

THE DEARBORN Engineer

UNIVERSITY OF MICHIGAN-DEARBORN

SPRING 2003





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FRONT COVER:

Dean Guard, GM's relations team coordinator; Thomas Stephens, group vice president of GM powertrain; and David VanderVeen, GM's executive director of vehicle engineering, quality, reliability, and durability

GENERAL MOTORS STRENGTHENS TIES TO CECS

"GM values our relationship with CECS and the partnership we have built. That partnership has provided us with outstanding continuous education opportunities, talented graduates, and solid research results. Programs such as the Institute for Advanced Vehicle Systems are very well aligned with our core business."

— Tom Stephens,
group vice president
of GM powertrain



The GM support will help to fund senior design projects.

A new pledge of support from General Motors Corporation to the College of Engineering and Computer Science (CECS) will strengthen an effective relationship that has been built over the last few decades. The school may receive up to \$79,000 over the next three years to support several mutually beneficial initiatives. Funding from GM will assist the Center for Engineering Education and Practice (CEEP), senior student design projects, and scholarships for minority and women engineering students. The company has already presented the college with a check for \$39,000 for the 2003 academic year.

"The College of Engineering and Computer Science is an outstanding school. It does an excellent job of meeting the needs of engineering students who work, and strikes a good balance between practical knowledge and theory," says David VanderVeen, GM's executive director of vehicle engineering, quality, reliability, and durability. VanderVeen is also GM's representative on the CECS Visiting Committee. "These funds will help support three initiatives that are important to both the university and GM."

Along with this pledge, General Motors identifies CECS as a strategically important partner of the company. "We're very pleased," says Subrata Sengupta, dean of the college. "This grant recognizes all of the relationships that we have with GM—in research, teaching, and recruitment—and formalizes them."

"With our academic partners, we're interested in not just recruiting from them but developing a relationship. UM-Dearborn has, for a long time, been a provider of a significant number of engineers for GM. We find the talent they bring to be extremely valuable," says Dean Guard, executive technical assistant at GM. Guard is a former CEEP Advisory Board member and GM's relations team coordinator for the university.

CEEP works to incorporate engineering practice, design, innovation, and concepts of manufacturing technology at all levels of engineering education by integrating the teaching environment with practice. To accomplish its mission, CEEP uses funding from companies such as GM to stimulate faculty and student interaction with practicing engineers from industry and government

GM AND UM-DEARBORN: A LONG HISTORY OF PARTNERSHIP

GM's new pledge of support will help expand the relationship that has been developed between General Motors Corporation and the College of Engineering and Computer Science. A strong, multi-level partnership involving a wide range of programs and initiatives has brought substantial value to both organizations. Important elements of the relationship include:

- In 2001, GM pledged \$250,000 to support research in the Institute for Advanced Vehicle Systems.
- Thomas Stephens, group vice president, GM, was an honorary chair for Discovering Connections, a recent international conference that was presented by the college. In 2002, he received the Distinguished Alumnus of the Year award from UM-Dearborn.
- David VanderVeen, executive director, Vehicle Engineering, QRD, is a member of the college's Visiting Committee.
- Robert Lust of the GM Research and Development and Planning Group is a member of the college's Alumni Affiliate Board of Governors.
- Dean Guard, GM's University of Michigan team coordinator, is a former member of the CEEP Advisory Board.
- Faculty members from CECS have completed internships at various divisions of GM during the past few years.
- Several research projects are currently being conducted between college faculty members and GM staff.
- The college previously provided an onsite bachelor's degree in mechanical engineering program for GM employees.
- The school has offered a variety of short courses through the GM Technical Education Program over the past 12 years. The most recent courses were provided at four assembly plants located in Mexico.



David VanderVeen, GM's executive director of vehicle engineering, quality, reliability, and durability

laboratories. This new funding will support the continued activities within CEEP, including joint faculty-industry research projects, some of which may include GM engineers and CECS faculty.

Another area that will benefit from the new GM funding is the college's senior design program. Over the next several years, this grant will provide for a number of senior-level students to purchase materials, supplies, and equipment to conduct their projects. Senior design projects help students learn new techniques and skills, gain valuable experience, and become better prepared for employment in industry.

"We want to get more involved in supporting senior design projects," says GM's Guard. "We're always looking for ways to help

students gain real-life experience in applying engineering knowledge. We consider the senior projects to be a big deal, because while they provide students with real-world problem exposure, they also provide GM with potential solutions to our problems. And when students get excited about helping us work on our problems, they develop an interest in coming to work for us after graduation. It's a win-win deal."

The college's minority and women student scholarship program, which is also being partially funded with the GM grant, has the objective of increasing the number of minority and women students graduating with degrees in engineering. "The engineering profession is very open to participation by all," says Dean Sengupta. "It's important to reflect the diverse nature of the marketplace in our graduates, and GM's generous support helps us further that goal." GM's funding will augment similar scholarship funding that is already being received from Ford Motor Company, DaimlerChrysler Corporation, DTE Energy, and others.

"We're interested in supporting scholarships specifically aimed at minorities and women because GM recognizes the value of a truly diverse workforce," adds Guard. "We feel it makes us a better company. Obviously, UM-Dearborn is providing the kind of industry-based academic training we're looking for. The question for us isn't why would we support UM-Dearborn; it's why would we do anything else? We would be missing an opportunity if we didn't."

CECS FACULTY WIN COVETED FORD GRANTS

Within the academic engineering world, competition for the Ford Motor Company's University Research Program (URP) awards is intense. This year, only nine percent of applicants, or about a dozen projects, won the coveted grant. Two of those projects belong to College of Engineering and Computer Science faculty members John Shen, assistant professor of electrical and computer engineering, and Ghassan Kridli, assistant professor of industrial and manufacturing systems engineering. They will receive a total of \$220,000 for projects they will conduct over the next three years.

John Shen's project will develop an advanced prognostic and warning system for the power electronic modules found in electric, hybrid, and fuel cell automotive vehicles. The project aims to reduce the risk to drivers of car failure while on the road. "Power modules can and will fail, given enough stress and time," says Shen. "Despite the continuous improvement of module technology during the last decade, the reliability of power modules under harsh conditions remains a major concern. It's one of the main barriers for high-volume market introduction of any electric vehicles. It's therefore highly desirable to develop a prognostic system that can monitor the state of health of the power modules and warn the driver of any potential risk."

The research will examine the symptoms demonstrated by a power module under stress test conditions similar to realistic vehicle usage. It will use these symptoms to develop an algorithm to monitor the state of health of the power module and will then seek a way to implement the solution cost effectively in existing vehicle hardware and software architectures.

Shen's research will be conducted in close collaboration with Dr. Vijay Garg of Ford's THINK group, which focuses on fuel cell technology and other issues related to electric vehicle development.

Ghassan Kridli is a veteran of the URP awards process. In 2000, he received an award to study the formability of aluminum tailor-welded blanks. With his latest URP award, Kridli will focus on the behavior of material during superplastic forming.

"Aluminum alloy sheets have been considered a candidate material for replacing steel in automotive body structures," says Kridli. "Aluminum is lighter than steel, which creates potential for weight savings and fuel efficiency. But these alloys have lower formability than drawing-quality steels when processed through conventional manufacturing processes like stamping. Alternative manufacturing processes, such as superplastic forming, which has been used by the aerospace industry for several decades, can lead to significant improvement in the formability of aluminum sheet."

The low deformation rates of aluminum alloys lead to long cycle times—around 20 to 30 minutes per part—which may be acceptable for low-volume niche vehicles but are not suitable for medium- and high-volume vehicles. So researchers at Ford have proposed a high-speed process to reduce the cycle time per part, which would make the process cost effective for higher volume vehicles.

Kridli's project will develop numeric tools required to model the novel process. He will also develop software-based tools to simulate various forming processes already under development at Ford Scientific Research Laboratory and integrate the software into commercial packages for production use. He will be working with Dr. Peter A. Friedman, Dr. Z. Cedric Xia, and Mr. George Luckey from the manufacturing systems department at Ford.



John Shen, assistant professor of electrical and computer engineering



Ghassan Kridli, assistant professor of industrial and manufacturing systems engineering

MICROSOFT AWARD DRIVES AUTOMOTIVE TECHNOLOGY CURRICULUM



Linda Mitchell, global business manager, Ford Motor Company Account, Microsoft Corporation; Dean Subrata Sengupta; Nilesh Patel, assistant professor of CIS; William Grosky, CIS chair; and Ray Gage, business development manager, Microsoft Corporation

Wireless technology is about a lot more than just phones these days, according to Nilesh Patel, assistant professor of computer and information science (CIS). Short-, medium-, and long-range wireless technology will be essential to the design of the next generation of automobiles.

"In Motown," says Patel, "we are working to rapidly adapt this technology for the transportation industry." To that end, Patel is working on developing a new College of Engineering and Computer Science curriculum, which he calls "autoMobile computing." In April, his autoMobile curriculum project received a huge boost when it was awarded \$220,000 from Microsoft Corporation.

"Mobile computing is recognized as the third wave in the computing industry," he says. "The first wave was mainframes, then personal computing, and now we're in the era of mobile computing." Patel notes that this new technology has primarily been applied in creating miniature versions of personal computing, but he sees vast capacities beyond these limits. "Lately, wireless technology has demonstrated immense potential in expanding the environment of vehicles with increased productivity, safety, and security."

This type of technology is often referred to as telematics, and it's a field that Patel has worked in for six years. Starting at Ford and then at Visteon, Patel chased that elusive goal: to create

a car environment that not only provided highly personalized entertainment but also allowed drivers to be productive in ways only imagined before.

"I'm interested in making the automobile more appealing to drive" says Patel. "You can easily spend many hours in a car every day. How can we better use that time? Thus far, we've focused on entertainment. But I want to make the experience not only more pleasing but also more productive."

Through telematics, we might eventually see a day when drivers can alter their route as they go, based on real-time traffic congestion updates. Their car would calculate their time of arrival based on current traffic and driving conditions. They could find out automatically not only when there is a problem with the car but when a problem might be starting to develop—and get it to a garage before they'll need costly repairs. Along with scheduling appointments and locking and unlocking their cars remotely, they could check and reply to e-mail, dictate notes, speak on videophones, and play interactive "Jeopardy" in the car.

"Eventually," says Patel, "we're looking at being able to put your car on auto-pilot. Although the concept of auto-pilot is not unique, I think the combined growth of high-speed computing devices, the accuracy of GPS-guided systems, and the evolution of wireless technology will bring this about sooner than we envision."

Before some of these benefits can happen, though, automotive technology will need to step up to new levels of safety. "Safety," says Patel, "should be at the heart of this whole technology. Right now, if you hit somebody, you might have an SOS button in your car that will signal for help. Well, that's good, but if we put all these new features in a car, we'll need something better."

Patel incorporates the concept of "active safety" into his curriculum. Active safety is about making the car intelligent enough to keep you from having an accident. "If you are distracted, your vehicle should be able to adjust to that," says Patel. "It should detect if you're speeding or if you're possibly going to collide with something, and it might apply the brakes or reduce speed automatically." The idea of active safety is recognized by the automotive industry; however, a cost-effective solution is yet to be developed. "Our objective is to develop such safety technologies and enable the integration of other consumer features concerned with safety."

WELCOME NEW VISITING COMMITTEE MEMBERS



SUJIT JAIN

Senior Vice President, Powertrain, Gasoline and Transmission Systems, Robert Bosch Corporation

Sujit Jain is senior vice president of powertrain, gasoline and transmission systems of Robert

Bosch Corporation Automotive Group. In this position, Jain has responsibility for managing the business and engineering of Bosch's gasoline and transmission powertrain products within the NAFTA region.

Prior to joining Bosch, Jain most recently served as director, engine management systems and components group, safety products group, for Denso America. He has also held positions at Walbro Corporation, Unidynamics Corporation, Carter Carburetor, and Gabriel India Ltd.

Jain holds a bachelor of science degree in mechanical engineering from Visvesvaraya Regional College of Engineering, Nagpur, India, and a master's degree in mechanical engineering from the Florida Institute of Technology.



RUSSELL J. KRAUSS

Managing Director, GM Global Product Development, EDS

Russell J. Krauss is EDS' managing director responsible for providing leading-edge

products and services globally to General Motors' product development organization and its joint ventures, partners, and suppliers.

Throughout his career, Krauss has succeeded in areas ranging from engineering to strategic and operational management and business transformation. He was vice president and chief information officer of the New York Power Authority (NYPA) in White Plains, New York, before joining EDS. In that role, he was responsible for the strategic and operational direction of all information technology and special projects.

Prior to joining NYPA, Krauss served as business unit CIO and director of information technology for Norden Systems, a branch of Westinghouse Electric Corporation. Before that, he served 12 years with United Technologies Corporation of Hartford, Connecticut, ending his stint as the company's director of technology and business process reengineering.

Krauss earned an MBA from the University of New Haven and bachelor's degrees in computer science and communications from State University of New York.



ERIC R. RIDENOUR

Executive Vice President, Product Development, DaimlerChrysler Corporation

Eric R. Ridenour is executive vice president of product development for

the DaimlerChrysler Group. Ridenour, who has 15 years management experience in Chrysler Group Engineering, was previously vice president of the premium vehicle product team. Ridenour has experience in several engineering and related disciplines at Chrysler Group, including powertrain engineering, regulatory affairs, product planning, and product strategy. In his current position, he directs 9,000 people involved in the product development disciplines, including engineering technologies, regulatory affairs, and product strategy functions, as well as the powertrain and vehicle engineering product teams.

Ridenour joined Chrysler Corporation in May 1986 as a program analyst and has since held various leadership positions with the company, including vice president of product planning, director of advanced vehicle engineering, director of powertrain planning, and director of the merger integration team.

He earned a bachelor's degree in mechanical engineering from the University of Michigan-Dearborn in 1980 and received an MBA from the University of Michigan-Ann Arbor in 1986.

FROM ST. PETERSBURG TO DEARBORN: INTERNSHIP PROGRAM BRINGS "BEST AND BRIGHTEST" TOGETHER



Professor R. Yusupov and Frode Maaseidvaag

This year marks the tenth anniversary of a remarkable alliance between Ford Motor Company, the University of Michigan-Dearborn, and the St. Petersburg Institute for Informatics and Automation of the Russian Academy of Sciences (SPIIRAS).

For 10 of its past 25 years of existence, SPIIRAS has been the Russian cornerstone in an ambitious internship program administrated at UM-Dearborn and funded in part by the U.S. Department of Commerce's Special American Business Internship Training (SABIT) program and by Ford. SPIIRAS is well suited for this partnership with UM-Dearborn and Ford because of its outstanding knowledge and network in Russia and the Commonwealth of Independent States (CIS). The College of Engineering and Computer Science's (CECS) Department of Engineering Professional Development (EPD) has administered the program since 1998. Recently, SABIT awarded \$82,200 to EPD to continue the program, which is also being funded by Ford. To date 125 people from the CIS have participated in the SABIT program.

"In 1992, Dr. John McTague, vice president of Technical Affairs, learned about the SABIT program and thought that Ford should participate," says Frode Maaseidvaag, former director of the International and Systems Research Laboratory,

Ford Research and Advanced Engineering. "At that time, I was on assignment in Europe to initiate a new research activity and was asked to go to Russia to start this program. I contacted SPIIRAS, which already had connections with UM-Dearborn and Ford, was welcomed with open arms, and that's how the whole thing started."

Ford particularly wanted to work with CECS on the internship program, says Maaseidvaag. "Ford has been working with UM-Dearborn for years. For one thing, they're just a stone's throw away. But primarily, the people at UM-Dearborn are absolutely superb. They make everything happen."

The alliance has benefited all three institutions. "Clearly," says Dean Sengupta, "our relationship with Ford was greatly enhanced by us providing a service that they valued, which is dealing with the training, logistics, and continued relationships with people who come from very different parts of the former Soviet Union. The SABIT internship program has made it possible for Ford to bring in some of the best and brightest people from these areas and has allowed technology development that was ultimately unique."

"For SPIIRAS," he continues, "it was an opportunity for them to expand their own portfolio of activities. Part of the purpose of this program was to make sure that their high-tech staff could continue to do their work as they moved away from the climate of centralized funding that existed before the collapse of the former Soviet Union. To that end, we wanted to expose them to both a business environment as well as an academic training environment."

The program has allowed the college to expand its research collaboration with SPIIRAS and with other institutions in the former Soviet Union as well as with Ford in both the US and Europe. "In some cases we have brought back SABIT interns to work for the university," says Sengupta, "so this has been a wonderful cultural and technical experience for all. We have come into contact with some extraordinary technical people, and the contacts we've made will last for a long, long time."

Maaseidvaag agrees. "This program has provided an environment where fabulous relationships have been established between scientists and engineers at Ford and CECS with some of the greatest minds in the former Soviet Union," he says. In many cases

the work that was started here has continued through research grants given by Ford to scientists and engineers who went back to Russia. That has been extremely helpful in providing research that benefits all three organizations."

In January 2003, SPIIRAS celebrated its 25th anniversary in St. Petersburg. Maaseidvaag attended and delivered plaques and congratulations to the institute and its director Prof. R. Yusupov on behalf of Ford and CECS. "It was absolutely marvelous to see my old friends again," says Maaseidvaag. "These were people I had not seen in several years, but it was as though it had only been a few weeks. That is what this is all about: relationships. That is what UM-Dearborn and CECS helped us to accomplish through their outstanding efforts. The earth is a better place when people are working together, feeling good about what they accomplish together, and becoming long lasting friends."



A reunion dinner for former SABIT interns in Russia

DIGITAL SILK ROADS PROJECT

On March 23, 2003, a collaborative relationship was formally initiated between the Department of Computer and Information Science (CIS) and the National Institute of Informatics (NII) of Japan, an inter-university research institute of the Ministry of Education, Culture, Sports, Science, and Technology. Dr. Kinji Ono, the executive director for research at NII, and Prof. William Grosky, chair of CIS, signed the document that formally initiates collaborative research on the Digital Silk Roads Project.

This joint research has as an overall objective the collection, digitization, and organization of various data (textual documents, audios, images, videos, maps, and 3-D artifact models) of the Silk Roads, routes that linked the civilizations of Eurasia for much of premodern history. A global web-based, tool-rich research environment whose backbone is a multimedia information system that promotes intelligent annotation, browsing, and querying will also be created.

"CIS has as faculty members internationally known experts in the fields of database management systems, multimedia content-based retrieval, and information systems engineering," said Grosky. "We relish the opportunities that this agreement presents for joint research with our colleagues in Japan."

The project will result in an intelligent web portal to a vast collection of cultural artifacts and ancient

documents pertaining to the daily life of the many travelers who journeyed through the numerous Silk Roads, by both land and sea, in central Asia for over fifteen hundred years. The Silk Roads were a nexus for the exchange of knowledge, ideas, cultures, and beliefs between East and West. The details of this cultural interchange are still an important area of current research, but many significant collections of cultural artifacts and ancient documents relating to this setting remain scattered among various museums, books, and researchers, across different countries and in many languages. It is critically important to preserve and organize them for the purpose of scientific research and education.



Kinji Ono and William Grosky

Subrata Sengupta, dean of CECS, and Dr. M. Sakauchi, deputy-director general of NII have signed a subsuming Memorandum of Understanding between CECS and NII. The intent is to develop annual or longer-term exchange programs, including research, academic staff, and Ph.D. student exchanges; joint curriculum development; continuing education; and other technological exchanges

DISTINGUISHED ALUMNUS OF THE YEAR: RICHARD SCHAUAM ADVOCATES "DO WHAT YOU LOVE"

Richard Schaum, class of '71, received the 2003 College of Engineering and Computer Science Distinguished Alumnus of the Year Award in April. He retired in March from his position at DaimlerChrysler as executive vice president in charge of product development.

It's a long way from building soapbox derby cars in Philadelphia to becoming an executive vice president at DaimlerChrysler Corporation in Detroit. But Richard Schaum, graduating in 1971 with a master's degree in mechanical engineering from the University of Michigan–Dearborn, sees it as a natural progression.

"I grew up in a family of people and neighbors who worked on cars as hobbies," says Schaum. "My neighbor's 1962 Corvette piqued my interest when I was a kid in Philly. I've been working on cars since I can remember, handing my dad tools when I was seven years old. We'd fix anything, whether we knew how to do it or not. I built go-karts, soapbox derby cars, and motor scooters by robbing engines from lawn mowers. These days, you can buy go-karts that go 160 miles per hour. That would be quite a thrill when your butt is two inches off the ground."

From an early love affair with cars, Schaum went on to Drexel University for a degree in mechanical engineering. While there, he briefly considered pursuing a career in biomedics. "I've always been fascinated by physiology and medicine," says Schaum. "I did a senior project at Drexel related to biomedical engineering. I find the parallels between science engineering and medicine fascinating—the methodology of deductive reasoning, diagnosis, and, hopefully, mediation." But when Chrysler recruited him into its co-op program, he accepted, spending several years splitting his time between Drexel and Detroit. When he completed the co-op program, Chrysler



CECS Alumni Service Award recipient Thomas Davies and Richard Schaum at the Henry Ford Estate for the April 16 Alumni Society Awards luncheon

offered him the chance to attend graduate school at UM–Dearborn, and he moved north for good.

"They gave me a choice of graduate schools in Southeast Michigan," says Schaum. "I looked around, and I became very impressed by the education that you get at UM–Dearborn because it's closely allied with industry in metro Detroit. I appreciated its pragmatic, industry-focused approach to education, which I think is definitely a competitive advantage."

At CECS, Schaum learned how to balance work and education. "At the graduate level," he says, "the team projects prepare you for life in the real world. When you work in industry, you've got to have the ability to work cross-functionally as a team toward a common objective. That's paramount to the success of the company. Not that individual contributions aren't important, but in most careers you make the transition from individual contributor to manager and leader. That's when you need the kind of skills I gained from the college."

Schaum sees his alma mater as continuing on the right track educationally. "The single biggest

change in the way in which we function today is the way we handle information," he says. "This is the age of the computer, and CECS has exploited that very well. They're doing the right things, emphasizing computing as a core competency and continuing to build alliances with industry."

Throughout the 32 years since graduating from UM-Dearborn, Schaum worked at DaimlerChrysler, starting as an engineer and working his way up through the ranks to his final position as executive vice president of product development, from which he retired at the end of March. Schaum sees his two-and-a-half-year tenure on that job as the high point of his career. "Clearly, these past couple of years have been the most challenging and gratifying because I've been part of an executive team that was charged with making profound change in restoring a company to profitability. It appears we've done that, but there's far more to do."

As Schaum looks back now from the vantage point of recent retirement, he ponders what his legacy might be. "At the end of the day, a legacy is reflected in the people you helped develop, the way in which you hopefully left a stronger organization than what you inherited when you came in. I believe we helped institutionalize a more disciplined and methodical approach to developing new products at DaimlerChrysler, and we needed that."

Looking forward into retirement, Schaum plans to take a few months off to ponder different options currently on the table, including a consulting role or, as he says, "another 90-hour-per week job that I'm considering." He hopes to find more balance in life, starting with a plan to sail 600 miles around the state of Michigan, from St. Clair Shores to a second home in the Holland area. "My wife and I love to sail," he says, "and we've got plenty of volunteers to join us along the way." By the time they complete their trip, they expect to be first-time grandparents.

As someone who has reached the top of his field, Schaum is frequently asked by younger colleagues and students for his keys to success. "I tell them that you spend two thirds of your life either getting ready for work or working. So you need to be happy in what you do. Fortunately for me, my avocation became my vocation and I rarely minded getting up at 5:30 a.m. and putting in the hours. My second piece of advice would be this: never have a career plan. There's no such thing. Do what you love. Take each job, do the best you can, and the rest takes care of itself."

Richard and Mary Schaum and Barbara and Roger Schulze at the Henry Ford Estate. Messrs. Schaum and Schulze, the college's IAVS director, once worked together at Daimler Chrysler.



ALUMNI UPDATE

Jack M. Dickert, '64 BSE-EE, is a retired systems engineer who aids the city of Redondo Beach, CA, as a reserve police officer offering technical help to the city's police force.

John Powser, '69 BSE-EI, is executive director of engineering at KI Industries in Berkeley, IL.

Robert Lee, '80 MSE-ME, works as a director at DaimlerChrysler in Detroit.

Gerald Szczepanski, '81 BSE-ME, is product design engineer, axle core, at Visteon in Dearborn.

Jeffrey H. Miller, PE, CPIM, '84 BSE-ISE, is a principal consultant for Productivity Engineering Services in Livonia. He was recently certified in production and inventory management (CPIM) by APICS, the Educational Society for Resource Management.

James Suchara, '85 BS-CIS, is chief technology officer at Exhibit Enterprises Inc. in Dearborn. He had been chief technology officer and director of operations at Coolfire Interactive in Royal Oak and New York City.

David Backus, '90 BSE-EE, and **Mark Stanczak**, '90 BSE-EE, own and operate Southfield-based Global ET, a supplier of electronic systems that automate the control, collection, and communication of data for the quality improvement of complex manufacturing processes.

Helmut Wodrich, '90 MSE-MSE, is chief operating officer at Valeo Raytheon Systems, Inc. in Auburn Hills. He had been product-line director for traffic-environment sensing products at Valeo Switches and Detection Systems, North America.

Michael Wrobel, '94 BSE-EE, is a product engineer at Ford Motor Company.

Terri Wrobel, '94 BSE-EE, '00 MSE-EE, works as a product engineer at Ford Motor Company.

Kevin Breier, '96 BSE-ISE, is a solutions consultant at Engineering Intent Corporation.

Scott Smith, '02 BSE-EE, BSE-CE, is an applications engineer at Westside Reprographics Inc. in Farmington Hills.



Emeritus Faculty

Over the years the Regents of the University have named the following faculty members professor emeritus:

A. ADNAN ASWAD

Professor, Industrial and Manufacturing Systems Engineering
1965-2001 (pictured above)

LUIZ V. BOFFI

Professor, Electrical and Computer Engineering
1965-1988

J. ROBERT CAIRNS

Professor, Mechanical Engineering
1957-1992

HOWARD E. CONLON

Associate Professor, Mechanical Engineering
1961-1986

THOMAS A. DESPRES

Professor, Mechanical Engineering
1963-1987

IZZEDDIN S. HABIB

Professor, Mechanical Engineering
1969-1998

DWIGHT S. HEIM

Professor, Electrical and Computer Engineering
1955-1986

GEORGE M. KURAJIAN

Professor, Mechanical Engineering
1964-1990

MURRAY H. MILLER

Professor, Electrical and Computer Engineering
1959-1998

SYED MURTUZA

Professor, Electrical and Computer Engineering
1971-2001

TSUNG Y. NA

Professor, Mechanical Engineering
1964-2000

JOSEPH E. SULLIVAN

Associate Professor, Electrical and Computer Engineering
1957-1989

PAUL K. TROJAN

Professor, Mechanical Engineering
1956-1998

LOUIS W. WOLF

Associate Professor, Mechanical Engineering
1962-1989

CECS HONORS EMERITUS FACULTY AND ALUMNI

On December 11, 2002, the College of Engineering and Computer Science held a special tribute to recognize its emeritus faculty and distinguished alumni. To mark the event, engraved portraits of the honored faculty and alumni were unveiled on "tribute walls" in the Engineering Complex on the University of Michigan-Dearborn campus. Featured speakers included Chancellor Daniel Little, Provost Robert Simpson, and Dean Subrata Sengupta. A dinner for the honorees followed the ceremony.

"This event provides an opportunity for the college and for me to formally thank our emeritus faculty for their dedication to helping our students receive a high-quality education," says Dean Sengupta. "Their work has touched the lives of thousands of people. We are also pleased to honor the alumni of this college whose accomplishments have distinguished them as leaders in their companies, industries, and communities. We are grateful for their support of the college and proud of their success."

Faculty members were recognized for their accomplishments in advancing engineering education through their research, teaching, and practice; preparing students to achieve success in their careers and lives; building partnerships with business and industry; and achieving high regard from members of the professional and academic community.

Alumni were recognized for their outstanding achievements and dedication, which support the mission of the school and enhance the reputation of the college and the university.

The college will update the walls annually with the images of distinguished alumni that are recognized at the University's annual Alumni Society Awards event. Emeritus faculty members will be added once they have been designated by the University's Board of Regents.



Paul Trojan, emeritus professor, and provost Robert Simpson



Murray Miller, George Kurajian, Paul Trojan, A. Adnan Aswad, Provost Robert Simpson, and Chancellor Daniel Little



The College of Engineering and Computer Science has recognized the following Distinguished Alumni and Alumni Service Award recipients:

Distinguished Alumni of the Year

TIMOTHY LEULIETTE: 1993
1971 BSE-ME

EARL KOOPS: 1994
1965 BSE-ME

THOMAS STEPHENS: 1995
1971 BSE-ME

LEWIS TANN: 1996
1966 BSE-ME, 1966 BSE-EE

ROBERT GEORGE: 1997
1971 BSE-ME, 1974 MSE

ROBERT JENSEN: 1998
1972 BSE-ME, 1975 MSE

CHRIS THEODORE: 1999
1976 MSE (pictured above)

SUSAN CISCHKE: 2000
1978 MSE, 1983 PDED

THOMAS EVANS: 2001
1979 MSE

TIMOTHY MANGANELLO: 2002
1975 MSE, 1981 PDED

Alumni Service Award

GARY ROSENKRANZ: 1994
1962 BSE-EI

THOMAS HELZERMAN: 1995
1967 BSE-EI, 1991 MSE

GREGORY POCHMARA: 1996
1974 BSE-ME

RICHARD ANDERSON: 1997
1976 BSE-IS, 1982 MSE

JOHN DORSET: 1998
1978 BSE-EE

DANIEL VANDENBOSSCHE: 1999
1971 BSE-ME, 1973 MSE

PAUL EBAUGH: 2000
1978 MSE

RONALD MODRESKI: 2001
1965 BSE-ME, 1965 BSEM

ALAN AMICI: 2002
1985 BSE-EE, 1987 MSE, 1993 MBA



Ronald Modreski, Thomas Stephens, Robert Jensen, Lewis Tann, Alan Amici, Paul Ebaugh, John Dorset, and Gregory Pochmara



Above: Chancellor Daniel Little, Alumnus of the Year 1995 Thomas Stephens, and Dean Subrata Sengupta



Left: Alan Amici; Malayappan Shridhar, ECE Chair; Mrs. John Dorset; John Dorset; Henry Patton and John Venious, Acromag Corp.; and Jeanette Schumacher of Alumni Relations

NEW FACULTY AND STAFF MEMBERS



XIANG CHEN

*Associate Professor,
Electrical and
Computer
Engineering*

Xiang Chen is an associate professor of electrical and computer engineering.

He received a bachelor's degree in electrical engineering in 1985 and a master's degree in power engineering in 1988, both from Huazhong University of Science and Technology, Wuhan, China. After working in industry for four years, he continued his studies at Louisiana State University, where he received his master's degree in 1996 and his Ph.D. in 1998 in systems and controls. Chen joins the college from his post at the University of Windsor, Ontario, where he served as associate professor in the Department of Electrical and Computer Engineering. His current research interests include vision-guided motion controls for distributed manufacturing processes and network-based controls with applications to automotive systems.



VENKAT N. GUDIVADA

*Visiting Associate
Professor, Computer
and Information
Science*

Venkat N. Gudivada is a visiting associate professor of computer and information science. He earned his bachelor's

degree in civil engineering in 1983 from Jawaharlal Nehru Technological University, Anantapur, India. He received his master's degree in 1986 and his Ph.D. in 1993, both in computer science, from the University of Louisiana. He worked as a vice president at Merrill Lynch from 1998 to 2000 and most recently was employed as a vice president at Financial Technologies, developing enterprise software and applications in both positions. Gudivada taught at the University of Missouri-Rolla and at Ohio University prior to his tenure in industry. His research interests include enterprise systems, functional extensibility in information systems, and multimedia information retrieval.



AFZAL HOSSAIN

*Assistant Professor,
Electrical and Computer
Engineering*

Afzal Hossain is an assistant professor of electrical and computer engineering.

In 1986 he received his bachelor's degree in electrical engineering from the Bangladesh University of Engineering and Technology, Dhaka, Bangladesh. He earned his master's degree in 1989 and his Ph.D. in 2002, both in computer engineering, from Syracuse University. Hossain has worked as a VLSI design engineer at Intel Corporation in Santa Clara, California, producing several generations of the Pentium processor with his teams at Intel. He was also a member of the Intel-HP collaborative team responsible for the design of the Itanium processor. His research interests include processor microarchitecture, trace cache microarchitectures, and system modeling.



TIGRAN GRIGORYAN

*Systems Research Programmer, Engineering
Computer Services*

Tigran Grigoryan, systems research programmer, received his bachelor's degree in computer science and mathematical cybernetics in 1995 from Yerevan State University, Yerevan, Armenia. He earned a master's degree in computer science and applied mathematics in 1997 from the State Engineering University of Armenia. Grigoryan pursued an additional master's degree in industrial and systems engineering from the University of Michigan-Dearborn, which he received in 2002.

As systems research programmer, Grigoryan will advance and maintain college web development projects. He will also develop web-based software applications and provide instructional support for CECS distance learning offerings and cultivate strategies to improve CECS computer capabilities and distance learning offerings.

FACULTY RESEARCH GRANTS

TECHNOLOGY TRANSFER AND COMMERCIALIZATION OF ERGONOMICALLY DESIGNED RIVET TOOLS

John G. Cherng, professor of mechanical engineering and **Mahmut Eksioglu**, assistant professor of industrial and manufacturing systems engineering, received \$74,796 from the Michigan Economic Development Corporation's Emerging Technology Challenge Fund.

RELIABILITY ANALYSIS OF SOLDER JOINTS IN ELECTRONIC PACKAGING

Chi L. Chow, chair of the Department of Mechanical Engineering, has received a \$27,612 grant from the Hong Kong Polytechnic University for a collaborative research project to develop a theoretical model to better predict the strength and mechanical properties of welded and soldered joints in electrical components.

ENHANCEMENT AND VALIDATION OF SOLDER MATERIAL

Dr. Chow also received an additional \$120,000 from Sandia National Laboratories to continue his work on solder material enhancement.

ADVANCED MULTIMEDIA SYSTEMS AND APPLICATIONS

William Grosky, chair of the Department of Computer and Information Science, has transferred the balance of his National Science Foundation grant from Wayne State University, where he formerly held a faculty position. The grant supports global virtual multimedia research laboratory development.

PASSENGER OCCUPANT DETECTION

Yi Lu Murphey, associate professor of electrical and computer engineering, has been awarded \$26,130 additional funding from TRW to continue development of a video-camera demonstration model of vehicle passengers.

PROJECT ALITE

Paul Richardson, assistant professor of electrical and computer engineering, has received \$44,000 from the U.S. Army-Tank Automotive Command to continue his work at its facility in Warren, Michigan.

VETRONICS INSTITUTE III

Dr. Richardson has also received \$61,236 from the U.S. Department of Defense-Army to continue vehicle electronics research.

CAREER AWARD

John Shen, assistant professor of electrical and computer engineering (ECE), received the National Science Foundation's Faculty Early Career Development (CAREER) Award, its most prestigious award for new faculty members. His research on power semiconductor devices was funded in the amount of \$400,000.



Yi Zhang, associate professor of mechanical engineering

STEREO-VISION DEVELOPMENT

Malayappan Shridhar, chair of the Department of Electrical and Computer Engineering, received \$25,337 from TRW for a project to develop stereo-vision technology for vehicle applications.

FINITE ELEMENT ANALYSIS OF ALUMINUM VEHICLE STRUCTURE/COMPONENTS

Yi Zhang, associate professor of mechanical engineering, has received \$35,595 from Ford Motor Company to study the mechanical properties of aluminum components in automotive vehicles.

MODELS OF TRANSIENT MELT FLOWS AND INTERFACE INSTABILITY IN ALUMINUM REDUCTION CELLS

Oleg Zikanov, assistant professor of mechanical engineering, has been awarded a \$55,034 contract from the U.S. Department of Energy to develop numerical models to better understand flow processes of molten aluminum in the production process.

MODELING OF TRANSIENT MELT FLOWS

Dr. Zikanov has also received a total of \$28,391 from Aluminum Company of America (ALCOA). This grant will supplement a U.S. Department of Energy numerical modeling project award that he received in fall 2002.

DEVELOPMENT OF MODULAR ELECTRICAL ARCHITECTURES FOR MULTIPLE VEHICLE PLATFORMS

Armen Zakarian, assistant professor of industrial and manufacturing systems engineering, has received \$66,000 from Visteon.

EMERGING LEADERS PROGRAM: BUILDING LEADERSHIP SKILLS FROM THE GROUND UP

Front Row:

*Tony DeLaRosa,
Sonalı Sathe,
Lynn Rivers, and
Renee Henderson*

Back row:

*Kevin Sidebottom,
Matt Bye,
Frank Judge,
James Guyette,
Ryan Cording,
and Matt Nizol*



Each year for the past seven years, a small group of University of Michigan-Dearborn cooperative education students has been selected from the fields of engineering, business, and liberal arts to participate in the Emerging Leaders Program (ELP). The program, sponsored by the provost's office, offers students a chance to further develop leadership skills through symposia, tutorials, and guided goal planning.

Keynote speakers for this year's ELP symposia were Chancellor Daniel Little; Mike Benoit, director of network services for Blue Cross Blue Shield of Michigan; Colleen Haley, vice president of purchasing for Yazaki North America, Inc.; and former U.S. Representative Lynn Rivers. Typically, presenters discuss such topics as leadership development, the importance of community service, and the career paths they have taken to accomplish their own goals. They focus on the adversity, courage, strengths, and challenges that leadership roles may require.

As part of the program, students prepare leadership development and action plans, intended to help them apply the skills they've learned at their co-op jobs and in their future careers.

This year, eight students from the College of Engineering and Computer Science participated: Matt Bye, Ryan Cording, James Guyette, Renee Henderson, Frank Judge, Matt Nizol, Sonali Sathe, and Kevin Sidebottom. "One of the objectives of the program is to keep the groups small for students to get the best possible experience," says Anthony DeLaRosa, coordinator of co-op education.

Students have responded positively to the experience, occasionally learning surprising things from it. "When most people think about a leader, they think of CEOs, presidents, and highly paid executives," says student participant Frank Judge. "What the ELP teaches you is that some of the best leaders might not be at that high level. Leadership can start from the bottom up. I found I wanted to improve my leadership skills so that I could be a good leader not only in the workplace but at home and school as well."

"The most valuable aspect of ELP is that it makes the people involved think ahead and clarify their vision of what they would like to do after graduating," says participant Renee Henderson, who believes she particularly benefited from the group discussions during the symposia. "It was interesting to hear viewpoints about leadership from not only the speakers but also the other students involved in the program," she says. "When I listened to Lynn Rivers talk about how she got started in public service by running for her children's school board, it made me realize that everyone has to start somewhere. Good leaders aren't born; they're developed."

For more information on the ELP or the CECS cooperative education program, contact Anthony DeLaRosa at 313-593-5145 or delaroan@umich.edu.

EPD TECHNICAL SHORT COURSES

Engineering Professional Development (EPD) courses are offered from 8 am to 5 pm (except as noted) and are held on campus:

MANUFACTURING

Overview of Supply Chain Optimization Factory Physics: The Science of Lean Manufacturing	May 16
Automotive Manufacturing Processes	May 12, 13, 14, 15
Metal Machine Processing	June 9, 10, 11, 12
Ergonomics in Vehicle Design	June 25, 26
Engine Emissions	August 26, 27, 28

QUALITY IMPROVEMENT AND STATISTICAL PROCESSES

Vehicle Crash Mechanics: Theories and Practice	May 14, 15, 20, 21
Overview of Non-Parametric Data Analysis Techniques	September 8
Overview of Multivariate Data Analysis Techniques	September 15

FUZZY LOGIC

Fuzzy Logic and Engineering Applications	June 18, 20
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COMPUTER TECHNOLOGY

Fundamentals of Visual Basic	April 29, 30, May 1
Intermediate Visual Basic	May 6, 7, 8
Advanced Visual Basic	May 13, 14, 15
Unix–Level 1	May 1, 2
Unix–Level II	May 7, 8, 9
Unix–System Administrator	May 14, 15, 16
Introduction to C++ Using Engineering Methods	June 23, 24, 25, 26, 27

ACOUSTICS SERIES

Vibro-Acoustic Modeling and Analysis	April 9, 10, 11
Fundamentals of Vehicle NVH Analysis Measurements and Controls	June 2, 3, 4, 5
Automotive Sound Quality	May 20, 21, 22

For more information or to register, contact Theresa Ceccarelli at (313) 593-4000, tceccare@umich.edu or visit <http://epd.umd.umich.edu>.

DISTANCE LEARNING PROGRAMS

The college is now offering internet-based graduate programs in software engineering and automotive systems engineering. These programs will allow students an opportunity to complete an entire graduate degree at their convenience using distance learning technologies. Courses are internet accessible and use video with audio, text, and graphics. Students can interact with instructors and with other students synchronously and asynchronously from personal computers through chatrooms and threaded discussions using Virtual Learning Tool software.



For more information on these exciting new programs, please contact engineering professional development at 313-593-4000, send e-mail to sguinn@umich.edu, or visit <http://dln.engin.umd.umich.edu>, or <http://online.umd.umich.edu>.

SUMMER 2003 ONLINE GRADUATE COURSE OFFERINGS

SOFTWARE ENGINEERING

Embedded Systems
Algorithm Design and Analysis

FALL 2003 TENTATIVE GRADUATE COURSE OFFERINGS

SOFTWARE ENGINEERING

Automotive Engineering
Software Quality Assurance
Automotive Manufacturing Processes
Data Mining Vehicle Ergonomics I
Internal Combustion Engines I
Vehicle Electronics I

ANNUAL ALUMNI EVENT



Alumnus Timothy Manganello, president and chief executive officer at Borg Warner; Dean Subrata Sengupta; and Timothy Morbach, president, UM-D Alumni Society

Alumni from the College of Engineering and Computer Science came together on March 5, 2003, for the annual gathering hosted by the college's Alumni Affiliate Board of Governors. The event, which took place at the Crowne Plaza Pontchartrain Hotel in downtown Detroit, once again coincided with the annual Society of Automotive Engineers World Congress held at Cobo Convention Center.

Dean Sengupta shared information about recent college activities, including plans for the school's new building and laboratories. He also acknowledged alumni support. "As I look around this room," he said, "I see alumni ranging from new graduates just starting their careers all the way to CEOs of Fortune 500 companies. It shows the remarkable breadth and depth of our alumni within the manufacturing, automotive, and industrial sectors. Our alumni have done extremely well for themselves and this college."

Other remarks were made by Richard Anderson, '74 BSE-IS, '82 MSE, president of the college's alumni board; and Timothy Morbach, chair of the University of Michigan-Dearborn Alumni Society Board of Governors.

Next year's event will be held in March 2004 at the Ponchartrain Hotel. For more information, contact the CECS development office at 313-436-9141.



CECS alumni at the Crowne Plaza on March 5



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.



Dean Subrata Sengupta and Roman Krygier, group vice president, global manufacturing and quality, Ford Motor Company, at the dedication of the college's Instrumentation and Measurement Laboratory and the Acoustics and Vibration Measurement Laboratory



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College of Engineering and Computer Science
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