOT YDMP is an eight-week summer program that prepares students ages 16-18 for college and the workforce.
- More than 70 College of Engineering students volunteered for the YES! Expo on Nov. 1, which aimed to increase interest among Michigan youth in science and engineering (5-7). More than 20,000 students in grades 8-12, primarily from Southeast Michigan, attended the expo at Ford Field. Some of the College of Engineering student organizations that participated included:
  - Theta Tau
  - The American Society of Civil Engineers
  - The Formula SAE Race Team
  - The Engineering Society of Detroit
  - The Biomedical Engineering Society
  - The American Institute of Chemical Engineers
  - The Institute of Industrial Engineers
  - Tau Beta Pi







Night of the Stars

The College of Engineering honored seven alumni and friends for their outstanding professional achievements and service at the College's 2012 Night of the Stars Gala. This year's event took place on Oct. 27 at the Gem Theatre in Detroit.

Matthew (Matt) Craig, Sandeep Johri, Adriana Karaboutis and **Akram Zahdeh** received the Distinguished Alumni Award and were inducted into the College's Hall of Fame, bringing the total number of inductees to 130 since 1983. **Derrick Kuzak** received the Socius Collegii (Friend of the College) Award, while **Darcy Salman** and **Paul Nahra** each received the Outstanding Industry Achievement Award.

Honorees:

Dr. Matthew Craig, MSME '99, PhDBME '07, division chief of human injury research in the Office of Vehicle Crashworthiness Research at the National Highway Traffic Safety Administration (NHTSA), U.S. Department of Transportation

Sandeep Johri, MSISE '86, chief operating officer at Appcelerator and senior technology executive with more than 20 years experience in large corporate and start-up environments

Adriana Karaboutis, BSCS '86, MSECE '86, global chief information officer at Dell, responsible for continuing to drive Dell's IT organization evolution, from managing an efficient and innovative global information infrastructure, to creating innovative breakthroughs that provide technology advances for the company and its customers

Dr. Akram Zahdeh, PhDME '90, GM fellow and manager of the General Motors Advanced Engine Analysis Laboratory within the General Motors Advanced Powertrain Division

Dr. Derrick Kuzak, retired Ford Motor Company group vice president of Global Product Development, who led a team of 18,000 engineers and technicians in eight engineering centers responsible for the design and engineering of all of Ford's vehicles globally

Darcy Salman, MSECE '93, order fulfillment applications portfolio manager at Ford Motor Company, responsible for managing a portfolio size of more than 70 marketing and sales applications and teams located in Michigan and India

Paul Nahra, BSME '98, MSME '00, enterprise resource manager at GM Powertrain Headquarters – Engineering Operations, former GM combustion engineer and former engineering innovator at Chrysler

International Outreach

Five engineering and business faculty members from the North West Institute of Engineering and Technology in Dhudike, India, visited the College in April 2012 to observe the College's academic culture. According to Shaamir Mallah, assistant professor of business administration at the institute, the professors were impressed with the practical approach to teaching and research, the level of student motivation, and the implementation of technology in the classroom and laboratory facilities.

In May 2012, the College welcomed a delegation of eight faculty members and administrators from Riga Technical University in Riga, Latvia, to continue discussions on joint academic and exchange programs. Progress was made in outlining a 3+2 program structure for RTU students interested in pursuing graduate studies at Wayne State upon completion of three years of coursework at their home institution.

India native Professor Tapan Datta, director of the WSU Transportation Research Group, made the most of a visit home in December 2011. Datta met with WSU alumni in Mumbai and Kolkata. According to Datta, who came to the United States in 1967 to pursue a master's degree in civil engineering from WSU, the meetings provided a great opportunity to reconnect with international alumni. They also allowed Datta to hear how prepared alumni felt upon entering their respective workforces thanks to their WSU engineering education.

A delegation of five professors from Zhejiang University of Technology's College of Mechanical Engineering and Fuzhou University visited Wayne State in May 2012 to explore the possibility of a joint degree program. Dean Farshad Fotouhi and representatives from the Department of Mechanical Engineering met with the professors to discuss a 3+2 joint degree program.

A delegation from Turkey visited the College of Engineering. Naeim Henein, professor of mechanical engineering, gave a tour of the Multi-fuel Energy Laboratory to the delegation, which was particularly interested in automotive innovations.

R. Darin Ellis, dean of academic affairs and student services, welcomed a group of 20 undergraduate and graduate engineering students from Shanghai University on July 17.

BIOMEDICAL ENGINEERING HIGHLIGHTS

- **Dr. Juri Gelovani** (1), the pioneer of molecular-genetic in vivo imaging, was named the new chair of the Department of Biomedical Engineering. He has served as full professor and chairman of the University of Texas M.D. Anderson Cancer Center's Department of Experimental Diagnostic Imaging and director of the Center for Advanced Biomedical Imaging Research. He also has served on committees for science faculty, small animal cancer imaging research, on the faculty of the Brain Tumor Center, and with the Stem Cell Multidisciplinary Research Program. He holds more than 15 patents, has published more than 160 papers and book chapters, and edited a major book in molecular imaging in oncology.
- Professor **Cynthia Bir's** (2) latest project involved crashing a full-size passenger airplane into the remote desert along the U.S.-Mexico border. The groundbreaking experiment looked at how passengers might improve their chances of survival. Crash test dummies and sensors throughout the plane revealed that bracing oneself and choosing seats toward the middle and back of a plane may lead to fewer fatalities and injuries. Another of Bir's projects, *ESPN Sport Science*, won a 2012 Sports Emmy, this time for Outstanding Graphic Design.
- Assistant Professor **Harini Sundararaghavan** (3) joined the Department of Biomedical Engineering in fall 2011.
- Assistant Professor **Zhifeng Kou** was awarded a seed grant from the International Society of Magnetic Resonance in Medicine (ISMRM) for his proposed work on mild traumatic brain injury. Kou also was awarded the North American Brain Injury Society's prestigious Charles W. Haynes Fellowship.
- Undergraduate Program Chair and Associate Professor **Michele Grimm** (4) received the College of Engineering's Excellence in Teaching Award.
- Graduate student **Sumit Sharma** was awarded the Simulia Excellence in Modeling Award at the 2011 Injury Biomechanics Symposium for his research in the field of finite element analysis, including automotive crash testing and blast injuries to the brain.
- Students **Zahraa Bazzi, Stan Marek** and **Abrar Wazir** (5) placed second internationally in the 2012 Extreme Redesign 3D Printing Challenge. The team submitted a design for a diabetic testing station that would allow an individual with the use of only one arm to independently test their blood glucose levels.
- Director of the Bioengineering Center and Professor **King-Hay Yang**, post-doctoral fellows **Haojie Mao** and **Xin Jin**, and Toyota Motor Engineering and Manufacturing North America, Inc., have teamed together to develop software models of a 10-year-old child and an elderly female human body for crash simulation purposes.
- Student **Nadia Azar** received first prize for her paper on "Muscular Response to Physiologic Tensile Stretch of the Caprine C5/6 Facet Joint Capsule: Dynamic Recruitment Thresholds and Latencies" at the 2011 Stapp Car Crash Conference, held in November 2011 in Dearborn. Student **Yan Li** received third prize for his paper on "Injury Predictors for Traumatic Axonal Injury in a Rodent Head Impact Acceleration Model."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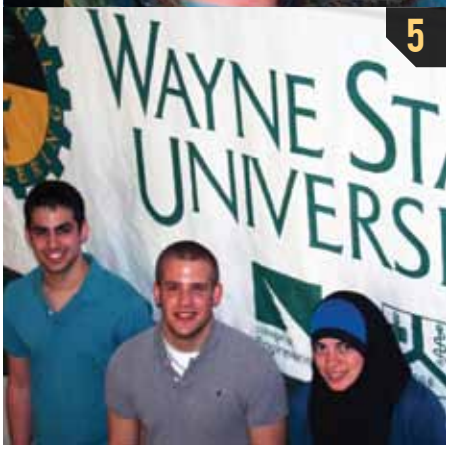

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CHEMICAL ENGINEERING AND MATERIALS SCIENCE HIGHLIGHTS

- Assistant Professors **Da Deng** and **Eranda Nikolla** (1) joined the department in fall 2011. **Zhiqiang Cao** will join the faculty in January 2013.
- Research Professor **Joseph Louvar** received the College of Engineering's Excellence in Teaching Award. Louvar was recognized for his outstanding contributions to teaching in the chemical engineering program and his peerless mastery of subject matter such as chemical process design, statistical design of experiments and risk management.
- Associate Dean for Research and Graduate Studies **Simon Ng** (2) was a recipient of the Governor's Award at the Michigan Department of Environmental Quality's 2011 GreenUp Conference. Ng was honored in the academic category for his work on heterogeneous metal oxide catalysts for biodiesel production – a technology that is being commercialized by startup company NextCAT (formed by Ng and colleagues).
- Professor **Howard Matthew** (3) was one of 107 new members elected to the College of Fellows of the American Institute for Medical and Biological Engineering (AIMBE). The Detroit resident's election was based on what institute officials said are seminal contributions to the development and application of polysaccharide biomaterials in tissue engineering. The College of Fellows comprises the top 2 percent of medical and biological engineers in the country.
- Professors **Howard Matthew** and **Yinlun Huang** received a $550,000 grant from the National Science Foundation (NSF) to develop a mathematical model of liver metabolism that can be used to analyze and more effectively predict responses to possible treatments for hepatic steatosis, more commonly known as fatty liver. Their goal is to develop a mathematical model to analyze and optimally compute possible interventions for treating fatty livers.
- Professor **Guangzhao Mao** (4) and Assistant Professor Eranda Nikolla hosted the College of Engineering's segment of the "Gaining Options – Girls Investigate Real Life (GO-GIRL) Go Material Girls" event in May 2012 that included tours of the chemical engineering nanomaterials laboratory and the energy materials laboratory.
- Graduate student **Denise Conti** was named the recipient of the 2012 Ralph H. Kummler Award for Distinguished Achievement in Graduate Student Research. She has done groundbreaking research under the tutelage of Professor **Sandro R. P. da Rocha**, on developing novel polymeric nanocarries for the regional delivery of nucleic acids to the lungs.
- Student **Elizabeth Barrios** was awarded a Michigan Space Grant Consortium Fellowship. Barrios will investigate and develop an aerogel prosthetic liner that would prevent the accumulation of perspiration and water in spacesuits.
- Professor **Jeff Potoff**, along with Professor **Loren Schwiebert** in Computer Science, received $320,000 NSF grant for support of their project, "SI2-SSE: Development of a GPU Accelerated Gibbs Ensemble Monte Carlo Simulation Engine."

- **Joseph Hummer** (5), an international leader in the development and testing of unconventional intersection and interchange designs, was named chair of the Department of Civil and Environmental Engineering. For the past 20 years, he served as a professor at North Carolina State University where he researched and taught traffic operations, highway design and highway safety. He has published more than 80 journal articles from more than 50 funded research projects.
- Assistant Professor **Jaewon Jang** (6) joined the department in fall 2011.
- Student **Stephanie Boileau** won first place in an essay competition at the 2012 American Society of Civil Engineers North Central Student Conference. She joined 20 other Wayne State students (7) at Ohio Northern University to compete in the essay, concrete canoe and steel bridge competitions.
- Assistant Professor **Shawn McElmurry** was honored as a favorite professor at Wayne State's Academic Recognition Luncheon.
- Associate Professor **Peter Savolainen** conducted a comprehensive state-of-the-practice review of traffic injury research in order to address a variety of methodological issues that can complicate analysis of injury severity data.
- The College of Engineering addressed the issue of distracted driving with its 2012 "Drive Safely to Wayne State" campaign (8). The annual event promotes safe driving practices and is conducted by the College of Engineering's Transportation Research Group (WSU-TRG).


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- Associate Professor **Christopher Eamon** received a three-year, $250,000 NSF grant to develop an accurate and efficient method for calculating failure probability (reliability analysis) for computationally and probabilistically complex structural engineering problems, with the goal of achieving greater levels of consistency within a structure. Eamon also was awarded a two-year, $278,000 grant from MDOT to analyze the significance of cracks near the supports of prestressed concrete girders on a few bridges in the state.
- Professor **Carol Miller** (9) was named an Engineering Society of Detroit (ESD) Fellow at the 2012 ESD Annual Dinner and Awards Ceremony.
- Civil engineering students introduced basic engineering concepts to area youth at the Latin Americans for Social and Economic Development (LA SED) Youth Center in southwest Detroit in August (10). The community outreach event brought together 35 students, ages 7-13, and eight mentors, ages 15-18, with members of the WSU chapter of the American Society of Civil Engineers (ASCE).


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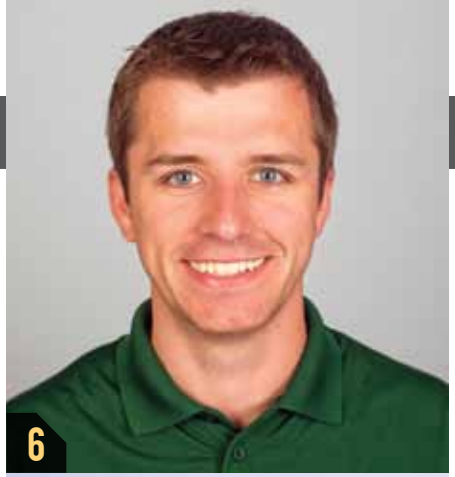
COMPUTER SCIENCE HIGHLIGHTS

- **Xue-wen (William) Chen** (1) was named chair of the Department of Computer Science. Chen most recently served on the faculty at the University of Kansas. Since 2008 he directed the Bioinformatics and Computational Life Science Laboratory at the Information and Technology Center. A 2007 NSF CAREER award recipient, Chen has published more than 100 refereed papers, including 50 journal articles, and has given keynote talks at several international conferences.
- Associate Provost **Monica Brockmeyer** (2) was selected for the inaugural class of the Executive Leadership in Academic Technology and Engineering (ELATE at Drexel™), a one-year, part-time program that addresses the need to increase leadership capacity and leadership diversity in engineering, computer science and related fields within academia.
- Assistant Professors **Dongxiao Zhu** (3) and **Hamidreza Chitsaz** joined the department in fall 2011.
- Associate Professor **Hongwei Zhang** (4) was awarded a $425,000 NSF Faculty Early Career Development (CAREER) Award to develop a central component of active traffic safety wireless network systems.
- Dean **Farshad Fotouhi** was inducted into Western Michigan University's College of Engineering and Applied Sciences' Alumni Excellence Academy. Fotouhi was also named a 2012-13 Engineering Society of Detroit (ESD) director at the 2012 ESD Annual Dinner and Awards Ceremony.
- Professor **Vaclav Rajlich** (5) published *Software Engineering: The Current Practice*. The text will be used at Wayne State University in sections of the Introduction to Software Engineering course.
- Compuware and the College of Engineering launched a mainframe computing education and summer internship program. The program is designed to introduce students to mainframe software development and cultivate and retain a vibrant high-tech talent pool in metro Detroit.
- **Chandankumar Reddy**, assistant professor of computer science, received two National Science Foundation grants. The first is "Rehospitalization Analytics: Modeling and Reducing the Risks of Rehospitalization," and the second is "EAGER: Efficient Methods for Characterizing Large-Scale Network Dynamics." The grant numbers are IIS-1231742 and IIS-1242304 respectively.
- Professor **Loren Schwiebert**, together with Professor **Jeff Potoff** in chemical engineering, received a $320,000 NSF grant for support of their project, "SI2-SSE: Development of a GPU Accelerated Gibbs Ensemble Monte Carlo Simulation Engine."
- The department hosted its annual three-week summer camp program for more than 80 students, ages 9-18, who learned about Web technology, robotics, animation, computer gaming, tech toys and phone apps.
- Associate Professor **Weisong Shi**, along with Associate Professor of Pharmacy Practice **Paul Kilgore**, was awarded a Bill and Melinda Gates Foundation Grand Challenges Explorations grant for an innovative global health and development research project titled "Mobile immunization tracking and management systems."
- Advaita Corporation, a startup company based on technology developed by Professor **Sorin Draghici**, received the final installment of a $125,000 award from the Michigan Emerging Technologies Fund program. This comes on the heels of a $2.2 million Phase II Small Business Technology Transfer (STTR) grant, "Pathway-Guide: A Novel Tool for the Analysis of Signaling and Metabolic Pathways," awarded to Advaita in 2011 by the National Institute of General Medical Sciences of the National Institutes of Health.

ELECTRICAL AND COMPUTER ENGINEERING HIGHLIGHTS

- Professor **Le Yi Wang** and Professor **Hao Ying** were elected as Fellows of the Institute of Electrical and Electronics Engineers (IEEE). Wang was elected for his contributions to system identification and the analysis of system complexity. Ying was elected for his contributions to theory and biomedical applications of fuzzy control.
- Undergraduate student **Luke Popiel** (6) was named Outstanding Student of the Year at the 2012 Engineering Society of Detroit Annual Dinner and Awards Ceremony.
- The department hosted the 2012 Forest E. Brammer Endowed Lecture Oct. 19, featuring **William J. Kaiser**, professor of electrical engineering at the University of California, Los Angeles (UCLA). Kaiser's lecture was titled "Wireless Health: New Technology and a New Industry."
- Assistant Professor **Ali Tajer** joined the department in fall 2012. Tajer came to WSU from Princeton University and his research is in information theory and energy systems.
- Assistant Professor **Abhilash Pandya** received the College of Engineering's Excellence in Teaching Award. Pandya was recognized for his seamless integration of teaching and research.
- Associate Professor **Yong Xu** (7) and a team of Wayne State researchers were awarded $330,000 from the NSF to develop a 3-D neural probe. Their aim is to develop an implantable device that will suppress tinnitus, a neurological disorder that affects more than 250 million people worldwide.
- Doctoral student **Yating Hu** was selected as one of the 13 U.S. scholars in this year's Kauffman Global Scholars Program.
- Assistant Professor **Mark Ming-Cheng Cheng** received a five-year, $475,000 Faculty Early Career Development NSF grant to study the potential of graphene, a novel carbon material, in the development of a reliable, high-performance, long-term implantable electrode system to improve quality of life using nanotechnology.
- Graduate students **Xuechen Zhang** and **Yuehai Xu** received the Best Student Paper Award at the 27th IEEE Computer Society Symposium on Massive Storage Systems and Technologies. Their paper, "YouChoose: A Performance Interface Enabling Convenient and Efficient QoS Support for Consolidated Storage Systems," was also invited for publication in *ACM Transactions on Storage* (Volume 7, Issue 3).
- Professor **Harpreet Singh** (8) was the lead guest editor for a special issue of Hindawi Publishing Corporation's *Real Life Applications of Fuzzy Logic*.
- Doctoral student **Mohammad Obeidat** (9) won the Best Poster Award during the 2012 IEEE Southeastern Michigan Section Spring Conference. Obeidat's poster was titled "Speed Identification of PMDC Motors Using Binary Sensors."
- Doctoral student **Ayman Mansour** (10) placed second in the Best Student Paper Competition at the 2012 North American Fuzzy Information Processing Society Conference. His paper was titled "Identifying Adverse Drug Reaction Signal Pairs by a Multi-Agent Intelligent System with Fuzzy Decision Model."
- Associate Professor **Song Jiang** and his research group have been collaborating with Facebook researchers on a project to investigate the characteristics of Facebook's Memcached, a key-value caching system for speeding up the access of database and other performance-critical data.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ENGINEERING TECHNOLOGY DIVISION HIGHLIGHTS

- Assistant Professor **Wen Chen** (1) was awarded a $5,000 Michigan Space Grant Consortium grant based on a proposal that highlights a model-based fault-detection strategy to detect mismatched thrust of aircraft. His research proposes the use of a Total-Measurable-Fault-Information residual method synthesized with an iterative learning observer to address this issue.
- Assistant Professor **Ana Djuric** (2) joined the engineering technology faculty in fall 2011.
- Student **Dennis Maxwell** (3) was named the Eleanor Josaitis Hope Scholarship award recipient at the 2012 Engineering Society of Detroit Annual Dinner and Awards Ceremony.


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MECHANICAL ENGINEERING HIGHLIGHTS

- Professor **Ming-Chia Daniel Lai** (4) was named a SAE International Fellow. SAE Fellowship status is the highest grade of membership bestowed by SAE International. It recognizes outstanding engineering and scientific accomplishments by an individual that have resulted in meaningful advances in automotive, aerospace and commercial-vehicle technology.
- Professor **Nabil Chalhoub** was named an American Society of Mechanical Engineers Fellow.
- Assistant Professor **Marcis Jansons** (5) was honored with the Ralph R. Teetor Education Award during the SAE 2012 World Congress held in Detroit.
- While a doctoral student, **Na Zhu** received the 2011 American Tinnitus Association Student Research Grant Program Award. She developed an innovative, 3-D computer-aided diagnostic system to pinpoint the exact locations of the tinnitus-related neural network activities in the brain's auditory structure.
- Graduate research assistant **Heather Lai** was named the recipient of Wayne State's 2012 Garrett T. Heberlein Excellence in Teaching Award for Graduate Students.
- Graduate research assistant **Tamer Badawy** (6) won third prize and $10,000 in the 2012 Collegiate Inventors Competition for his invention, "Autonomous Operation of Internal Combustion Engines on a Multitude of Fuels." This invention enables electronically controlled internal combustion engines to operate effectively on fuels of different physical and chemical properties.


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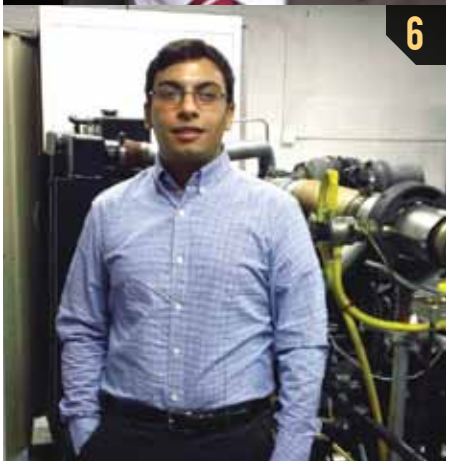
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INDUSTRIAL AND SYSTEMS ENGINEERING HIGHLIGHTS

- Assistant Professor **Evrim Dalkiran** (7) joined the department in fall 2011.
- Three student groups worked closely with GM and Henry Ford West Bloomfield Hospital to discover more effective and efficient ways to do business for their senior capstone projects. Students **Samuel Parayil, Justin Lens, Daniel Ribant** and **Lauren Weiss** (8) worked with Henry Ford Health System to identify and reduce non-value-added activities by health-care practitioners in an effort to further maximize direct patient care time at the hospital. Students **Fares Alsakkaf, Adel Ferid, James Loewen** and **Paul Mukhtar** provided a plan for GM that might save $1.2 million per year in stamping costs by using math modeling techniques to optimize use of scrap and nesting of stampings. Students **Thomas Miller, Nichole Gilbert, Ben Wojcik** and **Abubaker Mohammad** worked with GM to develop a mathematical model to optimize the global supply chain for two major subsystems of the Cruze.
- Associate Professor **Kyoung-Yun Kim** introduced computer technology that makes it easier for people who need wheelchairs to select one that best suits their needs.
- Student **Vanda Ametlli** presented her project, "Improving Inpatient Discharge Process to Reduce Readmission," at the Society for Health Systems 2011 Conference. Ametlli was the winner of the 2011 Undergraduate Student Paper Competition for the Society for Health Systems.
- Professor **Kenneth Chelst** (9) was awarded the Institute for Operations Research and the Management Sciences (INFORMS) President's Award. Chelst and co-author **Yavuz Burak Canbolat** of Abbott Laboratories published a new book titled *Value-Added Decision Making for Managers*.
- Doctoral student **Mahyar Movahednejad** won the Gold Paper Award from the 2012 Intelligent Transportation Society's Michigan Annual Meeting and Exhibition. This is the second time he won this award. His dissertation-related research paper was titled "Efficient Routing on Large-Scale Dynamic Networks under ITS Using Hierarchical Communities."
- Student **Jeseekia Vaughn** (10) received the Institute of Industrial Engineers' (IIE) Gold Award in recognition of her outstanding leadership as president of the WSU chapter of IIE during the 2011-12 year.
- **Nanua Singh** has announced his retirement from the ISE Department after nearly 20 years of dedicated service as a full professor.
- Professor **Kai Yang** (11) and partner institutions, the University of Michigan and the University of Georgia, received a $550,000 NSF grant for his work on "Collaborative Research: An Allocation Model with Dynamic Updates for Balanced Workload Distribution on Patient Centered Medical Homes."
- Associate Professor **R. Darin Ellis** is working on a project sponsored by the Veterans Administration Center for Applied Systems Engineering to develop a usability analytics framework for the VA's next generation electronic health record.


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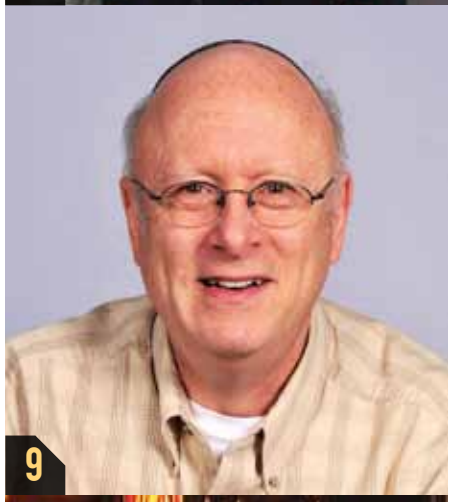
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GIVING

THE BOARD OF VISITORS SETS THE BAR

Seventeen alumni and friends comprise this year's Board of Visitors, the College's senior volunteer board responsible for strategic planning and external relations. They advise Dean Farshad Fotouhi on a wide range of important issues such as corporate relations and alumni giving.

Members of the 2012-13 Board of Visitors include:

Thomas Amato, president and CEO, Metaldyne, LLC

Jim Anderson, president and CEO, Urban Science

Robert Banasik, Ph.D., president, OmniLife Health Care

John Banicki, founder and chairman emeritus, Testing Engineers and Consultants, Inc.

Russell Carter, senior director of corporate development, ArvinMeritor

James Croce, president, Greenlark Energy Partners

Brian Geraghty, CEO, Geraghty Technical, LLC

Jim Gessner, Esq., president, Michigan Energy

Yousif Ghafari, chairman, Ghafari Associates, LLC

Charles Hess, president, Fisher/Unitech, Inc.

Steve Kurmas, president and COO, Detroit Edison

Nancy Philippart, president, NLP Solutions, LLC

Avinash Rachmale, president and CEO, Lakeshore Engineering

Julius Reeves, manager, product development, GM Warren Technical Center

Randy Rogers, senior vice president, Camp Dresser and McKee, Inc.

Paul Sgriccia, principal, Golder Associates, Inc.

Anthony Tai, chief technology officer, L-3 Communications EOTech, Inc.

GROWING SUPPORT FOR STRATEGIC PLAN

Dean Farshad Fotouhi is implementing a strategic plan to strengthen our resources and infrastructure in the immediate years ahead. It will raise our profile among engineering schools in Michigan and across the United States, and its success depends on alumni and friends like you.

In fact, more and more donors are investing in our plan. During the 2011-12 academic year, **821** donors supported the College, totaling **$1,730,606** – an increase in donors over last year. Our plan calls for measurable progress in student recruitment and retention, faculty research, student learning and alumni engagement.

With contributions from alumni and corporations, we will continue to 1) recruit and retain talented students with competitive scholarship packages, 2) upgrade our labs and classrooms with state-of-the-art technology, and 3) expand our offerings of co-curricular activities for students to learn the personal qualities and leadership traits they will need to succeed after college.

ROBERTS TO LEAD PHILANTHROPY, ALUMNI RELATIONS PROGRAMS

The College of Engineering welcomed a new director to its Office of Development and Alumni Relations in September. Mark Roberts comes to us with significant experience in fundraising and volunteer management. Most recently, he led the University of Michigan's architecture school to its most successful fundraising year in five years. Previously, he was the development officer for the schools of engineering and architecture at The Catholic University of America in Washington, D.C.

"The College is positioning itself as a national leader in alternative energy technology, advanced manufacturing and biomedical engineering," Roberts said. "Our faculty have applied for more than 60 patents the last few years. They've launched five start-up companies here in Detroit. When you couple their expertise in these breakthrough fields with the grit and determination of our students, you create a winning culture that's focused on moving to the next level. With the generosity of our alumni and friends, that's exactly where we're headed," he said.

Roberts can be reached at **313-577-8576** or **robertsm@wayne.edu.**

The College of Engineering celebrated the generosity of Ford Motor Company on April 25, 2012, as it unveiled the naming of the Ford Motor Company Student Activity Center. The Ford Motor Company Fund gave $3 million to Wayne State University's Wayne First campaign, with $1.8 million of the gift supporting the College of Engineering and its Marvin I. Danto Engineering Development Center.

Jim Anderson, president and CEO of Urban Science and College of Engineering alumnus, announced in March Urban Science's commitment to building a $1 million endowment to support the Col. Gregory Gadson Scholarship at the College in perpetuity. The scholarship will provide up to $50,000 annually to a wounded warrior to study engineering and earn an EDGE Engineering Entrepreneur Certificate. The first recipient of the Urban Science scholarship is Steven Patterson, a veteran of the U.S. Army and Purple Heart recipient.

Life Beyond Barriers (LBB), an initiative that combines the power of medicine, science, engineering and entrepreneurship to enhance quality of life for those in need through collaboration and product development, was launched in May 2012. Created in partnership through Urban Science, the College of Engineering and Rehabilitation Institute of Michigan, LBB combines world-class resources in the medical and biotechnological engineering fields to develop solutions that help people around the world overcome the physical challenges they face every day.

lifebeyondbarriers

AAA Michigan — Drive Safely to **WAYNE STATE**

The 2011 Drive Safely to Wayne State event was made possible by a top tier sponsorship from AAA Michigan, an organization that has worked to make Michigan's roads safer for nearly a century.

"Our intent was to put traffic safety top of mind as the new college year began," said AAA Michigan President Steve Wagner. "We wanted to help make motorists and pedestrians more aware of the need to be alert and attentive — whether driving or walking on campus. This annual event conducted by the Wayne State College of Engineering's Transportation Research Group was a natural fit for us."

At the event, Anthony Ptasznik, AAA vice president, Membership and Insurance Products, spoke at the opening ceremony and AAA traffic safety experts manned a safety booth.

"We have a long and proud history of providing traffic safety support for all ages," said Wagner. AAA's sponsorship of the Drive Safely event provided the organization the opportunity to share this support with the Wayne State community.

IAV Automotive Engineering supports **EcoCAR 2**

Wayne State University's EcoCAR 2 team is supported by a headline sponsorship from IAV Automotive Engineering, a leading engineering partner for all major car manufacturers and suppliers and a proponent of green automotive technologies.

"IAV has been involved in electrified vehicle development for more than 12 years," said Joe Lemieux, business unit director of energy management at IAV. "Our engineering consultants have been, and continue to be, closely involved in the development of many hybrid, electric, and fuel cell vehicles on the road today and in development."

IAV not only offers financial support to the WSU team but also provides input at the team's technical design reviews. Additionally, IAV supports the EcoCAR 2 team at marketing events, such as press conferences.

"We benefit by being close to a university where our engineers can help students grow in the area of green automotive technologies," said Lemieux. "Our sponsorship also allows us to identify potential future IAV employees."

"I diligently focused all of my efforts on preparing myself for college with volunteer work, extracurricular activities, internships and academic excellence. The only obstacle that stood in my way was the financial burden of a large university. As a first generation four-year university student, the College of Engineering Scholarship has given me the opportunity for my dreams to become a reality. As I watch my dreams unfold before my eyes, I cannot thank the COE enough for all that it has done for me. I look forward to continuing my education and receiving my Ph.D. one day. Thereafter, I hope to make a difference in the world, whether small or big, by teaching and performing research at a university; hopefully I can come back home to Wayne State to do this."

— Devin Partrich, BSCEE '13, civil engineering, intern with Horizon Engineering Associates, LLP, summer 2011, 2010, 2009 and 2008

"Scholarships help relieve financial strain and allow students to worry less about working and finances and focus more on their studies. Scholarship recipients can leverage that success on their résumés and stand out on job applications. My scholarships have given me an extra boost of motivation to do the best as I can — not just in my classes, but to be active in extracurricular activities. I am very grateful for the scholarships I have received and intend on continuing my involvement with high school robotics teams, something that helped foster my initial interest in engineering."

— Murtatha Zalzala, BSME '11, mechanical engineering graduate student, future Ford employee

Our Collective Success

LETTER FROM THE PRESIDENT

Dear alumni and friends,

On the evening of Oct. 27, a crowd gathered in downtown Detroit to cheer on the best of the best. You might first think, "That's easy. Comerica Park, Game 3 of the World Series." But next door is the Gem Theatre, where approximately 200 alumni, students, faculty and friends of the College gathered for the 2012 Night of the Stars.

This year's alumni awardees represent the finest members of our alumni community. A chief of research at a federal agency in Washington, D.C. The COO of a leading mobile platform firm in Silicon Valley. The CIO of a world-renowned computer technology firm. And one of GM's most decorated innovators in advanced engine analysis. They join the elite circle of the College's Hall of Fame.

I am proud to mention two additional alumni who received the Outstanding Industry Achievement Award: Paul Nahra, '98, '00, and Darcy Salman, '93. Dean Farshad Fotouhi recognized them for their contributions to their professions as well as their service to the College. You can read more about these men and women on page 17.

The College of Engineering's reputation is based on the collective success of alumni like you and me. It's important that we stay involved with our alma mater — by attending local events, volunteering on a committee, mentoring students on current projects, and hiring them as interns and employees when they graduate. By working together, we can make a difference for the next generation of Wayne State engineers and computer scientists.

I encourage you to visit **engineering.wayne.edu** and click on "Alumni and Friends." You can stay informed of news and upcoming events, and connect with us on Facebook and LinkedIn. There are many things happening online.

Let me conclude with an invitation. The Engineering Alumni Association Board (EAAB) meets the second Tuesday of every other month from 6-8 p.m. in the Hall of Fame conference room at the College. You are always welcome to join us.

I look forward to seeing you at an upcoming event or online.

Best regards,

John Micheli, BSME '87, president
Wayne State University
Engineering Alumni Association

ENGINEERING ALUMNI ASSOCIATION BOARD

John Micheli, BSME '87, president

Fritz Quitmeyer, MSME '83, financial officer

Dmitry Fudym, BSIE '08, secretary

Anthony Duminski, BSEE '65, MSEE '69, immediate past-president and chair of the Communications Committee

Paul Nahra, BSME '98, MSME '00, past-president

Brian Geraghty, MSME '72, past-president and EAGER Committee Chair

Joseph Boelter, BSChE '65, MSChE '66, past-president

David Kolodziej, BSME '59, MSME '62, past-president

Jennifer Kindseth, BSIE '01

David M. Chegash, BSIE '75

Nathan Bennett, BSEE '08

Joe Keyanchuk, BSET '03

Ali Khraizat, BSCE '01, MSEnvE '05

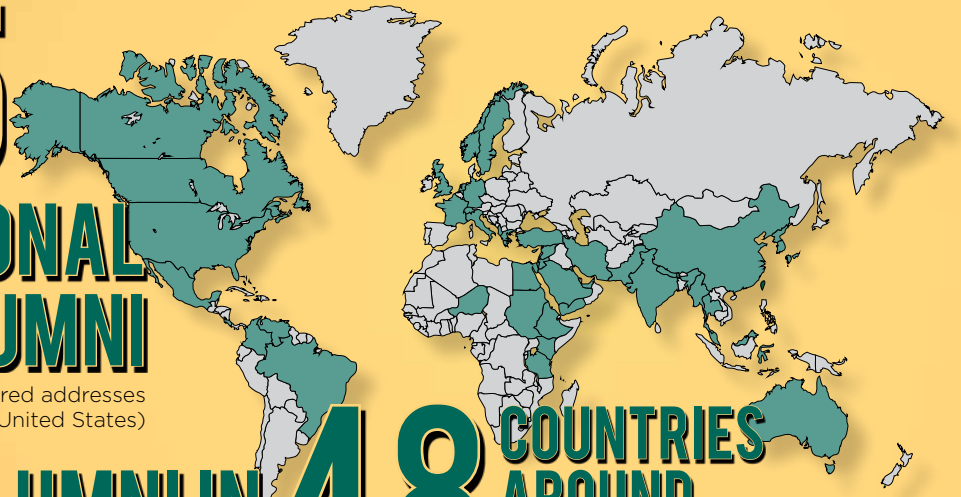
Dan Simon, BSME '01, MSME '04

Vanda Ametlli, BSIE '10

ALUMNI STATISTICS

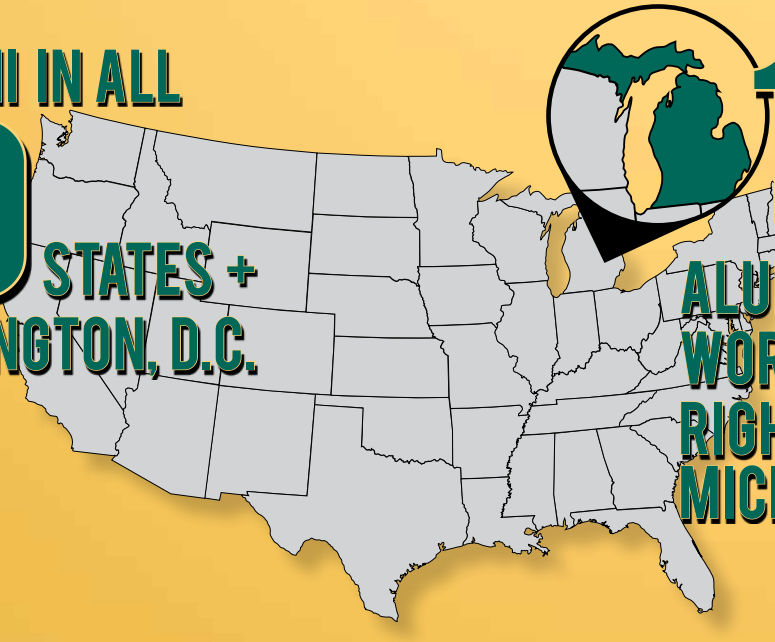
25,217
LIVING ALUMNI

945
INTERNATIONAL ALUMNI
(based on preferred addresses outside of the United States)



ALUMNI IN **48** COUNTRIES AROUND THE WORLD

ALUMNI IN ALL **50** STATES + WASHINGTON, D.C.



16,579
ALUMNI LIVING, WORKING AND PLAYING RIGHT HERE IN MICHIGAN

Class Notes

Thomas Stone, BSEE '60, is a distinguished emeritus professor at Oakland Community College. He is past president of many Michigan and local organizations and a consultant to nonprofit organizations. He serves on the Independence Township Senior Center Advisory Committee and ITSC Friends Committee. Stone has been an advanced amateur genealogist for more 30 years and he donates genealogical services to people who make appointments and minimal donations to the Independence Township Senior Center.

Jim Anderson, BSCE '66, MSCE '70, president and CEO of Urban Science, was named a 2012 Champion of the New Economy by Junior Achievement, *DBusiness* and WJR.

Craig Barton, BSME '69, is the Graduate School dissertation chair at Northcentral University. He coaches social science students as they complete their dissertation research.

Thomas Kamprath, MSCE '77, is president of Apollo Construction and Engineering Services in Apollo Beach, Fla.

Robert K. Jones, BSEE '78, is the author of *The Last Sleigh Ride: A Detroit Folk History*. Jones, a retired Ford Motor Company Research and Engineering Center supervisor, is on the board of directors of the Book Club of Detroit and president of the Littlefield (Liberty) Block Club. Jones also is author of *True Colors: Detroit's Fall Color Guide.*

Dan Zechmeister, BSCE '78, executive director of the Masonry Institute of Michigan in Southfield, Mich., has received the American Society for Testing Materials (ASTM) International Award of Merit from Committee C15 on Manufactured Masonry Units. The Award of Merit and its accompanying title of fellow is ASTM's highest organizational recognition for individual contributions to standards activities.

Steve Kurmas, BSChE '79, MSChE '83, president and COO of Detroit Edison and a College Board of Visitors member, was the Horace H. Rackham Award Recipient at the 2012 Engineering Society of Detroit (ESD) Annual Dinner and Awards Ceremony.

James Weiner, BSChE '80, is an attorney at James T. Weiner P.C. He also is the president of Southeast Michigan Land Conservancy.

Narender Oruganti, MSISE '83, has been named to the advisory board of Arkeia Software, a provider of network backup solutions, based in San Diego, Calif. Oruganti founded Catura Broadband Systems, was marketing director at Veritas' appliance software unit, and worked at Network Appliance and Hewlett Packard.

Larry Wash, BSEE '84, has been appointed executive vice president for the Americas at KONE Corporation. Wash has a proven track record in growing profitable businesses. In his latest role as the president of Global Services for the Climate Solutions sector of Ingersoll Rand, he led a $3 billion business in 60 countries. Previously, he served as vice president of service and contracting business for Trane within North and Latin America, and in various leadership roles with Xerox and Eastman Kodak.

Grace Bochenek, BSEE '86, director of the U.S. Army Tank-Automotive Research, Development and Engineering Center since 2006 and an Arsenal employee for more than 20 years, is the first chief technology officer for the Army Materiel Command, the Hunstville, Ala.-based Army division that oversees both Tacom and TARDEC.

Nandakumar Cheruvatath, MSME '92, has been named executive vice president for Eaton Business System, at Cleveland, Ohio-based industrial manufacturer Eaton Corp. He was formerly president, Europe, Middle East and Africa, Eaton Vehicle Group.

Steve Modica, BSEE '92, founded Small Tree Communications.

David Finley, PhDChE '96, was appointed dean of Lake Superior State University's College of Business, Engineering and Economic Development.

David LaPrairie, BSChE '94, was named a 2011 Michigan Super Lawyer by *Michigan Super Lawyers* magazine. He is an attorney for Howard & Howard and specializes in intellectual property law. In addition to his bachelor's degree in chemical engineering, LaPrairie received a J.D. from Wayne Law in 1999.

Nasser Al-Mahasher, MSChE '95, has been appointed new representative director and CEO of S-OIL.

Walter Dorfstatter, MSISE '95, has been named chief technology officer of Movimento Group.

Curtis Gomulinski, BSEE '01, serves as executive director, secretary-treasurer and editor for the Tau Beta Pi Association engineering honor society. He has been a member of the organization since 1998 and has held positions including chapter president and executive director-designate. Prior to joining Tau Beta Pi, Gomulinski was a lead project engineer in the plant information technology department at the University of Michigan.

Joseph Iskra, BSEE '01, a registered patent attorney, is an associate at Butzel Long. He will practice in the area of intellectual property law in the firm's Bloomfield Hills office.

Paola Abi-Nader, BSECE '05, has been hired by Honigman Miller Schwartz & Cohn LLP for its intellectual property practice. Abi-Nader, who will be doing patent-application work for high-tech companies, previously was a patent examiner at the U.S. Patent and Trademark Office. Before she was a lawyer, she worked as an engineer in the auto-supply industry.

David Lutz, BSCE '06, MSCE '08, was named one of Crain's Detroit's 20 in their 20s.

Mark Nasr, BSCE '07, MSCE '07, is an associate at Plunkett Cooney. Nasr concentrates his litigation practice on the defense of construction professionals and their firms.

REMEMBERING

The College of Engineering laments the loss of our alumni and friends.

Milton Behrens, MSME '60

Charles Betzner, BSChE '38, of Royal Oak, passed away on May 17, 2011. He was predeceased by his wife, Elizabeth Betzner.

Donald Blickwede, BSChE '43

David Brody, BSEngin. '52

David Buchanan, BSEngin. '73

Clark Carlyle, BSEngin. '53

Vincent Carney, BSEngin. '58

Robert Cook, MSME '67

Frederick Cribbins, BSEngin. '63

Marvin Danto, friend and supporter, passed away on Jan. 24, 2012. Danto had a successful career as an engineer, furniture retailer, real estate developer, community leader and philanthropist. Danto donated the seed money to augment state funds toward the creation of the college's Marvin I. Danto Engineering Development Center (EDC). The EDC is a 82,500-square-foot R&D facility dedicated to advancing an interactive, academic-business model to promote ground breaking research in the fields of alternative energy, nanotechnology and smart sensors. The facility symbolizes the promise of a state economy based on sustainable energy technology, health care and biotech innovation. (Text from IRA Kaufman Chapel website.)

Alfred Goldstein, MSME '50

Michael Haddad, BSECE '2010

William Harms, BSEngin. '49, passed away Feb. 18, 2012. He retired from the Oak Ridge National Laboratory in 1986 after 28 years of service. He previously was associate professor of metallurgical engineering at the University of Tennessee and a consultant to ORNL and the U.S. Delegate to the United Nations' International Nuclear Fuel Cycle Evaluation Project in Vienna, Austria. He was a fellow emeritus in the American Nuclear Society and the American Society for Metals International, a senior member of the Metallurgical Society, and a member of the honorary societies Tau Beta Pi, Sigma Xi, and Delta Epsilon Chi. He was inducted into the College of Engineering's Hall of Fame in 1984. He is survived by his loving wife of 70 years, Mary Grace Luer Harms; his son, Ben, and wife, Lucy; his daughter Elizabeth; his son Larry; and his grandson, Andrew.

Robert Harroun, BSEngin. '48

Fred Hodgins, BSCE '50, of Blissfield, Mich., passed away on April 26, 2012. A WWII and Korean War veteran, he used the GI Bill to earn his engineering degree at Wayne State. He was a licensed professional engineer and was employed as a civil engineer for Jones and Henry Ltd. until his retirement in 1991. He was predeceased by his wife, Lucile Russell.

Robert Holdreith, MSME '73

Joseph Kusiak, BSME '66

Jacob Lampcov, BSECE '58

Sam Langwald, BSEngin. '50

Eric Laven, CS '97

Richard Loose, BSME '63, passed away on April 13, 2012. He was a dedicated professional engineer for General Motors who had many accomplishments before retiring after 35 years. Among his distinguished accomplishments, he developed 11 patents and received two Kettering awards. He is survived by his beloved wife, Margaret Loose, and loving daughters, Sarah (Bill) Tiltman and Rebecca Loose.

Aaron Maniker, BSME '50

Melvin McClintock, BSME '48

Jambunatha Narayan, BSEngin. '60, MSEngin. '70

John Nyland, BSISE '58

Richard Gottlieb Olsen, a former Wayne State instructor, passed away Sept. 22, 2012, at the age of 89. A veteran of World War II and "French Legion of Honor" recipient, he was a longtime employee of the Detroit Edison Company and became Edison's senior nuclear fuel engineer in 1982. He served as instructor of electrical engineering at WSU from 1948 to 1977. He wrote the first computer course for Detroit Public School teachers and taught the course himself for nine years, 1966-1974. He was a member of a number of professional organizations, and he authored numerous professional journals and articles. He is survived by his beloved wife of 65 years, Virginia Ann (Abbinett) Olson, and his children, grandchildren, sister, nieces and nephews.

Benjamin Pitts, BSEngin. '80

Rockne Ristau, BSEngin. '62

Evgeny (Eugene) Rivin, colleague and professor, died after a long struggle with serious illness on June 6, 2011, at the age of 78. Rivin taught in the Wayne State

Department of Mechanical Engineering beginning in 1981 and was the longtime director of the College's Machine Tool Research Laboratory. His primary skills and interests were in the fields of problem analysis, definition, and solving using TRIZ methodology, research and development, and the implementation of R&D results. His extensive career provided him with experience in the areas of machine tools, manufacturing engineering, robotics, structural dynamics/rigidity, vibration/noise control, mechanical design/advanced machine elements, dynamics of rotating systems, rubber in machine design, and standardization.

James Schmitt, BSEngin. '63, MSISE '68

Weston Schultz, BSME '66, MSME '69, passed away peacefully on Oct. 12, 2012 at the age of 70. Beloved husband of the late Elaine for more than 30 years until her death in 2002, Schultz was lucky enough to find love a second time with his dearest companion, life partner and best friend, Ingrid Smart. He was a self-employed mechanical engineer, solving complicated problems for other engineers in the automotive industry. His family has established a scholarship in his memory to support mechanical engineering students.

David Skiven, MSCE '74, alumnus and Hall of Fame member, passed away at 64 on Nov. 16, 2011, after a lengthy battle with cancer. He was surrounded by family and friends at his home in Brighton, Mich. Skiven served as co-director of the Engineering Society of Detroit Institute (ESDI). He also served as ESD's vice president from 2004-08 and a member of its board from 1998-2008, as well as a trustee of the Rackham Engineering Foundation. A visionary and a champion for change, Skiven dedicated his 42-year career to the service of General Motors Corporation, serving as executive director of GM's Worldwide Facilities Group. In that role, Skiven was in charge of utilities, capital construction and environmental segments. The result of the single facilities management approach was significant structural cost savings, improved utilization of corporate assets and development of a talented global organization.

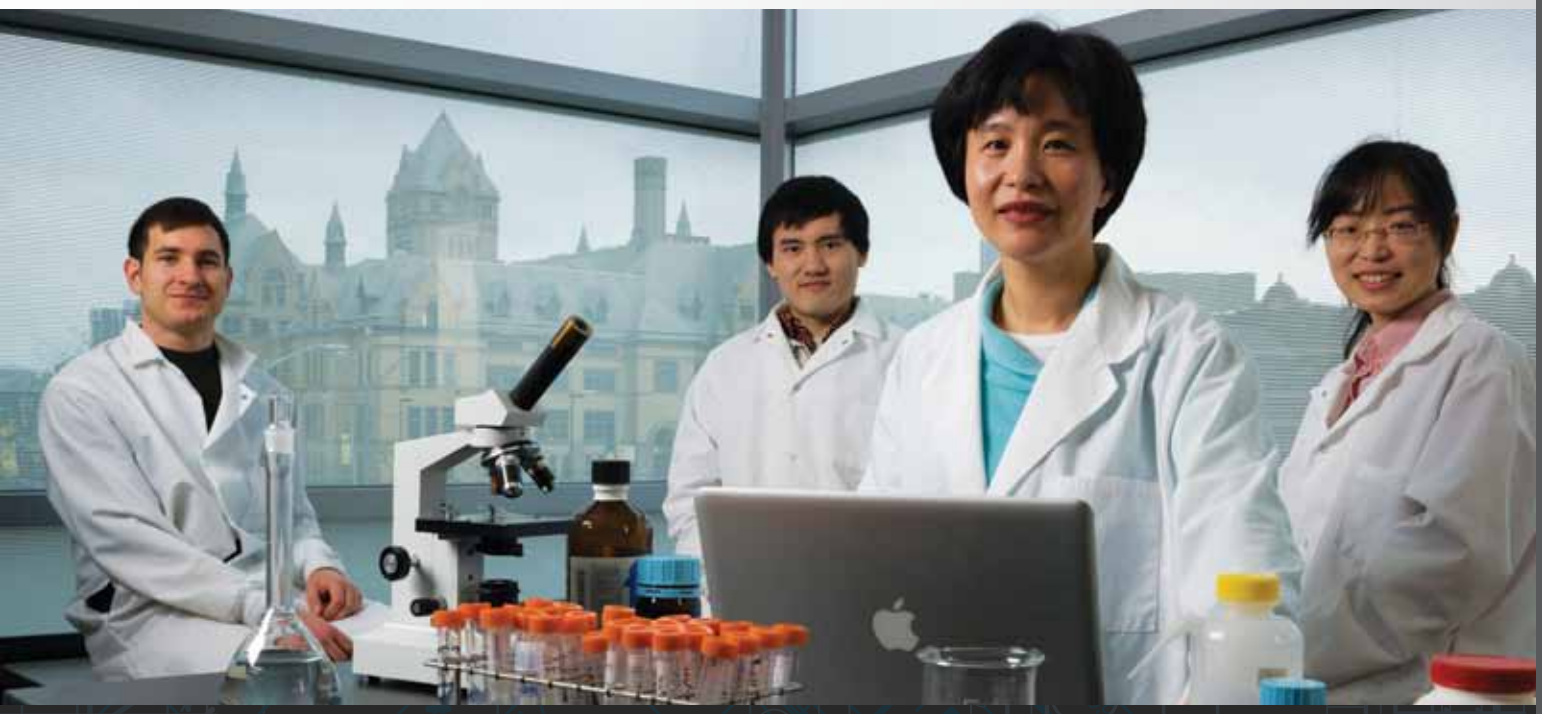
Carl Taulbee, BSME '53, MSME '59

Edward Tomaszczyk, BSECE '73

Louis Tubben, BSME '52, MSME '68

Raymond Warell, BSEngin. '57

Robert Wingerter, BSME '38



COLLEGE *of* ENGINEERING
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Detroit, MI 48202

EXEMPLAR