

## ENGINEERING PROFESSIONAL DEVELOPMENT COURSES

Engineering Professional Development has developed a new lineup of technical seminars to accommodate many engineering needs. Enjoy a quality learning experience featuring up-to-date technology, modern facilities, and instruction from both the College of Engineering and Computer Science faculty and highly qualified industry experts.

EPD has over 30 professional development courses available in subject areas such as manufacturing, engineering management, automotive engineering, NVH (noise, vibration, and harshness), engineering design and analysis software, quality and statistical processes, and others.

Customized seminars and short courses are also available.

**Call for the current schedule of classes – 313-593-4000**

*The course cost includes instruction fee, materials, and food service. Limited seats are available on a first-come, first-serve basis.*

*Course registration will be confirmed two weeks prior to course start date.*

Call **313-593-4000** to reserve your seat in one of the following courses:

**Engineering and Technical Leadership**  
1 day—January 28, 2004

**Factory Physics: The Science of Lean Manufacturing**  
1 day—January 23, 2004

**Overview of Supply Chain Optimization**  
1 day—January 26, 2004

**Value Engineering/Value Management**  
3 days—January 28, 29, 30, 2004 OR  
February 24, 25, 26, 2004

**Simulation Input Data and Output Results Analysis**  
1 day—January 29, 2004

**Automotive Manufacturing Processes**  
4 days—February 2, 3, 4, 5, 2004

**Business Process Modeling Using ARIS**  
1 day—February 2, 2004

**Introduction to C++ Using Engineering Methods**  
5 days—February 9, 10, 11, 12, 13, 2004

**Design of Experiments and Analysis of Variance**  
1 day—February 9, 2004

**Engine Emissions**  
3 days—February 10, 11, 12, 2004

**Overview of Non-Parametric Data Analysis**  
1 day—February 23, 2004

## ONLINE GRADUATE COURSES

The college offers two internet-based graduate programs: automotive systems engineering and software engineering. Online courses are offered via the Internet and use video with audio, text, and graphics. The convenience of completing a single course or an entire degree program by using distance learning technologies provides unlimited flexibility for students with demanding work or personal schedules.

Winter 2004 Online Graduate Course Offerings:

**Advanced Operating Systems**  
**Automotive Manufacturing Processes**  
**Automotive Powertrain I**  
**Database Systems**  
**Digital Systems & Microprocessors**  
**Software Engineering**  
**Vehicle Dynamics**

For more information or to enroll, visit the Distance Learning Network web site at <http://dln.engin.umd.umich.edu> or call **313-593-4000**.



The University of Michigan-Dearborn  
College of Engineering and Computer Science  
4901 Evergreen Road  
Dearborn, Michigan 48128-1491  
(313) 593-5290

CHANGE SERVICE REQUESTED

Nonprofit Org.  
U.S. Postage  
**PAID**  
Permit No. 684  
Dearborn, MI

# THE DEARBORN Engineer

UNIVERSITY OF MICHIGAN-DEARBORN

FALL 2003





DTE's Nirmal Singh with Provost Robert Simpson Page 1



Oleg Zikanov Pages 6 and 7



Intelligent Vehicle Contest Page 13



Thomas Davies Page 16

News from the College of Engineering and Computer Science, University of Michigan-Dearborn  
www.engin.umd.umich.edu

Feature Story: DTE Energy Power Electronics Lab Dedication	1
New Building	3
Industry Support: Visiting Committee	4
Industry Update: TRW and DaimlerChrysler	5
Faculty Research Grants	6
NSF Awards	7
Alumnus Profile: Eric Ridenour	8
Engineering News: New Faculty and Staff Members	10
International Programs	12
Student News	13
Awards: Co-op and Scholarships	15
Annual Alumni Awards	16
Professional Development	Back Cover

**Editorial Board**

Subrata Sengupta, Ph.D., Dean  
Keshav S. Varde, Ph.D., Associate Dean  
Editor: Kathryn Tamborino  
Assistant Editor: Phillip Snyder

The Dearborn Engineer is published for the alumni and friends of the University of Michigan-Dearborn College of Engineering and Computer Science. Send correspondence to the Editor, Dearborn Engineer, 4901 Evergreen Road, Dearborn, MI 48128-1491.

**Regents of the University**

David A. Brandon, Laurence B. Deitch, Olivia P. Maynard, Rebecca McGowan, Andrea Fischer Newman, Andrew C. Richner, S. Martin Taylor, Katherine E. White, Mary Sue Coleman (ex officio)

**Citizens Advisory Committee**

Ismael Ahmed, Stephen T. Economy, Linda P. Kughn, Patricia Mooradian, Timothy J. O'Brien, Jon Pepper, Michael C. Porter, Maria Leonhauser Rosenau, Shirley R. Stancato

**FRONT COVER:**

DTE Energy Chairman and CEO Anthony Earley and DTE President Robert Buckler dedicate the new DTE Energy Power Electronics and Electric Drives Laboratory

## DTE ENERGY FUNDS PREMIER POWER ELECTRONICS LAB



*UM-D Chancellor Daniel Little, DTE President Robert Buckler, DTE Chairman and CEO Anthony Earley, and Dean Subrata Sengupta*

The power electronics laboratory in the College of Engineering and Computer Science has been undergoing a major overhaul over the past two years, thanks in large part to a generous donation of \$150,000 from the DTE Energy Foundation and a matching grant from the National Science Foundation (NSF). To honor DTE Energy and the foundation, and to dedicate the renovated facility, the lab was officially renamed the DTE Energy Power Electronics and Electric Drives Laboratory at a ceremony this past summer.

DTE Energy chairman and CEO Anthony Earley cut the ribbon marking the official opening of the lab, and Robert Buckler, president of DTE Energy Distribution, unveiled a plaque honoring the occasion. Dr. Nirmal Singh, dielectric scientist at DTE and a strong advocate of the lab, also represented DTE at this event. Remarks by Earley and UM-D Chancellor Daniel Little were followed by an overview of the lab by John Shen, associate professor of electrical and computer engineering. UM-D Provost Robert Simpson presented mementos to mark the special occasion.

"We have been fortunate to have DTE's support over the years," says Subrata Sengupta, dean of the college. "There is a close alliance between the

power and automobile industries. With these new improvements, the DTE power electronics laboratory will serve the needs of both."

Enhancements to the lab include complete infrastructural renovations to the facility and the acquisition of new equipment, including 1/3-3/4 hp induction and DC motors, 1-5 KW universal power converter modules, DSPACE real-time control systems, power meters, digital oscilloscopes, voltage and current probes, and accessory testing equipment. Plug Power, a leading manufacturer of fuel cells with an agreement for the distribution of fuel cells by DTE Energy Technologies, a subsidiary of DTE Energy, for several mid-western states has also donated a hydrogen fuel cell for research and education uses.

"Part of the lab's purpose is to allow us to pursue power electronics for alternate sources of energy," says Sengupta, "including fuel cells and hybrid vehicles." The college is currently working with DTE on the continued development of a hydrogen fuel cell lab, which has already begun with the fuel cell donation.

Student enrollment in power electronics courses has grown significantly over the past three years, reflecting the increasing public interest in energy conservation and environment protection. The lab

will allow the electrical and computer engineering department to deepen its curriculum and strengthen it through additional educational and research projects. In anticipation of the expanded lab, a faculty team has developed several research concepts and proposals addressing electric motor control with industrial and automotive applications, power factor correction strategies for industrial and utility systems, a study of battery charging stations on load distribution (which will be especially useful when electric vehicles become more commonplace), regenerative braking, and solar cells and their applications.

"We started using the upgraded lab earlier this year," says John Shen, co-director of the lab along with Assistant Professor Chris Mi. "We've already got a number of projects going in various research areas, including prognostic systems for electric vehicle inverter modules (sponsored by Ford Motor Company), super junction power semiconductor devices (funded by NSF), low-voltage high-frequency power MOSFETs for DC/DC converters, automotive power semiconductor devices, a windmill generator simulation, a hybrid electric drivetrain study, and motor control teaching labs." The lab is also being used to facilitate student senior design projects, including electric bikes and golf carts.

"Power electronics is about efficiently controlling the flow of electrical energy," says Shen. "It's an enabling technology behind almost every aspect of

our daily life, from computers and communication equipment to consumer products to electrical vehicles to our electric utility grids."

But in spite of the importance of this technology, 90 percent of power electronics engineers working in the industry today were actually self-taught. "This is significant," says Shen. "We want to use this lab to prepare the future employees of the power industry with a base of knowledge that they're not likely to acquire otherwise."

Nirmal Singh believes the college now has an outstanding facility. "There aren't many university power electronics labs in the United States," he says. "Certainly, no other university in Michigan has a lab with these kinds of capabilities. And the professors who run it are capable, young, aggressive, just dynamite. Our people are very happy to see the lab come to fruition." Singh is also excited about the potential of this lab in the emerging distributed generation area, including improvements in the reliability of the electrical grid in the U.S. After all, power electronics is indispensable to the control of electronic power flow in modern utility networks.

Singh worked closely with Dean Sengupta; Phil Snyder, the college's development director; and the DTE Foundation to arrange for the funding for the lab. "At DTE, we want to hire good engineers," he says. "So we want to support schools that produce good engineers, which UM-Dearborn does. We do

hire people from Dearborn; they're very valuable to us. Our motive is not entirely selfish, however. Education is the crown jewel of the United States; our future depends on it. It is incumbent on every individual here to support education in whatever way we can."

To that end, the DTE Energy Foundation recently announced the award of an additional \$40,000 to continue the development of the college's power electronics laboratory.

*John Shen, co-director of the lab, describes its capabilities*



## DESIGN OF NEW ENGINEERING BUILDING UNVEILED



The U-M Regents recently approved a major addition to the College of Engineering and Computer Science's Engineering Laboratory Building. An additional 46,000 gross square feet will be added to house the school's Institute for Advanced Vehicle Systems (IAVS), dedicated laboratories, and engineering classrooms. Construction is expected to begin next summer and to be completed in 2006.

"This project reflects the need among our students and external stakeholders for facilities that will allow them to tackle the current and future challenges facing the auto industry," according to Dean Subrata Sengupta. "It also reflects the significant growth in our enrollment and the research activity of our faculty, which has also expanded considerably."

Enrollment in the college has nearly doubled since 1990. At the graduate level, the number of students has grown from approximately 250 to nearly 1,000 over that period.

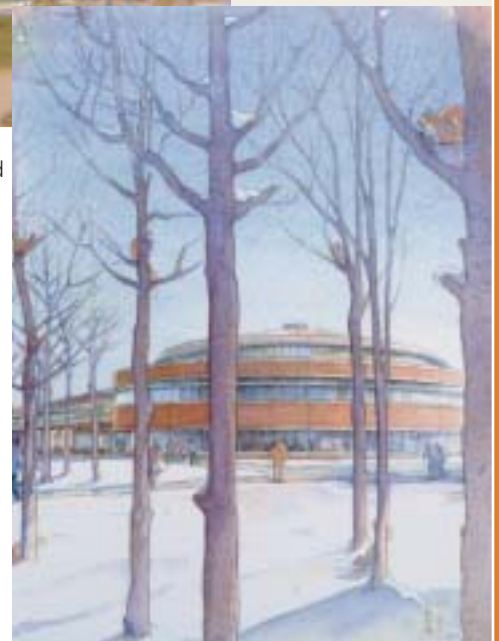
Along with research facilities, the addition will include laboratories for vehicle electronics, auto safety, ergonomics, and powertrains. It will also have a flexible open bay area to accommodate equipment used for teaching and research in manufacturing, space for undergraduate students to design and assemble projects for national competitions, and distance learning classrooms.

IAVS was created to accelerate applied research in the areas of product development and manufacturing. It focuses on systems engineering related to the design, development, and manufacturing of complex vehicles, and its faculty associates conduct research related to body and chassis systems, manufacturing processes, and integration with powertrain systems.

The building was designed by Terry Sargent of the firm Lord, Aeck and Sargent Architecture, and features windows, bricks, and cast concrete elements that harmonize with the existing architecture on the Dearborn campus.

The 30-foot-high bay space for IAVS has a circular form to accommodate an efficient rotating overhead crane.

"Adjacent to the high bay are specialized laboratory spaces, separated from the high bay space by glazed walls to share light and showcase the activities within," according to Sargent. "An atrium bisects the building, creating links to exterior and interior campus pedestrian paths, while highlighting the manufacturing, research, and public functions. The exposed structure of the high bay and atrium spaces further demonstrates the engineering aspects of the building."



*Two views of the new Engineering Laboratory Building addition, scheduled to open in 2006*

## WELCOME NEW VISITING COMMITTEE MEMBERS



### COLLEEN H. FLAHERTY

*General Manager  
Network Operations  
SBC*

Colleen H. Flaherty has been employed by SBC (previously Ameritech, previously Michigan Bell) for over 33 years. She has been

the general manager in the network operations organization responsible for service order provisioning for the five SBC Midwest states since 1996.

Flaherty began her career with Michigan Bell working various assignments while in college. After graduation in 1972, she became a full-time employee. Her assignments have included selling equipment and network services, developing the sales organization's methods and procedures, establishing pricing levels for various telecommunications products, and managing and directing the marketing regulatory process for price/cost changes.

In 1984 she was promoted to district level, the same year Michigan Bell became part of Ameritech. Flaherty transferred to Ameritech's product management organization in 1987 and was promoted to director during her tenure with this organization.

Flaherty holds a bachelor of arts degree from Mercy College (now University of Detroit Mercy). She and her husband, Randy Stuck, reside in Southfield.



### TIMOTHY M. MANGANELLO

*Chairman and Chief  
Executive Officer  
BorgWarner Inc.*

Timothy M. Manganello is chairman and chief executive officer of BorgWarner Inc. and serves as a member of the company's board of directors.

He most recently served as president and chief executive officer. Prior to that, he served as president and chief operating officer and executive vice president of the company.

Manganello joined the company in 1989 as vice president of marketing and sales for BorgWarner

Morse TEC. In 1994, he assumed the position of vice president of business development for BorgWarner TorqTransfer Systems. In 1995, he became vice president of operations of TorqTransfer Systems' Muncie facility. In 1999, he was named president and general manager of TorqTransfer Systems.

Prior to joining BorgWarner, he held product engineering management positions at Chrysler Corporation from 1973 to 1981 and sales management positions at PT Components-LinkBelt from 1981 to 1988.

Manganello holds a bachelor's degree in mechanical engineering from the University of Michigan and a master's degree in mechanical engineering from the University of Michigan-Dearborn.

### TIM MORSHECK

*Vice President—  
Technology  
Truck Group  
Eaton Corporation*



Tim Morscheck was appointed vice president-technology for the Truck Group in

January of 2002. He has responsibility for the advanced product technology development for the Truck Group as well as new business development for hybrid electric vehicles and VORAD collision warning systems.

Morscheck was previously vice president and general manager of the Truck Electronics Systems Division (TESD). He was named general manager of Truck Automated Products in 1998 and held that position until being named to lead TESP. Prior to this assignment, Morscheck had served as general manager of the Automated Products Division at Truck Components.

Morscheck joined Eaton in 1971 at its corporate Research and Development Center in Detroit and moved to Transmission Division at Kalamazoo, Michigan, in 1981 as chief engineer of automatic transmissions, progressing through several engineering and business unit management positions.

He received a bachelor's degree in mechanical engineering from LeTourneau College and a master's degree in mechanical engineering from the University of Michigan-Dearborn.

## INDUSTRY UPDATE

### TRW FUNDS NEW RESEARCH

Roger McCurdy, director of advanced product development at TRW Automotive, presents Phillip Snyder, senior development officer for the College of Engineering and Computer Science, with a check to support the research of Prof. Yi Lu Murphey of the school's electrical and computer engineering department. TRW Automotive has provided important financial support for the college and its faculty for many years.



### DAIMLERCHRYSLER PROVIDES SUPPORT FOR CECS

Eric Ridenour, executive vice president of product development at DaimlerChrysler, and Brian Glowiak, vice president of the DaimlerChrysler Corporation Fund, present Subrata Sengupta, dean, and Phillip Snyder, senior development officer, with a check for several important programs at the school. Over the past several decades, the college and the company have forged an outstanding, mutually beneficial partnership.

## FACULTY RESEARCH AWARDS

**Alan Argento**, professor of mechanical engineering, received an additional \$70,000 from Ford Motor Company to support the high-strain-rate-response laboratory and research activities.

**Vivek Bhise**, professor of industrial and manufacturing systems engineering, received an additional \$78,465 for work to optimize the ergonomics of vehicle instrument panel and console designs. This project is a collaborative award agreement among Collins and Aikman Corporation, Sanyo Electric Company, and Valeo Switches and Detection Systems.

**Charu Chandra**, associate professor, industrial and manufacturing systems engineering, received an additional \$40,000 from Ford Motor Company for his project "Analytical Modeling of Logistics for Reconfigurable Supply Chain in Customization of Vehicles."

**C. L. Chow**, professor and chair of mechanical engineering, received a \$50,000 award from Ford Motor Company to conduct experimental and analytical investigations for vehicle crashworthiness of aluminum cast components joined by MIG welds.

**William Grosky**, professor and chair of computer and information science, received an additional \$15,000 subcontract from Wayne State University to develop a biological information database system under a National Institutes of Health grant.

**Ghassan Kridli**, associate professor of industrial and manufacturing systems engineering, received a \$25,200 contract from Batelle Memorial Institute to support the development of simulation tools for modeling of electromagnetic forming processes.

**Pankaj K. Mallick**, director of interdisciplinary programs and professor of mechanical engineering, received \$50,000 in new funding from the U.S. Department of Energy (DOE) for the DOE/GATE Fellowship Program.

**John Miller**, associate professor; **Yi Lu Murphey**, professor; and **M. Shridhar**, chair and professor, electrical and computer engineering, received \$3,800 in new funding from TRW for their video camera demonstration model for passenger occupant detection. TRW also awarded them \$189,501 in added funding for their project "Advanced Study of Computer Vision Systems for Passenger Classification."

**Yi Lu Murphey**, professor of electrical and computer engineering, received an additional \$68,000 from Ford Motor Company to continue development and testing of vehicle signal systems. She was also awarded \$40,000 in funding from Ford for her project "Incremental Machine Learning with Applications to Problems in Vehicle Diagnostics and Signal Classifications."

Dr. Murphey received a \$25,466 contract from the U.S. Department of Defense (DOD) to support research in model-based fault diagnostics for an electric vehicle system. The DOD also awarded her \$70,000 to investigate the integration of virtual terrain imagery with video imagery.

**Elsayed Orady**, professor of industrial and manufacturing systems engineering, received a \$39,368 grant from TRW to assess the performance of ball joints in relation to design.

**Nilesh Patel**, assistant professor of computer and information science, received a \$30,087 National Institutes of Health Small Business Innovation Research subcontract from Mandala Sciences, Inc., to support the development of computer programs for medical outcomes analysis.

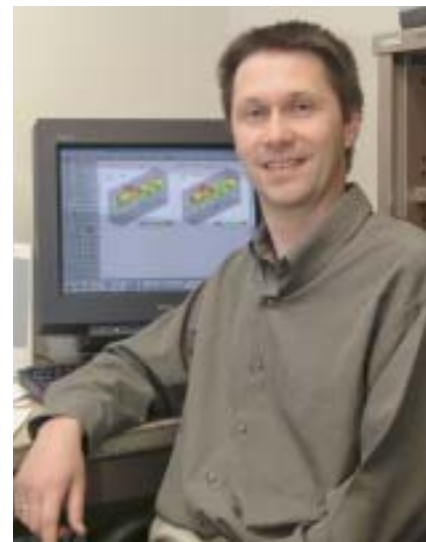
**Paul Richardson**, assistant professor of electrical and computer engineering, received \$8,700 in new funding from the U.S. Army-TACOM for the "Vetronics Institute III."

**Paul Watta**, associate professor of electrical and computer engineering, was awarded a \$15,000 faculty grant from UM-Ann Arbor to support research in automobile driver pose estimation used in smart airbag deployment technologies.

**Yi Zhang**, associate professor of mechanical engineering, received additional funding of \$13,442 from Ford Motor Company to analyze vehicle structures and components.

**Qiang Zhu**, assistant professor of computer and information science, was awarded \$20,000 in new funding from IBM Toronto Laboratory for his project "Optimization of Complex Queries in a Database Management System."

**Oleg Zikanov**, assistant professor of mechanical engineering, was awarded \$146,077 from the U.S. DOE for his project "Large-Eddy Simulation of Anisotropic Magnetohydrodynamic (MHD) Turbulence."



*Oleg Zikanov, assistant professor of mechanical engineering*

## NATIONAL SCIENCE FOUNDATION AWARDS

The National Science Foundation (NSF) recently awarded three grants to the College of Engineering and Computer Science, totaling approximately \$385,000. Projects supported by the grants include new undergraduate research opportunities, the founding of a nanoscience and nanotechnology program, and a computational thermo-fluids laboratory.

### UNDERGRADUATE RESEARCH IN ENGINES AND FUEL SYSTEMS

Keshav Varde, associate dean and professor, and Tariq Shamim, associate professor, both of mechanical engineering, were awarded a Research Experiences for Undergraduates (REU) grant from NSF for \$185,349. The three-year grant provides opportunities for 24 promising undergraduates to do research in combustion engines, fuel systems, and exhaust emissions control.

This past summer, eight students from across the country participated in the new program. Half of the students worked on experimental projects while others worked on simulation and modeling of combustion engines, catalytic systems, and flow-through catalysts. The students investigated predetermined problems; presented their project results to graduate students, faculty, and technical staff; and submitted detailed summary reports.

"We feel the program went very well," says Varde. "Engineering is a dynamic field, and students—undergraduate as well as graduate—must be trained to handle current and future engineering systems. Research provides an appropriate and efficient avenue to pursue these goals."

### NEW NANOSCIENCE CURRICULUM

A grant of \$100,000 will support the college's first undergraduate courses in nanoscience and nanotechnology. Award recipients include mechanical engineering professors Pravansu Mohanty and Tariq Shamim, clinical professor Norman Gjostein, and electrical and computer engineering professors Malayappan Shridhar and John Shen.

The grant will also allow the college to purchase a scanning probe microscope and simulation software. It will assist in funding new nanoscience modules for existing courses, undergraduate research opportunities in nanotechnology, and a professional development short course for local industry. It will also help to create a partnership with the Dearborn Center for Math, Science, and Technology to integrate nanoscience and nanotechnology concepts into its curriculum.



*REU student Jonathan Caserta*

"Nanotechnology is very new," says Mohanty, "and this initiative puts us in the group of very privileged universities that are working on the cutting edge. Its practical applications are expected to profoundly revolutionize the sciences by allowing us to make new materials, sensors, and devices."

### HIGH-TECH THERMO-FLUIDS LABORATORY

Mechanical engineering professors Oleg Zikanov, Tariq Shamim, and Inchlul Kim received a grant of \$100,000 to establish a new laboratory for thermo-fluids research.

The grant will fund computer equipment for the newly established laboratory, which will feature a Linux-based cluster of high-performance parallel processors. The infrastructure will support ongoing research into energy-efficient technologies and emissions control. "Areas of particular interest include turbulent flows of liquid metals; combustion, formation, and destruction of pollutants in diesel engines; particle dispersion in multi-phase flows; and atmospheric dispersion of pollutants," says Zikanov.

The new laboratory will play a major role in enhancing the computational component of the college's curriculum and facilitate training of graduate and undergraduate students in high-performance computing.



*Assistant Professor Pravansu Mohanty*

## ERIC RIDENOUR, CLASS OF '80

*Eric Ridenour,  
executive vice  
president  
of product  
development at  
DaimlerChrysler*



Eric Ridenour, executive vice president of product development at DaimlerChrysler, has always known what he wanted to do. "I've always been completely focused on anything to do with cars," he says. "Going into any other field would've just been a consolation prize."

Ridenour's interest in cars led him to pursue an engineering degree at the University of Michigan-Dearborn. "I remember really being challenged there," he says. "Every next class was always going to be the big one, the most challenging. I liked the campus and the camaraderie in particular."

Ridenour also remember his professors, "some fondly and some not so fondly, but all were challenging. It was a great curriculum."

"I think UM-Dearborn's greatest strength was in helping students form the basis of how to think logically," he continues. "The specifics become outdated, but they didn't just teach us to apply the formulas. They taught us how to think logically to come to the right answer. That has been invaluable."

After graduating in 1980, Ridenour took an engineering job in the powertrain division of

General Motors. He soon felt constrained by the narrow focus of his job and pursued an MBA through UM-Ann Arbor's evening program, graduating from there in 1986. "I wanted to expand," he says. "An engineering degree provides a good base point. But I was ready to take on a completely different set of skills, to be challenged to do something I wasn't sure I could handle."

When Chrysler offered him a position as program analyst, he took it. Over the next 16 years, Ridenour worked in various capacities at Chrysler, including powertrain engineering, regulatory affairs, product planning, and product strategy.

Today Ridenour splits his time between being a member of the Executive Committee team, running the business side of engineering—including resources and budget—and working with teams to decide what future DaimlerChrysler products will look like. The latter makes up the best part of his job. "I love the idea of generating new products and creating out of an idea a real, tangible vehicle at the end of the line," he says. "There's nothing like watching them come forward and bringing them to life."

Ridenour now finds himself encouraging other engineers to mix business with engineering. "Combining the logic you gain from an engineering degree with the business acumen of the MBA makes really good engineers," he says.

This philosophy led Ridenour to talk with Dean Sengupta about broadening UM-Dearborn's focus. "One thing we discussed was how to increase both the global vision and the business side of an engineer's training," he says. "Even if students don't go back for an MBA, there will be many ways they will be challenged to leverage costs on their projects in the workplace, to provide maximum value for their customers. In addition to core engineering classes, it's important that they stretch and think about the business aspects. I'm already starting to see these changes at UM-Dearborn."

Ridenour also recently joined UM-Dearborn's Visiting Committee, where he continues to talk with faculty and staff about expanding global markets and joint ventures with countries like China. "The growth at UM-Dearborn of more system-related approaches has been really good. That's the direction the car industry is going."

Ridenour also acts as an internal corporate sponsor for both UM's Dearborn and Ann Arbor branches through his involvement with the Chrysler Fund. "I'll watch out for UM's interests," he says, "and act as a liaison between the university and the Fund."

The son of an "old hot-rodder" who used to leave engines and transmissions lying around the garage, Ridenour got his first car when he was 15. "I put a new engine in it and painted it," he says. "I sat in it every night."

Ridenour now sees the familial obsession passed down to his three children, especially his sons. "The oldest, who is almost 14, is already checking web ads for cars," he says. "The 11-year-old has also started expressing an interest."

Even his seven-year-old daughter isn't immune: she joins the boys in checking out the competitive and concept cars Ridenour occasionally brings home. "She loves it whenever I bring a car to the house," says Ridenour. "She'll join the boys in crawling through it, sitting in the seats and fastening the seatbelts. Afterwards they tell me what they like and don't like. It's great."

## ALUMNI UPDATE

**Michael Muzzin**, '84 BSE-ME, '84 BA, has been promoted to vice president, Europe, sales and marketing, Light Vehicle Systems business group, at ArvinMeritor Inc. in Troy. He had been senior director, advanced module sales.

**Susan Lee Powell**, '92 BSE-EE, is an electrical engineer at Detroit Edison.

**Jon C. Guske**, '93 MSE-MSE, is a manufacturing program leader at Ford Motor Company's Auto Transmission New Product Center in Livonia.

**Heidi Mueller**, '97 MSE-ME, is a product design engineer at Ford Motor Company in Livonia.

**Bryan Mudge**, '99 BSE-ME, is an engineer at W. A. Kates Company in Clawson.

**Marc Rosenbrock**, '01 BSE-ME, '01 BA, is a project engineer at Lear Corporation.

**Lusine Baghdasaryan**, '01 MSE-MSE, is a student at the University of Illinois at Chicago.

**Molly D. Close**, '02 MSE-EE, is a development engineer at smart GmbH in Germany.

**Alex Westmeyer**, '03 BSE-EE, is a design engineer at TRW Automotive in Farmington Hills.

## NEW FACULTY AND STAFF MEMBERS



**JIRACHAI  
BUDDHAKULSOMSIRI**

*Assistant Professor of Industrial and Manufacturing Engineering*

Jirachai Buddhakulsomsiri, assistant professor of industrial and manufacturing engineering, received his Ph.D. degree in industrial engineering from Oregon State

University in 2003. He also earned a master's degree in statistics in 2002 and a master's degree in industrial engineering in 1998 from Oregon State University. He received his bachelor's degree in chemical engineering from Chulalongkorn University, Bangkok, Thailand, in 1995. Buddhakulsomsiri's primary areas of interest are operations research and applied statistics.



**HONG TAE KANG**

*Assistant Professor of Mechanical Engineering*

Hong Tae Kang, assistant professor of mechanical engineering, received his Ph.D. degree in aerospace engineering and mechanics from the University of Alabama in 1999. Kang also earned a bachelor's degree in mineral engineering and a master's degree

in aerospace engineering and mechanics from the same university. He joined MSX International as a CAE analyst in 1999 and then moved to Mokum Technologies as a project engineer in 2000. His expertise is in vehicle structures and durability analysis.



**XIANGYANG  
(SEAN) LI**

*Assistant Professor of Industrial and Manufacturing Engineering*

Xiangyang (Sean) Li, assistant professor of industrial and manufacturing engineering, received his doctoral degree from Arizona State University in 2001. Li also earned a bachelor's degree from

the Northeastern University of China in 1993 and a master's degree from the Chinese Academy of

Aerospace Administration in 1996. He worked as a researcher at the Chinese Academy of Aerospace Administration from 1996 to 1999 and as a post-doctoral researcher at the Rensselaer Polytechnic Institute, Troy, New York, and the University of Nevada, Reno, in 2002 and 2003. Li conducts research in quality of information systems, human/computer interaction, knowledge discovery, and data mining.

**GERMÁN REYES-  
VILLANUEVA**

*Assistant Professor of Mechanical Engineering*

Germán Reyes-Villanueva, assistant professor of mechanical engineering, received his doctoral degree in materials science and engineering from the University of Liverpool, United

Kingdom, in 2001. He earned a bachelor's degree and a master's degree in engineering from the Technological Institute of Morelia, Mexico. Prior to joining the College of Engineering and Computer Science, he was employed as a research associate at the University of Liverpool. Villanueva studies composite materials, with particular emphasis on the development and characterization of the fracture properties of novel fiber-reinforced aluminum foam sandwich structures.



**KIM WALKOWIAK**

*Student Advisor in the Records and Advising Office*

Kim Walkowiak, student advisor in the records and advising office, joined the College of Engineering and Computer Science in February 2003. She received her bachelor of arts degree in organizational communications

from Western Michigan University in 1999 and completed her master of arts in organizational management from University of Phoenix in 2001. Walkowiak has previous experience in student advising and admissions. She is now the UM-D liaison to the campus membership of the Society of Women Engineers. Walkowiak has also served on UM-D's Welcome Week Committee and looks forward to developing relationships with students, staff, and faculty across the campus.



## CECS FACULTY MEMBERS RECEIVE PROMOTIONS, TENURE

Two College of Engineering and Computer Science (CECS) faculty members were recently promoted to full professor: Alan Argento of mechanical engineering and Yi Lu Murphey of electrical and computer engineering.

Six CECS faculty members were promoted from assistant professor to associate professor, with tenure: Charu Chandra of industrial and manufacturing systems engineering, Ghassan Kridli of industrial and manufacturing systems engineering, Tariq Shamim of mechanical engineering, Zheng (John) Shen of electrical and computer engineering, Paul Watta of electrical and computer engineering, and Armen Zakarian of industrial and manufacturing systems engineering.



*Professor Yi Lu Murphey*



*Professor Alan Argento*



*FROM LEFT TO RIGHT: Associate Professors Paul Watta, Ghassan Kridli, Charu Chandra, Tariq Shamim, Zheng (John) Shen, and Armen Zakarian*

## CECS PARTNERS WITH CHINESE UNIVERSITIES

*Yubao Chen, director of China Programs for CECS, and UM-D Provost Robert Simpson at Tongji University's automotive engineering laboratory*



A delegation from the University of Michigan-Dearborn composed of Provost Robert L. Simpson, Dean Subrata Sengupta, and Professor Yubao Chen recently returned from China after formalizing partnership agreements with Tongji University, Chongqing University, and Xian Jiaotong University. The three universities, which are among the highest-rated educational institutions in China, will work together with the College of Engineering and Computer Science (CECS) to offer the college's master's degree program in automotive systems engineering to students in China. Students will complete coursework by combining both internet-based learning through the college's Virtual Learning Tool (VLT) software platform and face-to-face instruction. They will also have the opportunity to travel to UM-Dearborn to participate in internships that will help them apply their graduate knowledge in an American automotive setting.

During their visit, the UM-Dearborn delegation attended a dinner hosted by the Chinese Ministry of Education (MOE) and had various meetings with the presidents of the three Chinese universities and MOE officials. The UM-Dearborn group also met with Dr. Ji Zhou, the minister of education in China. Minister Zhou mentioned his high regard for the partnerships and his belief that such academic alliances will further encourage positive interactions between China and the United States.

Chen, who is also the college's director of China Programs, first started working toward establishing these partnerships during his sabbatical in

2001–2002. He used that time to visit universities in China and began to lay the groundwork for the program. But he points out that this wasn't a one-man operation. "This partnership really resulted from a collective effort by many faculty and staff members," says Chen, "including Professors Yi Zhang, Chia-hao Chang, C. L. Chow, and me, with strong support from Dean Sengupta; P. K. Mallick, director of interdisciplinary programs; and Jeanne Girard, director of engineering professional development." Last year Chen returned to China with Dean Sengupta to participate in more discussion and negotiation, which resulted in the current program.

"We have signed agreements with these three universities," says Sengupta, "as part of our goal of supporting our local automotive stakeholders that have operations in China. This is one way we can provide service to this major industry, by ensuring that we offer Chinese students—future workers for our stakeholders' overseas operations—the same level of education that we offer here."

The program is expected to begin next summer or fall with the enrollment of a minimum of 30 Chinese students. Some have already expressed an interest. "Our graduate programs are regarded highly by Chinese universities as providing quality education," says Chen.

Chen also emphasizes the reciprocal nature of the partnership. "Along with our course offerings, we also plan to maintain scholarly exchange programs with our partner universities in China," he says. "That way, the research work on both sides will benefit."

## UM-D ROBOTICS TEAM HAS TOP 10 FINISH IN "INTELLIGENT VEHICLE" CONTEST

This past spring, from May 31 through June 2, a team of College of Engineering and Computer Science students put two unique vehicles—an autonomous go-kart and a wheelchair—through a rigorous set of exercises in hopes of winning the 11th Annual Intelligent Ground Vehicle Competition (IGVC). Electrical and computer engineering (ECE) students Olamide Adabonyan, Hassan Ali-Ahmad, Melissa Cinpinski, Swapna Makam, Antoine Mordovanaki, Elie Mordovanaki, Nick Sidiropoulos, Bi Ying Sun, Vin Varghese, and David Wrosch designed the vehicles (christened "GCAT" and "UMD-SMART" respectively). Narasimhamurthi Natarajan, associate professor of ECE, was their project advisor.

The design and construction of an "intelligent vehicle" requires knowledge from a variety of engineering and computer science disciplines and has applications to technologies in military mobility, intelligent transportation systems, and manufacturing. The UM-D vehicles shared a similar design approach so that a module used for one vehicle could be easily interchanged with the other. But there was one major difference. GCAT (GPS-enabled Conventional Steered Autonomous Transporter) operated with conventional steering, while UMD-SMART (Un-Manned Differentially Steered Mobile Autonomous Robust Transporter) operated with differential or tank-type steering. The differential-type steering allowed the vehicle to have a roughly zero-degree-turning radius, giving it the ability to change direction almost immediately.

During the competition, the vehicles participated in four events: the Design Challenge, the Autonomous Challenge, the Navigation Challenge, and "Follow the Leader."

For the Design Challenge, CECS students Cinpinski, Makam, Sidiropoulos, and Varghese presented their work to the judges and answered questions. The team also submitted a written report, allowing the judges to further review the vehicles' designs and to note any innovative features.

The Autonomous Challenge required the vehicles to run through an outdoor obstacle course, avoiding various difficulties including construction barrels, white pails, sand pits, and potholes, and maneuver along the track within a certain time frame. The



*IGVC competitors Bi Ying Sun, Swapna Makam, Vin Varghese, and Melissa Cinpinski with UMD-SMART*

vehicles could not exceed a speed limit of five miles per hour.

During the Navigation Challenge, the vehicles traveled from a starting point to a number of targeted destinations and then back to the beginning. This challenge had to be done solely by using coordinates indicated on a map. Aside from reaching targeted destinations, the vehicles again had to avoid obstacles along the way.

In "Follow the Leader," the vehicles followed a lead vehicle through an obstacle course, maintaining a constant distance of three meters. The vehicles went through tunnels, over low bridges, through turns of decreasing radius, across speed bumps, and around stationary objects, all while responding to accelerations, braking, and emergency stops.

The competition, which was held at Oakland University in Auburn Hills, Michigan, drew teams from 25 other schools from the U.S., Canada, and Japan. UM-Dearborn placed tenth. "Our team got off to a very late start last year," says Cinpinski. To avoid repeating that problem, the 2004 team has already begun meeting and is seeking funding. They have also created the college's first robotics club (Intelligent Systems) in order to improve future designs and successfully compete in the 12th Annual IGVC.

## FRENCH STUDENTS ENJOY GLIMPSE OF UM-D AND AMERICA



*Stéphane Zanini, François Joveniaux, Edward Williams, Karine Gaborit, and Julien Ballongue*

For the four French students from the École Polytechnique Universitaire de Marseille who recently spent an enlightening summer at the University of Michigan-Dearborn, two months wasn't enough. "I want to return. This country is so huge, I'll need more than one trip to see it all," says Karine Gaborit. The rest of the group, Stéphane Zanini, Julien Ballongue, and François Joveniaux, agree.

The Polytech' Marseille students, who are studying project management within the field of industrial engineering, came to the U.S. to get an American perspective of this field. "To excel, we need to understand many subjects that relate to management, including quality, production, simulation, and computer science," says Gaborit. "I wanted to go to America to improve my English, but the choice of the University of Michigan-Dearborn was especially interesting to me because they have a laboratory that specializes in industrial engineering. Also, the subject suggested by Mr. Edward Williams allowed me to learn a lot about simulation software and engineering."

Ed Williams, adjunct lecturer for industrial and manufacturing systems engineering (IMSE) and the School of Management, considered setting up an internship for French students when he attended a couple of simulation conferences in Marseille in 2001. "While I was there, I met Professor Aziz

Naamane of the Intensive Educational Program in Advanced Logistics at Université d'Aix-Marseille," says Williams. "He coordinates exchange programs for a 'consortium' of French engineering schools and was very eager to have some of his best students visit here. I also received administrative support and advice from Onur Ülgen, professor, and Swatantra Kachhal, chair, both of IMSE, and logistical support from Joan Mrofka, coordinator of the college's international programs."

The program was kicked off this past summer with the arrival of the four students—all seniors at Polytech' Marseille.

At this point Williams doesn't foresee offering the program annually, although he does hope to facilitate it on a "regular" basis. He also hopes to see UM-Dearborn students head to Marseille in the future. "Establishing this liaison has been deeply satisfying professionally," he says. "The chance to extend my 'mentoring' across an ocean has been most valuable!"

During their brief stay, the students studied supply chains and lean engineering. Two students were assigned to each subject. All four learned to use Enterprise Dynamics, a simulation software package, which was a high point for the group. "I think learning to use the software was the best," says Joveniaux, who co-wrote a summary report on supply chains with Zanini.

Also significant for most of the students was the opportunity to immerse themselves in English and expand their understanding of the American lifestyle. "I think I improved my English during my stay," says Zanini, "especially my spoken English. I also increased my knowledge about American people and the American way of life."

The students regretted not meeting more students due to the summer break, but they thoroughly enjoyed traveling to New York and Chicago and visiting Niagara Falls and Cedar Point. "I want to come back," says Joveniaux. "It's a beautiful country."

## 2003 CO-OP EMPLOYER AWARDS

Two awards were presented this spring at the 2003 Cooperative Education Recognition Breakfast:

S-Y Systems Technologies of Dearborn, Michigan, received the Cooperative Education Employer of the Year Award for 2003 for their continued support of students from the College of Engineering and Computer Science.

Henry Patton, a great friend of the college and a long-time employer of the school's co-op students and alumni, was presented with the Distinguished Advocate of the Cooperative Education Program Award. Patton was the founder and president of Acromag, Inc. of Wixom, Michigan.



Henry Patton

*The College of Engineering and Computer Science lost a great friend this past summer with the death of Henry Patton. Patton, the president and CEO of Acromag, Inc., had supported the school for many years in a variety of important ways, including hiring co-op students, recruiting graduates for positions in his company, providing technical advice to faculty and staff, making grants and donations for a number of projects, and taking expert photographs at numerous college events. The college extends its sympathies to his family, friends, and the employees of Acromag.*

## 2003-2004 SCHOLARSHIP AWARDS

### DAIMLERCHRYSLER AMP

Joshua Bruton  
Tina Hewlett  
Robert Hill  
Robert Milton, Jr.  
Brian Rodriguez

### DAIMLERCHRYSLER MINORITY AND WOMEN SCHOLARSHIP

Rhita Boufelliga  
Ann Marchuck  
Susanne Sommer  
Inna Stashko

### RICHARD A. CSONKA MEMORIAL SCHOLARSHIP

Mark Hebert  
Jack Leich

### CECS/FORD FRESHMAN MINORITY SCHOLARSHIP

Branden Oden  
Aristide Bechi  
Matthew Maxey  
Carl Saenz  
Gabriel Scruggs  
Aaron Stokes  
Anthony Waller

### DETROIT EDISON MINORITY AND WOMEN SCHOLARSHIP

Rania Al-Sakka  
Shefali Bhavsar  
Melissa Cinpinski  
Alpana Patel

### NATIONAL SCIENCE FOUNDATION SCHOLARSHIP

Bilal Antar  
Marlene Assenmacher  
Muhammad Azimi  
Ahmed Bazy  
Mohamed Bazy  
Nadeem Bhatti  
Paul Brda  
Lawrence Chan  
Igor Fudym  
Joey Granz  
Vanessa Harp  
Samer Ibrahim  
Kiran Jadia  
Mark Leich  
Casey Lewis  
Brian Lynn  
Andrew Malburg  
Mehul Master  
Yehia Muhsen  
Andrew Penny

Brittany Pullum  
Kyle Saarela  
Michael Sidor

### FREDERICK P. AND VIOLET SHARPE ENDOWED SCHOLARSHIP

Aaron Akel  
Joanna Awad  
Dmitry Bekkerman  
Ibrahim Beydoun  
Winford Bishop  
Robert Boczkay  
Erik Brown  
Andrei Cioaca  
Timothy Habib  
Renee Henderson  
Phillip Lechowicz  
Mustafa Nurmuhammed  
Adam Shomsky  
Eric Zelman

## 2003 ALUMNI AWARDS

*College of Engineering  
and Computer Science*

### DISTINGUISHED ALUMNUS OF THE YEAR

**RICHARD O. SCHAUM**, '71 Engineering

Richard Schaum is recently retired from DaimlerChrysler Corporation, where he held a variety of positions in engineering, manufacturing, and product planning during 32 years of employment. He joined Chrysler Corporation as a co-op student in 1966 and retired in 2003 as executive vice president of product development. In that position Schaum was responsible for all matters pertaining to platform engineering, engineering technologies, regulatory affairs, and product planning. Earlier in his career, Schaum played an integral role in the restructuring of the Chrysler Group following its 1998 merger with

DaimlerChrysler. Schaum serves as a member of the Board of Directors of New Venture Gear, Inc., and the Board of Trustees of the Detroit Science Center. He has also served as an active member of the Society of Automotive Engineers, American Society of Mechanical Engineers, and Partnership for a New Generation of Vehicles. Schaum earned his bachelor's degree in mechanical engineering at Drexel University in Pennsylvania in 1969. In 1971 he completed the master's program in mechanical engineering at UM-Dearborn.



*Richard Schaum, Dean Subrata Sengupta, and Thomas Davies*

### ALUMNI SERVICE AWARD

**THOMAS J. DAVIES**, '69 Engineering

Thomas Davies received his bachelor's degree in engineering from UM-Dearborn in 1969. Cooperative education was a mandatory part of the undergraduate curriculum at that time. Davies is a firm believer in the value of the work experience he gained through the co-op program. He also recognizes the impact co-op experiences have in determining the career path a student chooses. For the benefit of both students and his company, Davies now employs co-op students from the College of Engineering and Computer Science. In 2000 he hired his first student to work with him at the Xilinx Company in Albuquerque, New Mexico. Since then six additional CECS co-op students have been employed at Xilinx. Davies derives considerable satisfaction from the successes experienced by students in a field he has enjoyed for more than 30 years. He has worked for Xilinx since 2000, when the Philips Semiconductor division he worked for was acquired by that company.

### African American Alumni Affiliate – DISTINGUISHED ALUMNUS OF THE YEAR

**MARIA L. WELBORNE**, '90 Engineering

Maria Welborne earned her bachelor's degree in industrial and systems engineering at UM-Dearborn in 1990 and then completed two master's degrees (in business administration and engineering management) at Northwestern University. Welborne is the operations manager for the Industrial Controls Division of Eaton Corporation's Cutler-Hammer Group. She currently serves as a board member and on the Youth Development Committee for the COA Youth and Family Centers, which provides services for low-income residents of downtown Milwaukee. Welborne is a member of UM-Dearborn's African American Alumni Affiliate and a donor to its scholarship fund. She has also served on the Board of Trustees of the Cleveland International Program and has been an active member of the Ford African American Employee Network.



*Affiliate Chair Jasper Rayburn  
and Maria L. Welborne*

**SAVE THE DATE**

Alumni Open House  
March 10, 2004, 5:30–8:30 p.m.  
Crown Plaza Ponchartrain, Detroit, Michigan

## Keep in Touch

Help us keep in touch by making sure our alumni information is up to date. Use the form below to send changes to the address at the right.

Dean's Office  
 College of Engineering and Computer Science  
 University of Michigan-Dearborn  
 4901 Evergreen  
 Dearborn, MI 48128-1491

Name

Address

City  State  ZIP

Phone

Year of Graduation

Degree

Department

Occupation

Employer

Employer's Address

City  State  ZIP

Please list any activities or recent honors you would like reported in future issues of the Dearborn Engineer.

## Keep in Touch Online

The "keep in touch" form is now available online. College of Engineering and Computer Science alumni are invited to visit <http://www.engin.umd.umich.edu/alumni> to update or add information about themselves, including career moves, recent honors, and address changes.