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www.eng.wayne.edu
Message from the Dean

As they say in the magazine trade, this issue of EXEMPLAR has real “plop” value. This is our biggest issue ever thanks to the incredible productivity of our students and faculty, and the contributions of our alums letting us know what they are up to. It’s been a Herculean task for our public affairs officer, David Reich, to keep up with the wonder stories, but he’s been up to the job. Thanks to David and to everyone who contributed to this issue.

We lead off with our cover story on PACE, the biggest event in the college’s storied history. The PACE industry partners are contributing $408 million in software and services to the college, making it the largest in-kind contribution in Wayne State history. The next biggest announcement is well-covered inside — the groundbreaking and initial construction phase of the new 82,000 square-foot, $27.35 million Engineering Development Center. The EDC will nestle beside the main engineering building, greatly expanding our research and development capability. Pardon our dust, as the saying goes, as construction continues through 2008. You can follow its progress by visiting our special webcam site at: http://www.eng.wayne.edu/page.php?id=5041

A few years ago the college had no endowed chairs. It now has three signed agreements, with a fourth in the works. We have moved into an entrepreneurial mode with our Engineering Ventures Programs endowed by alum Jim Anderson, our Collegiate Entrepreneurial Organization (CEO) mentor. Several companies have spun off from our research such as SenSound, Nanotec, and VISCA. A few years ago, we had no officially designated “distinguished faculty”. We are now on our way to three.

We are constantly being visited by congressional members, their aides, Gov. Granholm and others, all interested in our stimulation of the job market. And our students are in tremendous demand, as it seems new and old Michigan companies are looking for new talent.

Finally, we thank the Engineering Alumni board for their dedicated efforts to support our activities and our students. For those I’ve missed in these brief words, read on.

Ralph H. Kummer, Ph.D.
Dean of Engineering

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Wayne State University College of Engineering

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“The photos and commentaries of the event that took place almost 60 years ago capture a certain point in time long ago imbued with opportunity, promise and camaraderie only college days offer.”

from Joe Scheufler’s (BSCE’50) chronicles
City, State And University Officials Join Students, Staff And Faculty To Celebrate Groundbreaking

The ground where the new Engineering Development Center will rise was broken May 2. The 82,000 square-foot building is expected to be completed in late 2008.

City, state and university officials broke the first bit of earth with ceremonial shovels Wednesday, May 2, officially marking the start of construction of the Marvin I. Danto Engineering Development Center. Addressing a gathering of students, faculty and Wayne State supporters under a tent near the College of Engineering Courtyard where the new building will rise, the officials lauded the building project as a symbol of promise for the development of technologies in new, exciting sectors of the economy.

"Today we affirm not only the outstanding accomplishments and potential of our College of Engineering, but also look forward to an even larger role for the city of Detroit, for the region and the state," said WSU President Irvin D. Reid.

For his part, Danto said he felt "proud of what is happening here" as well as all the other new developments on campus. After the presentations, he joined the others at the ceremonial sandbox.

Ralph Kummler, dean of the College of Engineering, said, "The Marvin I. Danto Engineering Development Center represents the realization of all our aspirations for our graduates, for TechTown, for the city of Detroit, for the region and the state." The $27.3 million Engineering Development Center will rise in the area of the main college building facing Warren Avenue, and be joined with the existing structure. It will encompass 82,000 square feet on four floors, providing much-needed lab space for four major research initiatives: urban infrastructure, alternative energy and advanced propulsion, nanotechnology, and the Smart Sensors and Integrated Microsystems lab.

When completed by late 2008, the entire college complex will consist of 320,000 square feet of classroom, office and research laboratory space. The design includes a flexible modular layout and an advanced infrastructure to facilitate growth in critical research areas, provides interface space with the university’s technology park, TechTown, and enables students to engage in innovative research as an integral part of their educational experience.

The new building will incorporate sustainable energy design features to reduce energy consumption. To that, Kummler said, "In accordance with the university’s role as an environmentally responsible institution and our desire that this new building set the bar for others on campus, the Engineering Development Center project has been registered with the U.S. Green building Council.”

Eugene Driker, a member of the WSU Board of Governors, said the groundbreaking marked a "significant event in the history of the university and so important in fulfilling our vision for the university.”

Calling the new building "a great incubator for industry," Kim Trent from Gov. Granholm’s office applauded the partnership between the state, which appropriated $15 million toward the project, and the university, "to make Michigan an absolute incubator of jobs for the future.”

Detroit Deputy Mayor Anthony Adams said, "Okay. General Motors isn’t number one anymore. So what? This is the kind of cooperative spirit we need in the city of Detroit."
While the Internet cannot convey the tremors rattling the College of Engineering caused by the construction of the Engineering Development Center outside, the college has set up a webcam to share a view of the site as the work progresses. The webcam peers out at the construction site – the former Helios Courtyard -- from a third floor office window at the Engineering building at Anthony Wayne Drive and Warren Avenue. The image updates every five minutes and archives an image every hour. When the EDC construction is complete in late 2008, the college plans to use these images to produce a video history of the construction.

Workers from general contractor Christman Company last July removed debris from the demolition of Engineering Lectures, an auditorium that used to occupy the southeast corner of the Helios Courtyard where construction is taking place. Workers excavated the site last summer with large earth-moving equipment to prepare for construction.

One of the first tasks by laborers was to remove the Helios Sculpture, the 40-foot stainless steel icon anchored in the courtyard and dedicated in 1989. It is now being stored near the site. The 82,000 square-foot EDC will provide laboratory space for projects in the Smart Sensors and Integrated Microsystems lab, alternative energy and advanced propulsion, nanotechnology and urban infrastructure.

To visit the webcam site, go to: http://www.eng.wayne.edu/page.php?id=5041
College Receives $408 Million In Engineering Tools

By Ralph Kummer

Engineering graduates will be better prepared for careers in Michigan's emerging high tech and global economy thanks to Wayne State's selection as a member of Partners for the Advancement of Collaborative Engineering Education (PACE), a joint philanthropic and commercial initiative led by General Motors, Siemens UGS PLM Software and Sun Microsystems.

Officials from the five companies announced their latest corporate alliance on Tuesday, saying that the PACE partnership by Wayne State is expected to foster collaboration in research and instruction across any sector.

“Wayne State's participation in PACE strengthens the university's role in Michigan's transition to a high-tech economy,” said WSU President Irvin D. Reid. “The tools we receive from PACE will allow us to prepare the skilled engineering, manufacturing and design workforce needed in an increasingly competitive global marketplace. Our selection as a PACE institution greatly enhances Wayne State's ability to educate the men and women who will lead Michigan to economic prosperity.”

The comprehensive modeling and simulation tools from PACE allow Wayne State engineering students to use the latest software employed by major corporations, enhancing their ability to work in teams and design projects ranging from new automotive or highway safety systems to real-time cancer screening tools.

Wayne State joins 40 strategically selected universities around the world as a PACE Institution, including institutions in China, Germany, Sweden and Mexico, as well as five others in Michigan (Kettering University, Michigan Technological University, University of Michigan, Michigan Technological University and the College for Creative Studies).

“We are looking at the opportunity for CCS design students to work in tandem with our students to include styling as one of the design objectives for the Wayne State Formula SAE car,” said Michele Grimm, associate dean of academic affairs, and the lead engineering integrator of the PACE toolbox.

“We know students at Wayne State are already being prepared for the global economy,” said Mike O’Hair, vice president and regional general manager, GM Account, EDS. “By integrating the PACE tool box throughout its engineering curriculum, the College of Engineering is upgrading its ability to train a new generation of engineers well-versed in today's technology and ready to hit the ground running when joining an employer in any sector.”

The PACE software includes UGS NXTM, UGS TeamcenterTM Engineering, UGS Teamcenter Community, and UGS TecnomatixTM; MSC Adams and MD Nastran; Altair HyperWorks; FLUENT/GAMBIT; iSIGHT; and LS-DYNA.

In addition to the educational contributions made by the five PACE partners, several additional PACE Contributors and Supporters have embraced the PACE mission, and contribute valuable products and services to the PACE institutions. They are 3DConnexion, Altair Engineering, Autodesk, AutoWeb, Engineering, Fluent, Inc., Gamma Technologies, Livermore Software Technology Corporation, MSC. Software, and Wacom.

PACE Partners take a bow with the College for Creative Studies (CCS), a nearby PACE Institution. “We are looking at the opportunity for CCS design students to work in tandem with our students to include styling as one of the design objectives for the Wayne State Formula SAE car,” said Michele Grimm, associate dean of academic affairs, and the lead engineering integrator of the PACE toolbox.

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"Our selection represents a leap forward in solidifying Wayne State’s role as a major provider of the technology workforce of tomorrow.”

President Irvin D. Reid

It was also a day almost ruined by a gas line rupture occurring less than two hours before the scheduled PACE announcement. The leak was triggered by a backhoe operator working on the EDC construction site. Fortunately, General Lectures Auditorium was not affected by buildings closed, including the main college building, for more than four hours.

Wayne State President Irvin D. Reid called Tuesday “an historic day,” Gov. Granholm called it “great,” and Eugene Driker, chairman of the WSU Board of Governors, said it was “the beginning of a remarkable era.” Reid said, “Our selection represents a leap forward in solidifying Wayne State’s role as a major provider of the technology workforce of tomorrow.”

The PACE partners chose Wayne State through a rigorous submission process. In a brief media conference following the hour-and-a-half program, Ralph Szynida, Group Vice President and Chief Information Officer, IS&AS, General Motors Corporation, said the WSU College of Engineering was chosen because its grant proposal was “phenomenal,” because of its close proximity to WM’s headquarters, and diversity of its students. He specifically mentioned the college’s partnership with Chinese universities, bringing Chinese graduate students here to study engineering. Michele Grimm, associate dean for academic affairs, who authored the proposal, said she couldn’t be more excited for the students. “The benefits for our students to learn and grow using this software are boundless.”

Pace"
Gov. Jennifer Granholm Visits The College Of Engineering

A revival of plans and a big acronym, a team of Wayne State professors are trying to improve attitudes toward aspiring female candidates and faculty in engineering and science.

“We’d like to see more female faculty members in engineering and science,” says Ece Yaprak, professor of engineering technology. Yaprak, along with Karen Tonso, associate professor of education, are co-directors of ESCALATE, a project supported by a $500,000 NSF grant in a collaborative effort helmed by the Colleges of Liberal Arts and Sciences, Engineering and Education. They are joined by Ann Sodja, associate professor of biology, Allen Batteau, associate professor of anthropology, and Michele Grimm, associate dean of engineering.

ESCALATE is an acronym for Engineering and Sciences Careers in Academia: Learning from ADVANCE and Translating Effectively.

“My hope is to raise the issues, and with the awareness we will gain greater understanding and sense of the everyday solutions needed to address the problems that exist,” says Tonso, who was the lead investigator in procuring the NSF grant.

The ESCALATE team has attempted to quantify current attitudinal issues toward female faculty members at Wayne State. The results of their climate survey mirror findings reported in extensive scholarly literature that women faculty’s experiences tend not to be as positive as men’s among the male and female faculty polled. This effect is more acute among engineering and science faculty than among humanities and social science faculty. The survey results were similar with one taken at the University of Michigan, says Tonso, even though Wayne State’s campus is significantly more diverse.

“We’d like to see more female faculty members in engineering and science.”
Ece Yaprak, professor of engineering technology

The team has organized forums and networking opportunities for women faculty to share information and advice. They have sponsored a play that puts the spotlight on biases in the academic workplace, and they plan to stage several more addressing mentoring and hiring.

ESCALATE also offers small Career Development grants to female faculty members to fund business-related travel and childcare expenses while the women are attending conferences, as well as needed improvements in labs. The grants are also available to help bring speakers to Wayne State.

“When people don’t mean to be biased,” Tonso told The South End, Wayne State’s student newspaper. “It is an implicit way we have learned to understand.”

It may be a tall task to change attitudes, but Tonso and Yaprak are hopeful it can be done. “It takes finding the few key people (in key positions), and helping them become aware and outspoken about these issues,” says Tonso.

Tonso and Yaprak invite anyone interested in learning more information about ESCALATE, including the survey results and conclusions, to visit the program website: escalate.wayne.edu.

by Elliot Njus, Engineering Public Affairs Summer Intern

NSF Project Hopes To Improve University Culture For Female Faculty

Wayne State professors are trying to improve attitudes toward aspiring female candidates and faculty in engineering and science.

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by Elliot Njus, Engineering Public Affairs Summer Intern

Wayne State projects. The Jobs Fund, formerly the Life 21st Century Jobs Fund, including more than $3 million to Dean Ralph Kummler and faculty members conducting research funded by her initiative then gathered inside the Engineering Hall of Fame Lounge where presentations were made.

Kummler welcomed the governor and reviewed standout college initiatives such as its biosensors lab, bioengineering research, nanotechnology and the engineering ventures program. “The capability we have been working on for more than a decade in the College of Engineering through the Center for Automotive Research has been to develop tremendous expertise in diesel engines,” Kummler said. “So when people began looking at biofuels and diesel engines, the capabilities clearly existed in the college.”

Simon Ng, professor of chemical engineering and director of alternative energy technology, is the principal investigator, along with Naeim Henein, director of the Center for Automotive Research, of the synthetic fueled generator project. Ng described in detail for the governor how researchers are developing and testing on-site electrical power generator hardware to run on synthetic, biodiesel, and petroleum-based fuels. Project partners include NextEnergy, Titan Energy Development, Inc., and the US Army National Automotive Center (NAC). Herbert Dobbs, team leader at NAC, Steven Hurt, vice-president and director of Titan Energy Development, Inc.; Thomas Black, CEO and president of Titan Energy; and Eric Sattler from Alternative Fuels Technology, were present.

This will be the first time that a power generation device will be optimized for multi-fuel application. Once developed, local and federal authorities could use the generator for emergency utility services deployed for a wide variety of applications, including freshwater generation, emergency power, satellite communication, lighting and HVAC.

The state of Michigan awarded a total of $100 million in the first round to 61 university research teams and companies throughout the state out of 500 proposals submitted.

After her brief talk, Granholm was directed to Henein and Ng’s labs for brief tours and explanations. The visit ended on the sidewalk outside the college where Granholm was shown the Titan Sentry 5000 unit by Elliot Njus, Engineering Public Affairs Summer Intern.

Gov. Jennifer Granholm Visits The College Of Engineering

Governor Granholm was shown the Titan Sentry 5000 unit by Elliot Njus, Engineering Public Affairs Summer Intern.

Gov. Jennifer Granholm Visits The College Of Engineering

Governor Granholm was shown the Titan Sentry 5000 unit by Elliot Njus, Engineering Public Affairs Summer Intern.
Fourth Annual Drive Safely
To WSU Campaign Addresses Preventable Crashes

Each fall for the past four years, the College of Engineering and the Transportation Research Group ask the university community to pause and think about driving safety. This year, the fourth annual Drive Safely to WSU campaign promoted the following theme: Buckle Up. Drive Sober. Eliminate Distractions.

Not bad words of advice. While Michigan drivers can be sa luted for leading most states in seat belt use (94 percent), there is still room for improvement. About half of the 1,100 people who die on Michigan roads each year drive unbuckled.

We can all afford to be reminded of the campaign theme: Buckle Up. Drive Sober. Eliminate Distractions.

The face of the WSU road safety campaign, WJBK-2 Traffic Reporter Jackie Paige, introduced the guest speakers, leaders in Michigan traffic safety, at the kickoff ceremonies under a tent in Gullen Mall.

Secretary of State Terri Lynn Land, Colonel Peter Munos of the Michigan State Police, and Chief Deputy Director Jackie Shinn of the Michigan Department of Transportation were among the guests invited by Tapan Datta, professor of civil and environmental engineering. His Transportation Research Group of civil engineering graduate students provides critical analysis and evaluation of the nation and Michigan’s highway and safety programs.

For two days, Oct. 1 and 2, numerous tents, posters and displays, including crash cars and motorcycles, were presented on the Mall. Students had the chance to demonstrate their knowledge of traffic-related topics while playing various games, such as Jeopardy.

Students could use displays, including crash cars and motorcycles, were presented on the Mall. Students had the chance to demonstrate their knowledge of traffic-related topics while playing various games, such as Jeopardy.

The Transportation Research Group’s traffic safety campus campaign has been a model for other Michigan universities to start their own traffic safety campaigns.

Traffic fatalities in Michigan declined for the fourth straight year from 1,129 in 2005, to 1,084 in 2006. But alcohol and drug-related traffic deaths in Michigan rose from 408 to 440. These preventable deaths account for more than 40 percent of all Michigan traffic fatalities.

Come to think of it, we can all afford to be reminded of the campaign theme: Buckle Up. Drive Sober. Eliminate Distractions.

WSU Police Nab Student In First Ever Fuel-Cell Traffic Stop

Wayne State Police issued a traffic ticket June 5 for a routine driving violation in what is believed to be the first eco-friendly stop by a police officer driving a hydrogen fuel-cell vehicle.

Wayne State Police Sgt. Frank Smith made the stop, issuing a moving violation to a student for driving through a stop sign at Kirby Street and Cass Avenue on the eastern edge of campus. The street was heavy with traffic in both directions, but because of the small size of his patrol car, Smith was able to maneuver between a bus and the lineup of cars and catch up with the driver as she entered a parking structure.

The silver blue Mercedes A-Class vehicle operated by the WSU police runs on pure hydrogen converted to electric power by a fuel cell membrane packed under the floorboard, giving it a top speed of 87 mph and a range of about 110 miles. It is one of more than 100 vehicles in the DaimlerChrysler fuel cell vehicle fleet distributed to companies around the world to gather valuable data under daily driving conditions.

The car, complete with police lights, sirens and WSU police department logos, often piques people’s interest, Smith says. “The first question people ask is if it is an electric car.” It can outmaneuver the Ford Crown Victoria, the most predominant model in the WSU police car fleet, and is extremely quick off the start. In a recent street pursuit by two other WSU police vehicles, Smith recalls he was able to keep up with them, and in the end, pull in front of the detained suspect’s car to block its way.

“Some officers feel it’s too small and a lot of them think it’s cute,” Smith says. “It’s like any other police car, and I use it like a piece of equipment.”

Smith is not only impressed with the fuel cell car’s practicality, but also its technology. “When I saw it for the first time, I thought, ‘It’s a funny-looking car,’” he says. But after driving the environmentally friendly car on duty twice weekly, he believes it is a good solution for the future. “I like that one, and would buy it for myself.”

The three-year project, funded in part by the US Department of Energy, is in its final year, but the F-Cell car had limited use until now because of delays in construction of the refueling station.

The car is fueled at a BP hydrogen refueling station at the NextEnergy facility in Wayne State’s TechTown technology park. The car serves as a laboratory for students in the college’s Alternative Energy Technology program.

Wayne State Chief of Police Tony Holt says the F-Cell police car represents an important link between the university’s research goals and their practical application in the real world.

“If our police officers are leading by example,” Holt says, “by utilizing a police car fueled by alternative energy, we are keeping the campus safe and at the same time protecting and helping to sustain the environment.”

“The first question people ask is if it is an electric car.”
Clinton Tours NextEnergy Facility

College of Engineering research attracted presidential attention when Wayne State University hosted former U.S. president Bill Clinton. Clinton spent an hour and a half April 29 touring the NextEnergy Center in the Tecthon technology park accompanied by NextEnergy CEO Jim Croce, Detroit Mayor Kwame Kilpatrick, and Gov. Jennifer Granholm.

Researchers Evaluate New EMS Warning System

Never notice how long it takes these days for drivers to pull over to the side of the road to make way for emergency vehicles bearing down the street? The phenomenon has not been lost on firefighters, police and ambulance drivers on the way to emergencies. They blame cell phones, iPods and other electronic devices for an increase in the time required to respond to emergencies.

Emergency responders often need to slow down or stop at intersections despite their vehicles’ flashing lights and sirens running to make sure the way is clear, says Tapan Datta, director of the Wayne State University-Transportation Research Group (WSU-TRG), which is evaluating a new warning system designed to alert drivers of oncoming emergency vehicles.

The Emergency Vehicle Alert System (EVAS), developed by Livonia-based inventor Thomas Pappas, was installed in July at three Dearborn Heights intersections to provide drivers with a visual warning that emergency vehicles are approaching.

The devices consist of LED lights arranged in the shape of a fire truck. They hang adjacent to the traffic signals at the intersections of Beech Dale and Warren, Beech Dale and Hass and Warren and Fenton and are activated from 2,000 feet away by emergency responders sending a signal via a dedicated frequency.

Dearborn Heights Mayor Daniel Paletko offered his city as the first test site for the E-Light system when he was approached by Pappas.

The WSU-TRG was selected to evaluate the effectiveness of the new system and report its findings to Dearborn Heights officials and the Federal Highway Administration, which approved its use for this trial period. E-Light LLC has agreed to pay for its installation and $17,000 to conduct the research. The project’s first two years, the researchers will develop a test site for the E-Light system when he was approached by Pappas.

What? High School Math You Might Like?

Students who shudder at the mention of “calculus” may soon have a more exciting alternative as fourth-year math requirements are introduced into American high schools.

A $3 million National Science Foundation grant to researchers at Wayne State University, North Carolina State and the University of North Carolina-Charlotte will fund development, testing and implementation of an innovative math curriculum that makes math relevant, comprehensible, and engaging for students.

The five-year project, called Mathematics Instruction using Decision Science and Engineering Tools (MINDSET), was born in direct response to a call by universities and state departments of education to boost poor proficiency scores among American students.

“The MINDSET approach enlists principles from industrial engineering and operations research, including probability and statistics,” says MINDSET co-creator Kenneth Chehlt, chair of the Industrial and Manufacturing Engineering Department. “It stresses creative problem-solving and decision-making, enabling students to use mathematics to think analytically in the classroom as well as in everyday life.”

Along with the development of material, however, goes a recognition that teachers will also need to be trained to teach this new type of curriculum. “We’ll build a support mechanism to train teachers to teach this material,” Young says. That includes both on-campus and online semester-long courses, summer workshops, and technical support during the school year to help teachers learn the industrial engineering and operations research material and teach it to 12th-graders.

“Before MINDSET, pre-calculus, discrete mathematics and statistics were the only choices available. However, very few examples of direct immediate relevance to high school students” Chehlt says. “Now students in Michigan and North Carolina will benefit from a more application-oriented math course.”

Karen Norwood, associate professor of mathematics education at NC State and a member of the MINDSET project team, says teaching the application behind the mathematics makes more sense than teaching the skills before the application. Many students, she says, memorize the required skills but don’t understand how to apply them to real-world situations.

North Carolina and Michigan are leading the national trend requiring mathematics instruction for high school seniors. Both states are phasing in fourth-year mathematics requirements. North Carolina already requires a fourth year of math for students attending any of the 16 University of North Carolina system schools.

The research collaborators hope that their curriculum may one day be a model for the rest of the country. In the project’s first two years, the researchers will develop the material – a textbook and curriculum – for the new course. In the third year, pilot testing of the class will occur in five schools in North Carolina and five in Michigan. Testing will expand to 15 schools in each state in the fourth year. In the fifth year, formal testing of the course and its curriculum will be done in a total of 50 North Carolina and Michigan high schools.

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Summer is Engineering Camp Time at WSU

HSETI Brings Engineering’s Next Generation To Wayne State

As 32 high school juniors shuffle into his class, instructor Eric Tucker says, “If you’ve got to go to the bathroom, you’d better do it now. You’ve got three minutes.” As the students take their second exam of the course, Tucker sits at a desk, reviewing papers with his red pen. But while these are high school students, this isn’t a high school class. It’s intro to civil engineering, part of the College of Engineering’s High School Engineering Training Institute (HSETI) designed to introduce students for competitive college-level study. The summer session concludes in July with a closing forum. And at the program’s closing ceremony, the students shared their experiences with their parents.

Students attend HSETI every summer throughout high school, beginning the summer before their freshman year, and continuing Saturdays throughout the school year. The program concludes in the spring of their senior year. Student Jamaul Hall says, “I’d better do it now. You’ve got three minutes.” As the students take their second exam of the course, Tucker sits at a desk, reviewing papers with his red pen. But while these are high school students, this isn’t a high school class. It’s intro to civil engineering, part of the College of Engineering’s High School Engineering Training Institute (HSETI) designed to introduce students for competitive college-level study. The summer session concludes in July with a closing forum. And at the program’s closing ceremony, the students shared their experiences with their parents.

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Wayne State Extends International Partnerships With Universities In India

Wayne State Takes On Egypt's Environmental Challenges At Cairo Conference

In a world of ever-expanding globalization, Wayne State University continues to develop and strengthen its international partnerships.

A trip to Indian institutions of higher education, spearheaded by President Irvin D. Reid in August 2006, a formal agreement between the College of Engineering and the Institute of Technology Roorkee, signed July 5, and a memorandum of understanding between the college and the Hindustan Group of Institutions in Chennai, signed Sept. 13, will result in intellectual exchange and partnerships with institutions of higher education in this era of globalization. The two say they looked forward to study and pursue internships in Detroit-area industry.

Wayne State's contingent included Reid, Kummler, Singh, Stephen Cavanagh, associate dean of the Wayne State College of Nursing, and Bhanu Jena, professor of physiology in the School of Medicine, visited other colleges in Hyderabad, New Delhi and other cities in the northwestern part of the country.

The Wayne State delegation brought with them offers for two graduate fellowships, five $3,000 graduate scholarships, and ten $500 graduate scholarships. They arranged the symposium for leaders of engineering colleges in New Delhi at the Oberoi Hotel to provide an opportunity for more colleges from New Delhi and its surrounding provinces to learn about Wayne State. The symposium, “Expansion of Global Education,” attracted 30 college administrators and faculty. Many of the participants traveled more than 90 miles to get to the meeting, Singh says.

In addition to Reid’s talk, various college administrators made presentations on aspects of global education. Most of the attendees have visited Wayne State on different occasions, says Singh. “They were all very highly impressed by the increasing number of Indian students enrolled at Wayne State, as well as Wayne State’s progress in research, education and construction of new buildings on campus.” Singh visited about a half-dozen engineering colleges on his own during the trip, including Jawaharlal Technical University in Hyderabad, Punjab Engineering College, Chandigarh, IIT Roorkee and Kurukshetra University. “The trip was a great success,” he says. “We now have 85 applications for admission.”

The college and the Institute of Technology Roorkee signed a memorandum of understanding July 5 outlining a new partnership. Representing IIT Roorkee, located in the Utranchal area of India, was Director Suresh Chandra Saxena. Singh represented the college at the signing, which took place at the Pan IIT Global Conference of alumni in Santa Clara, Calif.

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Wayne State’s contingent included Reid, Kummel, Henin and colleagues from the college’s Center for Automotive Research. The center is known internationally for its pioneering research in automotive combustion engines, particularly diesel combustion. This year, Henin, a native Egyptian, made a keynote presentation on biodiesel fuel and several presentations on diesel engine behavior. Henin came to Wayne State in 1976 from the University of Michigan where he earned his PhD in mechanical engineering. Before that, he attended Alexandria University and Cairo University, where he earned his master’s and bachelor’s respectively.

Like other “mega-cities” of the world, Cairo, a city of 11 million people, is beleaguered by air pollution. But its citizens can breathe easier knowing some of the world’s best minds are working with the Egyptian government to decrease harmful emissions. The effort is part of an ongoing collaboration established by the Cairo International Conference on the Environment and Energy, held every two years with strong participation by Wayne State University.

Several hundred scientists and engineers from around the world met for the 10th biannual conference March 11 through 15 in Luxor, a city in southern Egypt. “We see many people doing exhaustive research as a result of our presentations,” says Naem Henin, professor of mechanical engineering and a long-time conference contributor.

President Irvin D. Reid made opening remarks again this year, reminding conference delegates of the impact the gathering has made in the past. For example, the Egyptian government instituted new regulations to reduce toxic lead emissions in cars, smelters and factories. “I commend the government of Egypt for its continuing commitment to this important conference and to the protection of the environment,” Reid says. The first conference in 1989 was held as a result of Dean Ralph Kummel’s 20-year association with his first Egyptian graduate students, Alaa and Amal El-Sharkawy. They introduced him to Abdullatif El-Sharkawy, now secretary-general of Egypt’s Supreme Council for Research Centers and Institutes. The conference grabbed the Egyptian media’s attention every two years when Egyptian government department heads hold a press conference on its first day. Kummel, a chemical engineer and expert in hazardous waste disposal, and Abdullatif El-Sharkawy have served as conference chairs from the beginning.

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Former WSU Professor Is Subject Of New Hollywood Motion Picture

The story of former Wayne State mechanical engineering professor and inventor Robert Kearns and campus life at WSU at the time will come to life on the big screen sometime in 2008. Universal Pictures and Spyglass Entertainment are in post production for a major Hollywood motion picture – Flash of Genius - based on the life of Robert Kearns, who invented the intermittent automobile windshield wiper, then continued to manufacture his device. He wanted to pay legal expenses. In the end, he was disappointed because the courts did not bar the companies from using his invention.

The full-length feature stars Greg Kinnear as Kearns. The role of Phyllis Kearns, who watches her husband’s obsession with legal attention suffocate their marriage and put a strain on their children, is played by Lauren Graham.

Shooting of the script, based on a New Yorker article by John Seabrook, took place last summer at the University of Toronto, which served as the stand-in for Wayne State University campus.

The third scene of the movie has Kearns in a classroom: “Good day. My name is Professor Kearns. I’d like to talk to you about ethics.” The script describes a sea of students, but it is clear that the audience is engaged and focused on the ethics lesson.

Kearns lived to see Ford eventually pay $10.2 million for patent infringement. Chrysler was ordered to pay him $18.5 million. Much of the money went to pay him legal expenses. In the end, he was disappointed because the courts did not bar the companies from continuing to manufacture his device. He wanted to manufacture them himself, says Maureen Kearns.

Wayne State Bioengineer Turns Sports Into Science for Network Cable Shows

Biomedical engineering may not sound glamorous, but a Wayne State bioengineering researcher has found herself in the national limelight. Associate Professor Cynthia Bir plays a starring role in two new shows by BASE Productions, a Fox Sports Network series called “Sports Science” and a National Geographic Channel feature called “Super Strength,” both airing on cable television.

“The shows are appreciated by a lot of different audiences, different age groups and backgrounds,” says Bir, who started her career as a research nurse, earned her PhD in biomedical engineering at WSU and joined the faculty in 2000. “This demonstrates ways you can take the principles of physics and human biomechanics, apply them to athletes, and bring them to life, to the big screen,” Bir says. “A lot of what we did for the show was what would be considered soft science, but that’s how it brings young people in.”

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Base Productions’ “Super Strength” is a reality-based series of programs investigating the latest developments in human and material science, applying them to athletes. The series is being promoted by the National Geographic Channel and features Super Strength athletes and coaches from around the world, painting a picture of how human and material science can improve athletic performance.

In “Sports Science” we’ve applied the tools developed in the lab to record, measure and map the speed, force and range of the human body, specifically, the athletes,” says Bir. “That paired with the computer graphics makes for a pretty cool show.”

Bir and several other experts join NFL linebacker Joey Porter and former NHL great Luc Robitaille on the set in one episode of “Sports Science” to measure and help illustrate the forces involved in the “Hardest Hits.” In another, they join Chris “Skywalker” Lowrey, a New York City street baller and dunk champion, to measure his vertical leap and the forces in play that allow him to jump over a sports car on the way to a slam dunk.

“Super Strength” is being promoted by the National Geographic Channel with promos like, “We call them Super Human. And they can do the impossible. Shatter stacks of concrete with the skull, fists and forearms. Bend solid steel wrenches by hand.”

The feature builds on the original Fight Science show that brought martial artists such as tae kwon do champions James Lew and Brent Foster, jiu jitsu legend Rickson Gracie, karate practitioner Mark Hicks, and ninjitsu expert and stuntman Glen Levy to the set to demonstrate their skills and ability to use their bodies as powerful weapons.

For all three shows – Fight Science, Sports Science, and Super Strength – the producers use high speed, high definition cameras to capture the athletes in motion, and in post-production, matrix-like CGI animation, to illustrate their point graphically. The post-production animators create 3-D models derived from the athletes and their choreography. The result is an impressive and dazzling meld of science and human sport taken to the edge.

Bir won’t deny that the months she spent during two summers - first in 2005 on a dojo studio set, and last summer in a converted airplane hanger - was fun. But that’s the point. “Students in America are falling further and further behind in science and math. Perhaps we can change this trend, turning them on to science by way of sports and shows like this,” she says.

WSU researchers have played a critical role in the development of auto and sports safety design, pioneering the field of impact biomechanics with their work leading to many automotive safety design improvements. Bir adds that Wayne State research on human body impacts, including crash tests and sports-related injuries, continues to spur the creation of safer cars, helmets and other protective sports gear.

“People locally may not realize that Wayne State’s engineering sports and closed-head injury research has contributed to the safety standards set for sports-related helmets and other athletic equipment in the United States,” says Francine Wunder, director of WSU corporate and public affairs.
WSU Matthaei Complex Turns Into Robotic Madness

The teams compete on a large playing field with referees and scoreboards. A lively crowd made up of cheerleaders, teammates, fans and parents in colorful, crazy outfits cheer loudly from the surrounding bleachers, creating a surging spirit.

“It’s like ‘tic-tac-toe,’ but you play with robots,” said Aaron Duvall, a member of the Melvindale High School Robocards. To make it more interesting, the game rules allowed for robots to employ defensive measures. Extra points were given to robots that neutralized opponent robots by lifting them off the ground.

The alliance made up of Team 247 (Berkley High School), Team 123 (Hamtramck), and Team 903 (Chadsey/Southwestern) won this year’s championship trophy. Additional awards were given to teams for technology, creativity, animation, and design, as well as sportsmanship and entrepreneurship. The UP Preparatoria team from Mexico City received the Rookie All Star award.

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Other regionals took place in Michigan and across the country, culminating in the National championships in Atlanta April 12 through 14. The game rules are different every year,” said Steven Walter, a senior on the Robocards. The FIRST Robotics rules are good because they give all teams the same amount of time to complete their robots, Walter added. The rules also encourage the teams to work with professional mentors. Abhilash Pandya, assistant professor of electrical and computer engineering, helped the Melvindale High School team program their robot.

by Justyna Konczalska, Engineering Public Affairs Writer

College of Engineering Instrument Designer Focuses on Hard Work

by Melanie Williams

Larry Herrick takes hard work to a new level at Wayne State. Herrick, instrument designer for the Engineering Technology Division, is a metro Detroit native who uses his 20-year work experience at WSU to enhance the education of students. Herrick ensures space utilization activities and operational services for ET. Herrick says he loves his job and doesn’t mind putting in long hours and overtime.

Herrick was awarded the President’s Exceptional Service Award both bronze (1998) and silver in 2001. “The job of teaching machine tool technology to students is worth every minute of my hard labor,” Herrick says. “I enjoy working and helping students who are focused and task orientated. Twenty years of devotion, late nights and hard work is worth the success of my students’ future.”

Herrick finds ways to contribute and volunteer his time and knowledge. Each March, he contributes his time and experience in the machine shop to help high school robotic teams with emergency fixes to their robots during the FIRST Robotics Championships held across the street from ET’s machine shop at the Matthaei Athletic Complex.

Herrick has volunteered at more than 30 different WSU functions and programs, including WSU Homecoming and college luncheons. He also has served as a building coordinator and a volunteer for the Formula SAE team. In addition, Herrick has made numerous contributions outside of the university. He served as a volunteer for the Ford 100th year celebration and Martin Luther King Jr. Day events. Herrick also has volunteered with the Michigan Science Center.

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Computer Engineering Students Featured In Compuware Software Ad

Engineering students Nick Minor, Riki Patel, Vukasin Denic and Randall McKeever are building their résumés — with an Erector Set. The students won the chance to appear in a Compuware advertisement by designing and building a replica of the Compuware Corporation building in downtown Detroit using an Erector kit. Minor, Patel, Denic and McKeever volunteered for the project when Compuware approached BE 1200 instructor Olugbenga Mejabi, associate professor of industrial and manufacturing engineering, in search of students for its new advertisement. The ad promoted programming software called Optimal.

“Software developers typically enjoyed modeling kits as children,” says Gwen Mitchell, project manager of Creative Marketing Services at Compuware. “The Erector Set concept was designed to elicit that nostalgic childhood experience associated with modeling.” Compuware gave the students the freedom to propose their own project. After choosing to replicate Compuware’s building, they worked to complete it under the guidance of Mohamad Hassoun, electrical and computer engineering professor. “We chose to build the Compuware building because it’s their building,” Denic says. “Plus, it is shaped like a ‘W.’” Mitchell was extremely happy with the final product. “We chose the WSU students because they had the technical knowledge and quite a bit of passion for the project.”

College Start-Up Obtains $100,000 To Study Acoustic Characteristics Of Jet Plume

A College of Engineering spin-off company located in Wayne State’s TechTown research and development park is aiming high. By studying the sounds of jets flying overhead, the company tries to make life more comfortable on the ground. A $100,000 grant from the US Air Force allows SenSound LLC to study the technical issues of the acoustic characteristics of a jet plume produced by a high-performance jet engine. The company is conducting feasibility studies and developing a robust, portable and accurate holography tool to map the acoustical field produced by a full-scale jet engine.

Insight and knowledge gained from the research will enable manufacturers to devise more cost-effective ways to reduce engine noise from high-performance military fighter jets and commercial airliners, according to Sean Wu, distinguished professor, mechanical engineering, and vice president for technology at SenSound. “Users of this tool will be provided an in-depth understanding of jet noise that cannot be obtained by conventional measurements and analysis technologies,” he says. The objective of the study is to facilitate development of a technology that will allow engineers to correlate jet noise to a jet stream, he adds.

Researchers Begin Testing Biodiesel Fuel In Delivery Vans

Art Van Furniture of Michigan has joined a consortium of partners testing biofuels led by engineering researchers and will begin using the fuels in a number of its delivery trucks. The National Biofuels Energy Lab at NextEnergy has completed Phase One of analyzing biofuels derived from vegetable oils and animal fats, with the aim of recommending processes that produce a fuel that works most efficiently in auto engines, said Simon Ng, professor of chemical engineering and the NBEL director. Phase Two moves the testing from the laboratory into the field.

Nanoscience Researchers Receive $333,423 University Grant

The university has awarded $333,423 in Research Enhancement Grant money to support a research effort by chemical engineering and School of Medicine researchers in a collaborative project to understand membrane fusion at the atomic level. The research will enable the design and development of smart membrane-based bio-sensors for use in detection of environmental toxins and biological agents, according to the researchers. Just as significant, the research can be applied to health care technology, leading to the development of drugs and drug delivery systems for targeted delivery and their sustained release. Charles Manke and Jeff Potoff are the investigators from the Chemical Engineering and Materials Science Department working on the project, and Bhanu Jena, professor of physiology, from the School of Medicine.
Entrepreneur Lisa Knoppe-Reed has taken a uniquely responsible approach to business. Her company employs people with disabilities at fair-market wages, while a College of Engineering professor has helped make the arrangement more feasible.

Knoppe-Reed, 44, of Birmingham, founded Art For A Cause in 1998. The company produces CuteTools!, a product line which draws from the talents of school children and people with physical and mental disabilities. A percentage of the proceeds are donated to local charities.

Knoppe-Reed says the work gives her employees a feeling of accomplishment. “They want to do the work,” she says. “They even ask to come in on their days off and work.”

CuteTools! began through an act of “serendipity,” Knoppe-Reed says. Despite having no formal art training, she started a line which draws from the talents of school children and people with no work ethic. Yet these kids have an extraordinary work ethic. They take ownership of their work, and it shows.”

Knoppe-Reed was able to expand her business all the way to Tokyo. She credits Wayne States University’s Robert Erlandson, professor, electrical and computer engineering, and his students for allowing her to take the company to a global level. Erlandson’s students have designed job tools to greatly assist people with disabilities in doing their jobs more efficiently, improving Knoppe-Reed’s bottom line.

For example, as a class project, a group of Erlandson’s students designed a special wood template that serves as a guide to Knoppe-Reed’s workers packing the parts to CuteTools! garden tool kits. The tool kits are shipped to CuteTool! workshops around the world that Knoppe-Reed has set up where local workers, also with special challenges, assemble the parts into finished products.

Erlandson’s passion for helping people with disabilities goes back more than 20 years when he worked at the Rehabilitation Institute of Michigan (RIM) in Detroit. He worked next to the occupational therapy ward. “I saw what was going on there,” he says. “That got me interested in applying technology to helping people with disabilities.”

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Erlandson developed several robotic rehabilitation devices, enabling someone to have a job,” she says. “The main objective is to get people working ... This will let other businesses know special needs people are good workers.”

In November 2005, CuteTools! were sold at 300 stores globally. As of September 2006, they were sold at 2,500 stores globally. But in addition to her considerable success, Knoppe-Reed says she finds the job itself extremely rewarding. “I feel like I haven’t worked a day since 1998,” Knoppe-Reed says. “These people don’t work for me; I work for them.”

“People’s needs people are good workers.”

Amy Knoppe-Reed, Art For A Cause founder, supervising her workers.

Erlandson has received two five-year National Science Foundation student design grants, which specify that the student design projects must serve the disabled community.

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WSU Engineers And Children’s Hospital Surgeons Take Health Care Leaps Forward

by Abhilash Pandya, assistant professor, electrical and computer engineering

Since 1985, when a robot was used to place a needle for a brain biopsy using CT guidance, robotic surgery has developed and advanced. It has been tried in many types of surgical procedures, including prostate cancer, hysterectomy, mitral valve repair, and even coronary heart bypass.

For prostate cancer removal, health care professionals are looking at the use of robots because the technology is minimally invasive. Incisions are smaller, there is less risk of infection, hospital stays are shorter, and recuperation is reduced. A team of Smart Sensor and Integrated Microsystem (SSIM) lab engineers and Children’s Hospital of Michigan (CHM) surgeons are doing their part to advance the technology, specifically in the key areas of robotic vision, diagnostic sensors, and sensor fusion. These advancements in robotic surgery are anticipated to parallel the importance of imaging technology in medicine today. The results will have a significant influence in health care over the next decade.

At the SSIM laboratories, work has been going on for more than a decade on unique sensors and applications and about four years on sensors with robots. Sensors of touch and temperature to enhance the surgeon’s haptic sense, imaging sensors to heighten visualization, and sensors for diagnostics are all being applied in conjunction with robotic devices to improve the surgeon’s effectiveness as well as that of patient care.

Currently, there are surgical robots at both the research lab at SSIM and in the operating room. A ZEUS robot surgical system used to perform surgeries at Children’s Hospital is now used for research activities in the lab and a da Vinci Surgical System has taken its place in the operating room. The system is made up of three components: a surgeon’s hand controls, a patient-side robotic cart with four arms manipulated by the surgeon, and a high-definition 3D vision system. Surgical instruments are mounted on the robotic arms and introduced into the body through cannulas.

Surgical robots already enhance surgeons’ skills by filtering tremor and scaling motions, but it may also be possible to automate certain routine tasks to free surgeons to focus on higher-level tasks. With intelligent interfaces, the robotic system could warn surgeons of incorrect trajectories or even restrict the movements of the surgery away from dangerous or critical areas to prevent vessel penetration or critical tissue or nerve damage. Even with significant technological gains, robotic surgery is still in its infancy. There are some major areas of technological improvement needed for it to reach its ultimate potential, including better visualization, tactile sensing, diagnostic sensing, intelligent software, and miniaturization. The research lab at SSIM, Computer-Assisted Robot Enhanced Systems (CARES), is looking into several research areas. Imagine if a surgeon sitting at a robotic console could ask the system to determine if the tissue at hand was tumorous or normal. SSIM is developing a biosensor capable of this task and is merging it with advanced visualization techniques.

Raman spectroscopy is another method. It detects normal and abnormal regions of tissue. Its near-real-time analysis and the fact that it does not require sample preparation make it highly suited for in vivo applications. Image-guided surgery helps the surgeon position and track instruments (such as a Raman probe) inside the body, making it a natural complement for Raman spectroscopy and robotic surgery.

A passive robotic device holds the Raman probe and once its near-real-time analysis and the fact that it does not require sample preparation make it highly suited for in vivo applications. Image-guided surgery helps the surgeon position and track instruments (such as a Raman probe) inside the body, making it a natural complement for Raman spectroscopy and robotic surgery.

Graduate assistant Lavi Golenberg is a researcher on the Smart Sensor and Integrated Microsystem team advancing technology in robotic vision, diagnostic sensors and sensor fusion.

Robot Nurses: One Answer To The Nurse Shortage

Robots are not only being used in surgery, but also to assist surgeons and nurses making rounds. And it is not far-fetched to imagine they could assist surgeons with tools in the operating room and take care of patients at their bedside. In fact, there is already a fleet of robots currently moving about the hallways at Children’s Hospital helping doctors perform their rounds more efficiently.

InTouch Health Systems of Santa Barbara, Calif., created the world’s first mobile remote presence robot for health care. The robot is designed to enable health care assessment, consultation and treatment by a doctor from a remote location. With this system, the doctor uses a laptop

consideration is tracking the head and eyes of the surgeon and automatically moving the viewpoint in tandem with the surgeon’s focus of vision. As the surgeon moves his/her viewpoint around on the screen, the system analyzes viewpoint data and directs the robot holding the camera to move to the optimal viewpoint. Currently, the surgeon uses either voice commands or a foot pedal to move the arm. This research will allow seamless control of the camera, freeing the surgeon to concentrate on higher level tasks.

Motion scaling is another area of research activities. Motion scaling allows the surgeon to perform a microsurgery while making macro-type movements, and it enhances the surgeon’s dexterity. Centimeters of movements at the surgery site can be controlled to become millimeters of movement at the patient site. However, the scale is typically set during operations and not changed. Methods of tracking the movements of the surgeon’s hand controllers are being explored to develop the ability to make automatic and subtle changes to the motion-scaling parameters during surgery. If the surgeon makes large movements, for example, the scale is increased to allow more refined movements at the patient site. If the surgeon is making tiny movements, the scale is increased to allow more gross movements at the patient site.

Advances in robotic surgery will also accelerate the use and improvements in telemedicine or tele-surgery. At present, most robotic surgery is performed by surgeons at the location of surgery. Remote surgery takes robotic surgery technology and combines it with telecommuting advances, allowing surgeons to be available to patients worldwide without the need for the patient to travel beyond his/her local hospital.

Clinical applications for this technology include helping doctors perform their rounds more efficiently.

InTouch Health Systems of Santa Barbara, Calif., created the world’s first mobile remote presence robot for health care. The robot is designed to enable health care assessment, consultation and treatment by a doctor from a remote location. With this system, the doctor uses a laptop...

photo by Rick Bielaczyc
Nanotechnology can be defined as structures and mechanisms that can interact at the scale of cells. Silicon micro-teeth that open and close like jaws have been developed at Sandia National Laboratories. The micro-jaws can reach high in blood vessels and pick up red blood cells. When the jaws close, they trap a red blood cell. The jaws can capture cells, deform them, and release them. Then the blood cells travel on, regain their former shape, and appear unharmed. This is a micro-scale tool that can be equipped with a fiber-optic camera and inserted through a tiny incision; once it is inserted, it can walk like an inchworm controlled by a joystick.

Abhilash Pandya earned his MS (University of Michigan, 1986) and PhD (Wayne State University, 2004) degrees in Bioengineering, specializing in modeling/simulation, medical robotics and image guided surgery. He worked at the Johnson Space Center, Houston (1988-1998) under various contracts for NASA’s flight crew support division, developing immersive virtual/augmented reality environments and robotics-related projects. He later worked at the Neurosurgery Department at Harper Hospital in Detroit from 1998 to 2004 as a team leader in research on robotic and image-guided surgery in the operating room. Currently, he is an assistant professor of electrical and computer engineering. Pandya’s research interests are image-guided surgery, medical, space and military robotics, virtual reality, augmented reality, biosensors and human factors. He has written more than 70 articles in these fields.

Pandya is a member of a team of collaborators involving SSIM researchers and Children’s Hospital of Detroit. The others are: Michael Klein, chief of surgery, Children’s Hospital; Alex Cano, engineer, SSIM Computer Assisted Robot Enhanced System (CARES) group; Darin Ellis, associate professor, industrial and manufacturing engineering; and Greg Asner, professor, electrical and computer engineering, and director of SSIM.

The Wayne State University College of Engineering is a dynamic community of scholars and researchers in which scientific discovery continuously enriches the learning experience. And now, as a participant in Partners for the Advancement of Collaborative Engineering Education, or PACE, we are enriching the learning experience. And now, as a participant in Partners for the Advancement of Collaborative Engineering Education, or PACE, we are collaborating with General Motors and other leading industries to prepare the next generation of engineers and leaders. The college is committed to advancing the frontiers of knowledge through research, and I am pleased to introduce seven members of our faculty who work and transform the lives of people in Michigan and around the world.
Budding Engineers Seek And Find Jobs

Despite Dismal Michigan Economy

Ask an engineering student what he or she wants to do after graduation, and you’ll probably hear dreams about working at a company that makes the technology of tomorrow.

Engineers create new products, inventions and designs. But are Wayne State engineering students creating careers in today’s Michigan economy which is going through what seems like the worst of times? The answer depends on who you ask.

Seek and ye shall find

Some recent grads have managed to find the job of their dreams without much struggle. Completing his bachelor’s degree in industrial engineering in May, Kenneth Adams took his job search to the Internet. In late June, Ford Motor Co. offered him a full-time job as part of a three-year, post-college graduate program. As an added bonus, Adams, 26, of Macomb Township, won’t have to move. The job is in Dearborn. But he said he was willing to go wherever there was work. He said a keyword-loaded resume and previous job experience set him apart from the competition. Since October 1999, he had worked at MNP Corp. in Utica, a Tier One supplier of automotive fasteners. It’s a looking for the same number of students as usual. This year Reeves is looking for the same number of students as usual. This year Reeves

Despite “gloomy reports, perceptions and talk”

The news media continues to report troubling news about the state’s economy, and a recent public opinion poll found most Michiganders feeling dismal about things. A June survey of 600 voters by The Detroit News/WWAY-TV found 76 percent say the state is on the wrong track, and 70 percent say the economy became worse in the past year. And they don’t seem to expect better times soon either. Twenty percent said they expect next year to be an improvement; 31 percent said they expect things to get even worse. Despite gloomy perceptions about the economy, Wayne State engineering graduates tend to find work shortly after graduation, said Padmaja Rao, assistant director of Career Services at Wayne State. A 2005-2006 WSU survey of 103 engineering grads found 92 percent of the respondents were employed within six months after graduation. Rao said the survey shows 73 percent of the respondents found employment in Michigan. However, it should be noted, she said, that the findings are not institutionally representative because the responses were voluntary. Small, mid-sized and large companies continue to be eager to conduct campus interviews and meet with students from many engineering specialties. (See accompanying sidebar.) Entry-level jobs still exist for graduates who look in the right places, said Douglas R. Allen, managing director of the Detroit office of Boyden, an executive search firm. “I would say there’s lots of work to be done in the automotive marketplace,” he said. “The trick is to figure out who is going to do it.” Allen said the market wants engineers who can work in the automotive, health care, telecommunications and IT industries. “If you just read the newspapers, you figure out what’s hot in product design. It’s energy; fuel economy and alternative energy.”

Despite talk about jobs leaving Michigan, jobs are coming in

And while there is plenty of talk about jobs leaving Michigan, Allen said jobs are also coming into the state and providing new opportunities. Japanese companies such as Toyota, Nissan and Honda are moving their operations to Michigan to get at the local talent. Chinese companies won’t be far behind, he added. While Allen said the gloomy reports about Michigan’s economy are based in reality, he believes that young engineers have a role in the state’s economic turnaround. “That is why they’re taking on engineering, to improve things,” he said.

Some WSU engineering students aren’t waiting for someone to hire them. They’re looking to create their own jobs by starting their own engineering firms.

Julius Reeves, a Wayne State alumnus and lead recruiter for GM, said the engineering job market is still “fairly good” from a company standpoint, although some engineering majors are in higher demand than others. This year Reeves is looking for the same number of students as usual. This is true even though some GM engineering jobs have left Michigan for other states. “We’re still recruiting because there’s still attrition,” Reeves said. “People are retiring early, and more software development is going on.” At GM, mechanical engineering is not as strong as it was in the past, but software engineers and electrical engineers are particularly needed, Reeves said. Besides the auto industry’s need for alternative propulsion systems like hybrids and fuel cells, the need for new equipment and devices in the medical field makes it a hot market, too, he added.

continued on next page
Steps toward success

For engineering graduates to get the job of their dreams, career search experts say there are a few measures that can produce results. Networking is key to finding unadvertised job openings, said Joseph Boelter, a WSU chemical engineering alumnus and president of the Northville-based Management Recruiters of Plymouth. “Folks in certainly the last year or two in engineering school should be networking constantly with company recruiters with many positions to fill,” Boelter said. “Networking is still the number one way to uncover the hidden job market.”

Reeves said graduates with top-notch grades are a step ahead of the competition. Extracurricular activities and an awareness of the global engineering environment also can make job hopefuls stand out from the crowd. “If they can take foreign languages or try to learn about other cultures, that’s helpful for conference calls or traveling overseas.”

GM recruiter Ron Harvey talking to a potential future recruit

Eric Czarnik, a 2005 Wayne State journalism graduate, is a Metro Detroit freelancer

WSU Job Fair attracts companies eager to fill engineering positions

are a result of plans for new projects and products as well as attrition and employee buy-outs, Wand said. General Motors recruiter Julius Reeves, a team manager at GM Strategic Initiatives, said GM currently has a broad range of open positions, mostly for engineers with some experience. Currently, GM is looking to fill electrical, mechanical, industrial, chemical and civil engineering positions. But the company also has a need for engineering technology students, said Reeves, and is seeking undergraduate engineering students for co-ops and internships.

“Engineers basically sign all their rights away. As an engineer, you work to create things. If you have your own company, you get all the money that comes in from those ideas.”

Thomas, 25, of West Bloomfield, is an advocate for TechTown, a 12-block “entrepreneurial village” located just north of campus. Through the support of risk-taking business people, investors and corporations, TechTown tries to be an incubator for small businesses and high-tech start-up companies. TechTown can help Michigan embrace a variety of high-tech industries so the state can reduce its dependence on the auto industry, said Thomas. “I know a lot of people are moving out of state. I’m trying to get people to realize all the opportunities about TechTown.”

Thomas is not deterred by automotive layoffs that have rocked the state, and hopes to stay and work in Detroit. “I believe entrepreneurship is going to resurrect Detroit,” he said.

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“I think the job fair is really good because, for a lot of students, it’s hard to get out and visit all these companies, and it’s wonderful when the companies come to you,” said Inibati Nkanga, an industrial engineering senior. Nkanga has already been offered a full-time position with Ford where she worked as an intern, but she talked to the Ford recruiters anyway. “I did my internship there and it was a wonderful experience. I just wanted to use this opportunity to network with other departments in Ford.”

The CIA, DTE Energy, Halliburton, Pepit Bottling Group, Unisys, U.S. Army Corps of Engineers, United States Navy, Urban Science, Waidbridge Aldinger, and Yazaki were some of the larger companies with recruiters at the job fair. “We recruit people who are active students,” said Sgt. Dion Byrd, a U.S. Marines recruiter at the job fair. He explained that the Marines are looking for engineers as well as students from other departments for various positions. Kiewit Western, a construction contractor and mining service company, participated this year for the first time at the job fair. Kiewit recruiter Robyn Wulfenkotter said her company is offering internship and full-time positions for civil engineers and in the construction management area.

Despite the dismal job news portrayed in the press, interviews with recent graduates and recruiters conducted by the college’s engineering magazine EXEMPLAR paints a different picture. Some recent graduates have managed to find the jobs of their dreams without much struggle. Interviews and surveys suggest most tend to find engineering work shortly after graduation. Their experiences show that Wayne State engineering students with their co-op and internship experience gave them an edge in the job market. Networking is also key to finding unadvertised job openings, experts agree.

Andrew Ricketts, a WSU mechanical engineering student who graduated last May, came to the job fair not to look for a job, but as a recruiter. Two days after graduating, Ricketts landed a job he dreamed about since high school, that of a boat designer. Now a project leader for Baja Marine Corporation, of Bucyrus, Ohio, Ricketts parked his 25-foot 247 Islander power boat in front of the college, and set up his company display on the third floor.

Ricketts credits his co-op experience at Boesch for landing his job. “If it wasn’t for the co-op, I wouldn’t have this job,” he said. In his job interview, the manager recognized his technical skills, but was also looking for an engineer with people skills. “The people skills and the management skills I got from the coop,” he said.

The advantage of the practical experience of Wayne State engineering graduates is something the recruiters often talk about. “Getting some practical job experience in your field of study before you graduate makes you very marketable,” said Ford recruiter Wand, who is always impressed with Wayne State engineering graduates. “I think the best way they come out of Wayne State is exceptional,” he said, “from their technical background, with academics, and their involvement with student organizations.”

by Justyna Konczalska, Engineering Public Affairs Writer
BIOFUELS: An Alternative Solution to Energy Security and Global Warming
by K. Y. Simon Ng and Steven O. Salley, professors of chemical and material science engineering

In his 2007 State of the Union speech, President George Bush outlined the priorities in energy policy: to reduce the nation’s dependence on foreign oil and to reduce greenhouse gas emissions. Specifically, he said the nation must move towards energy security by reducing US fuel usage by 20% in the next 10 years, and by accelerating the research and development of alternative fuel sources.

Among alternative fuel sources, biomass conversion to liquid fuel remains the most immediate and viable option that can make the most impact. A recent study by the US Department of Energy and Department of Agriculture to assess the availability of biomass, concluded that the US could produce 1.3 billion dry tons of biomass for biofuel production without major changes in agricultural practices, or affecting the demands for food, feed and exports. Biomass is renewable and can serve as our sustainable source of energy. However, the main technical barriers for widespread use of biomass-based fuel are the conversion efficiency of biomass to biofuel, and a good understanding of the relationship between fuel properties and engine performance to allow the development of fuel quality standards.

The National Biofuels Energy Laboratory (NBEL) at NextEnergy, funded by the US Department of Energy (DOE), was created to address the synthesis, characterization and performance evaluation of biodiesel and biodiesel blends. NextEnergy, Inc. in Novi, Wayne State University engineering researchers, and other partners are creating a biodiesel knowledge base to form a solid technical foundation for the development of future fuels of this type.

Biodiesel is a renewable fuel for diesel engines derived from natural oils and fats (e.g., vegetable oils, recycled cooking greases or oils and animal fats) that meets the specifications of ASTM D 6751. It is composed of monoalkyl esters of long-chain fatty acids, produced by the transesterification with alcohol of the above natural oils. Biodiesel is a DOE-designated alternative fuel and is registered as a fuel and fuel additive with the US Environmental Protection Agency (EPA).

Biodiesel is nontoxic and biodegradable, and offers many benefits over conventional petroleum diesel. Biodiesel burns cleaner, with net emissions reductions in particulates, hydrocarbons and carbon monoxide (and with zero-to-slight increases in NOx). With its high energy balance of 3.2 to 1, biodiesel provides a beneficial 78 percent life cycle CO2 reduction. Biodiesel also possesses a high cetane number (averaging more than 50) and improves petroleum diesel cetane performance when blended. Because it is naturally low in sulfur content, it also lowers sulfur emissions when blended with petroleum diesel. Biodiesel blending also imparts improved lubricity to petroleum diesel. Because it is domestically produced, biodiesel shows great potential for reducing US dependence on foreign energy supplies. Biodiesel provides a "closed economic loop" because the feedstock can be grown locally, the biodiesel can be produced locally, and the fuel can be used locally. Furthermore, it is evident that minimal-to-no infrastructure change is necessary to implement widespread biodiesel use. Biodiesel blends can be used in any diesel engine and can be transported and stored using existing infrastructure. While there has been an exponential growth in biodiesel production in the United States in the last few years, biodiesel still represents less than 1 percent of total diesel fuel used in the United States in 2007. Thus, the diesel market is wide open for quality bio-based diesel fuel.

While biodiesel shows such tremendous potential, there are still unresolved challenges to its complete acceptance. Among the top research priorities are: 1) fuel quality and quality standards; 2) fuel stability; and 3) cold flow properties. Moreover, there is an urgent need for a B-20 (20% blend of biodiesel with ultra-low sulfur diesel (ULSD)) specification to provide a standard for fuel quality that is acceptable to automotive and engine manufacturers.

The NBEL research consortium with Wayne State, NextEnergy, Bosch, Delphi, DaimlerChrysler, and Biodiesel Industries is a biodiesel manufacturer that has just invested in a 10 million tons/year production facility two blocks from the Wayne State campus) was formed. Our overall program objectives are to establish a sound technical basis for biodiesel that will assist in setting the ASTM specification for B-20, and to gain a comprehensive understanding of composition-property-performance relationships for biofuels. We aim to develop the next-generation of biodiesel with acceptable performance, cold flow and stability properties. The ASTM B-20 specification is a very important issue for the biodiesel manufacturer, as well as for the OEMs for the automotive industry. It is the mission of the NBEL to translate the research findings into new application and technology to increase the overall use of biofuel, thus leading to better energy security for our nation, while reducing green house gas emissions.

$2 Million Project To Develop Synthetic Fuel Generator

Another alternative fuel project being conducted at the NBEL is the development of bio- and synthetic-fueled generator sets for energy and homeland security. This $2 million project is sponsored by the state of Michigan 21st Century Job Fund and focuses on the development of adaptive engine control strategies so that multiple fuels can be optimized for use in mobile generator sets. The partners in this project are NextEnergy, Titan Energy, and the National Automotive Center of the US Army.

A secure and domestic fuel source is a top priority of the US military. To address these concerns with fuel supply, the Office of the Secretary of Defense (OSD) has launched an Assured Fuels Initiative. This initiative provides that US energy independence can begin with a national alternative fuel initiative to provide the US military with a secure domestic supply of clean fuel synthesized from domestic resources. This initiative will become the springboard for America’s renewable and synthetic fuels industry, capable of assuring that not only our military, but also the US Department of Homeland Security and, indeed, our nation, has the liquid fuels needed for the transportation of people and goods throughout the country.

In this project, the objectives are to develop a good understanding and detailed characterization on how the chemical and physical properties of different types of fuel (JP-8, synthetic fuel and biodiesel) affect cetane number, heat of combustion, oxidative and storage stability and lubricity. Another objective is to optimize engine control strategies and to develop new adaptive controlling techniques, and to conduct long-term performance studies using NextEnergy’s power pavilion and alternative energy platform. We hope our research findings will translate into a new-generation system that can operate on multiple types of alternative fuels for the military and disaster relief organizations.

The challenges presented by global warming, as well as outside threats prompting the need to fortify our defense, have presented us with an opportunity to embark on technological efforts that will have a tremendous positive impact on the quality of our environment and our ability to reduce the affect of natural disasters. As researchers, we are excited about taking on the challenge.
Greg Auner, director of the College of Engineering’s Smart Sensor and Integrated Microsystems (SSIM) lab, has been selected an “Everyday Hero” by the RARE Foundation. “SSIM projects are about trying to find solutions to critical, real-world problems such as delicate fetal and infant surgeries, early diagnosis and treatment of diseases such as Parkinson’s, and auditory and visual implants to restore failing eyesight and hearing loss in people with hearing and visual impairments.”

The RARE (Recognizing Achievement Rewarding Excellence) Foundation, located in Troy, engages youth through the process of discussion, discovery and writing about the everyday heroes in their communities.

Ralph H. Kummer, dean of the college, was awarded the Outstanding Committee or Council Leadership Award, for outstanding committee work by members of an ESD committee or council, at the 2007 ESD Annual Dinner, June 21.

Steven Salley, former dean of academic affairs for the college and associate dean of the Graduate School since 2002, has been appointed Interim Associate Provost and Dean of the Graduate School. He will continue his role as USU advisor to the Graduate School and the Transportation Research Group launched the first annual “Drive Safely to WSU” in 2004 in parallel with “Drive Safely to Work Week” to become the first college in Michigan to do so. Finally, Datta was chosen the 2007 winner of the college’s Excellence in Teaching Award, along with Ece Yaprak, associate professor of engineering technology.

Bryce Greve and Bulchand S. Rathod were recipients of the 2007 Engineering Technology Excellence in Teaching Awards. The award honors faculty whose excellence in academia is reflected in their teaching and unique contributions to education.

Congratulations to Pat Kosynka, advisor, engineering technology, for 40 years of service; Gary Zaddach, director of business operations, for 35 years of service; and King Hay Yang, director of the Bioengineering Research Center, for 25 years of service, who received WSU service awards at the 2007 Employee Recognition Program held in April. Thanks and best wishes to Alan Whitman, professor of mechanical engineering, and John Rather, professor of physics and SSIM collaborator, on their retirement.

Carol Miller to Head WSU Civil and Environmental Engineering

The college salutes Carol Miller, a member of the engineering faculty since 1984, as the new chair of the Civil and Environmental Engineering Department. Miller replaces long-term chair Mumtaz Usmen, who was recently appointed associate dean of research. “Dr. Miller brings a wealth of teaching and practical field experience to her new position,” said Dean Ralph Kummer. “We are delighted she has agreed to lead the department.”

Miller, a specialist in environmental/hydraulic engineering, is the recipient of the 2006 Michigan Society of Professional Engineers “Engineer of the Year Award.” As a private consultant, she has been active in various river hydraulics projects and contaminant remediation projects. Her research has been supported by the National Science Foundation, the American Water Works Association, and the EPA, among others. Her graduates have assumed academic positions nationally (California Polytechnic University, Notre Dame) and internationally (University of Seoul), as well as many who remain in the local engineering community.

Miller obtained her PhD, master’s and bachelor’s degrees, all in civil engineering, and all from the University of Michigan. She joined the WSU engineering faculty as an assistant professor in 1984, and became a full professor in 1998.

Miller’s family has long ties with Wayne State starting with her grandfather, Walter G. Pomering, who taught art classes at Wayne in the 1930s. Her father, Don A. Pomerening, taught in the Electrical Engineering Department in the 1950s, while her mother, Shirley Stevens, was a pre-med student at the university in the 1940s.
James Facen, Beloved WSU And College Administrator, 74

The college extends its heartfelt sympathy to family and friends of James Facen, former assistant dean of academic affairs at the College of Engineering, who died suddenly May 16. He was 74.

Facen suffered from emphysema, but his death came suddenly, family members said.

Facen, who earned his PhD in Education from Wayne State, was also an assistant provost of the university at one time. Before working in the College of Engineering, he was employed by the student services program where he assisted handicapped students.

Former Dean Stanley Stynes described Facen as a good friend and a very caring and helping colleague. “In addition to being general advisor to our students, he provided support for student organizations and helped to develop the Black Engineering program. He was absolutely wonderful in his concern for and his help to students.”

James McMicking, professor emeritus of chemical engineering, said of Facen, “We went undergrad at Wayne State together. He was a very gentle person and wonderful in his concern for and his help to students.”

He attended Wayne University and earned a bachelor’s degree in Occupational Therapy in 1956, and provided support for student organizations and helped to develop the Black Engineering program. He was absolutely wonderful in his concern for and his help to students.

Wayne State together. He was a very gentle person and wonderful in his concern for and his help to students.”

Milton Koenig, Conscientious Teacher, Experienced Practitioner, 79

The college extends its heartfelt sympathy to family, friends and colleagues of Milton Gene Koenig, honored professor emeritus of the Mechanical Engineering Department, who died April 7 from complications of pneumonia. He was 79.

Koenig taught mechanical systems from his first appointment as instructor in 1956 to his retirement in 1989. He also served as director of Undergraduate Studies for the department from 1978 and was director of Laboratories since 1986. He was awarded the Arthur Raymond Carr Award for Excellence in Teaching in 1964.

“I’ve known him very well,” said Naeim Henein, professor of mechanical engineering, who worked with Koenig for 19 years. “He was one of the most conscientious professors I ever met. He was very knowledgeable in his area, careful about teaching, instructions, the welfare of his students, and was willing to help any colleague or student.”

Koenig was born August 23, 1927, in Moberty, Mo. and raised in Detroit. He graduated in 1945 from Cooley High School and served in the 5th Army, 6th Armored Division from 1952 to 1954. He graduated with a bachelor’s in mechanical engineering in 1956 and master’s in 1957, both from Wayne State. He was appointed an instructor in 1956 and promoted to associate professor and achieved tenure in 1962.

“Professors in his day were very experienced practitioners,” said Stan Stynes, former dean of the college. “They spent summers working at jobs in industry, then came back to the classrooms and passed on their experience. Milt was a good example of this.”

In addition to his work in industry, Koenig built a consulting business working with litigators based on his expertise in mechanical systems.

“In a career at Wayne State spanning 32 years, Koenig made enormous contributions to the Mechanical Engineering Department and all activities related to instructional programs and laboratory work,” said Kenneth Kline, former chair of the department at Koenig’s retirement in 1989.

Koenig is survived by his wife of 50 years, Diana, and their three children, son Matthew with wife Rachel and their children, Tyler, Shawnee and Mya; daughter Kei with husband John and their children Logan and Maguire; and son Christopher with wife Tamara and their daughter Heather, together with their extended families and close friends.

A memorial service was held April 12 at O’Brien Sullivan Funeral Home in Novi. He was buried at Northville’s Rural Hill Cemetery.

Alice Lietz, Devoted Student Adviser, 70

The College of Engineering extends its heartfelt sympathy to the family of Alice J. Thomas Lietz, a graduate student adviser at the college who worked ceaselessly to serve her students.

Alice ("A.J.") Lietz, of Harper Woods, died July 23, 2006 after a long illness. She was 70.

Lietz held a bachelor’s degree in political science and master’s in education from Wayne State where she worked for more than 25 years, including her most recent position as graduate adviser to engineering students.

She was highly regarded by the staff, faculty and students for whom she showed the utmost devotion. Countless students sought her counsel, even some who were enrolled in other programs because it became known that she was always willing to help and find a way to get things done for them.

“The students at Wayne State more than anything else motivated A.J. to continue working when she was ill,” said D’Arcy Moffitt, Lietz’ only daughter. “It was all about the students, and I know the feeling was mutual.”

Besides counseling, Lietz taught a course for entering freshmen to help prepare them for college studies and campus life.

Lietz is survived by her husband, Karl, daughter D’Arcy Moffitt (Charles) and stepson C.J., brothers, Albert (Jerry) and George (Betsy), and her late sister, Corrine Davenport (the late William).

A funeral was held July 26, 2006 in Grosse Pointe Woods followed by her burial at Forest Lawn Cemetery in Detroit.

Patricia Sheehy, Electrical Engineering Secretary, 75

The College of Engineering extends its heartfelt sympathy to family and friends of Patricia Ruth Sheehy, former long-time electrical and computer engineering secretary, who died March 24, 2007. She was 75.

Sheehy joined the Mechanical and Industrial Engineering Department staff in 1954, and served as administrative department secretary, mostly in the Department of Electrical Engineering, over a period of 44 years until she retired in 1998.

She is survived by her brother Robert Sheehy.

Former CEE Professor Takes On New Job As Chair At WMU

After more than 26 years on the engineering faculty, Haluk Aktan, former professor of civil and environmental engineering, has started his new job as chair of the Civil and Construction Engineering Department at the University of Western Michigan.

Aktan left Wayne State in December 2006 because of an opportunity to establish and grow a new civil engineering program, he said. “This is a new program where I have control over the quality of students entering the program,” he added. Aktan assumed his new position last January.

A structural engineering expert, Aktan mentored many students who are now industry leaders in the metro Detroit area. Ten of his PhD students are from all over the world, from Korea to Egypt.

“Dr. Aktan is a highly respected teacher and a very strong researcher who brought our institution excellent visibility and recognition,” said Mumtaz Ulmen, associate dean of research.

Aktan said he enjoyed his time at Wayne State. “I made lifelong friends and I worked with people from all over the university.”

Academic Counselor Retires

After 40 years of service to Wayne State University, Patricia Kosmyna, an academic counselor for the Division of Engineering Technology (ET), retired last spring.

Pat began working at the university in 1967 when she was hired as an office assistant in biochemistry at the School of Medicine. Two years later, she performed office tasks as a member of the College of Engineering Dean’s staff. From 1975 to 1994 she served as a higher level office assistant, and was later promoted to administrative assistant for ET. Pat earned a bachelor’s in criminal justice (1986), and a master’s in guidance and counseling (1993), both from Wayne State. As a professional counselor, Pat served as ET’s academic service officer from 1994 to her retirement. She resides in Dearborn Heights.
The college welcomes Peter Savolainen, assistant professor, Department of Civil and Environmental Engineering. Assistant Professor Savolainen joined the faculty in August 2006 from Purdue University where he earned his PhD (2006) and master’s (2004) degrees in civil engineering and was a graduate student instructor and researcher. Prior to his time at Purdue, the Nebraska, Nebraska native earned his bachelor’s degree in civil engineering from Michigan Technological University (2002). His primary research area is transportation safety and he is currently involved in projects focused on utility work zone safety and mobility, the effectiveness of an emergency vehicle alert system, and statewide safety belt usage. Assistant Professor Savolainen currently teaches courses on transportation engineering, highway safety and risk management, and civil engineering research methods. In addition, he currently serves as a member of the Transportation Research Board Motorcycles and Mopeds Committee, the Michigan Crash Data Users Group, and the Michigan Motorcycle Action Team. Assistant Professor Savolainen resides in Huntington Woods with his fiancé, Alicia Jener.

The college welcomes Weiping Ren, assistant professor, Department of Biomedical Engineering. Assistant Professor Ren, who joined the faculty in January 2007, received his medical degree from Shanghai Second Medical University in China, and PhD in Biochemistry from Yamagata University, Japan. He is the recipient of a NIH-NCI Cancer Center Oncology Research Faculty Development Award. He spent four years studying molecular mechanism in cancer biology as a research assistant professor in the Department of Orthopedic Surgery. Assistant Professor Ren has conducted research projects on the molecular mechanism of implant loosening. His funded projects included both the basic research (angiogenesis) and a clinical trial of implant loosening treatment using an anti-osteoclastogenesis drug.

The college welcomes Tim Gates, assistant professor, civil and environmental engineering, who joined the faculty this past fall. Assistant Professor Gates earned his PhD from the University of Wisconsin-Madison in 2007, and his master’s and bachelor’s from Michigan State University in 2000 and 1999. He was an associate researcher at the Texas Transportation Institute at College Station. Assistant Professor Gates developed a process to predict red-light running vehicles at signalized intersections and subsequently extended the all-red-clearance interval to ensure sufficient clearing time for the errant driver. He resides in Northville with his wife, Deanna.

The college welcomes Wen Li, assistant professor, mechanical engineering, who joined the faculty in 2007. Associate Professor Li comes from Mississippi State University where he was associate professor of mechanical engineering. Associate Professor Li earned his PhD from the University of Kentucky, Lexington, in 1991, his master’s in vehicle engineering from Beijing Institute of Technology (1984) and bachelor’s in physics from Liaoning Teachers University in 1982. He was principal engineer for United Technologies Research Center in Hartford, Conn. from 2002 to 2004. He was senior staff engineer at Carrier Corporation from 1995 through 2001. And he was a research specialist at Case Corporation in Burr Ridge, Ill. from 1992 to 1995. Associate Professor Li’s area of expertise is acoustics, structural dynamics, passive and active noise and vibrations control, fault detection and system identification, signal processing techniques, biomechanics and bioacoustics.

Civil engineering undergrad Mollie Wimsatt was selected to receive the 2007 ESD Outstanding Student of the Year Scholarship Award. The scholarship is awarded each year by ESD to one undergraduate student and ESD member with outstanding achievement who has distinguished him or herself in the engineering and scientific community. Wimsatt helped create a new program called Civil Engineering Conversations where students, faculty and industry friends discuss various professional issues at a mutual lunch or dinner. She helped organize an ethics panel last year bringing three participating engineers to campus to answer students’ questions, followed by an in-depth discussion. She was active with the ASCE student chapter and Chi epsilon, holding important offices in both. Wimsatt has a bachelor’s degree from the University of Michigan in natural resources, and is interested in pursuing a career in environmental engineering with a concentration in the environmental discipline.

Chemical engineering graduate student Cristina Pilosa co-chaired the PhD Research Session of an international chemical engineering sustainability forum held in September at South China University of Technology in Guangzhao, China. The forum, the first of its kind in Asia, attracted more than 400 researchers, scientists and practitioners from throughout the world to discuss the advancement of product and process engineering through the effective integration of sustainability.

Hasan Attili, an undergraduate studying electrical and computer engineering and an active WSU IEEE committee member, received the Most Outstanding Student Award from the IEEE southeastern conference. The WSU student chapter of IEEE was nominated for the best and most involved branch in the entire IEEE southeastern Michigan section.

Mark Nasr, who graduated in civil engineering last May, was honored April 17 with a WSU David Mackenzie Award from the David Mackenzie Honor Society. Nasr was among 16 students selected for the Class of 2007. The Society elects to its membership “outstanding students whose unselfish service on behalf of the university has materially contributed to its increasing institutional greatness.” Nasr graduated magna cum laude at the top of his civil engineering class and served two terms as president of the Engineering Student Faculty Board, the governing student organization for the college.

Sabyasachee Misra, a PhD student working with Snehamay Khansabas, professor of civil engineering, was awarded a $2,000 scholarship from the Michigan Institute of Transportation Engineers for the year 2006. The award is given annually to four students from Michigan universities on a competitive basis based on the student’s academic performance, leadership, professional activities and a brief essay on transportation.

Jie Xiao, a PhD student in chemical engineering, is the recipient of the 2006 American Institute of Chemical Engineering (AIChE) Process Development Division Student Paper Award. The paper, “Ant Colony System-Based Dynamic Optimization for Reactive Drying of Polymeric Coating,” was published early in 2006 by AIChE Journal, a top journal in chemical engineering. The award is “probably the first time, in our department that a graduate student’s regular journal paper was recognized by an AIChE division,” said Yin Lun Huang, professor of chemical engineering and Xiao’s PhD adviser.
WSU Athlete Makes Good In Both Engineering Studies And Fencing

Recent mechanical engineering graduate Steve Znoy excelled both as a student with a cumulative GPA of 3.47, and as a varsity athlete on the Wayne State fencing team. He worked full-time in summer and part-time last fall and winter semesters as a co-op student at American Axle, an automotive supplier. Znoy received the Dean’s Award from the Department of Athletics for the highest cumulative GPA for a student athlete for the highest cumulative GPA for a student athlete.


Wayne State University from Pakistan determined to finish school quickly. And he did. He graduated cum laude, earning his bachelor’s in only two and a half years. One year later he received his master’s. He needed only two more years for his PhD which he earned last spring.

"Since I was a kid, I liked researching and engineering," said the 26-year-old. "I always wanted to become an engineer." Znoy decided to study at Wayne after hearing about his neighbor’s son, an engineering student at WSU. "I came alone and didn’t know anyone, not even my neighbor’s son," said Khalid. His first roommate picked him up at the airport and introduced him to the school system and campus. "He really helped me a lot." Khalid focused on school and asked for special permission to take 24 to 26 credits per semester. In his second semester, he started working at the Undergraduate Library and helping his advisor Yong Xu., professor of electrical and computer engineering, conducting research on bio sensors based on polymers, and working on an electrostatic actuator for a lab or chip device.

Today, Khalid, whose father is a mechanical engineer, lives with his 23-year-old brother Umer Khalid, who is finishing his Ph.D. at Wayne. Umer is on track to complete his PhD in six years. Khalid remembers his first year when he lived for the first time alone. "I didn’t know what to do. I didn’t know what to expect." Today he is well-known on campus. Khalid ran for the King of International Students in 2005, losing by one vote. The same year he also ran for student council. Khalid is now looking for a job in the industrial sector and would like to work one day for IBM or NASA. "I am flexible and open for changes," he said.

PhD Fast Track

In 2001, Waqas Khalid came to Wayne State University from Pakistan determined to finish school quickly. And he did. He graduated cum laude, earning his bachelor’s in only two and a half years. One year later he received his master’s. He needed only two more years for his PhD which he earned last spring.

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Stories by Justyna Konczaik, Engineering Public Affairs Writer

Order of the Engineer/POET

Sixty-five December engineering graduates, both undergrad and grad students, were inducted into the professional Orders of the Engineer and Engineering Technology at special ceremonies at Wayne State’s General Lectures Hall, May 12. Dean Ralph Kummier, associate deans, and department chairs officiated, with some 340 relatives, friends, faculty and staff witnessing the event.

WSU Bioengineering Students Lead Stapp Conference Poster Sessions

Bioengineering faculty and graduate researchers as usual participated in force at the top auto safety conference held last November in Dearborn. Wayne State graduate students took first and third place student paper awards at the International Stapp Car Crash Conference. The conference, co-chaired by Wayne State alumni Harold Mertz and Priya Prasad, is the premier forum for presentation of auto safety research. Anita Singh and her team (Professor John Cavanaugh adviser) took Best Paper Award and $1,500 for the paper, “A New Model of Traumatic Axonal Injury to Determine the Effects of Strain and Displacement Rates.” Chirag Shah (Professor King Hay Yang, adviser), took third Place honors and $500 for the paper, “Dynamic Biaxial Tissue Properties of the Human Cadaver Aorta.” Wayne State leads all participants with contributions of 34 percent of all papers presented at Stapp Conferences. The University of Virginia is second with 14 percent, and the University of Michigan is third with 12 percent.
Jack A. Morton was headed for a career in academia when he graduated from Wayne University with a bachelor’s degree in electrical engineering in 1935, but a chance meeting with a Bell Labs research director landed him a job at the telephone research facility. In his 35-year career, the former WSU Tartar football player and engineering alum pioneered the development of the transistor at Bell Labs, but a Dec. 2006 IEEE Spectrum magazine article by Michael Riordan explores his role in Bell Labs’ failure to pursue the subsequent development of the microchip, one of its most costly errors in judgment.

Morton’s first years at Bell Labs was devoted to developing microwave technology. His advancements in the field extended the range of World War II era radar, which gave allied forces an edge in the Pacific theater. After the war, Morton developed a small microwave vacuum tube that was used in telephone relay towers for years to come.

In 1948, he was put in charge of the development of the transistor, at the time a guarded secret. The transistor had been invented at Bell Labs a year prior. The technology would become a fundamental part of modern electronics, but its commercial applications were still unknown at the time. Morton developed the experimental device into a commercially viable product. His team continued to improve the technology, and Morton was responsible for the critical decision to switch to silicon-based technology.

“It was revolutionary,” says Greg Auner, professor of electrical and computer engineering, and director of the Smart Sensors and Integrated Microsystems lab at the college. “It was the genesis of all electronics.”

The microchip was a logical progression of Bell Labs’ research into transistors. “The microchip is basically a series of discrete devices,” said Auner. “The core technology is the transistor.”

But Bell Labs stopped short of developing the microchip. Morton believed the technology had no large-scale commercial application, especially in the telecommunications industry. He believed microchips would have a high failure rate due to the number of devices on a single chip. But by the 1970s, it had become clear these worries were unwarranted, and AT&T, affiliated with Bell Labs, had lagged behind in microchip development.

Morton believed the technology was terminally limited by problems that turned out to be short-term, said Auner. “The technologies weren’t immediately available,” he said. “So his conclusion was that he just couldn’t do it.”

But in spite of his opposition to pursuing microchip technology, Morton’s reputation was still intact by the time of his death in 1971. On Dec. 10, firefighters found Morton’s body in the back seat of a car that had been lit on fire. He had been beaten unconscious and stuffed in the car after being targeted in a late-night robbery. Henry Molka and Freddie Cisson were convicted in the murder. It was a sudden and tragic ending to the life of a most successful engineer, husband, and father of two children. Morton held 24 patents alone and jointly with co-inventors at the time of his death. He was a member of several professional organizations, received a number of awards, and wrote numerous published articles and a book. The IEEE established the Jack A. Morton Award to honor outstanding contributions in solid-state devices. He was awarded an honorary doctor of science from Wayne State in 1956, and he was elected a member of the National Academy of Engineering in 1967.

by Elliot Njus, Engineering Public Affairs Summer Intern

photo (left): Courtesy AT&T Archives and History Center

EXEMPLAR welcomes information from friends, relatives and others who knew Jack Morton to share their stories. We believe there is much more about this remarkable man that has been left unsaid. We hope to collect this information for a sequel in future publications. Send your comments, stories, photos to davidreich@wayne.edu or visit www.eng.wayne.edu for updates to the Jack Morton story. - editor

In 1936, Jack Morton (BSEE’35) landed at Bell Labs by chance, the next leg of his
The Girl Scouts of Metro Detroit visited the college in March for what has become an annual visit. They were hosted by the WSU student chapter of the Society of Women Engineers.

WSU Provost Nancy Barrett and Anand Verghese, director of Hindustan Group Institutions (HGI) in Chennai, India, held up freshly signed agreement between HGI and WSU, facilitating exchange of engineering faculty and students.

President Reid and Li Qiang, president of Hebei University of Science and Technology in China, stand at the fulcrum of representatives from both universities, gathered after the signing of a memorandum of understanding laying the groundwork for more Chinese students to study engineering at Wayne State.

Math teachers gathered at the college last summer for a workshop on a new fourth-year high school math curriculum developed by Industrial Engineering Professor Ken Chelst and Professor of Education Tom Edwards. “MINDSET” modules enlist principles from industrial engineering and operations research that makes math relevant, comprehensible, and engaging.

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Mahmoud El-Gamal (left), a civil and environmental engineering adjunct professor, served as the college’s recruiter at a job fair at the Marriott Hotel in Cairo, Egypt and the American Center in Alexandria. El Gamal estimated that more than 1,000 students stopped by his WSU table.

Manouch Daneshvar (far right), vice president of Marysville Hydrocarbons, led Professor Ming-Chia Lai’s (far left) alternative energy technology class on a tour of the company’s ethanol processing plant opened in 2007 in Marysville in St. Clair County. College Development Director Kathleen Russeu (second left), Dean Ralph Kummer (center with green shirt), and Chemical Engineering Chair Charles Monke accompanied the students.

Gov. Jennifer Granholm poses with members of the WSU National Biofuels Energy Lab Team on a tour of NextEnergy last May with former President Bill Clinton.

Auto Journalist John McElroy was the keynote speaker at the IME Auto Symposium last May.

The Smart Sensors and Integrated Microsystems lab is a popular tour at the college. Debbie Dingell (WSU Board of Governor member), alum James Kosakowski, Sen. Carl Levin and State Rep. John Espinoza were among those taking tour in 2007.
AWARD RECIPIENTS

Socius Collegii
Marvin I. Danto
Founder, Danto Investment Company

Industry Achievement Award
James Ruma, BSEE’70,
General Dynamics
Bill Vogel, BSEE’80, MSIE’84
EDS

EXEMPLAR takes this opportunity for a look back at Night of the Stars 2006, which took place Friday, October 27 at the Detroit Science Center for the second straight year. Two auto company executives, an auto supplier, a building contractor, a glass manufacturing executive, a civil engineering firm CEO and the director of a petroleum refining acquisition company were inducted into the Engineering Hall of Fame. These seven successful men and one woman joined a prestigious group of 100 engineering alumni with outstanding professional accomplishments.

J. Gerald Demirjian, BSME’54,
MSIE’56, began his independent business career in 1985 after more than 25 years in manufacturing production, including 18 years with the Chrysler Corporation, when he acquired the Tillotson fuel systems division of Borg Warner. He has held positions on the board of directors of Main Street Trust, Inc. and International Controls Systems, Inc., as chairman of the board of directors of the Decatur Chamber of Commerce, and as a member and past president of the board of directors of Webster/Cantrell. Jerry is also an Emeritus Trustee of Millikin University in Decatur, Ill.

Russell J. Ebeid, MSIE’68, was named one of the four directors of Guardian Industries in 1985, and president of the Glass Group. He was awarded the Knight of the Order of Merit on three occasions. In 2003, Russell was awarded the National Arab American Businessman of the Year. He resides in Bloomfield Hills with his wife of 45 years, Carolee.

Frank O. Klegon, BSEE’77, was appointed Chrysler Group executive vice president of Product Development in September 2005. He joined the Chrysler Corporation in 1985 working his way up the corporate ladder. As a manager of product engineering, he worked in Audio Systems, Audio and Feature Products, and Electronics and Engine Electric, and then Electronics Engineering and Passive Restraints for the Minivan Platform.

C. G. Korneffel, BSEE’70, has been president and CEO of E.C. Korneffel Co., a marine, bridge and piling contracting firm, since 1974. Curt serves on the Boards of Directors of Oakwood Southshore Medical Center as well as for the Detroit Chapter of the Associated General Contractors. Together, he and his wife Maureen Ann of 36 years have two children, Meredith Leigh and Graham C., who is following in the family business.

Hank Kuchta, BSChe’80, has been a director of Northern Tier Refining (NTR) Acquisitions Co. since September 2006. Hank joined the Tosco Corporation in 1993, serving in several commercial and refining positions, and advancing to vice president of corporate development until 2001. Following Phillips Petroleum’s acquisition of Tosco in 2001, Hank served as business development manager until 2002 where he was appointed executive vice president for refining for Premcor Inc., a refining and petroleum products company. At Premcor, Hank became chief operating officer in 2002, and president in 2003, holding both titles until 2005.

Nancy Philippart, BSIE’80, earned a master’s degree in economics from Wayne State in 1987. She became executive director, GM Accessories, General Motors Service and Parts Operations, in January 2003. She has been recognized by Automotive News as one of 100 Leading Women in the North American Auto industry. She and her husband, Tom McGrail, are the proud parents of Kevin, David and Kelsey.

Avinash Rachmale, MScE’89, founded Lakeshore Engineering Services, Inc., in 1994, one of the country’s most successful and fastest-growing minority-owned companies. Avinash is married with three U.S. born children. His charitable affiliations include the Indian Chamber of Commerce, the Bhartya Temple of Troy, the Hindu Temple of Canton, VHP Corporation, Adopt-a-Child, and numerous nonprofit organizations providing cultural and educational programs for Indian, African-American, and other minority and underserved children.
Message from the President

Dear Alumni and Friends,

The spirit around the College of Engineering is dynamic. In my years on the Engineering Alumni Association Board of Directors, I have had the opportunity to talk to many alumni who confirm my belief that the school we graduated from is outstanding with a growing and promising future.

This year, as president of the EAA Board, I am committed to strengthening the alliance between the college and alumni, and connecting with more alumni than ever. The alumni board would like a presence at more activities this coming year. If you know of an event, or if you want to get involved in one of the existing events, don’t hesitate to contact me or the WSU Alumni Office.

By now you’ve probably seen the engineering alumni web page. It is accessible from the college’s home page at www.eng.wayne.edu. Click the alumni link in the left pane. Here you will find information about alumni events, contact information for current board members, and even a comprehensive job search engine that queries many existing databases at once. Bookmark this site as we continue to build this hub of our connectivity.

Speaking of networking, we have some events in the future aimed toward leisure activities while promoting networking opportunities with fellow alumni. This year, we are having an Alumni Basketball Event on Saturday, Feb. 16. Join us on the 90th anniversary of WSU athletics as the Warriors take on Grand Valley State. Also, the 6th annual golf outing is coming in May. Assemble your foursome and join us for 18 holes of golf, along with dinner and networking at the 19th hole. The proceeds will support student engineering activities.

In closing, I am filled with pride for your dedication to Wayne State and the College of Engineering. It is my goal to help you stay connected with the college and each other. I look forward to seeing you, and thank you for the honor of being your president.

Sincerely,

Paul R. Nahra, MSME’98, SMSE’99

Letter to the Editor

Dear EXEMPLAR:

I am a 1959 mechanical engineering graduate of WSU. I accepted a position with the Noise and Vibration Lab at GM Proving Ground in Milford, where I remained for 13 years. Curiously, I returned to GM’s subsidiary Saturn in 1986 to direct the (not immediately successful) noise control engineering development activity. Between the GM stints, I was employed by H.L. Blachford, Inc., in Troy, to direct a noise control consulting activity for 10 years and then I owned and operated an independent consulting firm for four years before returning to GM. I sold my interest in the consulting firm to two of my engineers and they just celebrated their 20th year in business. They now have nine employees and operate in Waterford as Kolano and Saha Engineers, Inc.

I am one of those few engineering graduates who remained as an active engineer during the majority of their careers, for just over 40 years for me. I have now been retired for six years and enjoy travel and restoring a 1915 Chevrolet.

My enthusiasm for engineering and science must have influenced my children. Two have EE degrees and a third has degrees in computer science and education. I visited the WSU engineering building a few years back to pick up some literature for use in a junior high school career fair, which my daughter was arranging. It was good to see the newer facilities and I ran across Milton Koenig with whom I reminisced. I greatly enjoyed my time at WSU with Professors Emerson, Perry, Howell and Jack _____, for whom I graded thermo problems for two years. (I thought I would never forget his name, but I cannot recall it just now.) He pulled a trick on me between the first and second year, as he changed books: I had to work all of the new problems in order to be able to judge if the student’s problems were correct.

Sincerely,

James A. Groening, P.E.
Milford, Michigan

Editor: Mr. Groening is a member of the WSU Green and Gold Club for contributing $500 to the College of Engineering.

He Combines Hard work and Good Karma

Avinash Rachmale, MSCE’89

Avinash Rachmale, MSCE’89, founder and head of Lakeshore Engineering Services, Inc. was born in Bombay, India, and came to the United States to earn a master’s degree in civil engineering at Wayne State. In 1994, Avinash founded Lakeshore Engineering Services, locating it in Highland Park. Avinash combined engineering skills and an ethnically-based business plan to grow his civil engineering company into one of the country’s most successful and fastest-growing minority-owned companies in the country.

Lakeshore grew from $2.5 million in 2000 to $68 million in 2006 in contracts nationally and internationally, including

in Iraq. Lakeshore’s good karma business approach, including its commitment to Detroit – Lakeshore bought and moved into the old Secretary of State building at the northeast corner of Woodward and Grand Avenue – was recently featured in a Free Press story. “We want to create a $100 million economy right here on Woodward and East Grand,” the 42-year-old company head told the reporter. “I love having a business in Detroit. I feel like we can do something to give back to the community here.”

Avinash maintains a strong non-profit arm to the company. His charitable affiliations include the Indian Chamber of Commerce, the Bharatiya Temple of Troy, the Hindu Temple of Canton, VHP Corporation, Adopt-a-Child, and numerous nonprofit organizations providing cultural and educational programs for Indian, African-American, and other minority and underserved children.

Avinash is a 2006 member of the College of Engineering Hall of Fame and was the commencement speaker at the December, 2007 Order of Engineer/POET ceremonies. He is married to Hema Rachmale. Together they have three children.
Female Engineer Sees the World With Optimistic Eyes
Jude Garzolini, BSChE’78
by Justyna Konczalski
Engineering Public Affairs Writer

The world is flat after all, but its future will only be secure with more women in leadership positions, says Jude Garzolini, a Wayne State engineering graduate and program manager for Hewlett-Packard.

Garzolini, who received her bachelor’s of science from the college in 1978 in chemical engineering and an MBA from the University of California, Davis, not only talks about women as a force in technology larger than their numbers, but also emphasizes the uniqueness they bring to the table of ideas. She does so as the recent president of the National Society of Women Engineers (SWE). The society is no longer just the institution that once fought so passionately for the rights of females in male-dominated professions. A conversation with Garzolini quickly puts this notion to rest. Garzolini and SWE’s ambitions have adjusted to the critical questions of today’s global economy.

For Garzolini and SWE, it’s about empowering women. But not much has changed in the number of women in the engineering field and in industry leadership roles. In 2007 in chemical engineering and leadership positions in industry. According to current data, only 20% of engineering graduates are females, whereas barely one in ten is actually practicing engineering in her profession.

For Garzolini and SWE, it’s about empowering women. But it’s also about this message: women are critically needed in industry not only if the United States will continue to compete in the world economy, but also for its health. “Women have very strong communication skills; they want to make a difference in the world and make it a better place for their children to live in,” says Garzolini.

“Female brains are wired differently and women approach problems differently than males.” Women are keenly interested in all issues that affect humankind, including sustainability, and they think about tomorrow, Garzolini continues. The seed to these ideas began when Garzolini was an engineering student at Wayne State working full-time and attending evening classes. She studied under Ralph Kummer, a solid waste management expert and the current dean of engineering. It was also at Wayne State when she found SWE.

At Hewlett-Packard, Garzolini is responsible for managing teams composed of research and development, as well as finance, marketing, procurement, manufacturing, and packaging members for key media products in support of the Inkjet and LaserJet printing businesses. During her 20-year career with HP, she has contributed in the area of product development and has been granted four patents in the area of printing and media, with three more pending. Garzolini is convinced that multiple perspectives and group discussion are needed to come up with the best solutions. Not only are more women needed at the table, she says, but also people from different cultures and subgroups are needed in the engineering field and in industry leadership roles.

“Engineering today is more of a cross-discipline science, combining many different subfields,” explains Garzolini. The world is one big marketplace of products, challenges, ideas and possibilities, and, in order to remain the world’s leading economic power, the United States needs to look forward and create new technologies and industries, she adds.

Besides her work at HP and in SWE, when she has time, Garzolini enjoys gourmet cooking, gardening, mountain biking and traveling. The Wayne State alumna also enjoys reading historical fiction about people or events and long-view books about society, technology and business. Studying engineering at Wayne State was good preparation for her engineering career, says Garzolini. The college’s strong connection to industry and faculty members with strong industry backgrounds translates to a very practical and process-oriented education, she says. Because of her practical experience, the professors can orient the student to careers in industry.

The John G. Wright Scholarship
For two decades, mechanical engineering students with outstanding scholastic achievement and leadership qualities have enjoyed financial support from a scholarship established by the family of former professor, John G. Wright.

Born in London, Ontario and raised in Detroit, Professor Wright was a Wayne State graduate and a member of the mechanical engineering faculty for 25 years until his retirement in the mid-1980s.

Wright taught thermodynamics, system dynamics fluid systems and control theory among other courses. He was a recipient of the Carri Award for Excellence in Teaching. He was a faculty advisor, a member of the Society of Automotive Engineers and of the American Society of Mechanical Engineers.

But most important, he was a son, a husband, a brother, and a father. Wright died in 1987 at the age of 64.

Last April, Phyllis Wright Johanneson traveling from Maryland where she now resides to return to the college and attend the College of Engineering Honors Convocation where she met the current scholarship student benefiting from the endowment established soon after her husband’s death.

Accompanying her were two daughters, Elaine Cole, a nurse, and mechanical engineer Carolyn Stockley. Robert Wright, the Wright’s other child, who is an electrical engineer, could not attend.

Wright Johanneson said it is exciting for her family to support students with the John G. Wright Memorial Endowed Scholarship. “Some of the scholarship recipients are writing letters to stay in touch and tell me what they are doing in their lives,” she said.

Peter Karpala, a mechanical engineering senior, is the John G. Wright Scholarship student in 2007. “I feel great. It’s always an honor to be recognized for achievements and receive a award scholarship,” said the 22-year-old, who uses the award to pay his tuition and plans to graduate in May 2008.

Phyllis Wright Johanneson (right center) stands with Peter Karpala (center left), this year’s John G. Wright Scholarship recipient. Bookending the two are daughters Carolyn Stockley (left) and Elaine Cole (right).

Thanks to the GM Foundation
The College of Engineering extends a warm thanks to the General Motors Foundation for its $26,000 contribution in support of engineering curriculum development. The grants will provide the opportunity for faculty to redesign curriculum in undergraduate and graduate courses to take full advantage of state-of-the-art software tools employed in industry.

The engineering analysis software will be incorporated into seven courses offered through the College of Engineering by Kyoung-Yun Kim, instructor in industrial and manufacturing engineering; Jerry Ku, professor, mechanical engineering; and Gene Liao, associate professor, engineering technology.

In addition to the cash donation, the faculty and graduate students teaching the courses will be supported by the software companies through additional software licenses to use during the development of the curriculum. The companies participating in these projects are UGS, MSC Software Corporation, Livemore Software Technology Corporation, and Fluent Inc.

Planning a Legacy
“Planned Gifts” is a collective description for the ways a donor can leave assets to the College of Engineering at his or her death. Arranging a planned gift is often referred to as “leaving a legacy” because these gifts will be received by the College of Engineering in the future.

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Tech Savvy

by Michelle Franzen Martin

he alumni association jumped on board the information superhigh-
way in recent years – and has been speeding ahead with award-win-
ing e-communications, Web pages and social networking sites.

An all-new Web site, online community and e-newsletters are just a few of the ways the alumni association has leveraged technology. Peer recognition, including at least one national award, shows that it’s working.

In March, the alumni association launched WorldwideWayne, an all-new online community. Called W3 for short, it complements the organization’s recently redesigned electronic newsletters, including @ Wayne State and Green & Gold Getaways, as well as the new Let’s Go! events e-newsletter.

And in July, the alumni association received an award of excellence in the category “Most Improved Web and Intranet Sites” from the national organization APEX, Awards for Publication Excellence. The award recognized www.alumni.wayne.edu, which was redesigned in late 2006.

The alumni association also has been recognized by the higher education community. The organization was asked to present its electronic communications plan at the Council for the Advancement and Support of Education District Five annual conference.

From top: @ Wayne State, Let’s Go! Green & Gold Getaways, W3 and www.alumni.wayne.edu
Steven D. Krefman, BSME’74, is the Associate Technical Fellow Award. He resides in St. Louis.

Mark Gavoor, MS/OR’81, was named vice president of Supply Chain at Sanford Brands North America, a division of Novevell Rubbermaid. In this role, Mark is responsible for logistics, customer service and demand planning. He is tasked with improving the operations of the supply chain leading into and after the implementation of SAP in 2007. He resides in Wilton, Conn.

Bilal A. Adam, BSCE’06, was appointed head of the Department of Metallurgical And Materials Engineering University of California, Davis. She resides in Star, Ind.

Judith A. Garzolini, a BSChE’78, is a program manager for Hewlett-Packard. She was elected president of the Society for Automotive Engineers Ralph R. Teetor Award. According to Perry, his work has led to the development of practical implementation of methods to treat toxic chemicals in various systems for municipal and industrial wastewaters, biological treatment systems, and industrial research tools for commercial applications.

Robert C. Jones, BSME’79, is the Associate Technical Fellow for the Boeing Integrated Defense Systems in St. Louis, Mo., where he is analyzing vibration testing on the 79E, F. Robert was recently awarded the Technical Fellow Award. He resides in St. Louis.

David Obikwelu, MSMTL’79, is chair of the Wayne State University’s Chapter for 10 years and advises clients on how to optimize their performance and customer satisfaction. Now a successful business owner, Jim has taken to providing advice to engineering students aspiring to be successful entrepreneurs.

Man On A Mission
Jim Anderson Has Come Full Circle Back To Wayne State

Jim A. Anderson, BSCE’66, MCSCe’70, struck out on his own while working at Wayne State University, and wants to give Wayne State students and graduates the chance to follow in his footsteps. In 1977, while working at the Wayne State’s Center for Urban Studies, he was asked to plot new vehicle registrations on a computerized dot map. He bought a computer and a plotter with borrowed money and started his own company, Urban Science Inc., to accomplish something other companies had deemed impossible. Jim’s company, now grown to more than 400 employees, analyzes data and advises clients on how to optimize their performance and customer satisfaction. Now a successful business owner, Jim has taken to providing advice to engineering students aspiring to be successful entrepreneurs.

With his support and inspiration, the college is planning a new Engineering Ventures Program. The first step was to connect entrepreneurial students with internships and funding for their ventures. Jim also organized a Wayne State chapter of the Collegiate Entrepreneurs’ Organization and personally mentors students in entrepreneurship and business. He has set lofty goals for the EVP, including 250 graduates by 2009 and 25 business-owning graduates by 2014. He aspires to make the program the best of its kind in the world.

Jim’s contributions will eventually fund an endowed chair in Engineering Ventures and two rooms in the Engineering Development Center. He has also lectured as an adjunct professor for the college.

Jim, 62, is married to Patti Anderson and resides in Grosse Pointe Shores. Together they have four children and two grandchildren.
Jim Croce, MSEE ’86, was named the 2007 Grant Thornton Leader and Innovator of the Year. The global accounting firm of Grant Thornton recognizes outstanding leadership and innovation at Michigan companies, community organizations and enterprises. Jim was chosen from among 47 award nominees. Since 2003, he has led the Detroit-based organization NextEnergy into a nationally prominent position in the alternative energy industry. He resides in Grosse Pointe Farms.

Sharon Hubbell-Mabe, BSME ’87, is teaching 6th, 7th and 8th grade math at the Nelson County middle school in Lovingston, Va. She resides in Hodgenville, Ky.

Arun Chickmenahalli, MS ’99, is a civil engineering supervisor at the Leap Corp. He is working on advanced engineering and crashworthiness. Arun received two patents for inventions involving head impact counter measures. He resides in Ann Arbor.

Tongqing Zhou, MS ’99, together with fellow researcher Banna Dey, played a major role in the recent AIDS discovery made at the Vaccines Research Center at the National Institute of Allergy and Infectious Diseases (NIAID). Under the leadership of Dr. Peter Kwong from NIAID, the researchers discovered and mapped a small piece of HIV outer coat that could be critical in developing a vaccine against the currently incurable disease. Their work was featured in the February 15 issue of Nature.

Allan Schneck, BSCE ’00, MSCE ’04, is city engineer for the city of Pontiac. He also talks about civil engineering to Pontiac school kids in an effort to educate them about the opportunities in this field. Allan won the 2000 Steinman Fellowship from the NSPE Educational Foundation.

Kevin Wilk, MSCE ’01, is a project engineer, has been named an associate in the Plymouth office of Soil and Materials Engineers, Inc. He resides in Westland.

Debra K. Osuch, MSHWM ’03, manager of development services in the Shelby Township office of Soil and Materials Engineers, Inc., was selected by Crain’s Detroit Business as a winner in its annual “40 Under 40” competition, which identifies men and women in business and nonprofit community who have achieved solid business success before the age of 40. Debra was selected from among more than 200 nominees. She was also among 28 women to be featured in Business Direct Weekly’s “Most Influential Women in 2004” edition. She also received the 2004 Industrial Achievement Award from the College of Engineering. She resides in Shelby Township.

Leonard R. Middleton, BSCE ’60, Worked On Mackinaw Bridge While A Student
by Fred Levantrosser, BSCE ’60

The College of Engineering regrets the passing of Leonard R. Middleton, BSCE ’60, who died June 16, 2006, at his home in Maple Grove, Minn. Leonard enjoyed a long and innovative career in structural engineering, but it was perhaps his participation while still a student in the construction of the Mackinaw Bridge, the longest suspension bridge in the world at that time, for which he will most be remembered. He was 69 years old.

In 1956 he matriculated from Fordson High School in Dearborn to major in civil engineering at Wayne State. During summertime while attending Wayne, he worked on the Mackinaw Bridge. Standing on catwalks some 250 feet above the Straits of Mackinaw, he worked side-by-side with some of the most courageous iron workers of the time, spinning the massive cables that hold the bridge deck.

As a freshman, Leonard became the lead oarsman on Wayne’s first varsity rowing team. After graduation in 1960, he joined the Architectural Bridge Division of U.S. Steel in Gary, Ind. plant. Leonard moved quickly to larger jobs and soon became involved with the construction of the next longest suspension bridge, the Verrazano Narrows Bridge in New York. Leonard’s career then turned to multi-story buildings during the construction boom in Houston, Tex. He developed many innovative methods for construction processes that streamlined erection procedures and introduced more cost-effective and efficient ways to build large structures using massive pre-cast concrete panels at extreme heights. His analytical ability became known throughout the industry. Leonard moved to Minnesota in 1970 and became head of a construction firm that built processing plants and other unique structures. He later turned to consultant work. One extraordinary project took him to the South Pole where he served as a consultant on the new permanent U.S. Antarctic Scientific Station. He retired in 2005. Leonard was predeceased by his wife of 45 years, Anita. He is survived by his children, Paul, Laurie and Kara, and four grandchildren.
James Oldham, BSEE’53, passed away May 21, 2007 at Maricopa Center in Newport Richey, Fla. at the age of 88. Born in England, James attended Edison Institute where he earned a bachelor’s in mechanical engineering and in 1953 in electrical engineering from Wayne University. He passed on his passion for engineering to his two sons and two grandsons. He worked 43 years at Ford Motor Company and retired as chief engineer. A navy veteran of World War II, James helped to develop radar. He last resided in Spring Hill, Fla. He is survived by sons, Bob of Florida, and Dan (Teresa) of Livonia, and grandsons Michael and Stephen. His hobbies were traveling, gardening, golf and reading. A memorial service was held June 4 at the Howe-Peterson Funeral Home Chapel in Dearborn.

Fred W. Trumpy, BE’52 passed away July 21, 2006. He resided in Pensacola, Fla. Born in Grand Rapids, and at Wayne University, played on the football and baseball teams. In a career that spanned 55 years, Roman worked his way through corporate positions, including GM and Curtiss Wright before becoming a design engineer at Cox Instrument Co. in Detroit. He worked there throughout the 1960s until his retirement in 1978. He resided in Brownstown Township. He is survived by his wife, Judith; daughters Lynn Dabanian, Irene Berenson and Lisa Estenssoro; two sisters, and five grandchildren.


Roman Boruta, BS AeroE’51, passed away August 4, 2007 at his home in Houston, Tex., surrounded by his family. He was born in Grand Rapids, and at Wayne University, played on the football and baseball teams. In a career that spanned 55 years, Roman worked his way through corporate positions, eventually becoming top executive for various companies, taking him from Michigan to Washington, D.C., Kentucky, Pennsylvania, and finally to Tulsa, Okla. He started his career with the U.S. Naval Air Missile Test Center where he helped with the development of propulsion systems. He worked for Kiekhauer Corporation, was a quality control manager for Chrysler, and in 1977 took his first position with Reed Tool in quality control, becoming his president in 1979. In 1987 Roman took up a position with York International. In 1990, he joined Purrolater Products Company in Tulsa, as president, eventually managing the company as CEO, and its successful turnaround. In his retirement, he continued playing golf and following professional sports. Roman leaves his wife, Nancy, five children and five grandchildren. Roman was inducted into the WSU College of Education Hall of Fame in 1992 and is a recipient of the WSU Corporate Leadership Award. He and Nancy are Anthony Wayne Society members.

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Watch for future announcements for the grand opening of the Marvin Danto Engineering Development Center sometime in late 2008 or early 2009.