Globalization has had a seismic impact on the way business is transacted around the globe today. Recognizing its importance, the subject has become an integral element of the educational experience enjoyed by Spartan Engineers as part of their preparation for pursuing successful careers. A solid understanding of the global context, solid engineering skills, and an ability to see the big picture — these characteristics are all requirements for the next generation of engineers.

Thus we begin preparing our students early on to be successful in today’s global economy, starting with our freshman engineering program — Cornerstone Engineering — which aims to let students know that engineering is for real. We teach them the principles of designing things that meet a need while simultaneously satisfying real-world constraints such as cost. Continuing throughout their years of study, and culminating in the senior capstone course, we provide our students with an exciting environment where they acquire vital professional skills. While mastery of one’s discipline is valuable, the ability to comprehend and to communicate the big picture is priceless.

Industry is looking for engineers with a broad set of problem-solving skills, but many of these skills cannot be taught in a classroom setting. Some things are best taught through engagement and “guided osmosis.” Our Residential Experience for Spartan Engineering lends itself well to that way of thinking.

To read more about our residential and cornerstone programs, see the article on pages 8–11 of this issue.

Further yet from the typical classroom experience, our student design teams travel to places as far away as Tanzania to learn more about how the rest of the world lives and transacts the ordinary business of life. The solar-powered computer project in Tanzania, sponsored by corporate partner Lenovo, truly exemplifies what a world-grant university is. It goes to the heart of what we are all about — partnering with others for the benefit of all involved. We felt fortunate to have a corporate partner who saw value in what we were proposing, and who provided the necessary support. Not only did the project have an impact on Tanzania but, just as important educationally, Tanzania had an incredible effect on our students (read the story on pages 12–13 of this issue).

In addition, the college now offers a course in global engineering (see page 39), and our students can find out what it’s like to live and learn in intercultural settings by choosing to participate in Freshman Seminars Abroad (see pages 30–31), which usually run 10–18 days, or the more in-depth study abroad programs, which typically run several weeks.

There are many outstanding faculty members in the college who help to grow exceptional graduates. But two of them really stand out when it comes to mentoring future engineers — Evangelyn Alocilja and Melissa Baumann. Their care and nurturing is unrivaled. They continue to produce many stellar students, some of whom travel abroad to further their studies and continue their research, while others stay closer to home to apply their research skills in the areas of homeland security or biomedical engineering. To read about Vangie and Melissa and some of their students, see the article on pages 24–28.

In early spring, I traveled to Iraq with two of my colleagues to explore opportunities for our students and faculty to become involved in an exchange program there. Iraq is an ancient civilization with a long history of respect for scholarship. Home to the Sumerian and the Assyrian civilizations, the recorded history of Iraq goes back thousands of years. For the last 30 or 40 years it’s been under assault. Our visit was truly eye-opening. It was a joy to see the people of Iraq sharing the same values as we do here at Michigan State. The prospect of partnering with Iraq — as opposed to fighting battles — is exciting. We envision students and faculty from Iraq being able to spend time in our College of Engineering, while some of our students and faculty spend time there. It’s an amazing opportunity. We foresee a lot of positive things happening within the next few years. And we’ll share these plans with you as they develop.

Satish Udpa
FEATURES

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DEPARTMENTS

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The demand for College of Engineering computer science graduates remains strong. Yes, even in today’s current economic situation, the “Help Wanted” sign is out for information technology (IT) personnel, including software engineers, system administrators, security specialists, and others. Small companies, big companies, companies on the cutting edge of technology, and companies whose business is not directly related to IT need IT employees. This is a trend nationally, statewide in Michigan, and locally in Lansing. And you might be surprised at the companies needing IT employees.
"We have openings now and expect those employment opportunities to continue in the future," says Robert I. Buchanan, senior vice president of information systems and technology at Auto-Owners Insurance Company. Why does an insurance company need IT people? "One factor that separates the very best insurance companies from average companies is great automation and technologies," says Buchanan, who has an IT staff of more than 400 associates. The corporate headquarters for Auto-Owners Insurance is in Lansing, Mich.

TechSmith Corporation, with headquarters in Okemos, Mich., is one of many exciting software development companies in the Midwest. "We offer a chance for people to do real software development right here in mid-Michigan," says Dean Craven, vice president of research and development at TechSmith. "We are not a giant multinational company, but employees have more ownership of what they do and more ability to create and innovate," says Craven, who is a 1986 MSU computer science graduate. TechSmith has grown at the rate of 20 percent over the last six to eight years, and while not growing at the accelerated pace of the past years, the business is doing well in the current economy.

Technically speaking, IT is the study, design, development, implementation, and support of computer-based systems, particularly software applications and computer hardware. Recently, the term IT has ballooned to encompass many fields. An IT professional may be involved in data management, networking, computer security, engineering computer...
software is very exciting and that’s one of the reasons I decided to work here,” says Schott. He is a mentor for students currently in the capstone course and believes the capstone projects are important to students because it gives them a real-world experience and an opportunity to work on a group project.

Schott likes the relaxed atmosphere at TechSmith as well as the flexible schedules and doing creative work. And there is always something “cool” to try out because the company encourages employees to investigate other new products. “The one thing I wish I had done in college was more personal projects, such as game development,” says Schott. “Those kinds of projects force you to work out little things to make them function — and having experience like that impresses employers.”

Lauren Revard’s advice to undergrads looking for career possibilities is to learn to work well in groups. “In the real world, especially in IT, you are going to work with a group of people. You have to bring that skill with you,” says Revard, who is a 2006 CSE graduate and now a programmer analyst at Auto-Owners Insurance. “I enjoy working here. The company cares about its employees and really makes an effort to make us happy,” says Revard. And she feels secure in her job, a bonus in these difficult economic times.

Paul Middlin is the lead developer for Snagit at TechSmith. Snagit, TechSmith’s first commercial product, is a program that captures, edits, and shares exactly what is on a computer screen. Middlin received his BS in CSE from MSU in December 2000, and then went on to get a master’s degree in computer science, graduating in December 2002. He found out about TechSmith through a friend who said it was a “fantastic” company. “I was surprised to find a company right here in the Lansing area where you could work on real software. I assumed I would have to move to make commercial software,” says Middlin. Like other graduates, he has family in the area and he is a big fan of Michigan’s hunting and fishing opportunities.

When Middlin started at TechSmith there were only about 40 employees. “I have seen the company grow into a different company, and I still want to work here. The culture and the feel is the same.” His responsibilities have grown over the years, too, but “sharing is all part of the job. We always collaborate in teams.” Recently another employee made a suggestion for a project Middlin was working on. “It was a brilliant idea and saved me hours of sitting there thinking about what to do.”

Michael Malinak is a lead developer with TechSmith Labs, which is the company’s research area. “We are looking at technology and methodology to adapt for our products,” says Malinak, who received his BS in CSE from MSU in 2000. “I was surprised to find a media aligned company in the area. The work is complicated and challenging, but it is exciting creating something people want to use,” says Malinak. The one thing he points out is that there are not enough women in computing.

That brings us to April Noren, who received her BS in CSE from MSU in May 2007. She had an internship at IBM and did her capstone project with Motorola. One skill that has helped her is knowing several program languages. “I’m not scared to try them or experiment with them,” says Noren. She likes working on cutting-edge projects, such as Jing, a TechSmith program that snaps a picture or makes a quick video of anything on the computer screen and makes it possible to share it instantly.

Cheryl Smallwood, who received her BS in CSE from MSU in 2002, started at Auto-Owners Insurance as a programmer, working on various Web systems, and research and development for the company. Her family is in the Lansing area and she jumped at the opportunity to work close by. Smallwood is now an assistant manager in the IT Department where she does less technical work and supervises employees. “I’m working on the challenges of building relationships with people and getting people to work together in groups,” says Smallwood. However, the people she supervises all have technical backgrounds, so her engineering knowledge and computer skills are helpful relating to people. “There is always something different to work on and I am learning more about the company,” says Smallwood. “I really like how friendly the people here are.” — JLD
hardware, and software design, as well as management and administration of entire systems.

“Auto-Owners Insurance and TechSmith are good examples of companies that need IT staff, especially computer science graduates,” says Wayne Dyksen, professor in the Department of Computer Science and Engineering (CSE) in MSU’s College of Engineering. He is also the instructor for CSE 498, Collaborative Design, the capstone course for CSE seniors. He works with corporate clients to explore and develop potential capstone course projects. This turned into a gold mine for companies looking for IT employees. “Local and state companies need computer science graduates. Faculty and staff at the MSU College of Engineering are continually engaged with companies to get in front of the curve and have ready the graduates that companies need for their present and future employment,” says Dyksen, who personally interacts with a wide range of companies. “Through the capstone course, companies get to know the students and the kind of work they can do. In turn, the students are more aware of the possibilities at various companies,” says Dyksen.

In addition to Auto-Owners Insurance and TechSmith, other companies involved with projects in the CSE capstone course have included Microsoft, Boeing, Ford, Chrysler, General Motors, Accident Fund, Urban Science, GE Aviation, Toro, Motorola, Terex, and others. All of these companies actively seek people to fill IT positions. “MSU’s College of Engineering is offering the best education and the best opportunities for IT employment,” says Dyksen. “While some students want to get away from mid-Michigan, more and more graduates want to stay in the Lansing area, and we connect students with the excellent career opportunities available right here.”

Dyksen also says that some companies have realized that large percentages of their IT staffs are approaching retirement and many workers will be exiting the labor force. “There are fewer workers available to take their places,” says Dyksen who, along with others from the computer science department, is part of the Capital Area IT Council, formed by Capital Area Michigan Works! to increase awareness of IT possibilities in mid-Michigan. “The College of Engineering is committed to working with companies in Michigan, across the country, and around the globe to provide them with engineers who can immediately be effective in the workplace,” says Satish Udpa, dean of MSU’s College of Engineering.

Auto-Owners Insurance has provided a project for student teams in the capstone course since the spring of 2005. “It’s a great way to get our name out and to talk to students,” says Buchanan. Auto-Owners Insurance has more graduates from MSU working in IT than from any other university. “That’s because of our relationship with Wayne Dyksen, our overall involvement with MSU, and primarily the caliber of the students,” says Buchanan. He admits that a major stumbling block for the company is that students think accepting a position at Auto-Owners Insurance will mean they have to sell insurance. “Students, university faculty, and others in the community don’t realize the robust IT environments that businesses use,” says Buchanan. For example, Auto-Owners Insurance is building a new 95,000-square-foot state-of-the-art data center near the corporate headquarters in Delhi Township.

TechSmith is also pleased with its involvement with the MSU CSE capstone course. “The capstone course in CSE has been wonderful. I can’t imagine not being involved with projects in the course,” says Craven. “It is a good way to develop relationships with students, many of whom do not know about our company and that it is located in Okemos. We also believe that by being involved we can help the CSE department turn out graduates with more knowledge relevant to our industry.” Students who work on TechSmith projects in the capstone course tend to tell other students about the “cool” local company and the opportunities for developing commercial software. “We are team-oriented, dynamic, and fun. The word gets out,” says Craven, who as a 1986 grad admits to being one of the oldest TechSmith employees.

For the spring 2009 semester, Auto-Owners Insurance had a team of students from the capstone course.
working on a telephone log self-service dashboard. Some of the technologies needed for this project included JavaScript, Sequel Server Database, and Web Services. TechSmith had a team of students working on Collaborative Video Captioning to upload videos with audio to a server and perform software speech-to-text transcription. Technologies being used in the project are the Windows Vista operating system, Speech to Text Software, Windows Speech Recognition Engine, JavaScript, and others. Students, working in teams, have 15 weeks to design, build, test, and deliver a working software solution from scratch. There are no textbooks and no posted solutions. "It's a creative environment that forces CSE seniors to draw on everything they have learned during their time at MSU," says Dyksen. As part of the coursework, each team produces a 15-minute video about their project, which is then posted on the Web for clients to view. TechSmith offers Camtasia Studio, one of the company's programs for creating presentation videos, to all students in the capstone course to help with the development of the required videos.

In addition to involvement in the capstone course, TechSmith hires software engineer interns, primarily from the MSU CSE department. Spring semester there were five CSE students working as interns at TechSmith. Two have since been hired for full-time work after they graduated. "We don't intend to hire every intern for employment here," says Craven. "But it is a good way to expose students to our company, and they tell others. The word-of-mouth advertising is great."

TechSmith also works with MSU on programs for middle- and high-school students to increase awareness of computer science possibilities. The lead developers at TechSmith also talk to students in freshman engineering courses. "We want to feed the pipeline, to keep students actively interested in IT," says Craven. "So many people do not realize that there is an IT industry in the Lansing area. All the news is about the decline of the auto industry. State and local officials say they want IT and high tech, but they don't give specific examples of companies that already exist."

Buchanan and Craven want similar attributes in potential employees. "We look at the classes completed, grades, and their recommendations," says Buchanan. "Our primary goal is to hire people with an outstanding attitude as well as great aptitude. We want to be confident that our people will adapt well to our dynamic development environment where projects, specifications, and priorities may change frequently." He points out that there are many activities going on in the IT area at Auto-Owners Insurance, and employees have an opportunity to work on projects in many areas including software development, network engineering, telecommunications, and mainframe engineering, as well as projects related to security and compliance.

When evaluating potential employees, Craven looks for smart people who have a good understanding of computer science, can solve problems, and work well with others. "The intangible is a passion for innovation and the development of software," says Craven. "They would do this work even if they were not paid. It comes out in different ways. Sometimes it is doing independent software projects or getting involved with some of the open source projects on the Web."

In the end, as Buchanan points out, it is all about people. "We don't hire the university or the major, we hire the person." ⊕
Beginning in the first week of freshman year, students work in teams and actively design projects. The first project of the fall 2008 semester required students in ECE 100 to design, build, and compete with a “nutritionally balanced” edible car. Students selected edible materials of their choice to build their vehicles, as long as the finished product represented a balanced diet of carbohydrates, proteins, and fats. The vehicles had to be under a certain size, with total materials costing no more than $10. They spent two weeks at the beginning of the semester, working in teams of four students, to build their vehicles. They then raced their cars on an inclined track, with speed determining the “best cars.” The students were also required to write formal engineering reports detailing their designs. The purpose of the project was to introduce first-year students to engineering design, teamwork, and the principles of optimization. The main engineering principle learned: proper engineering design does not use trial-and-error methods.
Aft

er nearly three years of plan-
ning, the College of Engineering
has successfully launched the
first stages of its Residential
Experience for Spartan Engineer-
ing.

It’s all happening one step at a
time — and step one has gone well,
says Thomas Wolff, associate de-
an for undergraduate studies.

The new program, located in
Wilson Hall, essentially combines an
existing residential program (which
has been housed in Bailey Hall for a
number of years) with a brand-new
academic component — Cornerstone
Engineering — in which freshman
engineering students get an overview
of engineering along with hands-on
design experience. The cornerstone
courses help students see what’s ahead
so they know what they’re getting into;
faculty also expect that the hands-on
approach will help students get excited
about engineering. The old model
confined students to the rigorous cal-
culus, chemistry, and other foundation
classes for two years — putting off any
view of how these would be applied
in engineering practice and very often
discouraging the students.

Engineering 100, one of the
cornerstone courses now required for
freshmen, ran as a pilot course for two
semesters in 2007–08. In fall 2008,
453 students were enrolled, with 117
design teams working collaboratively on
projects in a new design lab in Wilson
Hall. The spring 2009 Engineering 100
class had 194 students. Engineering 102
was off to an equally smooth start in
spring with 311 students.

Tim Hinds, the lead instructor for
these courses, now has his office in
Wilson Hall. Also located in Wilson
Hall is a new computer lab with 36
dual-monitor computers designed to
accommodate student-teaching as-
sistant teams. And 12 graduate students
and 26 undergraduate mentors were
on site fall and spring semesters to
help students through their challenging
first year.

All in all, the new program is going
very, very well, according to Hinds. "This
is great. This is a fantastic program. The team of folks who put together this program, the graduate and undergraduate students — everybody's excited about this.”

Wolff agrees. He is especially excited about the renovation of the engineering curriculum to allow for those cornerstone classes, thus setting up, he says, a “cornerstone to capstone” experience. Allowing students — in some cases, pushing them — to work in teams and actively design projects from the first week of freshman year on is preparing them not just for their senior year capstone projects, but for higher-level engineering jobs. That’s crucial, he says, because those entry-level jobs have gone overseas. “We need a different kind of engineer,” one who can write those executive summaries and feel confident right after graduation to manage projects.

That’s crucial, he says, because those entry-level jobs have gone overseas. “We need a different kind of engineer,” one who can write those executive summaries and feel confident right after graduation to manage projects.

Wolff tells freshmen exactly that during their second week of Engineering 100. “The lecture is called, ‘The Engineer of 2020,’” he says. “I tell them, ‘If you just want to do calculations or check things, you’re in the wrong country.’ But the other message I convey is, ‘This might look overwhelming — but you can do it. And we’re here to help you.’”

The next major stage of the program will be implemented in fall 2009, when the residential component now in Bailey Hall will be relocated to Wilson Hall. This move will allow the residential program to expand from 150 freshman engineering students to about 400 of an expected 650 engineering freshmen.

“The whole idea is to create a live-and-learn community,” says Neeraj Buch, the newly appointed director for the Residential Experience and Cornerstone programs, and professor of civil and environmental engineering. This community, when all the pieces are in place, will largely exist in Wilson Hall and will be a home base for all things engineering. Long-term plans are also underway for offices for advisers, career planners, tutors, and even professional organizations such as the American Society of Civil Engineers student chapter. In addition, some college faculty and staff will have secondary offices in Wilson, so they will be able to interact with freshmen and facilitate the sense, as Buch says, “that engineering faculty do care.”

It will be a college within a college, a total immersion that will, its designers hope, help retain students and produce 21st-century engineers.

Students in the program will be exposed to the critical issues in engineering today and will learn to focus on long-term solutions to 21st-century challenges. One way the college intends to accomplish this “big picture” goal is through “themed” rooms or common areas within the residence hall, where students will work together to brainstorm ideas and provide technical solutions to real-world problems in areas like energy, sustainability, or transportation. Students will be “getting their feet wet and their hands dirty,” says Wolff, as they apply knowledge to real-life problems. The college is currently seeking companies interested in sponsoring these themed...
Neeraj Buch was appointed in January 2009 as the director of the Residential Experience for Spartan Engineering and Cornerstone Engineering. He was a logical choice, say his colleagues, because he has an unusual combination of engineering expertise and talent as a teacher. He has conducted substantial research in both, and has won several teaching awards. He was involved from the beginning in the planning of the new programs.

Originally from New Delhi, India, Buch came to the United States in 1987. He holds a bachelor’s, a master’s, and a PhD in civil engineering, and has a special expertise in concrete pavements. He joined the faculty at MSU in January 1996 as assistant professor and is now a professor of pavement engineering in the Department of Civil and Environmental Engineering.

Buch, who will spend half of his time with the residential and cornerstone programs and the remainder in his home department, says that despite the economic crisis, “I’m convinced we’ll succeed in implementing the program, in phases. The administration has been great, and open to any and all ideas. I haven’t had anyone tell me to slow down.”

If you would like more information about partnering with the college to help develop the engineering leaders who will shape the future, please contact the College of Engineering Development Office at (517) 355-8539.

Sheryl James is a freelance journalist from Brighton, Michigan.
Sunny Days Ahead for School Children in Tanzania

In Tanzania, the Maasai people’s herding way of life is slowly disappearing as government regulations allow takeover of their land, leaving little room for their herds to graze. Many elders of the community believe their future depends on educating their children so they will be able to participate in public discourse and influence government decisions, protecting their land and their way of life and making possible more life choices. Yet, in small, remote villages across the country, young people gather in schoolrooms that lack not only computers but the electricity to power them. Books and other educational materials are scarce.

But now, an MSU-designed computer system powered by the sun is empowering children in Tanzania by giving them access to the vast educational resources and information of the Internet. Working with Lenovo Corporation and MSU’s Department of Telecommunication, Information Studies, and Media, a team of engineering students and faculty have designed and installed a rugged, low-cost computer system that uses energy generated by solar panels.

The project began a few years ago, when Erik Goodman, professor of electrical and computer engineering, and Kurt DeMaagd, assistant professor of telecommunication, information studies, and media, approached Lenovo with the idea of creating cost-effective solar-powered computers for developing nations and remote locations. Lenovo signed on to fund the research. Engineering professors Aloys Mvuma and Dominic Chambega of the University of Dar es Salaam in Tanzania’s capital provided the team with essential information about Tanzanian infrastructure, as well as direction and ongoing support to help ensure that the program will fulfill the needs of the community and be sustainable.

In spring 2008, senior engineering and telecommunication students designed an Internet-enabled, solar-powered computer system. In the fall, a second team of engineering and telecommunication students refined...
the design and produced a workable, four-terminal computer system as part of their senior design course project.

In December 2008, the second team of engineering students — Ben Kershner, Jakub Mazur, Eric Tarkleson, and Josh Wong — traveled to Tanzania with faculty members Goodman, DeMaagd, and Jennifer Olson, associate professor, telecommunication, information studies, and media. They met with their African colleagues and acquired computer and solar power parts in Dar es Salaam before moving on to Losinwa, a remote village located southwest of Mount Kilimanjaro. There, the team worked from dawn to dusk for three days to assemble, install, and test the system in the Baraka Primary School — the first primary school in Tanzania to have Internet access. The new system operates from a list of approved Internet sites including msu.edu, a special version of Wikipedia, and some Swahili resources. Finally, the team trained community members and turned over responsibility for the system to the village.

“We know this is a small installation, but it is a start,” says Goodman. The MSU project is paving the way for more cost-effective solutions that could make their way into many villages in Tanzania and other developing countries.

To view a video about the project, go to http://report.president.msu.edu/content/providing.php.

— Lynda White

Spartan Engineers Work Extreme Hours to Improve Lives of Local Family

When ABC’s Extreme Makeover: Home Edition came to nearby Holt, Mich., in October to build a new home for recently widowed Arlene Nickless and her three sons, a team of engineering students and faculty gladly pitched in to design a room for 12-year-old Aaron, who has a passion for electrical engineering.

A number of faculty, staff, and students logged many late hours to complete the room on time. Students who worked on the project were Ben Kershner, George Ballios, Michael Dow, and Nicholas Vogtmann. Faculty involved included Tim Hogan, electrical and computer engineering professor, and Leo Kempel, electrical and computer engineering professor and associate dean for research in the College of Engineering. In addition to working on Aaron’s room, the Spartan Engineering team also assisted in making sure that other electronics projects in the home actually worked.

— Laura Luptowski Seeley

Paige Hemmis, one of the designers on Extreme Makeover: Home Edition, works with Ben Kershner in an Engineering Building lab to plan a room design for Aaron Nickless. The TV film crew visited the College of Engineering on October 2, 2008, to tape a segment. The Nickless family episode aired in November.

Ben Kershner (left) and Aaron Nickless in his new room. Aaron’s favorite feature is a hidden room (directly behind him in the photo) that contains four computer screens, as well as two surveillance monitors that allow Aaron to see who is coming into his bedroom.

Arlene Nickless (center) with her boys Aaron (left), Noah (right), and Andrew (front) outside their new home. Tim Nickless, Arlene’s husband and the boys’ father, died in January 2008.
Ashley was a freshman about to start spring semester at MSU when her father was laid off from his job while the family was already in the midst of experiencing other financial challenges. They were maxed out on the financial aid they were able to get from the university, and the College of Engineering had done all it could do. The family had exhausted all options. But Ashley was still short $1,800, the balance she needed to enroll for spring semester courses.

That’s when her plight came to the attention of Theodore Caldwell, director of the Diversity Programs Office (DPO). Caldwell says, “We brought her into the office and I told her ‘we’re going to make all the calls we need to figure this out.’” As it turned out, Ashley was no stranger to the DPO and its programs — she had been involved with two pre-college programs through the DPO during previous summers. Now, thanks to discretionary funds available through the DPO from one of its corporate sponsors, Ashley was able to get the $1,800 she needed — along with her books for...
the semester. Because of the Diversity Programs Office, Ashley was able to continue with her college education.

When students like Ashley need help, the DPO is there for them. “We’ve been able to provide ‘emergency funding’ to keep kids here,” Caldwell says. “This semester, we’ve been able to keep two students here who were on their way back home because their parents weren’t able to provide the funding necessary to keep their kids in college.” But that’s just one of many things the office does — and does well.

Founded in 1968 as the Equal Opportunity Engineering Program, it was established because faculty and staff were concerned that the numbers of underrepresented minority students and women majoring in or graduating with degrees in engineering were extremely low. While its name and the methods by which it delivers its services and its message has changed since 1968, what has not changed is the need for the office and the services it provides. In fact, the rough economic climate during these past five years makes the DPO more important today than ever.

“Back then, it was believed that the first two to three years in a student’s experience here were critical in terms of indicating the student’s ability to succeed,” says Caldwell. “Here we are 41 years later and that hasn’t changed.” Other issues seen as challenges in 1968 were the difficulties students experienced transitioning to the college environment, financial concerns, and students’ under-preparedness. Today, freshmen still have difficulties transitioning to a college environment, students still face financial difficulties, and “under-preparedness is still one of...
The biggest challenges that our young people face, particularly with underrepresented minority students,” says Caldwell. “Some school systems simply have not been able to prepare these students for what they’ll encounter when they get here, so students still need help in certain classes.

“As advanced as today’s students are, technology-wise, they still face many of the same challenges that yesterday’s students faced. So we still have to address them; we just have to change the way in which we address them,” says Caldwell. Those methods have included creation of a Facebook page, a newly upgraded Web site, and direct communications via text messaging. “I’m impressed with how our young people are able to work through challenges and persevere. We want to support them in that.”

The DPO is a student support unit for the entire College of Engineering. Caldwell points out that the DPO is “ready to serve any student that walks through the door and says ‘I need help’ or ‘I have a question.’” It assists about 500–750 students each academic year in a variety of ways. A free Guided Learning Center (GLC) is the hub for academic assistance across the college. “We currently have academic assistants ready to go in more than 80 classes,” says Caldwell. If a student requests help in a class that the GLC does not have a tutor for, special arrangements will be made to attempt to hire a tutor for that student. Drop-in help, one-on-one tutoring, and group study sessions are all available. LEAD (Leaders Encouraging Academic Development), a peer mentoring program, was established in 2005. College faculty and staff serve as advisers for a number of registered student organizations including the National Society of Black Engineers, the Society of Hispanic Professionals, the American Association of Blacks in Energy, the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, and the American Indian Science and Engineering Society. The DPO provides student employment opportunities, hiring student assistants to work in the Guided Learning Center or in the administrative side of the office. Scholarship opportunities are also available through the DPO’s corporate partners.

In addition, the DPO hosts pre-college and pre-freshman programs. “Our goal with these programs is to create
Meet the DPO Staff

Rickey Caldwell was born in California and raised in North Carolina. He served in the Army National Guard from 1992-1998, and earned his BS in mechanical engineering from MSU in 1999. He was employed by Engineering Animations Incorporated in Southfield, Mich., as a dimensional management engineer prior to being laid off due to the World Trade Center attacks. Then, following another passion, Caldwell embarked on an aberrant career as a martial arts instructor. He earned his 2nd Degree Black Belt in the American Advance Combat System and was the main instructor at the Mid-Michigan Academy of Martial Arts. In 2007, Caldwell began working on his MS in mechanical engineering; he plans to begin his PhD in fall 2009.

In his current role as Guided Learning Center coordinator, Caldwell employs and trains a staff of academic assistants who tutor students in any class they request. He recently ran a mentoring group that resulted in his students experiencing a 25 percent increase in their term GPA. Caldwell works to leverage his wide range of experiences to help undergraduates in the College of Engineering to succeed.
such as being a first-generation college student. DPO-SP is a collaborative effort to help increase student retention in the College of Engineering. Those who successfully complete the program will receive a $1,000 scholarship and placement in a research assistantship the summer after their first year, which includes a $2,000 stipend.

The DPO is also the managing office for MSU’s Michigan Louis Stokes Alliance for Minority Participation (MI-LSAMP), an NSF grant-funded alliance between the four leading research institutions in Michigan — MSU, Wayne State University, Western Michigan University, and the University of Michigan. The program’s goal is “to double the number of historically underrepresented minorities who graduate with degrees in the STEM (science, technology, engineering, and math) fields in a five-year period.” The grant is currently entering its fourth year.

As part of the MI-LSAMP program, in addition to a pre-freshman component, MSU has an undergraduate research component. Each academic year, approximately ten students are involved in research. This summer, for the second year, the DPO is hosting an eight-week research residential program — the Summer Undergraduate Research Academy (SURA). As a result of last year’s SURA, one student had a paper published and another was sent to a conference in Europe. The DPO is also planning to host a six-week residential research program called Summer Experiences in Math.

Caldwell’s vision for the future includes a DPO-sponsored “traveling engineering lab,” which would take hands-on experiments into 3rd-, 4th-, and 5th-grade classrooms across the state, specifically to rural and urban areas. It would potentially be staffed by a DPO staff member, a graduate student, and an undergraduate student. “Data shows that in 3rd grade, kids make their minds up about whether or not they can do math and science. So that is a critical time to get them excited about math and science again. They have this idea that if you’re good at math and science, you’re not cool. But engineering is cool. So how do we get kids excited about math and science? We take it to them and we make it fun for them.”

He also believes in getting pre-college students involved with research. He’d like to start a program that would connect 7th- and 8th-grade students with MSU research faculty. “That’s going to keep a kid engaged and excited about math and science. That will reinforce the things they’re learning in grade school,” says Caldwell. And that, he says, will better prepare them to do well at the college level.

Caldwell believes in a combination of going out to the students, as well as bringing kids to campus for a day. Last year, the DPO sponsored “Day at State,” a program funded by corporate partner Alcoa, which brought to campus 115 7th- and 8th-graders from Baylor Woodson Elementary School in Inkster, Mich. They spent five hours touring the College of Engineering, visiting an engineering faculty member’s lab, and sightseeing around campus. “It was extremely impactful,” Caldwell says. “These school districts are challenged to connect these kids to us, and we ought to be able to make that connection happen.”

Both methods combined — going out to classrooms and bringing students to campus — can have a huge positive impact on these students’ interest in math and science, their engagement in it, and the likelihood that they’ll become Spartans. “What we want to see first of all is that these kids are reengaged in math and science and believe it’s cool. We want to be
sure they are positioned to do well in those classes so they’re academically prepared,” says Caldwell. “The bonus will be that they become Spartans!

“There are a lot of activities and ideas we’d like to implement, but they all cost money. And at a time when everyone is looking to save money, it’s a bit of a challenge to obtain these funds,” Caldwell admits. “So we’re working on a number of ways to bring in the funds necessary to move this program forward and increase graduation rates.”

Corporate partners provide about 60 to 70 percent of the funding for DPO’s efforts. “Our corporate partners are extremely important to us,” says Caldwell. “But in today’s economy, everyone is increasingly limited in what they can provide for us. So we really have to work hard to maximize our dollars and find new ways to fund our programs.”

One such way is through grants. The MSU Office for Inclusion and Inter-cultural Initiatives provided a $35,000 grant for the DPO’s summer 2008 six-week bridge program for incoming freshmen. In December 2008, the Motorola Foundation contributed $50,000 in discretionary funds. “Discretionary funding like the Motorola Foundation grant gives us the flexibility to decide how to best meet our students’ needs and challenges — which change on a daily basis,” says Caldwell. It’s this type of funding that is able to help provide services like “emergency funding” for students like Ashley.

Ursula Hall-Stanbrough received her BS degree in electrical engineering in 1999 from MSU and is now a buyer in the global purchasing division at General Motors. She says the DPO was extremely instrumental in her success while she was a student here. The Southfield, Mich., native had co-ops with Honda and NASA; an internship with Delphi; and a study abroad in Kaiserslautern, Germany. She was also involved with the Institute of Electrical and Electronics Engineers, Inc. and the Society of Women Engineers. Through the National Society of Black Engineers, she helped to organize mock interviews for the DPO. She credits Aurles Wiggins, her EGR 160 instructor, as being instrumental in her life. “She molded me, she shaped me,” says Hall-Stanbrough. She describes Wiggins as her “mother away from home.” Wiggins is currently the director of MSU’s Office of Supportive Services.

Hall-Stanbrough says she was impressed with DPO as a student, citing “the knowledge and the connections,” and “the alumni who came back and wanted to help other students.” Says Hall-Stanbrough, “I cannot imagine my college experience without DPO.”

“We are continuing to increase our activity and expand our reach,” says Caldwell, “to make sure that our students have the tools they need to be successful. Our mission is very simple: To help students graduate.”

As a parent, mentor, and administrator, Caldwell says he enjoys “being able to encourage and sow optimism into the lives of students.” He says there is nothing more exciting than seeing a kid “get it,” whether it’s a math equation, or how to write a paper, or how to convince someone to hire them. “That, for me, is priceless. That’s what drives everything that we do here.”

Caldwell says of his work in the DPO, “There isn’t anything else I’d rather be doing.”

HOW YOU CAN HELP THE DPO
If you or your corporation would like to help the DPO by volunteering your time, donating equipment or supplies, or providing discretionary funds, please contact Theodore Caldwell, director of the Diversity Programs Office, at (517) 355-8310 or caldwe4@msu.edu.
At Michigan State University, the old stereotype that athletes choose easy majors is as obsolete as, well, math without calculators. In fact, plenty of students in the College of Engineering are also athletes. And as far as they’re concerned, there’s a direct correlation between sports and academics.

“Coach (Tom) Izzo says this a lot, but school and sports are related, because if you are a worker in the classroom, you will probably be a worker on the court,” says Tom Herzog, an applied engineering sciences student and MSU basketball player.

“Being on the swim team and being an engineering student are very similar,” says Brian Rockwell, a mechanical engineering and economics student. “Both require a substantial time commitment.” He says there is also camaraderie within the swim team and among fellow engineering students, who are in the same classes a lot of the time.

Adds MSU wrestler John Murphy, the dual dedication of the engineer-athlete at MSU. The campaign depicts engineering students in action on the sports floor or field. Above the picture is the slogan, “Spartan Engineers. Built Better.” The photos run in advertisements and are used as posters, too, says Lynda White, director of marketing for the College of Engineering.

“This campaign is designed to communicate the many different learning experiences a student can have when studying engineering at MSU,” White says. “The response to these ads has been overwhelmingly positive — from alumni, faculty, staff, and pre-college students. The students love seeing an athlete that is also able to excel in engineering. It helps students see themselves studying here one day.”

Amanda Ruhno couldn’t agree more. A mechanical engineering major who graduated spring semester, Ruhno was a member of the women’s rowing team. She thinks today’s engineering students are becoming more diverse in who they are. “It’s no longer people who don’t have social skills and just sit at computers all day.” Athletics and all sorts of other extracurricular activities are available. “I think that makes the best engineer — having all these life experiences that teach you a lot of life skills.”

She said her role as coxswain “definitely helped me to be a leader.”

Sometimes, the correlation between a sport and engineering can be quite direct. At least that’s what one Triathlon team member learned.

“Triathlon is unique in that there’s a fair amount of engineering that goes into the sport,” says Tingwall, who double majored in mechanical engineering and journalism; he graduated in spring 2009. “A fairly large industry engineers bikes to optimize weight, aerodynamics, and stiffness. Compared to sports like soccer, basketball, and swimming, a triathlete’s success depends heavily on the gear — a well-engineered bike.”

As a result of his engineering background, Tingwall adds, “On the Michigan State Triathlon team, I was one of the more knowledgeable members when it came to maintaining and purchasing bikes.”

Clearly, these young engineers inspire those around them. Following is a roster of some of this year’s Spartan Engineer athletes.
Jamie Deacon, a civil engineering major, plays field hockey. Originally from Ireland, Deacon led the team in points her first year with the team and has earned Second Team NFHCA All-America honors. Also, three times she has been named Big Ten Offensive Player of the Week — the most ever for a Spartan in a single season. She has been named to First Team All-Region and All-Big Ten. In addition, Deacon has gained national attention with her selection on the NFHCA National Academic Team, and selection to the ESPN The Magazine/CoSIDA 2008 Academic All-District Women’s At-Large First Team.

Tom Herzog is majoring in applied engineering sciences. From Flint, Mich., Herzog is a member of the Honors College and plays center for the men’s basketball team. A healthy 7-foot-tall, 240-pound young man, Herzog has three times received MSU’s Scholar-Athlete Award and has been selected for the Academic All-Big Ten team. He is pictured on one of the Spartan Engineers posters. He says he loves the versatility and the engineering professors, “who have been great.”

Kurt Kivisto is a graduate student earning his master’s degree in geotechnical and geoenvironmental engineering; he studied civil engineering as an undergrad. He plays forward on MSU’s varsity hockey team. From Brighton, Mich., Kivisto played junior hockey in Cleveland before accepting an offer to play for MSU in 2005. He’s known as a “shootout specialist,” and is described as a “smart player with a great approach to the game,” and a “role player with a terrific attitude and work ethic.”

John Murphy, who graduated spring semester 2009, started wrestling in fourth grade in his hometown of Evergreen Park, Ill. An electrical engineering major, Murphy earned Academic All-Big Ten Honors and All-American honors at University Freestyle National Championships. In the classroom, he participated in multiple research projects and internships that honed his technical skills and background — and secured him a job with Siemens Energy and Automation after graduation. He has always tried to be a mentor and inspiration and, he says, his dedication to engineering has inspired some of his wrestling teammates to consider that field. >>

# GREAT ATHLETES

## COLLEGE OF ENGINEERING VARSITY STUDENT ATHLETES

<table>
<thead>
<tr>
<th>STUDENT</th>
<th>SPORT</th>
<th>MAJOR</th>
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<td>Kebler, Michael Howard</td>
<td>Men’s Basketball</td>
<td>Engineering–No Preference</td>
<td>Sophomore</td>
</tr>
</tbody>
</table>

### GREAT ATHLETES

**Brian Rockwell** is pursuing a double major in mechanical engineering/economics, and he holds a 4.0 GPA so far. In addition to all of his academic work, he is on MSU’s varsity swim team, a commitment of at least 20 hours per week, he says. Originally from Houston, Tex., Rockwell has earned academic and athletic honors, including a University Distinguished Scholarship. He is a four-year letterman in swimming and has been MVP and co-captain on the team. Rockwell wants to pursue a career in the automotive industry after graduating.

**Amanda Ruhno**, who graduated spring semester 2009 with a degree in mechanical engineering, was a coxswain on the the women’s rowing team. She grew up in DeWitt, Mich., and never thought about women’s rowing until being recruited.
<table>
<thead>
<tr>
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<th>CLASS*</th>
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* as of spring semester 2009

in her freshman year. Similarly, a high school calculus teacher introduced her to engineering, a path she had never considered. While at MSU, she was a member of the Honors College, and the recipient of a General Motors scholarship, an MSU President’s Award, and an MSU Office of Study Abroad Academic Excellence Award, among others. She secured a job with Whirlpool Corporation in St. Joseph, Mich., upon graduation.

- **Eric Tingwall**, who double majored in mechanical engineering and journalism, graduated in spring 2009. He balanced his academic heavy lifting with an equally rigorous life as a member of MSU’s Triathlon team, a club sport that he says is “one of the largest, most active, and most successful teams both at MSU and in terms of collegiate triathlon teams.” While at MSU, he was a leader on the team as president, a role that often required him to develop relationships with corporate sponsors. He received a General Motors scholarship and wrote for automotive publications. A native of Novi, Mich., Tingwall carried a 4.0 GPA in engineering and a 3.92 in journalism. He hopes to obtain a design, research, or planning engineering position at a major corporation.

- **Ross Weaver**, of Southfield, Mich., is studying mechanical engineering. He plays cornerback for MSU’s football team, and arrived on campus from a high school career that placed him among the nation’s best players. Weaver especially enjoys hands-on engineering projects and internships wherever he can get them. He says his experience in class has taught him the value of “working with other people and learning new ideas and different approaches to solving problems.” When people ask him how he handles football and engineering at the same time, “I say it’s through the grace of God. I have wanted to quit at times because the work got hard, but I often pray about it and keep moving.” ☺

![Ross Weaver](image-url)
Evangelyn C. Alocilja, associate professor of biosystems engineering (foreground, left) with two of her most recent star students. Michael Anderson (left), a PhD student in biosystems engineering, received a SMART — Science, Mathematics, And Research for Transformation Program — fellowship, which will cover full tuition, books, health insurance, and other fees and includes a stipend of $38,000 per year, for up to five years. Anderson is Alocilja’s third SMART fellow. Hanna Miller, a biosystems engineering sophomore and professorial student in Alocilja’s lab, received a Department of Homeland Security (DHS) scholarship, effective her junior year and renewable for her senior year. This scholarship pays for full tuition and books and includes a stipend of $5,000 a month. Miller also received an MSU DuVall Award for 2009, which includes a stipend of $3,500. Miller is Alocilja’s third DHS scholar. The two previous DHS scholars are Tracy Kamikawa, a PhD student currently doing her research in an FDA lab in Washington, DC; and Michael Wiederoder, a senior in biosystems engineering who continues to work in Alocilja’s lab.
Many faculty members in the MSU College of Engineering mentor students and help them achieve more in their college careers. Sometimes these students receive the highest national and international awards. Here’s a behind-the-scenes look at two faculty members who have a track record of producing extraordinary students.

Unlocking Student Potential

Passion — you can see it in her face and feel it in her words. “If I can impact one life, it is worth the time,” say Evangelyn C. Alocilja, associate professor of biosystems engineering. She has spurred on high schoolers and undergrads, as well as master’s and PhD students, to obtain scholarships, fellowships, and other awards.

For example, Connie Shi, a senior at Okemos High School who worked in Alocilja’s Biosensor Lab during the summer of 2008, was a semifinalist for the 2008 Siemens Competition for Math-Science-Technology and the 2009 Intel Science Talent Search. Others under her tutelage include John Zhou, who became a finalist in the 2006 Intel Science Talent Search and winner of the 2006 BioGENEius Challenge. John was eventually selected to the 2006 All-USA High School Academic First Team (one of 20 in the nation), and selected to the prestigious 2006 class of Presidential Scholars.

Two PhD students, Michelle Packard and Shannon McGraw, work with Alocilja in her lab. They are each receiving SMART graduate fellowships from the Department of Defense. Tracy Kamikawa, another of Alocilja’s PhD students, is a National Science Foundation Graduate Fellow and an Oak Ridge Institute for Science and Education (ORISE) Fellow. Brian Castro and Romali Ranasinghe, freshman professorial assistants, each received a second place award for their respective posters at MSU’s 2008 University Undergraduate Research and Arts Forum (UURAF). Michael Wiederoder, a senior professorial assistant in Alocilja’s lab, is a Department of Homeland Security Undergraduate Scholar.
What’s Alocilja’s secret? “I recruit good students to work in my lab,” says Alocilja. Grades are not her only criteria. She is looking for people who can initiate action and, if problems occur, find solutions. “I want them to be able to read journal articles and interpret the information to use in projects,” says Alocilja, who sees herself as a cheerleader. “Every student has potential. You just have to encourage them and bring out that potential. Sometimes I have to gently push them, remind them, and talk to them about why they should apply for these awards.”

She has been involved in MSU’s High School Honors Science/Mathematics/Engineering Program (HSHSP) for more than 10 years. This program selects students from all over the country to work in MSU professors’ labs during the summer. Alocilja always has at least one of these students in her lab. Alocilja’s research concentrates on the development of nanostructured biosensors for homeland security and biodefense, food safety, environmental quality, and health care. She is affiliated with the National Center for Food Protection and Defense, a Homeland Security Center of Excellence.

Her graduate students are required to write journal papers. “When you apply for fellowships and awards, you are competing with the best and the brightest. You had better have an edge,” says Alocilja. “If you can show that you have written a paper, co-authored a journal article, or made a presentation at a conference, that can be the edge that is needed. Grades alone do not make it.” Just applying for some of the awards or becoming a semifinalist shows commitment, initiative, writing and presentation skills, and the ability to synthesize information. This can have implications in applying to universities for undergraduate and graduate degrees and when seeking employment in industry. “I spend time with my students,” says Alocilja. “I even pray for them that they have wisdom and are successful.”

Looking for Initiative and Innovation

Melissa Baumann looks for initiative in students. “I give a lot of presentations
mask off and was playing without it. That prompted Vilminot to send MSU basketball’s certified athletic trainer Tom Mackowiak an e-mail at 11:00 that night, inquiring whether he wanted a custom-made mask for Raymar Morgan. By 8:30 the next morning, Mackowiak had consulted Tom Izzo and was calling Kainnon on the phone to take him up on the offer. At 4:00 that afternoon, Kainnon arrived at the Breslin Center to begin the process.

Vilminot cast, custom fabricated, and custom fit Raymar Morgan’s face-mask. First, a negative plaster mold was taken of Morgan’s face and was used to create a positive plaster model. The anatomical facial structure of the model was sculpted to provide protection without compromising vision or function. Thermoplastic was then heated and vacuum-formed over the model. The shape and contours were finalized during the fitting process. Vilminot created three different masks using different polymers, which the basketball player could use interchangeably, so he’d be assured of the most comfortable fit and be able to give 100 percent to the game.

“Proper anatomical loading with total contact, total surface bearing, proper dispersion of forces kept our guy in the game,” says Vilminot. “And who better to help a Spartan than a fellow Spartan? It was awesome for me to be able to give back to MSU . . . thanks to what I learned from Dr. Baumann.”

Vilminot is referring to Melissa Baumann, associate professor of chemical engineering and materials science, and associate dean of MSU’s Honors College. He completed two courses taught by her — MSE 250 (Introduction to Materials) and MSE 425 (Biomaterials and Biocompatibility).

“I am so glad that we have such a concrete link between teaching/learning and our graduates making the world a better place,” says Baumann. “Or in this case, making it so that Raymar’s face wouldn’t hurt — long enough for him to get us to the next NCAA championship game!”

Vilminot also created a facemask for Kelly Confer, pitcher for MSU’s softball team, after she broke her maxilla this spring.

Vilminot earned an MS in prosthetics from Northwestern University in spring 2009 and will earn his MS in orthotics from Northwestern in October 2010.

— Laura Luptowski Seeley

Kainnon Vilminot (left) preparing to vacuum-form the polymer over a plaster facial model; assisting him is Warren Darling.

MSU alumnus Kainnon Vilminot (right) and MSU associate professor Melissa Baumann discuss the techniques that were used to create Raymar Morgan’s protective facemask.
EXTRAORDINARY STUDENTS / GREAT MENTORS

Students Progress and Grow

Robert J. Friederichs and Shannon McGraw are students extraordinaire who deserve enormous credit for realizing their potential and still reaching out to do better. In the process, they give substantial credit to the mentors who helped them become extraordinary students.

Friederichs, from West Branch, Mich., graduated this spring from MSU’s College of Engineering with a bachelor’s in materials science engineering. He has also completed some work on a master’s degree. He was named a Goldwater Scholar in 2007 and most recently was a finalist in the Gates Cambridge Scholarship. In the fall, he is off to England where he has been accepted at the University of Cambridge. He will attend Churchill College, which focuses on teaching and research in the fields of science, engineering, and technology. “My ambitions are to research cutting-edge topics in biomaterials science, such as targeted drug delivery from nanostructured microspheres,” says Friederichs, who hopes to obtain a master’s degree from Cambridge. His longer-term plan is to get a PhD and end up in a leadership position either in industry or at a research institution.

McGraw, from Macomb Township, Mich., graduated from MSU with honors in December 2006 with a BS in biosystems engineering. She also completed the Honors College program and the Bailey Scholars program. McGraw is now pursuing a PhD in biosystems engineering. In 2008 she received a SMART fellowship from the U.S. Department of Defense (DOD) to pursue her graduate work. The Science, Mathematics And Research for Transformation (SMART) scholarships aims to increase the number of civilian scientists and engineers working at DOD laboratories. Her research focuses on designing a biosensor to rapidly detect various pathogens in food and water samples.

As a freshman, McGraw participated in the professorial assistant program run by the MSU Honors College. “In my senior year of high school, Dr. Alocilja called me at home and offered me a spot working in her lab. I was very excited to accept,” says McGraw. At the end of this year, she will have worked in Alocilja’s lab for seven years. “From the very beginning, when I was just this 18-year-old kid who didn’t know the first thing about biosensors or lab work, she supported me and probably had more faith in my success than I had in myself.”

During his four years at MSU, Friederichs has worked in Melissa Baumann’s laboratory. “I met Dr. Baumann through her involvement in a community organization. I then started volunteering and eventually working for her in the spring of my freshman year,” says Friederichs. “Dr. Baumann has held me to a very high standard and has given me levels of responsibility uncommon to most undergraduate students. This has encouraged me to perform to the best of my ability, and has inspired me to pursue graduate study in biomaterials engineering.” He is most proud of his work on diamond-like carbon wear coatings for use in biomedical implants. He co-authored an article on this subject that has been submitted to the Journal of Biomedical Materials Research. “My main area of research now involves microcracking ceramic tissue scaffolds with the goal of enhancing bone healing,” says Friederichs.

McGraw also credits her mentor with helping her improve as a student and scholar. “Dr. Alocilja never flinched at giving me my own projects as an undergraduate or having me present the results of the project,” says McGraw. Alocilja was the driving force behind McGraw applying for graduate school. “She convinced me that I had what it takes to complete a PhD program and to apply for the SMART program. I feel very fortunate to have an advising professor who gives me the freedom to conduct my research the way I want to conduct it, but is also always available if I need help.” McGraw has received numerous honors during her time at MSU, and has included extracurricular activities in her schedule. As a graduate student, McGraw volunteers on the Biosystems Engineering Curriculum Committee and is treasurer of the Council of Graduate Students, to name just a few of her activities.

While determination and analytical skills are important to Friederichs, his MSU experience has given him an even greater skill set. “I have learned to convey my ideas confidently to others due to the thorough academic backing I have received.” — JLD
Graduate Students Win Fitch Beach Research Awards

Six doctoral students were the recipients of the 2009 Fitch Beach Outstanding Graduate Research Awards. The awards are determined based on the strength of the student’s research record, as well as a technical oral presentation. Awardees are selected by the College of Engineering Research and Graduate Studies Committee.

The winners are: first place — Monther Dwaikat, civil engineering (Venkatesh Kodur, adviser); second place — Joseph Gredell, chemical engineering (Patrick Walton, adviser); and third place — Douglas Neal, mechanical engineering (John Foss, adviser). Winners received $3,000, $2,000, and $1,000, respectively.

Honorable mentions went to: Deng Zhang, biosystems engineering (Evangelyn Alocilja, adviser); Chad Meiners, computer science (Alex Liu and Eric Torng, advisers); and Vikram Melapudi, electrical engineering (Shanker Balasubramaniam, adviser).

The winners were honored during the College of Engineering Academic Awards and Service Recognition Reception on March 19.

Formula SAE Team “Goes Clean”

MSU’s Formula Racing Team is Going Clean. And they had a chance to promote their campaign in January at one of the most prestigious automotive events in the world — the North American International Auto Show. Coinciding with the show’s overwhelmingly “green” theme, the MSU team’s display centered on its own Go Clean environmental program.

Central to the team’s display was a large “green globe” (provided through the generosity of two communication technology companies — EPI Logistics and Tonic) that described in detail the three steps to Going Clean. “When you hear the term ‘green’ in relation to the automotive industry, most people tend to think solely about biofuel and hybrid-powered vehicles,” says Adam Zemke, project manager for the MSU Formula Racing Team. “Although using hybrid vehicles to transport team members and converting to an ethanol-based power plant in the near future is one step in our Go Clean campaign, they’re not the only facets of the program. Just as important as reducing CO2 emissions are the use of recycled, organic, and biobased materials throughout MSU’s Formula SAE cars.” From bio-paints to recycled foams, organic fabrics, and ‘green’ resins, each component that the team can make from earth-friendly or recycled materials reduces the team’s dependency on chemicals and products that are harmful to our planet.

A further step to Going Clean, says Zemke, is to reduce the impact that manufacturing has on the Earth. Implementing biobased and degradable cleaners, using lean manufacturing methods, recycling scrap material, and reusing components all help the team to further reduce its contributions to the environmental equation. This and more information about the team’s clean commitments can be found at www.msuformularacing.com/goclean.
SU’s freshman seminars do more than just introduce incoming students to the MSU campus — some of these seminars take them around the world. Mid-summer, just prior to starting fall classes at MSU, the students embark on this global experience, which may take them to Ireland, Scotland, Canada, New Zealand, or South Africa. These two-credit Freshman Seminars Abroad, described as “short-term study abroad programs,” typically run 10 to 18 days. They are designed to give first-year students international exposure, an opportunity to improve their understanding of global issues, and the chance to find out what it’s like to live and learn in intercultural settings.

Dan King, a specialist and academic adviser in the Department of Civil and Environmental Engineering, served as staff assistant during the Freshman Seminar Abroad in Ireland (Galway and Cork) last summer. Majors represented included engineering, business, English, psychology, and others. King said he is looking forward to returning to Ireland this summer with a new group of freshmen. Each program accommodates about 30 students.

“For several years, I have been involved in MSU’s study abroad programs,” says King. “I decided to get involved with the Freshman Seminars Abroad because I believe these programs really help incoming freshmen transition from high school to the college experience at MSU.”

These seminars provide a way for students to gain confidence and skills related to the college transition, says James Lucas, assistant to the dean for undergraduate education charged with campus internationalization. “First-year experiences are proven to shape the way students engage during college, and they play an important role in their academic success. Building on the first-year experience model, the Freshman Seminars Abroad program provides MSU faculty and staff with the opportunity to engage with a young person and shape the direction of his or her academic career. I’ve been teaching for more than ten years, and my time teaching on these programs has been the most rewarding experience of my career.”

Each program varies, depending on the instructional team, but the programs typically include common large-group activities like taking excursions, attending cultural events, or listening to guest speakers. The seminars allow students to gain experience and insight into interesting topics, which may help them make decisions about a possible major and career. For example, the Ireland seminar had one track that was psychology-based, where students learned through lecture, reading, and field experiences about lifespan development from the perspective of those growing up and growing old in Ireland. In a second track, students learned about issues associated with health care in the Irish culture. Participants also develop a meaningful relationship with peers, faculty, and staff, establishing a network for support and mentoring that will serve them well during their first year of college.

Joining the Freshman Seminars Abroad team this year as a staff assistant for the program in Bologna, Italy, is Bob Chalou, teaching specialist for computer-aided design and product design courses in the College of Engineering and lead instructor for EGR 410, the applied engineering sciences program capstone course. Chalou
became interested in returning to Italy this summer after a trip there last June to participate as a faculty member in a program, which was sponsored by the Society of Manufacturing Engineers Education Foundation, to study the machine tool industry in Italy.

“The Freshman Seminars Abroad program has become a great living-learning experience for incoming freshman students,” says Chalou. “When they arrive on campus in the fall [after participating in that program] they have established a group of close friends that definitely helps the transition from high school to college. I chose Italy because of the rich and diverse design history and tradition. To be able to see the works of the masters firsthand is an incredible opportunity.”

The Freshman Seminars Abroad program aligns with MSU’s mission to move forward as a world-grant institution and it helps ensure that MSU’s incoming freshmen have a good global understanding when they set foot on campus for their first day of classes come fall semester.

NOTE: Just as this issue was going to press, the 2009 Italy program was canceled.
Faculty Win NSF CAREER Awards

Jongeun Choi, assistant professor of mechanical engineering and of electrical and computer engineering, and Jian Ren, assistant professor of electrical and computer engineering, have each received a National Science Foundation (NSF) Faculty Early Career Development (CAREER) Award.

Choi received the award for his proposal, "Multi-Agent Systems and Gaussian Processes: Applications in Environmental Sciences." Ren received the award for his proposal, "Towards Cognitive Communications in Wireless Networks."

Each received a five-year $400,000 grant.

Choi’s work is in developing and analyzing distributed learning and cooperative control algorithms so that a network of mobile sensing vehicles can gather data and learn an unknown field of interest in order to perform specific tasks. This research has applications in the environmental sciences.

Due to recent drastic global climate changes, it is necessary to monitor the changing ecosystems over vast regions on land, in our oceans, and in our lakes, Choi explains.

"Emerging technologies in robotic sensor networks and field prediction algorithms can offer great potential to deal with such issues," he says. "The main purpose of my work is to develop control algorithms for a network of mobile sensing vehicles to explore and predict an unknown field of interest."

Applications include prediction and tracing of harmful algal blooms in lakes, toxic contaminants in public water systems, and pollutants in the air. "For instance, tracing and predicting harmful algal blooms in a lake could be accomplished using proposed algorithms and a network of autonomous underwater vehicles (AUVs) with fluorescence-based sensors," Choi says.

In other applications, a group of autonomous mobile robots, combined with chemical warfare sensors, could be used for detecting a concentration field of chemical warfare agents.

The project offers training experiences for undergraduate and graduate students and provides opportunities to foster collaborative research with MSU’s Department of Civil and Environmental Engineering and Department of Fisheries and Wildlife.

During summer residential programs sponsored by the College of Engineering’s Diversity Programs Office and the Office of Recruitment and k–12 Outreach, k–12 and underrepresented students will be able to try out some of the biologically inspired mobile robots — robots that mimic flocking birds or swimming fish — that have been developed in Choi’s lab.

Ren’s research will significantly improve the efficiency, security, and interoperability of communications between versatile wireless devices. His work introduces innovative methodologies in architecture development, system design, and secure and efficient network management.

Ren explains that today’s “cognitive radio” — an intelligent wireless communication system that is aware of its surrounding environment — can perceive a spectrum hole (or lack of activity on a frequency within a portion of the radio spectrum) and then transmit on the unutilized frequencies.

However, he says, lack of user coordination and network control raises serious issues in efficiency, security, and resource waste in wireless environments.

“My research is an effort to develop an ideal human-technology platform for e-commerce, national security, environmental protection, health monitoring, and many future applications that could benefit from fast and reliable information exchange,” says Ren.

The technological advances resulting from this project will be integrated into undergraduate and graduate curricula, as well as into k–12 outreach activities. Thus, Ren’s work will have a significant impact on the training of a highly skilled and diverse workforce in the area of cybersecurity and wireless networking.

The CAREER award, one of NSF’s most prestigious and competitive awards for junior researchers, recognizes those who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research.

“These CAREER awards are tangible expressions of validation from Jongeun’s and Jian’s peers concerning their research goals and plans,” says Satish Udpa, dean of MSU’s College of Engineering. “I am delighted to see their peers confirm that they are on a very productive research trajectory.”

Choi received a BS in mechanical design and production engineering from Yonsei University at Seoul, Republic of Korea, in 1998. He received his MS and PhD degrees in mechanical engineering from the University of California at Berkeley in 2002 and 2006, respectively.

Ren earned his BA and MS from Shaanxi Normal University in China in 1988 and 1991, respectively. He received a PhD degree in electrical and computer engineering from Xidian University in 1994.

To access NSF award abstracts and video interviews, go to www.egr.msu.edu/news/2009/02/19/two-faculty-win-nsf-career-awards and click on the appropriate links near the bottom of the page.

— Laura Luptowski Seelye
Craig J. Gunn, senior academic specialist and director of the mechanical engineering department’s communication program, recently received the MSU Distinguished Academic Specialist Award. Gunn was recognized for his understanding of the challenges facing new students and for fostering engineering students’ improvement of oral and written communication skills. Beyond the classroom, he has influenced his field through work on university-wide committees and workshops, and through his work with the Cooperative and Experiential Education Division (CEED) of the American Society for Engineering Education. He is widely known and respected in the organization through his presentations at annual meetings, his service on the CED’s board of directors, and his work as editor of the newsletter. Gunn has published essays in numerous journals and textbooks, and created the MSU course “Technical Communication for Engineers.”

John R. Lloyd, University Distinguished Professor of mechanical engineering, has been named chief editor of the International Journal of Energy for a Clean Environment, published by Begell House Publishers. Under his leadership, the journal is expanding its scope to cover air-, water-, and earth-related studies of the influence of alternative energy technology and the impact on the environment. He was also recently appointed to the editorial board of the Web-based Thermopedia, an electronic encyclopedia of heat and mass transfer. He is team leader for environmental systems.

In October 2008, at the 3rd International Conference on Heat and Mass Transfer in Swirling Flows, which was held at the Moscow Power Engineering Institute of the Russian Academy of Sciences, Lloyd presented his paper, “Ab-Initio Molecular Dynamic Study of Nano-scale Thermal Energy Transfer Across a Material Interface.” It was the first paper utilizing the ab-initio computational technique to study energy transfer. He was named Top Scientist at the conference and was made an honorary member of the Department of Thermophysics of the Moscow Power Engineering Institute.
Six faculty members were recently named fellows in professional organizations. Leo Kempel, associate dean for research; Hayder Radha, professor of electrical and computer engineering and ECE associate chair for research and graduate studies; and Juyang (John) Weng, professor of computer science and engineering, were named fellows of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). The grade of fellow is one of the IEEE’s most prestigious honors. It recognizes unusual distinction in the profession and an extraordinary record of accomplishments in an IEEE field, bringing significant value to society. Manoochehr Koochesfahani, associate dean for graduate studies and faculty development, was named a fellow of the American Concrete Institute (ACI); and Ranjan Mukherjee, professor of civil and environmental engineering, was elected a fellow of the American Physical Society (APS); Neeraj Buch, professor of mechanical engineering, was elected a fellow of the American Society of Mechanical Engineers.

Leo Kempel, associate dean for research, was elected a fellow of the IEEE, effective Jan. 1, 2009. He received this prestigious honor in recognition of his contributions to conformal antenna design and electromagnetic composite materials. His research focuses on the general area of applied electromagnetics with particular emphasis on conformal antennas, engineered materials, and measurement of electromagnetic properties of materials.

Kempel has served as an elected member of the administrative committee for the IEEE Antennas and Propagation Society and the board of directors for the Applied Computational Electromagnetics Society. He was an associate editor for the IEEE Transactions on Antennas and Propagation and is an active reviewer for many scholarly publications.

Hayder Radha was elected a fellow of the IEEE “for contributions to visual coding, communications, and networking” in November 2008. He serves on the editorial boards of IEEE Transactions on Multimedia and the journal Advances in Multimedia. He is an elected member of the IEEE technical committees on Multimedia Signal Processing and Image and Multidimensional Signal Processing. He served as co-chair of the ATM/LAN Video Coding Experts Group of the International Telecommunications Union.

Radha is a professor of electrical and computer engineering and associate chair for research for his department. He holds 27 U.S. patents in the areas of wireless communications and networking and image and video processing. He is a recipient of the Bell Labs Distinguished Member of Technical Staff Award, the MSU College of Engineering Withrow Distinguished Scholar Award, and the Microsoft Research Content and Curriculum Award. He was appointed a Philips Research Fellow in 2000.

Juyang (John) Weng, professor of computer science and engineering, was named an IEEE fellow, effective Jan. 1, 2009, for his contributions to computer vision and pattern recognition. Weng is a co-founder of the Embodied Intelligence Laboratory and a member of the MSU Cognitive Science Program and of the MSU Neuroscience Program. He received the College of Engineering Withrow Distinguished Scholar Award. He is editor in chief of the International Journal of Humanoid Robotics, a member of the executive board of the international Neural Network Society, and associate editor of the new IEEE Transactions on Autonomous Mental Development.

His research interests lie in the intersection of computer science and engineering, brain science, and cognitive science, including the new multidisciplinary field of autonomous mental development, with a goal of modeling how the human mind develops and enabling machines and robots to develop autonomously. He is the author or coauthor of more than two hundred research articles and book chapters on related subjects.

Manoochehr Koochesfahani, associate dean for graduate studies and faculty development, has been named a fellow of the American Physical Society (APS) for his “pioneering contributions to the development of experimental techniques including laser induced fluorescence, molecular tagging velocimetry and thermometry, and quantum dot imaging, and for his fundamental studies of turbulent mixing.”

The APS, founded in 1899, is the largest organization of professional physicists in the United States; it has 46,000 members. Election to fellowship is limited to no more than one-half of one percent of the membership.
Sticklen Named New Director of Applied Engineering Sciences Program

J on Sticklen was appointed in December 2008 as the director of the Applied Engineering Sciences (AES) program. Sticklen has been an associate professor in the Department of Computer Science and Engineering, as well as a special assistant to the dean on instructional technology and engineering education research, an assignment that will be formalized to “Coordinator for Engineering Education Research.”

Sticklen originally wanted to be a high school mathematics teacher, but instead pursued a bachelor’s degree in physics from The Ohio State University and completed a master’s degree in astrophysics at Columbia University. After employment in the areas of astronomy and physics, and a stint at his family’s farm in central Ohio, Sticklen returned to OSU where he received a master’s and PhD in computer science, specializing in artificial intelligence (AI).

He came to MSU in 1987 as an assistant professor; much of his early work focused on AI. However, Sticklen says that one of his strongest lessons from the research work was not on the technical side, but rather the people side. “AI research is highly collaborative. Without strong collaborators, my research paths during the ‘gos would not have been possible.”

By 1999 Sticklen had embarked on educational research aimed at learning more about what can be done to help early engineering education be more effective. In 2003 he was one of the founding members of a study group on engineering education research. By 2007 the group had received a grant to study the relationship between industrial needs and college curricula on computational problem solving. In 2008 the group was awarded a five-year National Science Foundation grant aimed at increasing retention in the MSU College of Engineering from its current value of roughly 65 percent up to a value of 75 percent. “The new grant is exciting, and dovetails strongly with my new duties as the director of the AES program.”

Sticklen admits his path to his current position is non-linear, but considers his varied background an asset: “I believe that all that has gone before on my life’s journey has prepared me well to serve as the director of AES.”

Koochesfahani was recognized at the organization’s 61st Annual Division of Fluid Dynamics Meeting in San Antonio, Tex., in November 2008.

- **Neeraj Buch**, professor of civil and environmental engineering, was elected a fellow of the American Concrete Institute in recognition of his contributions to the work of ACI. The ACI citation praises Buch for “contributing to research and education in the field of concrete pavements.” His core research foci include analysis and design of innovative pavement repair strategies, analysis and design of joints, performance modeling for distress prediction, and evaluation of the impact of concrete material properties on concrete pavement performance. He serves on numerous national and international concrete pavement committees and has held leadership positions on ACI technical committees. A formal announcement of his election was made at the ACI convention in March 2009 in San Antonio, Tex.

- **Ranjan Mukherjee**, professor of mechanical engineering, was elected a fellow of the American Society of Mechanical Engineers (ASME), effective December 2008. Roughly 3 percent of ASME’s members are elevated to fellow status. Mukherjee is recognized for his significant contributions to advancements in the general area of mechatronic systems. His research has covered both theory and applications to a wide range of problems, including nonholonomic systems, space and mobile robots, haptic interfaces and robotic systems for tele-surgery and remote diagnostics, control of structural vibration, and control of rotors supported by magnetic bearings.

Mukherjee has also educated and mentored many mechanical engineering students. These students are trained in a multidisciplinary field that allows them to model, analyze, optimally design, and implement mechanical systems that utilize control and electronics. Several of his doctoral and postdoctoral students are faculty in universities in the United States and other countries.

Percy Pierre, vice president and professor emeritus of electrical and computer engineering, has been elected to the National Academy of Engineering (NAE). Election to the academy is one of the highest professional distinctions accorded to an engineer.

Pierre is among 65 new members and nine foreign associates honored for outstanding contributions to engineering research, practice, or education. He is recognized for his service as assistant secretary of the Army for research and development, contributions to engineering education, and leadership in creating the national minority engineering effort.

“We are very pleased to see Percy Pierre honored for his pioneering work in engineering education, specifically with underrepresented groups,” says MSU President Lou Anna K. Simon. “This well-deserved honor brings distinction not only to Dr. Pierre, but to the College of Engineering and Michigan State University.”

Pierre is recognized as the first African American to earn a doctorate in electrical engineering. After receiving his PhD from The Johns Hopkins University in 1967, he went on to hold a number of administrative posts in government and higher education. He served as a White House Fellow in the Executive Office of the President from 1969–70, as dean of the College of Engineering at Howard University in Washington, DC, from 1971–77, and as assistant secretary of the Army for research, development, and acquisition from 1977–81, where he had direct responsibility for the development of all Army weapons, including the Abrams Tank, the Patriot Air Defense Missile System, and the Apache Attack Helicopter. In 1981, he was presented with the U.S. Army’s Distinguished Service Award, the highest honor presented to a civilian. Pierre also served as president of Prairie View A&M University from 1983–89 and as vice president of research and graduate studies at Michigan State University from 1990–95.

Beginning in the early 1970s, Pierre established many programs across the country, including Howard University’s first doctoral programs in electrical and mechanical engineering, the National Action Council on Minorities in Engineering (NACME), and GEM — the National Consortium for Graduate Degrees for Minorities in Engineering and Science, Inc. In 1998, he started the Sloan Engineering Program in the College of Engineering at MSU, a program that supports recruitment and retention of minority doctoral students. He has counseled and helped support more than 30 individual minority students pursuing doctoral degrees.

“For those of us who have known Percy, this award is not surprising,” says Satish Udpa, dean of MSU’s College of Engineering. “He has been at the forefront in initiating and launching innovative programs for improving access to higher education for students from underrepresented groups for a long time.”

Pierre also recently received a Mentor Award for Lifetime Achievement from the American Association for the Advancement of Science (AAAS), the world’s largest general scientific society and publisher of the journal Science.

The NAE is an independent, nonprofit institution. Founded in 1964, it operates under the congressional act of incorporation that established the National Academy of Sciences, which was signed in 1863 by President Lincoln. The NAE provides leadership and guidance to government on the application of engineering resources to social, economic, and security problems.

NAE members are the nation’s premier engineers, elected by their peers for seminal contributions to engineering. Total U.S. membership is now 2,246 and the number of foreign associates is 197.

For more information about the NAE, visit www.nae.edu/nae/naehome.nsf. To learn more about Pierre’s work, go to www.egr.msu.edu/~pierre/. View a video interview at http://news.msu.edu/story/5928/.

— Laura Luptowski Seeley
Venkatesh Kodur Named Fellow of Canadian Academy of Engineering

Venkatesh Kodur, professor of civil and environmental engineering and director of the MSU Structural Fire Testing Facility, has been elected a fellow of the Canadian Academy of Engineering (CAE). This prestigious academy includes many of Canada’s most accomplished engineers, who have expressed their dedication to the application of science and engineering principles in the interests of the country and its enterprises. Being a fellow of the CAE is the highest honor for engineers in Canada.

Kodur is one of the world’s leading experts on the effects of fire on materials and structural systems. He has more than 18 years of experience in structural and fire engineering and spent 12 years at the National Research Council Canada just prior to coming to MSU. He was part of the FEMA/ASCE Building Performance Assessment team that investigated the collapse of the World Trade Center in 2001.

Members of the CAE are nominated and elected by their peers to honorary fellowships, in view of their distinguished achievements and career-long service to the engineering profession. Kodur’s citation reads: “Dr. Kodur has made significant contributions and earned recognition for his research and development activities in structural, material, and fire areas. He has published more than 200 technical papers, developed unique research programs in structural fire safety at NRC Canada, trained graduate students, and developed fire design guidelines that have been incorporated in many codes and standards. Dr. Kodur, a fellow of the American Society of Civil Engineers (ASCE) and the American Concrete Institute (ACI), has won many awards and was the only non-American invited to be part of the ASCE/FEMA expert’s team for the World Trade Center building investigation. He has transferred — through media interviews, keynote presentations, and blue ribbon panels — WTC investigation findings to the public, has raised the awareness of the engineering profession, and has showcased the world-class research in Canada’s institutions.”

Kodur’s election will be formally announced at the academy’s 2009 Annual General Meeting and awards ceremony to be held on Monday, July 13, 2009, in Calgary, Alberta, Canada.

The CAE is an independent, self-governing, nonprofit organization that was established in 1987 to serve Canada in matters of engineering concern. It is an active member of the International Council of Academies of Engineering and Technological Sciences (CAETS), which involves 25 other leading countries. Total membership in CAE stands at 304; there are 112 emeritus and 3 honorary members.

For more about CAE, visit www.acad-eng-gen.ca/e/home.cfm. To learn more about the Structural Fire Testing Facility, go to www.egr.msu.edu/cee/research/fire_center.pdf. To view a video interview with Kodur, visit http://spartanpodcast.com/?p=271.

Venkatesh Kodur, professor of civil and environmental engineering and director of the MSU Structural Fire Testing Facility, stands atop the fire test furnace housed at the Civil Infrastructure Laboratory. The furnace is capable of testing loaded structural assemblies (such as columns, beams, and floor systems) under extreme fire conditions. The natural gas–fueled test furnace is capable of reaching temperatures in excess of 2,200°F.
New Faculty

Sixteen new faculty joined the College of Engineering in 2008–09. The three most recent hires are listed here.

Prem Chahal has joined the Department of Electrical and Computer Engineering as an assistant professor. He received his PhD (1999) in electrical engineering from Georgia Institute of Technology, and his MS (1994) and BS (1991), also in electrical engineering, from Iowa State University. From 2006 to 2008 Chahal held a senior research position at Abbott Laboratories, leading research in the area of BioMEMS. Prior to that, Chahal served as a principal engineer at Raytheon, Dallas, leading research in the areas of Terahertz (THz) technologies, microsystems packaging, RF MEMS, and nanoelectronics. In addition, he has held summer internship positions at Motorola and BFGoodrich. Chahal’s current research interests include THz technologies, microwave circuits, infrared sensors, microsystems packaging, flex electronics, RF MEMS, and BioMEMS.

Lixin Dong has joined the Department of Electrical and Computer Engineering as an assistant professor. His main research interests include nanorobotics, nanoelectromechanical systems (NEMS), mechatronics, mechnochemistry, and nanobiomedical devices. Prior to joining MSU in December 2008, Dong held a senior research scientist position at Swiss Federal Institute of Technology (ETH) Zurich, where he led the NanoRobotics Group in the Institute of Robotics and Intelligent Systems (IRIS). He became research associate in 1992, lecturer in 1995, and associate professor in 1998 at Xi’an University of Technology; assistant professor at Nagoya University in 2005; and research scientist in 2004 at ETH Zurich. He received the IEEE T-ASE Googol Best New Application Paper Award in 2007, Best Conference Paper Award at the International Conference on Control Science and Engineering (ICCSE2003), and has been a co-winner in the 2008 Nano Today Cover Competition. He serves as associate editor of the IEEE Transactions on Nanotechnology and the IEEE Transactions on Automation Science and Engineering.

Wen Li has joined the Department of Electrical and Computer Engineering as assistant professor. She received her PhD (2008) and MS (2004) in electrical engineering from California Institute of Technology. Prior to that, Li studied at Tsinghua University and received an MS degree in microelectronics (2003) and a BS degree in material science and engineering (2001). Her research interests include MEMS/NEMS technologies and systems, microsensors and actuators, biomimetic devices and systems, microfluidic and lab-on-chip systems, and microsystem integration and packaging technologies.

Goodman Named Michigan Distinguished Professor of the Year

Erik Goodman, professor in the Department of Electrical and Computer Engineering, has received a Michigan Distinguished Professor of the Year Award from the Presidents Council, State Universities of Michigan. He is among three recipients.

The award recognizes the outstanding contributions made by the faculty of Michigan’s public universities to the education of undergraduate students. Each of Michigan’s 15 public universities was invited by the Presidents Council to nominate a faculty member who has had a significant impact on student learning through various mediums, including work in the classroom and student advising.

Goodman is recognized for helping to establish MSU as a leader in ecological modeling. He has mentored Rhodes Scholarship and Churchill Scholarship recipients, as well as a National Science Foundation graduate fellowship recipient. Goodman is the academic adviser for half of the honors students in the computer engineering major. He also teaches the senior capstone design course in electrical and computer engineering (ECE), where he introduced industrial-sponsored projects and public presentations at ECE Design Day. He places emphasis on guiding students into undergraduate research experiences, study abroad, and enrollment in graduate classes.

“Higher education is one of the few good investments in these hard economic times,” said Michael Boulus, executive director of the Presidents Council, State Universities of Michigan. “We need to honor those who continue to contribute to its success and produce well-prepared and intelligent graduates of Michigan’s 15 public universities. These outstanding professors are actively involved in developing the minds of Michigan’s future, and they deserve recognition for their work.”

The other two awardees are Eddie Cheng, Department of Mathematics and Statistics, Oakland University; and Steven Wright, Department of Civil and Environmental Engineering, University of Michigan—Ann Arbor.

This is the third year the awards have been presented.

The Presidents Council hosted an awards luncheon on May 14, 2009, at the Radisson Hotel in Lansing, Mich.
GOING GLOBAL

It’s no secret that globalization is having a major impact on the engineering profession. It’s “an ancient process that is speeding up and intensifying in the 21st century,” according to Ron Rosenberg, College of Engineering associate dean for special initiatives. “Due to increased economic development and the growing ‘push-back’ of our environment, our professional practice is changing. This provides exciting challenges in building sustainable global systems for communication, energy, food, manufacturing, security, transportation, and water resources.”

MSU’s College of Engineering wants to make sure it continues to produce successful engineering professionals and well-informed citizens who are able to meet these new challenges. In response, the college is offering a new course — EGR 291, “Going Global” — which examines the intertwined roles of economics, engineering, and the environment.

Rosenberg, instructor for the new course, which was piloted in fall 2008, tells his class, “Globalization is economically driven, engineering-enabled, and environmentally constrained.” During the semester, more than a dozen guest speakers increase the awareness of students about key globalization issues. The course also helps the students develop useful working knowledge, or literacy, in a professional learning environment. Students build two critical skill sets: systems thinking — a framework for understanding complex issues; and communication — active listening, presenting, teaming, and networking. These are lifelong tools for global professionals and citizens.

After completing the course, one student said, “This class has made me interested in exploring more areas of knowledge.” Another student thinks it should be a required course. Another says, “This course reached its goals of scientific literacy . . . I feel much more confident in my presentation abilities and understand globalization to a great extent.”

According to Urban Science, a retail consulting firm headquartered in Detroit, Mich., which currently serves clients in over 70 countries from its 13 global offices, it is critical that today’s engineering students understand globalization.

“Just as environmental issues go beyond country boundaries, the business world is global as well,” says John Frith, MSU alumnus (BS civil engineering ’78) and vice president of retail channel solutions for Urban Science. “In order to be competitive, companies need to be able to conduct business internationally. Even if your business operates in a single country, defending your territory necessitates an appreciation of how the rest of the world operates,” says Frith. “Understanding how other parts of the world view issues and respond to them will be critical to anyone who wants to contribute to the solution of global problems. Based upon my experience in Europe and Asia, people without an international viewpoint soon get left behind. In my opinion, any curriculum without a globalization course, or at least specific content, cannot be considered world class.”

— Laura Luptowski Seeley
A Special Request from Julie M. Goss

Julie M. Goss is seeking information about her late father, Hugh Arthur (Art) Goss, Jr. (BS Mech Egr ’50), who died on August 10, 1976, in Traverse City, Mich. Art, the youngest of his four children, writes: “I barely knew my father; he passed away when I was only seven years old.”

Art married Jeannette A. Frankenstein after they met each other on the MSU campus. Upon graduation, he obtained a position at Combustion Engineering, a Chicago firm. Eventually, he was promoted/transferred to the Windsor Locks, Conn., office. “I believe that he briefly served as an officer for the U.S. Army in Alaska in an engineering capacity (literally keeping vehicles running and preventing them from freezing),” Julie says. He loved golf and was known to be playing 18 holes while two of his children were born! He is survived by four children and six grandchildren; a great-grandson is due September 12.

If you knew Art, Julie would like to hear from you. What was he like as a classmate/study partner/friend? What hobbies/interests did he have? Did any other ’50s alumni work with him at Combustion Engineering or serve with him during his brief time in the military? Did any gals recall dating him prior to his meeting Jeannette? Does anyone remember Jeannette A. Frankenstein from Evanston, Ill. (she died April 8, 1990)? You may contact Julie at (971) 322-8575 or smilingheart_2000@yahoo.com.

CLASS NOTES

in memoriam

Donald Hodgkiss (BS Civ Egr ’49) of Naples, Fla., died November 12, 2008, at the age of 81. He was born June 1927 in Evanston, Ill., to A. W. and Marian Hodgkiss. In 1938, the family moved to Petoskey and his father, along with Bill Douma, started Hodgkiss & Douma, Inc., a paving and construction business. Don graduated from Petoskey High School in 1945, entered the Army Air Corps, and was discharged in late 1946. After graduating from MSU, he began working for Hodgkiss & Douma in 1950; he retired in 1986.

Don married Nancy Kennedy in Lansing, Mich., in 1955. He was involved with the Emmet County Planning Commission for many years. He was a member of the Emmanuel Episcopal Church in Petoskey, Mich.; Trinity-by-the-Cove Episcopal Church in Naples; Sigma Alpha Epsilon Fraternity; the American Society of Civil Engineers; The Elks; Petoskey-Bay View Country Club; and Bear’s Paw Country Club of Naples.

Don is survived by his wife of 53 years, Nancy; son Dan (Helen) of Saratoga, Wyo.; daughter Laurie Egeland (John) of Grapevine, Tex.; son Tom (Karen) of Madison, Wisc.; grandchil-

Robert Shedd

Robert Shedd (BS Mech Egr ’43) of Grand Rapids, Mich., died August 15, 2007. Robert was active in the Michigan Society of Professional Engineers. The Shedd fam-

Robert Douglas (Doug) Trezise

Robert Douglas (Doug) Trezise (BS Elec Egr ’49) of Owosso, Mich., died November 26, 2008, at age 83. Born in Wakefield, Mich., Trezise enrolled at MSU in 1942, enlisted in the U.S. Army Signal Corp in 1943, and returned to MSU after serving in the military and Civilian Corps in Germany. At MSU, Trezise was presi-

Robert N. Rosso

Robert N. Rosso (BS Civ Egr ’44) of Traverse City, Mich., died December 15, 2008, at the age of 86.
1960s

- Constantine Demos (BS Civ Egr ’66) of Houston, Tex., recently co-wrote and published a book with his brother, Steven S. Demos, MD, titled The Tradition Continues—Spartan Football. For more information about the book or to purchase it, visit www.msufpatraditions-book.com. All proceeds from the sale of the book are being donated to MSU for its football program.

1970s

- Michael S. Sacks (BS ’81, MS ’83, Egr Mechanics), the John A. Swan son Endowed Chair in the Departments of Bioengineering, Mechanical Engineering/Materials Science, and Civil Engineering at the University of Pittsburgh, recently received the Van C. Mow Medal from the American Society of Mechanical Engineers (ASME) Bioengineering Division. He is recognized “for contributions in advancing biomechanics of native and engineered heart valve tissues; and leadership in the development of the bioengineering profession, service to its community, and inspired guidance of young bioengineers.” In 2008, Sacks was the recipient of the Chancellor’s Distinguished Research Award from the University of Pittsburgh. An ASME fellow, he is considered a world-class leader in heart valve tissue mechanics. Scientific American named him as one of its top 50 researchers of 2006 for his seminal work on the biomechanics of biological scaffolds for cardiac regeneration.

1980s

- Michael Richards (BS Systems Sci ’80) recently moved to a new position with Monsanto in St. Louis, Mo., as vice president of Enterprise Information Technology (IT). Previously he was with Ford Motor Company as a director of IT, and before that was with IBM Corporation, which he joined immediately after graduation from MSU. He was married in Oslo, Norway, to his wife, Annele, and has four children and three dogs. He is an active motorcyclist. He also serves as an adviser to a nonprofit initiative with MIT to provide accessible simulations of climate dynamics that foster understanding and action to improve environmental health.

- Steven Debban, PE, LEED AP (BS Civ Egr ’96) returned to work for RW Armstrong in Chantilly, Va., in February 2008. The company had previously hired him immediately after graduation. He is now a senior project manager working on civil engineering projects. While the emphasis of his experience is in domestic airport design, his recent experiences are as diverse as a U.S. Navy dock renovation in Panama City, Fla., and runway pavement rehabilitation in Abu Dhabi. At his previous job, Debban worked on the new fourth runway at Washington Dulles International Airport, which was commissioned in November 2008.

- Robert Gorski, PE (BS Civ Egr ’94) has been named president of the Illinois Section of the American Society of Civil Engineers (ASCE), effective November 2008 through November 2009. The section covers all of Northern Illinois and consists of more than 3,500 members. In addition, he has been named to the ASCE National Transportation Policy Committee. Gorski is a registered professional engineer in Illinois, Michigan, and Pennsylvania, and has more than 14 years of experience that ranges from preliminary engineering; to development of plans, specifications, and estimates for transportation, water, and solid waste projects; to construction. He has been involved with the Illinois Section of ASCE for nine years. In October 2006 he was named Young Engineer of the Year, and in April 2008 was elected to the Local School Council for Newton Bateman Elementary in Chicago.

1990s

- Charlie D. Krug (BS Civ Egr ’06), a staff engineer in the Kalamazoo, Mich., office of Soil and Materials Engineers, Inc., was elected to the board of directors of the American Society of Civil Engineers (ASCE) Southwest Michigan Branch. Krug has approximately three years of experience and specializes in geotechnical and materials engineering services, including subgrade evaluations, foundation design recommendations, vibro-compaction, retaining walls, and chemical and permeation grouting. He is also experienced in construction materials services related to building envelopes, coatings, roofing, waterproofing, reinforcing steel, concrete foundations, and asphalt pavements.

2000s
Materials Science Alum’s Experiments on International Space Station

Kim K. de Groh (van den Ende) (BS ’85, MS ’87 Materials Sci) is a senior materials research engineer with NASA Glenn Center in Cleveland, Ohio, conducting research on the durability of spacecraft materials. She currently has three experiments, including the Stressed PEACE Polymers experiment, up on the International Space Station (ISS), to be retrieved during shuttle mission STS-128 (August 2009), and four experiments to be taken to ISS during STS-129, manifested for this November. Her experiments are part of the Materials International Space Station Experiment (MISSE), a series of flight experiments attached to the exterior of ISS.

Materials International Space Station Experiment (MISSE) 6A & 6B; deployed March 22, 2008 (STS-123). A close-up of MISSE 6A & 6B on-orbit, shortly after deployment, with the Stressed PEACE Polymers experiment highlighted; additional close-up photo of the sample trays added to show detail.
Kin Keung Lai (PhD civil engineering ’77) and Mamud Dako (BS chemical engineering ’08) were among 13 individuals honored at the 2009 International Awards Ceremony for their contributions to international studies at MSU. The awards, presented each year by MSU’s International Studies and Programs, recognize individuals who have had a significant impact on the advancement of international scholarship, teaching, public service, outreach, or education throughout their careers. The awards ceremony and reception were held on April 1.

Lai received the Joon S. Moon Distinguished International Alumni Award in recognition of his compassion, determination, enthusiasm, and empathy for the underprivileged. After earning his degree at MSU, Lai returned to Hong Kong where he spent six years in private industry before joining the faculty of the City University of Hong Kong, where he is presently a chaired professor and acting head of the department of management science. Lai was an organizer of the Caring for Children Foundation — a successful charitable foundation serving poor and disadvantaged children in China — and has served as its deputy chairman since 1995. Instrumental in raising $4 million for relief from the 2008 earthquake, Lai continues to raise funds for the reconstruction of schools.

Dako received one of six Homer Higbee International Education Awards, cited for his “amazing record as an engaged student leader” and his “impressive success in the classroom.” He is a first-year graduate student in MSU’s Department of Packaging and president of the International Students Association (ISA). Under his leadership, the ISA has continued its trajectory as a powerfully influential student organization. Dako is also an assistant residence hall director, a graduate research assistant, and a regular volunteer with international student orientations.
I pose the question often, “You have a profile on LinkedIn, you’re using LinkedIn, but are you really utilizing it to further your career?”

Invariably, the answer is no. LinkedIn.com, an online professional network with over 40 million users, is fast becoming one of the most important career development tools ever invented. Human resource departments vet candidates. Sales professionals uncover qualified leads. Business owners compare and contrast vendors. All of this is accomplished from the comfort of their computers.

The power of LinkedIn is in connectivity and its huge capacity for networking. Imagine having a database with 40 million users, the vast majority of which are college-educated in white collar professions, with which you can slice and dice data in any number of ways. Want to see the number of jobs available in Chicago (75,802 on May 19, 2009), number of MSU alumni in C-Level positions in Tempe, Arizona (333), or the percentage of TechSmith employees who graduated from MSU (42 percent)? LinkedIn.com affords you the opportunity to do so.

Currently, there are roughly 85,000 MSU alumni with a profile on LinkedIn (including thousands of engineering alumni). That’s a small slice of the nearly 460,000 MSU alumni nationally. However, the growth of the site in the last year (it has tripled in size since summer of 2007) portends even greater numbers.

MSU Alumni Career Services has incorporated the site into its one-to-one career counseling with alumni; we show them how to look for jobs on LinkedIn. Through this service, we are able to show alumni who’s connected to those jobs (by searching profiles by company name); connect them to affiliations (by searching profiles by company name and keywords like Michigan State University); and then walk them through

How Are You Connected?

The College of Engineering has embraced social media to help you stay connected. Wherever you are, we hope to be there with you. Choose one or choose them all; we hope you’ll choose to stay connected to MSU Engineering.

- **LinkedIn.** In addition to the LinkedIn group — MSU Engineering Alumni — there are also LinkedIn groups for our Career Peers and for students (and employers) who participate in the MSU Corporate Spring Break program.
- **Twitter.** Follow SpartanEngineer on Twitter and receive job notices, tips for your job search, information on upcoming events, and news items. The Center for Spartan Engineering manages and distributes information through this network.
- **Facebook.** Be a fan of MSU Engineering Alumni and keep track of upcoming events and news articles about engineering, or interact with fellow alumni, students, and college faculty and staff. If you are a CSE grad, you might also want to be a fan of the Michigan State University Computer Science and Engineering page.
- **Alum-Net.** The college maintains its own network, Alum-Net, offering yet another means to connect and reconnect with friends and colleagues.
- **YouTube.** Spartan Career Services has a presence on YouTube with 25 videos on interviewing, work life, and other tips.
- **Blogs.** Two engineering students are also blogging — one is blogging about her experience looking for her first job after graduation and moving to a new area, and the other is detailing his experience on an international assignment.

Interested in connecting? Visit the College of Engineering home page at www.egr.msu.edu for links to all these sites and get connected to your College of Engineering.

— Mary Mertz-Smith
the first contact with those affiliations through informational interviewing (i.e., playing into the intrinsic value of giving back to another MSU alumnus to gain insight into a desired job or company). Essentially we’ve employed a “Spartan helping Spartan” model that if done correctly ends in an MSU-related job seeker being internally referred within their desired career destination by an MSU-related employee working at said company.

This is just one of the many ways to utilize this online presence. Many alumni just want to reconnect with friends and colleagues and, fortunately, LinkedIn.com provides that opportunity as well. Through a “Groups” function, people with like interests can connect their profiles together. As of May 19, 2009, there were 146 LinkedIn.com groups associated with Michigan State University, including the MSU Alumni Association (with 11,000 members), regional groups like MSU Alumni Club of Metro Chicago (814 members), or college-affiliated groups like Michigan State University Engineering (470 members).

And all of this is free!

So if you have a dormant profile or have never registered, these are some helpful approaches to motivate you to utilize and engage the MSU networks and relationships waiting for you on LinkedIn.com.

John Hill may be reached at www.msualum.com or by phone at (517) 355-7698.

Davison Gift Supports Agnes McCann Legacy

The impetus for giving often comes from early experiences. For Sam Davison (BS mechanical engineering ’53), Agnes McCann, an MSU staff member, provided the motivation to support Michigan State University. As secretary to the dean of the College of Engineering from 1917 to 1962, McCann worked with literally thousands of students over the years. She not only provided general support and motherly advice when students questioned whether they could survive the rigorous curriculum, but also offered advice on which classes to take when. “I owe her a big thanks,” Davison said.

Like many college students, Davison took a while to choose a major. It wasn’t until the beginning of his junior year that he decided on mechanical engineering. He was fortunate to also be employed as a student worker for McCann at that time. “I had a lot of credits, but not enough in engineering. When I was at MSU, we could pre-register. She (McCann) gave me the optimum classes,” Davison said.

Because of McCann’s help, and Davison’s hard work, he became a maintenance test pilot in the Air Force and went on to become a chief engineer at General Electric, designing many different types of engines for 37 years. His accomplishments earned him a place in the Propulsion Hall of Fame for his design work on the CFM 56 while at GE.

Upon exploring the idea of supporting Michigan State University, Davison was pleased to learn of the existing Agnes McCann Memorial Student Endowment, which pays tribute to her legacy. The endowment provides critical support for undergraduate activities in the College of Engineering, including academic initiatives, student programs, and tuition support. As with all endowments, the principal of the gift is continually preserved and a percentage of the interest income is spent annually.

The College of Engineering was delighted to learn of another graduate’s appreciation for Agnes McCann with a gift to the endowment that honors her. Dean Satish Udpa remarked, “Agnes McCann was unforgettable to the students and staff who were privileged to have known her. She touched many lives and we are pleased that Sam Davison chose to pay tribute to her dedicated service with his gift.”

To read more reminiscences about Agnes McCann, see pages 46–49 in this issue of Currents Magazine. For more information on the Agnes McCann Memorial Student Endowment or to support the MSU College of Engineering, contact Senior Director of Development Stephen Bates at (517) 355-8339.

— From the spring 2009 issue of Developments, a newsletter produced by University Development, highlighting recent gifts to MSU.
Dale Marshall (BS ’60, MS ’75, Agric Egr) of Holt, Mich., was the first to respond. He writes: “You asked for the identity of the ‘woman in control’ of the (Olds?) car on the back cover of the winter 2008/09 Currents Magazine. She looks to me like the secretary of the ME department of the fifties. She handled our course registration, etc. For me, that was 1956–1960. Her name might have been Agnes McCann . . .

I started in 1953 with an eight-week short course in agricultural engineering. I lived in B-32 Wells Hall (the second Wells Hall). The first Wells Hall was destroyed by fire earlier; so all six building sections of the second Wells Hall were separated with a firewall. You had to go outdoors to go into another section. In 1953 I had a five-digit student number. When I returned in 1956 they would not let me use it and gave me a new six-digit number. Now I hear they are up to seven digits. I worked for USDA Agricultural Research Service doing mechanical harvesting of fruits and vegetables research in Farrall Hall from 1969 to 1997, when USDA transferred me to Georgia. During 28 years at MSU, I hired 85 students. The experience they gained proved valuable when they went into the work force.”

The American Society of Agricultural and Biological Society recently awarded Marshall a 50-year certificate of membership.

EDITOR’S NOTE: Dale Marshall also poses this teaser: “Does anyone know the story behind Agriculture Hall and the east section of the building that currently extends into the parking lot area? Do you know who occupied it in the ’30s and ’40s, and why it was torn down and rebuilt?” If anyone knows anything about this, please contact us at editor@egr.msu.edu or call us at (517) 432-1303.

Richard L. Herrick (BS Mech Egr ’56) of Holt, Mich., writes: “The ‘woman in control’ sure looks like Miss Agnes ‘Aggie’ McCann. I worked for her at Olds Hall when I was a sophomore.”

Bill Cleary (BS Mech Egr ’52) of East Lansing, Mich., writes: “It was really great to see Agnes McCann’s picture on the back cover of your magazine. The way she is holding the tiller is symbolic of the way she kept the College of Engineering on an even keel during the forties, fifties, and beyond. She was truly an angel to all engineers and I never knew of any problem she couldn’t resolve!”

Ron Flinn (BS Civ Egr ’60), currently assistant vice president for MSU’s physical plant, writes: “I believe the ‘woman in control’ is Aggie McCann, aka the ‘engineer’s friend.’ She was officially the secretary to the engineering dean, but functioned at least at the level of an assistant dean.”

Don F. Schimmel (BS Mech Egr ’52) of West Bloomfield, Mich., writes: “How about that. Agnes McCann is in the driver’s seat and is in control of the engineering school. Along for the ride is Dean Lorin G. Miller. I had a few sessions with Ms. McCann (never call her Aggie or Agnes) to discuss what I would have to do to graduate; it probably would have been easier to talk to the dean!

This picture appears to have been taken in the two-story lab, which was attached to and directly behind Olds Hall. This building had a lot of machinery on the main floor and had a balcony that ran around the second
level. Students learned to run tests on various machines, such as steam engines and air compressors.

- **Loyd E. Winer, PE** (BS ’52, MS ’57 Civil Eng), a consulting engineer from Grand Rapids, Mich., writes: “I enjoyed the recent issue of *Currents*. I noticed on the back page you asked who the woman in the picture was. To me the name Agnes McCann came to mind right away. As I recall, she was the secretary to the dean of engineering when I was there in 1953.”

- **Keith Hunt** (BS Civil Eng; originally class of 1944, but graduated upon returning from WWII in 1947) of Grand Rapids, Mich., writes: “I am quite sure that the woman is Agnes McCann, administrative assistant in the school of engineering. I worked for her part-time as a student in 1942–43. I think the man is Dean Lorin Miller.”

- **Paul Shoemaker** (BS Mechanical Eng ’60; MS Applied Mech ’61) of Akron, Ohio, writes: “I think the picture on the back cover is Aggie McCann! She was the ‘leader’ of the engineering department when I was there in 1942–43. I think the man is Dean Lorin Miller.”

- **Bill Stephens** (BS Electrical Eng ’48) of Denver, Colo., writes: “The woman in the ‘Looking Back’ picture looks to me as if it could be Aggie McCann! She was the ‘leader’ of the engineering department when I came back from WWII in 1943. She was quite the gal!” Stephens worked 33 years for Commonwealth Associates, Inc. (and subsequent companies) in Jackson, Mich., before retiring in 1980.

- **Mel Dean** (BS Civil Eng ’43) of Grand Rapids, Mich., writes: “The gal at the wheel looks an awful lot like ‘Dean’ Aggie!” He provides the following caption: “How the heck did they get that contraption started without a computer?”

- **Vern Nelson** (BS Electrical Eng ’52), CEO of Nelson Publishing, Inc., in Nokomis, Fla., writes: “The ‘woman in control’ is Agnes McCann and her passenger is Lorin G. Miller, dean of engineering. I worked in the engineering office while a student and had the privilege of knowing Agnes McCann. She was an incredible professional with a very caring nature for MSU Engineering and its students. Thanks for including this photo from the past.” Nelson says that his company publishes magazines for those in the manufacturing, electronics engineering, information technology, and healthcare industries.

- **Marvin M. Schumann** (BS Chemical Eng ’44) of Venice, Fla., writes: “The two people in the ‘Looking Back’ photo in the latest *Currents* Magazine are probably Dean Miller and Aggie McCann. Since I retired to Florida, I am keeping busy constructing scenery for the local Venice theater.”

- **Harry W. Rapp** (BS Chemical Eng ’43) of Bradenton, Fla., writes: “It has been a long time since I graduated, but my guess is the lady at the controls is a wonderful friend of engineering students and to us the ‘Mother’ of all engineers — Aggie McCann. It looks like she’s in one of the engineering labs in her ‘Merry Oldsmobile.’”

- **Carleton H. Musson, PE** (BS Electrical Eng ’50) of Tabernacle, N.J., writes: “The photo is of Agnes McCann at the tiller, and I believe Dean Miller is passenger.” His suggested caption: “Let’s take a spin around Circle Drive!” Musson submitted this 1952 photo (above) of Dean Miller (center) with L. P. Towsley, the first chief engineer of WKAR-TV, and Musson (far right, peering into the camera), the first technical supervisor of WKAR-TV.”
Musson was director of engineering of RCA Broadcast Equipment Division in Camden, New Jersey, before retiring.

■ James R. Carr, PE (BS Civ Egr ’50) of Grand Rapids, Mich., writes: “The picture on the back of the magazine is Aggie McCann, with Dean Loren G. Miller, PE. It is fitting that Aggie is the ‘woman in control’ as she steered the direction of the engineering school for so many years. Aggie was a great help to me from 1946 to 1950, when I was an undergraduate in civil engineering. What a joy to fight our way through registration with a slip prepared by Aggie that was accepted by all as the gold standard of class assignments.

After graduation, the Seabees called me back in service due to the Korean ‘conflict’ and Aggie kept in touch while I was at the Seabee embarkation base at Port Hueneme and also while I was stationed on Amchitka in the Aleutian Islands. She sent me copies of the engineering publications — including Spartan Engineer — along with copies of cartoons about engineers. Sure helped the days and months pass by.

Thanks for the opportunity to respond to your fine magazine.”

■ Bill Harring (BS Mech Egr ’51) of Madison, Wisc., says that he worked in the girls’ dorm serving three meals a day, worked in a Lansing car wash on Saturday mornings, split an evening shift (four hours) at REO Motors in Lansing, and still found time to go out for football his freshman year. He transferred from chemistry to mechanical engineering after his first year. He writes: “This lovely lady helped me arrange all my classes to fit my schedule. I would title this photo: ‘You won’t find anyone better to give you precise directions to reach your lifetime goals.’”

■ Carl W. Hall (PhD Agric Egr ’52), of Arlington, Va., writes: “As a person who knew and worked (as a graduate student and faculty member — from 1951–70) with both individuals pictured on the back of the winter 2008/09 issue of Currents Magazine, and to let you know that I read the magazine cover to cover, I submit the following: Agnes McCann, secretary to the dean, is the woman in control; Lorin Miller, then dean of engineering, is her passenger. As for a humorous caption? ‘Eyes forward with satisfaction,’ or ‘Lady with her hand on the tiller looking to the future.’”

LET US HEAR FROM YOU!

NAME (INCLUDING MAIDEN NAME)

STREET ADDRESS

CITY / STATE / ZIP

IS THIS A NEW ADDRESS? YES NO

E-MAIL ADDRESS * TELEPHONE

CLASS DEGREE

OCCUPATION / JOB TITLE

EMPLOYER

BUSINESS STREET ADDRESS

BUSINESS CITY / STATE / ZIP

* YES. PUBLISH MY E-MAIL ADDRESS SO CLASSMATES CAN GET IN TOUCH WITH ME.

NO. DO NOT PUBLISH MY E-MAIL ADDRESS.

The College of Engineering and your former classmates are interested in you. Please keep everyone informed. Fill out this form (please type or print clearly) and return it along with any photos, news clips, or press releases to: Currents Magazine, Office of Publications and Public Relations, 3412 Engineering Building, MSU, East Lansing, MI 48824-1226; or contact us at editor@egr.msu.edu.
Doug Harvey (BS ’49, MS ’51, PhD ’55, Mech Egr) of Sterling Heights, Mich., writes: “The driver is, of course, Dean Miller and the passenger is Agnes McCann. All early automobiles were driven from the right side. R. E. Olds gave the car — a 1901 Oldsmobile — to the school of engineering in 1948 or 1949. A group of students from mechanical engineering got it running and drove it around campus. It would run a few hundred yards then stop. We would clean out the sediment from the fuel line, crank it back to life, and drive it farther. When my turn came to drive, the fuel line was clear, allowing me to drive perhaps three or four miles. It was later driven to Lansing and back, perhaps in a parade. There was a story about the car, which may or may not be correct. As I remember, the car was assembled from parts in 1904 when Olds realized he did not have a 1901 model. Olds was not sure that it would even run and was surprised when it did. The fact that there was sediment in the gas tank does not support this account.

The car was in the Mechanical Engineering Power Lab (as seen in the picture) and was covered with a cloth when Olds came to see it. He was outraged and complained to someone in administration. He asked that it be placed in a glass enclosure in the museum. It was there when I last saw it. Where is it now?”

EDITOR’S NOTE: If anyone knows anything about what happened to this car, please contact us at editor@egr.msu.edu or call us at (517) 432-1303.

Robert S. Rowland (BS Mech Egr ’50) of Augusta, Ga., writes: “You asked who the woman is in the photo; I presume you have several answers by now. I’d say it’s Aggie McCann, ME department secretary for many years, including ’46–’50, when I was there. She was loved by all and very helpful.”

Paul Fair (BS Elec Egr ’50) of Traverse City, Mich., correctly identified the woman in the photo as Aggie McCann, and says that he worked for her for a couple of years. He believes the setting is the Power Lab in Olds Hall. He says about the most recent issue of Currents Magazine: “Great issue, nice publication, well put together; our compliments.”

John T. McCall (MS Civ Egr ’51) of Hanover, N.H., writes: “Who else but Dean Miller and Miss (Agnes) McCann.” His caption: “Beam me up, Aggie. MSU Engineering is taking off!” McCall was a faculty member from 1947–59.

Herb Mitson (BS Mech Egr ’51) of Bedford, Ohio, writes: “I think that the ‘woman in control’ is Agnes McCann, the dedicated person in charge of keeping the grading records for engineering students. Her passenger is Lorin G. Miller. They are seated in an R. E. Olds early model gas buggy.”

Winfield Himman (BS Egr—No Pref ’35) of Mesa, Az., correctly identified Aggie McCann and Dean Miller. He says he remembers the car well.

Jack B. Ridenour (BS Mech Egr ’48) of Lansing, Mich., writes: “I believe the picture is of Miss Aggie McCann and Dean Miller, our beloved head of the engineering school in the 40s. Aggie McCann was always ‘steering the boat.’” Ridenour retired from Oldsmobile Div., GMC.

Samuel Mercer, Jr. (MS Mech Egr ’50) of Media, Pa., writes: “The photograph shown dates back to what I believe to be the early 1950s. Miss Agnes McCann is in the driver’s seat of one of the earliest Oldsmobiles and Dean Loren G. Miller is in the passenger seat. Miss Agnes McCann was the power behind the throne in the office of the dean of engineering at that time and for many years before and after.

In 1947 the college was becoming overwhelmed by the returning wave of veterans enrolling under the GI Bill. In that year L. G. Miller was head of the mechanical engineering department. He so sorely needed teachers that he hired me as an instructor without so much as a personal interview. I served on the faculty from 1947 until 1959, approximately half the time in the mechanical engineering department and the latter half of the time in the applied mechanics department. At the time I left to take the position of head of mechanical engineering at Drexel, the dean of engineering at MSU was John Ryder.

The period 1947 to 1959 was an exciting one to be at Michigan State in terms of growth — academically and athletically. The college achieved university status, became a member of the Big Ten, and had a national championship football team coached by ‘Biggie’ Munn. I feel very fortunate to have participated in, and to have contributed to, that growth.”

Mindy Swartz of Laingsburg, Mich., provided the following caption: “When you told me to work on my golf grip, that you had a surprise for me, I never guessed . . . !” While Mindy is not an MSU alum, her husband, Paul, is (BS forestry ’74), and her daughter, Ashley, will be in 2011 (she is currently an MSU undergraduate in mechanical engineering, specializing in biomechanical engineering). Paul is currently the MSU campus arborist in Landscape Services; Ashley is a Von Ehr Scholar and a soccer player. “I read Currents Magazine to stay on top of what is going on in the College of Engineering,” says Mindy.
This photo of Herman K. Vedder appeared in the 1911 yearbook (which was called The Wolverine at the time). Can anyone tell us more about this photo? Contact us at editor@egr.msu.edu.