We Build Them Better
ach spring issue of Currents Magazine showcases our students — Spartan Engineers. This issue focuses on how we train them and it highlights their many accomplishments.

In the Michigan State University College of Engineering, we start building a Spartan Engineer the moment he or she arrives on campus. Our freshmen begin their academic careers with “cornerstone” classes, where they are engaged in the design process the first week of class. Throughout a student’s years of study, a rigorous academic environment is combined with experiences outside the classroom — like undergraduate research, study abroad, internships, and co-ops — tailored to meet each individual’s goals and needs. At the end of his or her course of study, a Spartan Engineer enrolls in a senior capstone design course, which provides a team-based, industry-driven design challenge that requires the application of cumulative technical and experiential skills to real-world engineering problems. Then, in accordance with MSU’s land-grant philosophy, our graduates take what they’ve learned and apply that knowledge in the real world to benefit the community, the state, the nation, and the world.

We teach our students how to think, and we teach them how to learn. We also train our engineers to be “Renaissance engineers” — that is, engineers who have depth in a specific area but also have the ability to connect with professionals across disciplines. We are exploring the idea of “interleaving” engineers into an environment with students in business, pre-medicine, pre-law, the social sciences, and the humanities. This would raise our engineering students’ awareness of different perspectives and enable them to pick up the “soft skills” necessary to communicate and work effectively with people outside of the field of engineering. We want our engineers to be able to look at a problem from a 50,000-foot level, yet have the ability to zoom in to study it. But this type of learning requires an immersive environment. And that is the goal of our new Residential Experience for Spartan Engineering (to learn more, read the article on pages 2–5).

If we want to attract the best and brightest students in the country to the field of engineering, we cannot afford to overlook 50 percent of our population — women. The diminishing number of women entering engineering and science careers has become a critical national concern. In response, the college has launched a Women in Engineering program to recruit and retain women, and to make sure that the College of Engineering provides a nurturing environment for women (read about this new program on pages 16–17).

Utilizing all of these methods for imparting knowledge ensures that our graduates will adapt to the rapid changes inherent in today’s technology and business practices and remain competitive in this global economy. In short, Spartan Engineers are “good to go” and “built to last.”

Finally, we’ve included in this issue a special pullout feature — “Engineering the MSU Campus” — that illustrates how our alumni, faculty, and students have helped to build our campus, beginning in 1875 and continuing right up to the present. We hope you enjoy reading about how Spartan Engineers have helped make the MSU campus the beautiful, functional place it is today.

from the Dean
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Engineering the MSU Campus

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With no previous engineering experience, students in ECA 100, Introduction to Engineering Design, had two weeks to form teams, modify a 12-ounce pop can, and compete with classmates to see which team’s pop can would roll down an incline the fastest. The winning team’s pop can rolled down the track in 3.6 seconds.
The Residential Experience is a combination of new academic classes, called Cornerstone Engineering, and a designated residence hall that will offer living quarters for freshmen and be a hub for freshman engineering classes and activities. “This new option will immerse students in an integrated and intensive academic environment so they will be better prepared to adapt to constantly changing engineering workforce needs,” says MSU President Lou Anna K. Simon.

The College of Engineering has had freshmen living in a residence hall for a number of years. Under a program called ROSES (Residential Option for Science and Engineering Students), about 150 freshman engineering students live in Bailey Hall. “This is a good living and learning experience for freshmen, but it has not had an engineering academic component. Students are in common sections of math, chemistry, and writing, but not engineering,” says Tom Wolff, associate dean for undergraduate studies in MSU’s College of Engineering.

Starting in fall 2009, students in the Residential Experience will be housed in Wilson Hall, which will also have computer and project labs for EGR 100, Introduction to Engineering Design. Some of these facilities will be in place as early as fall 2008. The Residential Experience is currently in Bailey Hall in the Brody Complex. The move to a location within a short walking distance of the Engineering Building, and the lab facilities in the same hall, will significantly improve the living-learning experience and connection of our freshman engineers.

After renovations to the building, the Residential Experience for Spartan Engineering is expected to be in place by fall 2009. Living in the residence hall will be optional, but strongly recommended, for freshmen. The academic classes, which will be taught in classrooms and labs in the residence hall, will be required for all freshmen. The residence hall will also feature areas for tutoring and offices for advisers and faculty. Student organization offices will also be located within the residential setting. “All freshmen will end up in the residence hall whether they live there or not. That’s the incentive to live in the residence hall,” says Wolff.

Carmellia Davis-King, a specialist-adviser for undergraduate studies in MSU’s College of Engineering, works closely with students currently involved in the ROSES program and sees great potential for the Residential Experience. “The goal is to make a large campus like MSU feel like a small-campus experience,” says Davis-King. She believes the Residential Experience will make students more aware of the help and activities that are available to them and will make them strong enough to survive their college years. She is a mentor.
to the students but really pushes the academic side. Students need to have a specific grade point average and complete core courses in order to be officially eligible for admission to the College of Engineering. Generally this is done by the time students become sophomores. “The students like being with other students who are taking the same classes. It is easy to ask for help or ask what happened in class when other students from the same class are just across the hall,” says Davis-King. “This Residential Experience provides an opportunity for student participants to live and breathe engineering.”

But living and breathing engineering is not enough. The college’s overall goal is to produce “Renaissance engineers” — engineers who possess in-depth knowledge in a specific area, yet have the ability to connect more broadly with professionals across disciplines. To accomplish this, the residence hall designated for the new residential program will not be “engineers only,” nor will it be segregated by floors. A large number of engineering students will share the facility with students from other disciplines including business, pre-law, pre-medicine, and the humanities. “Our vision,” Wolff says, “is that this model will raise our students’ awareness of different perspectives — initially through informal interactions and later, perhaps, more formally in joint curricular programs.”

The other part of the Residential Experience is the Cornerstone Engineering program. In the fall of 2007, a pilot class of Engineering 100 (Introduction to Engineering Design) was offered to 48 freshmen. The pilot was also offered spring semester. There will be about 400 students enrolled when it is a required class for freshmen in the fall 2008 semester. Until the residence hall is ready, the classes will be taught in the Engineering Building. Engineering 100 has two parts — a lecture that gives an overview of how engineers design products and processes, and a lab that offers hands-on projects geared toward team building. This course gives students a chance to learn about the broad scope of engineering before focusing on a major.

On the first day of class, students are divided into teams and given a project, which has to be completed in two weeks. In the pilot class this past fall, students were challenged to get a 12-ounce beverage can to roll down an incline the fastest in a class competition. “This develops team skills and lets students do trial and error without a lot of engineering knowledge. They have to be organized right away,” says Timothy Hinds, academic specialist in the Department of Mechanical Engineering and the lead instructor for Engineering 100.

The students then work again in the same teams on another project, which has to be completed in four weeks. This past semester the project focused on energy conversion. Each team had to take a AA battery and convert its stored energy to another kind of potential energy.

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The third project in the course — which the teams had eight weeks to complete — is an open-ended design project. The students research products, conceptualize a product, and build a prototype, all within a budget. “Individuals in the team learn a lot about how to write a technical document, and how to prepare and deliver a presentation, but the biggest goal is to learn how to work in an engineering team,” says Hinds. “Students in the pilot class had a tremendous experience, and by the end of the semester, some great work was being done that you might not expect from freshmen.” For the last project, the teams had to create a new product that their roommates might use. One team developed a type of dumbwaiter that could raise a television set up to a loft bed. Another team developed a backpack clothes hamper. Dirty clothing would go in at the top in separate compartments. At the laundromat, the compartments could be unzipped at the bottom and emptied into the washing machine.

The other class in the Cornerstone Engineering program is Engineering 102 (Introduction to Engineering Modeling). The pilot class was held for the first time in spring semester 2008. The prerequisite is Engineering 100. In Engineering 102, students learn how to identify and solve engineering problems. Labs focus on how to use computer tools to solve problems. “We teach students to recognize the problem, and then in the lab we show them how to develop a computer model to solve the problem,” says Hinds.
Students have had a positive response to both classes. “It’s the first time they are seeing engineering and it gives them an opportunity to determine if this is what they really want to do. In the past the first opportunity to work in a team was generally as a senior. Students need to develop these team-building skills at the freshman level to use throughout the rest of their education and in their careers,” says Hinds. “We want our graduates to come out of the College of Engineering at MSU ready to go into employment. Employers want graduates who are ready to work. Companies do not train graduates anymore on how to be engineers.” He also points out that many traditional entry-level jobs for graduates no longer exist or have been outsourced overseas.

The Cornerstone Engineering classes will be taught in the residence hall when it is available. “Senior-level engineering students are peer mentors in the Cornerstone classes, so freshmen have an opportunity to interact with upperclassmen, which has not been the case in the past,” says Wolff. Because the residence hall will be within walking distance of the Engineering Building, faculty members will be encouraged to visit and interact with students. Some faculty will have offices in the hall.

The primary reason behind the development of new academic courses for freshmen and the expansion of the Residential Experience is a recent decline in the number of students interested in science and engineering. “In the old model, we first sent students to take calculus and physics. This doesn’t engage young people,” says Wolff. “In a class like Engineering 100, students get excited. They can see right away what engineering is all about.” He points out that most engineering schools are doing something similar in academic coursework for freshmen. “What sets us apart is the Residential Experience.”

The Residential Experience for Spartan Engineering has been in the planning stages since January 2006. Representatives from all departments and majors in the college have been involved in the planning and implementation. In the Cornerstone classes, students see faculty members from each major during the course. Faculty members teach modules of the class and are involved in panel discussions. “We want to keep all departments involved. Everyone has ownership, so it is a win-win situation for the college and all the departments,” says Hinds.

Engineering’s residential program joins other living and learning options at MSU including Lyman Briggs College for natural sciences, James Madison College for public affairs, and the Residential College in the Arts and Humanities. In 2007, MSU’s residential colleges were named by U.S. News & World Report as “stellar examples” of programs “linked to student success.”

Wolff sees the engineering jobs of the future centering on integration (pulling the pieces together) and innovation. “The U.S. workforce needs engineers who can make sense out of all the pieces and come up with the next big thing — the products of the future. The skills needed for integration and innovation are traditional math and physics knowledge, plus teamwork and written and oral communication skills,” says Wolff. “With the Residential Experience for Spartan Engineering, MSU and the College of Engineering are responding to a national call to put all of this into the curriculum the day students start college. It works.”

Jane L. DePriest is a writer and editor who lives in East Lansing, Michigan, with her engineer husband, Leland.
The Center for Spartan Engineering opened in 2007 to support student success. Since its inception, The Center has become a hub of activity, offering a comprehensive portfolio of student services.

Whether it's a young person learning about an engineering career through a K-12 activity, a Spartan Engineer seeking out-of-classroom opportunities, or an alum seeking career networking, The Center is their resource of choice.

Services for students are readily accessible with one stop at The Center. “Students know that if they are seeking information on a program, looking to make contact with industry, wanting information regarding an event, needing to identify a source or connection, or requesting support in other areas, they merely need to come into The Center,” says Garth Motschenbacher, College of Engineering director of employer relations. “This one-stop resource is not only for students, but for employers, faculty/staff, and alumni.”

One of the unique characteristics of this premier facility is the invaluable Career Peer team. This knowledgeable, experienced cadre of students is representative of every class level and engineering major. The Career Peers are dedicated, trained students providing helpful assistance in many matters.
The Center for Spartan Engineering is the center of student life for the college. K-12 outreach, recruitment, career advisement, career exploration, employer connections, alumni networking, faculty links — The Center has it all.

GARTH MOTSCHENBACHER, DIRECTOR OF EMPLOYER RELATIONS

They provide information regarding co-op, internship, and undergraduate research opportunities; serve as liaisons between employers and current and prospective students; write the Spartanengineering News; and support electronic communications for the college.

The Career Peer team is just one of the powerful resources available to Spartan Engineers. “Helping students tailor their educational experience to achieve their future career goals is one of the core values of The Center,” states Bernadette Friedrich, College of Engineering director of student advancement. “In particular, we assist them with out-of-classroom opportunities such as co-ops, internships, alternative spring break experiences, and other formal and informal connections with employers.”

Engineering Career Expo is one of these opportunities. Held during National Engineers Week in February, the event gives students a chance to meet with employers from the manufacturing and technology sectors. It’s an ideal venue for exploring career options while networking with potential future employers. Other Center-sponsored events include the Engineering Career Expo.

The Center held its grand opening on September 6, 2007. The Center is staffed by Career Peers — dedicated, trained students who provide invaluable assistance and information. From left to right: Garth Motschenbacher, College of Engineering director of employer relations; Bernadette Friedrich, College of Engineering director of student advancement; Natalie Hannon; Brad Wardynski; Jordan Cohen; Andrew Baczewski; Catherine Burnham; Ben Maibach III (“Career Peer Ben”), BS ’69 civil engineering; Jessica Micklash; Michelle Marinich; Jeff Laforge; Tania Yusaf; Emily Baker; and Jennifer Jennings, College of Engineering field career consultant. Ben Maibach and his wife, Barbara, provided a generous financial gift in support of The Center.
events include career and professional development seminars held each semester, regularly scheduled workshops to sharpen interview skills and job search strategies, “five-minute résumé critiques” that provide quick and easily accessible résumé advice, and many experiential education opportunities.

According to Friedrich, students gain invaluable information when they participate in out-of-classroom experiences like “alternative spring break.” Instead of taking a break, Spartan engineering students in their freshman and sophomore years apply for the opportunity to visit multiple companies during the week. This year, students traveled to meet engineers and other company representatives at Alcoa, GE—Transportation, MeadWestvaco, Norfolk Southern, and Philip Morris.

“This ‘alternative spring break’ program offers freshman and sophomore students an insight into industry and the uniqueness of each employer,” says Jennifer Jennings, field career consultant in the College of Engineering. “This is a real networking experience that also includes a great combination of exposure to industry, active participation, fun, and travel.”

A commitment to robust career development resources and opportunities creates a forward-looking educational environment for Spartan engineering students.

This is what The Center is all about — facilitating connections between students, faculty and staff, employers, and alumni. Hence the name “The Center for Spartan Engineering,” says Motschenbacher.

To learn more about The Center and its activities, listen to the podcast at http://spartanpodcast.com/?p=390.

Janet Kranz is a writer and marketing professional. She is an alumna of Michigan State University.
Reflections on Spring Break
Corporate Tour with Career Services Network

Invaluable. That is the only possible way to explain my spring break. The Career Services Network Spring Break Corporate Tour was a great experience for every student who participated. Along with 19 other students, I boarded a bus on Sunday morning and headed to the east side of the state to visit five companies — MeadWestvaco, Philip Morris, Norfolk Southern, Alcoa, and GE–Transportation.

This trip gave us a realistic view of corporate America. We did a variety of different things at each company we visited. Every activity, presentation, and tour gave us insight into the culture of each company. We also learned what these companies expect from their employees. All of the employers we visited gave us valuable information about what they specifically look for when recruiting interns, co-op students, and full-time employees.

Not only did we gain important information about each company, this trip was a great opportunity to network with employers. We met multiple people from a variety of fields at each company. This gave us a great chance to ask questions of people who could answer them in depth.

I cannot express how thankful I am that I went on this trip. I learned a lot and I now have a better idea of what I am looking for in a future career. More than that, I had a great time. I met many other students and got to know some faculty members better. This trip was truly one of the best experiences I have ever had.

—Alexandra Hartford, Freshman, Engineering No Pref

The Spring Break Corporate Tour was an unforeseen marvelous experience. I truly recommend this to all freshmen and sophomores who are serious about their careers. Before the trip I will admit I was hesitant to participate; after all, who wants to “be professional” during spring break? Well, I decided to go because I am serious about my career.

On this remarkable trip we visited with five Fortune 500 companies in several states. We learned about the business of each corporation from the inside out. In my opinion, the culture of the company was one of the most important elements we learned about. Viewing how employees interacted with one another was essential. Everyone wishes to enjoy their careers, but it may be very difficult if you don’t take pleasure in the environment.

Each company provided time to have discussions with managers, recruiters, knowledgeable employees, entry-level employees, and top executives. All the employees were extremely open to answer questions. Each of these individuals went through experiences similar to those that college students are now facing, so they gave us important advice to better ourselves academically and launch our future careers.

One important concept I discovered is that you are not restricted by your major. You come to college to learn problem-solving skills. I conversed with engineering majors who were working in human resources, purchasing, or management positions. With an engineering degree you have a broad opportunity.

Overall, the trip assisted me in building relationships with companies. These relationships will become very useful in the future, especially when I start my quest for a co-op and full-time employment.

“It’s not what you know but who you know that makes the difference.” —Anonymous.

—Gary Golden, Sophomore, Mechanical Engineering
K–12 Outreach

John Thon, program coordinator for the College of Engineering K–12 Outreach initiatives, works with seventh-grader Caleb VanZee (seated) and eighth-grader Corey Hungerford during the college’s Design Day on December 6, 2007. More than 125 middle-school students from across Michigan attended.
K-12 Programs Inspire Future Engineers

Sheryl James

Vivianne Robinson couldn’t believe what she was seeing.

There was her 9-year-old son, Justin, not just participating, but passionate — riveted to the LEGO® invention he and the other kids had built. They were a team competing at a regional FIRST LEGO League (FLL) competition at Saginaw Valley State University, and Justin had been designated the team leader. FLL is the result of a partnership between the LEGO Group and the nonprofit organization FIRST (For Inspiration and Recognition of Science and Technology); competitors use LEGO MINDSTORMS Robotics Invention System kits. Justin was charged with making sure the team’s computer-programmed, remote-controlled robot negotiated its way through an obstacle course.

“He was so serious and so focused,” recalls Robinson of the competition four years ago. “I had not always thought of my child as being focused. So when he told me he was selected leader, I was a little nervous.”

Robinson, who lives in Holt and is director of human resources and training for University Development at MSU, soon learned what her son and his teammates already knew: that the LEGO competition was so much fun, no one had time to be nervous.

The team didn’t win, and it didn’t matter. But this isn’t where the story ends. Justin’s involvement with FLL through MSU’s College of Engineering has changed his life. Since that day four years ago, Justin, now 13, has graduated from FLL to Wireless Integrated MicroSystems (WIMS) for Teens, also one of the MSU College of Engineering programs.

As Justin learned when he attended WIMS for Teens last year, the summer residential program provides teens a fuller exposure to engineering through hands-on projects and close interaction with engineering faculty and students. Now attending Holt Junior High School, Justin also stayed in a dorm.

“He can’t wait to go back.

All of this “has really got him interested in engineering,” Robinson says. Not only that, Justin must maintain a B-plus average in math and science to qualify for the program. “Last year, he was struggling in those areas. I let the teachers know this is something he wanted to do, and they spoke to him.”

Justin’s experience is a perfect example of what a variety of professionals affiliated with the College of Engineering hope to accomplish with its recently reinvigorated K-12 Outreach initiative. This amazingly wide-ranging, sophisticated network of programs is designed to entice young people into the adventure known as engineering. And, as in Justin’s case, the programs help...
students work hard to make sure they qualify for the field of study. At least 3,000 students in all attend one or more of the 15 MSU programs offered throughout the year.

“Our job is to make sure kids perceive math, science, and engineering as fun and exciting,” says Drew Kim, assistant to the dean, who oversees the K–12 Outreach program. “That’s why everything we do is hands-on. We rarely do a lecture for these age groups. We recognize in the College of Engineering that we need to do something drastic, something outside the box — not just the traditional in-class teaching of math or science.”

The stakes, all agree, could not be higher. Nationally, interest and enrollment in engineering has dropped in recent years. Kids perceive engineering as either too hard, too boring, or both. And they harbor inaccurate, narrow views of engineers as people who build bridges or, even worse, operate trains.

“Frankly, compared to the rest of the world, we’re not doing very well,” Kim says of the future of the nation’s engineering muscle. An effort such as the K–12 Outreach is “not a luxury anymore.”

In addition, the more rote, basic engineering jobs have gone overseas. “Here, the engineering jobs are second tier. So our graduating students have to walk out as design-oriented people — innovators. That means we have to get these kids at a younger age up to the teens, so when we get them here, they’re really ready to roll.”

Satish Udpa, dean of MSU’s College of Engineering, agrees. He has made the program a priority. “Our K–12 outreach programs are vitally important for producing the seed corn necessary for training the next generation of science and technology leaders. We need these leaders to be able to address the challenges of tomorrow — be it in the areas of energy, health, environment, or security.”

The K–12 programs’ wide reach involves elementary school kids and LEGO products; high schoolers programming robotic fish propelled by a polymer plastic; teacher training and curriculum development; and even grandparents. One of the most popular programs, Grandparents University, has garnered national exposure. Grandparents and grandchildren live in the dorms and participate together in a variety of hands-on activities.

Mary Maxwell Tomas, a retired circuit court judge and former MSU student, attended with her grandson in 2007. Afterward, she was contacted by author Sally Wendkos Olds, who is working on a book tentatively titled 100
Fun Things to Do With Your Grandkids. Olds had heard about MSU’s Grandparents University and wanted to interview past participants. In an e-mail to Olds, Tomas raved about the program’s treasure hunt activity.

“Each child was given his or her own portable GPS, and they used it to run all over campus, with winded grandparents bringing up the rear,” reported Tomas. “They were following clues left in plastic containers hidden in bushes to locate a treasure.

“I could not have imagined a more entertaining and educational experience for both of us. Needless to say, we’re planning to attend again.”

John Thon, Holt Junior High School technology teacher and program coordinator for MSU’s College of Engineering k–12 Outreach initiatives, has been assisting with Grandparents University — and Design Day, another program involving high schoolers and graduating seniors in the College of Engineering — for years. “To see the kids and the interaction with the grandparents is great,” says Thon, who helps grandparents design and build robots.

Grandparents University, he says, “eases the gap in technology between generations. It gives grandparents the opportunity to prove they’re still viable learners, and really puts a whole focus on learning as being a real lifelong pursuit.”

The overriding scope of the k–12 Outreach initiative presents what Kim describes as a dynamic, evolving, and changing field of study. “You can’t look at engineering without biological consideration,” he says, “or without nanotechnology consideration. This was not in the equation three, four, five years ago. When I started in 1999, nanotechnology was barely a spoken language. Microsystems was a big thing. Now, everything has a nano influence.”

He adds, “the most important thing I tell students is that we’re not necessarily teaching you these things so you know in two years how to work this — because it will be obsolete. We’re teaching you how to learn.”

The key word in all of this is “building.” It’s one word most people associate with engineering. And that is what the k–12 Outreach program is doing, on two levels.

While young people assemble LEGO robots; while high schoolers use computers to program wireless thermometers on printed circuit boards; while MSU seniors present their capstone projects on, for example, a portable audio-visual book reader; while students get a real sense of what studying engineering in college is like at the High School Engineering Institute, the College of Engineering is building something, too — the future.

For a complete list of k–12 programs offered through the College of Engineering, visit the Future Engineers Web site at www.egr.msu.edu/future-engineer/programs.

Sheryl James is a freelance journalist from Brighton, Michigan.
What began as a fragile neighborhood’s struggle to preserve green space has become an ambitious collaboration, led by Michigan State University, to transform lives with technology. The resulting Information Technology Empowerment Center (ITEC-Lansing) will have a heavy focus on youth programs to equip Lansing (Mich.) residents with skills needed to succeed in today’s global economy.

ITEC-Lansing is a collaborative effort between community, industry, and education. “This unique partnership will create incredible educational opportunities for our children and spark new job creation in a fast-growing sector of our economy,” says Lansing Mayor Virg Bernero. “What was once a thriving center for educating our children will once again play a key role in preparing young people for success in the emerging global economy.”

ITEC-Lansing will be housed in the former Holmes Street School in Lansing, which is also the future site of the new headquarters for Spartan Internet Consulting Corporation. A “groundbreaking” ceremony was held at the school in January. The ITEC Center will officially open in late summer after renovations to the building are completed.

The technology center will offer hands-on activities designed to teach science, technology, engineering, and mathematics (STEM) skills. “ITEC provides a unique ‘proving ground’ for new ideas in IT teaching and learning,” says Kirk S. Riley, executive director of ITEC. “We are seeking to involve teachers at all levels — MSU faculty, Lansing School District teachers, Lansing Community College faculty, local IT professionals, and MSU students — all in the search for, and implementation of, new ways to engage students with technology. We will have succeeded when every student in the capital region seeking to enter science and engineering fields has the opportunity to do so.”

“We wanted to find a new purpose for this building that would make it a tremendous asset to our neighbor-
“It certainly would not have happened without the great partnership between MSU, the community, the city, and the corporations who came together to get it done.”

David Hollister, president and CEO of the Prima Civitas Foundation, a regional community and economic development collaborative, worked with CSE faculty and staff to assemble a team of colleagues from MSU, Spartan Internet Consulting Corporation, Dewpoint, Inc., the Lansing School District, and local nonprofit organizations. Their vision: to empower Lansing with technology.

Computing and information technology (IT) jobs are among the fastest growing, highest paying jobs in America. Despite the wealth of IT career opportunities available in mid-Michigan, local businesses are struggling to fill these positions. ITEC-Lansing will address this problem by providing residents free access to technology and by teaching technology skills that apply to everyday life.

“I believe in this project,” says CSE Professor George Stockman. “When you inspire kids and adults to explore science and technology, you provide them with opportunities they may not have had otherwise. This also benefits MSU enrollment and gives companies a pool of trained technology professionals.”

The key, Stockman explains, is to engage children with “cool” technology. ITEC-Lansing will provide activities that encourage them to explore technology as a community. For example, children might participate in a group programming activity where they create a story using 3-D graphics.

The team is eager to partner with more businesses and organizations to promote technology in the Lansing area. “We’re thrilled to be part of the effort to revitalize mid-Michigan and promote a strong economy,” says Teresa Isela VanderSloot, CSE academic adviser. “There are multiple opportunities for different types of collaboration.”

Stockman, Pitcher, and VanderSloot are all on the ITEC-Lansing Board of Directors. Other faculty involved include CSE Professor Laura Dillon, and Linda Jackson, psychology and CSE adjunct professor.

ITEC-Lansing is unique, VanderSloot says. “It’s a win-win situation. This is a truly collaborative effort. It’s about giving back and making a difference.”

Learn more at www.iteclansing.org.

From left to right: Adam Pitcher, systems analyst in the College of Engineering’s Department of Computer Science and Engineering (CSE) and president of the Holmes Street School Community Neighborhood Association; Virg Bernero, Lansing mayor; T. C. Wallace Jr., superintendent of Lansing Schools; David Hollister, president and CEO of Prima Civitas Foundation; and Teresa Isela VanderSloot, academic adviser in the College of Engineering’s CSE department and president of the ITEC-Lansing Board of Directors. Hollister worked with CSE faculty and staff to assemble the diverse ITEC team. MSU is a founding partner and key supporter of Prima Civitas, which was established in 2006 to diversify mid-Michigan’s economy and promote job growth.

ITEC-Lansing was officially announced on January 28, 2008.
Just a few years ago, MSU’s College of Engineering enjoyed enrollment numbers that included 22 percent women. Today, that number has dropped; fall 2007 enrollment statistics show that 16 percent of the undergraduate students in MSU’s College of Engineering are women. This trend is consistent with the national average of 15 to 18 percent women enrolled in engineering programs.

In response to these disturbing numbers, last fall the college launched a new Women in Engineering (WIE) program.

“Women are very underrepresented in the field of engineering. And the numbers are dropping,” says Judy Cordes, coordinator of the new program in the College of Engineering. “If we don’t recruit women into engineering, we won’t have enough engineers to fill the need in the future.”

Getting more women into engineering is not only a need of the college, it’s a need across the United States in the corporate world and in academia.

Fewer women across the nation are choosing careers in engineering today. At the K–12 level, girls usually don’t consider engineering as a career choice simply because they aren’t familiar with what an engineer really does.

In some engineering disciplines — like chemical engineering and the biomedical area — women are better represented. “But if you look at the classical disciplines of engineering, we have done a lousy job of communicating to women that it’s a good profession,” says Satish Udpa, dean of the College of Engineering.

According to a 2005 survey report from the Extraordinary Women Engineers Project, a national initiative to encourage girls to consider a career in engineering, high school girls said they are looking for a career that is enjoyable.
and will make a difference. At the same time, they are seeking a good working environment, good income, and flexibility. An engineering career could provide all that, yet they don’t have an understanding of what engineering is and they don’t see the benefits and rewards of being an engineer because they aren’t typically exposed to engineering in high school.

“Most women are interested in a career or profession where they know they’re going to help people, help the environment, or help society. And they need to be able to see how engineering does that,” says Cordes.

Prior to the launch of Women in Engineering, the only programs for women in the college were limited to organizations like the Society of Women Engineers (SWE) and Women In Computing.

“But our students need more than a SWE student chapter,” Cordes admits.

The college was recently part of a three-year longitudinal study in which 10,000 women participated; a large percentage of those women said that even if they may not ultimately use a program like WIE, the availability of such a program would influence where they chose to go to school.

The mission of WIE is to encourage women of all backgrounds to pursue careers in engineering, and to provide opportunities for academic, personal, and professional growth. The intent of WIE is to reach pre-college students, women who have been admitted to the college, and currently enrolled women.

“It’s about getting women into engineering majors — hopefully at MSU, retaining them through graduation, and getting them working in the field of engineering or into graduate school,” says Cordes.

The program will provide resources and services to help students succeed in academic and professional pursuits, facilitate the development of leadership and career-enhancing skills, offer mentoring and networking opportunities, and provide an overall positive environment for women in the college.

In May 2007, the college conducted an online survey of undergraduate women currently enrolled and found that 96.5 percent of the women said they are comfortable studying here. So that’s a good start. But Cordes says the work doesn’t stop there.

In the first two years, WIE will focus on recruitment and retention. Cordes outlined some possible activities. High school juniors and seniors will be invited to campus for activities designed to teach them about engineering and get them excited about career opportunities. Women admitted to the university as engineering majors will be assigned a currently enrolled woman student as an e-mail buddy to help them connect with the college and feel comfortable, or Michigan residents may be invited to attend a reception in their region of the state to enable them to meet other admitted students. For currently enrolled students, freshmen would be able to participate in a special lunch/seminar aimed at them, for example, or seniors may attend a special session to address graduate school or career-related issues.

While WIE targets women, Cordes points out that the program is open to everyone — men and women. “That’s something we want to make very clear. Everyone is welcome to take advantage of our programs and participate in our activities.”

Corporate support, grant funding, and alumni involvement will all contribute to the success of the program.

“It’s important to reiterate why women need a program like this,” Cordes sums up. “The diminishing number of women choosing engineering as a career is not unique to Michigan State; this is a critical national issue.”

For more information, visit the Web site at www.egr.msu.edu/wie.

Women in MSU’s College of Engineering, Fall 2007

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<tr>
<th>Major</th>
<th>Total Students</th>
<th>Women</th>
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<td>149</td>
<td>42</td>
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<tr>
<td>Biosystems Engineering</td>
<td>124</td>
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<tr>
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College Enrollment by Major, Fall 2007

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The National Science Foundation has awarded a $450,000 grant to a team led by MSU’s College of Engineering to develop undergraduate science and engineering programs that better align the computing education received by undergraduate engineering students with the needs of engineering and technology companies in Michigan.

The team is made up of faculty from MSU, Lansing Community College, and Western Michigan University, the Corporation for a Skilled Workforce, and key leaders in the Mid-Michigan Innovation Team. The team will work collaboratively with Michigan...
companies to develop a process that will prepare future two-year and four-year graduates to move seamlessly into the workforce.

The goal of this two-year grant is (1) to help students move into the workforce as agile thinkers who can use software and computational and strategic thinking skills to solve problems and (2) to develop a collaborative process that brings higher education and industry together to understand each other’s needs in computing education, and then to identify creative strategies to transform that education.

“Instead of having a disconnect between what undergraduates learn and what industry needs them to know, this project will work to bridge that gap,” says Tom Wolff, associate dean of undergraduate studies at MSU’s College of Engineering.

“It is unusual for higher education and industry to have the opportunity to work in a two-way process like this one,” Wolff adds.

“Having a high-ability workforce that can use computing methodologies to solve today’s challenges is critical to the economic development of Michigan,” says Jon Sticklen, MSU associate professor of computer science and engineering and a member of the team that received the grant. “In the rapidly changing business environment, educators need to stay ahead of changes in the workplace; this grant will help us be ahead of the curve on those needs. It brings the academic faculty and industry leaders of our area to the same table to develop a process that reflects industry needs in engineering curriculum,” adds Sticklen.

“This opportunity to mesh our curriculum goals with the computing needs of industry will aid faculty in preparing students who will be skillful, confident, and adaptable in their problem-solving abilities,” says Louise Paquette, professor of math and science at Lansing Community College.

The overall benefit to mid-Michigan is the economic development this project will spur with the development of diverse, agile engineers and scientists who can provide mid-Michigan with a ready workforce of scientists and engineers.

“We hope to be better poised to attract and retain technology-based firms, including high-tech entrepreneurial ventures, that seek to leverage our state’s rich engineering design and research assets,” said Jeannine La Prad, president of the Corporation for a Skilled Workforce and team member.

In November, the National Science Foundation’s Directorate for Computer and Information Science and Engineering (CISE) completed the process of awarding the grants for its CISE Pathways to Revitalized Undergraduate Computing Education (CPATH) program, an initiative that aims to transform undergraduate computing education on a national scale. More than 25 institutions across the country received grants totaling $6 million.

In addition to Tom Wolff and Jon Sticklen, the MSU co-principal investigators for this grant are Mark Urban-Lurain, Director of Instructional Technology Research and Development, Division of Science and Mathematics Education, College of Natural Science; Daina Briedis, associate professor of chemical engineering and materials science, College of Engineering; and Neeraj Buch, associate professor of civil and environmental engineering, College of Engineering.
The Worm Team. From left to right, back row: Diane Graham (Woodcreek Magnet School engineering teacher), Jillian Joliat (MSU engineering student), Sandra Raymer (Woodcreek Magnet School fifth-grade teacher), Craig Somerton (MSU associate chair and associate professor of mechanical engineering), James Meyerle (Urban Options educational manager), and Matt Langenderfer, Brad Wackerle, and Caitlen Douthitt (MSU engineering students). Woodcreek students, front row, from left to right: Raina Gilbert, Xymana Reed, Brendan Carter, Isaac Caterino, Austin Merrian, Yosvany Pupo-Rivera.
The Motorola Foundation awarded two Innovation Generation Grants to the college in support of K–12 outreach programs. The grants were established in early 2007 to fund education programs that spark a love of science, technology, engineering, and math in today’s youth.

Two programs in the College of Engineering are supported by the grants:

The Youth in Energy and Environment Humanitarian Project received $45,000. This program involves 3rd- to 6th-graders in a design project for the Department of Mechanical Engineering’s capstone course oriented toward energy and the environment. During fall semester 2007, MSU students worked with 5th- and 6th-graders at Lansing’s Woodcreek Magnet School to develop a solar-heated worm bin. For several years, the school had used a worm-based compost approach for disposing of lunch waste. But in winter, the worms go into hibernation and composting ceases. A solar heating system heats the compost pile and keeps the worms active. The Motorola grant provides funding for equipment and supplies, and enabled the class to travel to the MSU campus at the end of the semester to attend the College of Engineering’s Design Days. (See related story in sidebar on page 23.)

Wireless Integrated MicroSystems for Teens (WIMS for Teens) received...
$50,000. This two-week summer residential program for 7th- to 9th-graders is designed as a catalyst to further develop students who are already motivated and well prepared to choose careers in science, math, and engineering fields, and specifically in Wireless Integrated MicroSystems. Microsystems are very small information-gathering nodes that gather data from the environment, interpret it, and wirelessly communicate that information in local or global information networks. Microsystems are among the hottest areas in microelectronics today, blending low-power embedded computing with sensing and wireless interfaces to tackle important problems in the health care, energy, and defense fields. The WIMS for Teens course is offered through the NSF-funded Engineering Research Center for Wireless Integrated MicroSystems (WIMS ERC), a partnership between the University of Michigan, Michigan State University, and Michigan Technological University. More than 1,000 students — many of them girls and minorities — have enrolled in the 40-plus short courses offered since the center was established in September 2000.

"The Motorola Innovation Generation Grants could not have come at a better time," says Drew Kim, assistant to the dean for recruitment and k–12 outreach in MSU’s College of Engineering. "The Center for Wireless Integrated MicroSytems is actively seeking ways to sustain its current programs. This Motorola grant allows us to double the current capacity and expand our WIMS for Teens program from one week to two weeks. We know that the more time students spend on campus gaining experiential engineering education, the more likely they will be to pursue a career in the math, science, and engineering fields. This grant also allows us to employ more engineering students to mentor these young people and be good role models for them."

Kensall D. Wise, director of the WIMS ERC and professor of electrical engineering and computer science at the University of Michigan, points out that the center’s NSF funding will expire in 2010. "That’s why it’s critically important that companies like Motorola step up and help keep these programs running."

According to the U.S. Bureau of Labor Statistics, jobs requiring science, engineering, or technical training will
increase 24 percent to 6.3 million between 2004 and 2014, creating greater demand for critical thinkers fluent in technology.

“It’s a struggle to continue to be technologically competitive in the world today,” says Wise. “All too few of our high school students are going into science and engineering fields. But science and engineering competencies are the key to global competitiveness. So it’s urgent that we communicate excitement about engineering and science to our middle school and high school students in order to maintain our quality of life in the United States.

“This is a battle we can’t afford to lose,” Wise adds.

“Studies have indicated that we can make the most impact at the middle school level if we can partner with corporations like Motorola, collaborate with the science, math, and technology teachers in our schools, and provide hands-on interactive activities to teach math, science, and engineering,” says Kim.

“Future citizens of the world must be aware of the energy and environmental issues that will impact our lives,” adds Craig Somerton, associate professor and associate chair of the Department of Mechanical Engineering at MSU. “The greater the technical awareness of our future citizens, the greater the opportunities will be to solve critical problems.” Somerton’s Youth in Energy and Environment Humanitarian Project will cultivate this technical awareness.

“For a number of years, the thought was that you really build a child’s interest in engineering during middle school,” says Somerton. “But I’ve seen literature now indicating you may need to do it even earlier.”

Eileen Sweeney, director of the Motorola Foundation, says, “Motorola’s partnership with MSU’s College of Engineering will cultivate the next generation of skilled scientists America will need and ultimately help improve our country’s future workforce. All of us at Motorola are advocates for education and applaud the work that MSU is doing to ignite an interest in science, math, and engineering at an early age, particularly for girls and the underserved.”

Since 2000, Motorola Foundation has contributed more than $35 million in grants to a variety of programs that draw students closer to science, technology, engineering, and math.
Five Faculty Honored at MSU Awards Convocation

Five College of Engineering faculty members were recognized at the annual university-wide Awards Convocation February 12 at the Pasant Theatre, Wharton Center: Bruce Dale, Steven Shaw, Ning Xi, Carl Boehlert, and Ramakrishna Mukkamala. They were among 30 members of the campus community honored at the ceremony.

Distinguished Faculty Awards

- **Bruce Dale**, professor of chemical engineering and associate director of MSU’s Office of Bio-based Technologies, is an internationally recognized leader in the application of biotechnology principles to produce fuels, chemicals, and other industrial products from renewable plant resources. His pioneering research on the ammonia freeze-explosion process, a leading pretreatment method for lignocellulose, is now being commercialized by a major ethanol producer. As a teacher and mentor, he is sensitive to the human element involved in the application of engineering science and encourages this sensitivity in his students. Dale met with President Bush at the White House in Feb. 2007 as part of a group of experts on the subject of alternative fuels for transportation, then testified in April before the U.S. Senate. He was selected as the 2007 Sterling B. Hendricks Memorial Lecturer by the Agricultural Research Service (ARS), the USDA’s primary research agency, in recognition of his outstanding contributions to the chemical science of agriculture.

- **Steven W. Shaw**, professor of mechanical engineering, is recognized internationally for his research in nonlinear dynamics. His eclectic suite of contributions ranges from the extremely theoretical to the pragmatic. His research has made fundamental and original contributions to the understanding of systems undergoing chaotic dynamics and nonlinear vibrations. His seminal works on dynamic vibration absorbers have been translated into contemporary practice in the automobile industry; this environmentally sensitive design protocol could be responsible...
for fuel savings of more than 20 million barrels of oil each year. He is a fellow in the American Society of Mechanical Engineers and received the Society of Automotive Engineers Arch T. Colwell Merit Award (1997). He has delivered several keynote and invited lectures at international conferences, including the 2001 JSME Minisymposium on "Nonlinear Dynamics and Chaos in Mechanical Systems" in Tokyo. He is known for his mentorship of undergraduate and graduate students.

Ning Xi is the John D. Ryder Professor in the Department of Electrical and Computer Engineering and director of the Robotics and Automation Laboratory at MSU. His pioneering work on Internet-based telerobotics has laid the foundation for integrating robotics with information technology. He was named an IEEE fellow in 2007 for his contributions to the field of nanorobotic manipulation and assembly. He received the SPIE Nano Engineering Award (2007) and the Best Paper Award of IEEE Transactions on Automation Science and Engineering (2007). His major research contributions include the development of a nanorobotic manipulation and assembly system that enables a human to visualize and manipulate nano-scale objects in real-time. He is a consummate educator, providing students with an education that extends beyond the curriculum. He has mentored 10 doctoral students who are enjoying successful careers in academia and industry.

Teacher-Scholar Awards

Carl Boehlert, associate professor of chemical engineering and materials science, has an international reputation for his work on titanium-based alloys for high-temperature aerospace materials and biomedical implants. Honors include an NSF CAREER Award (2002); a Department of Energy Presidential Early Career Award for Science and Engineering (PECASE) (2002); and the American Institute of Mining, Metallurgical, and Petroleum Engineers "Rossiter W. Raymond Memorial Award" (2003). He is regarded by students as an enthusiastic, approachable, and dedicated teacher who creates a positive learning environment. He relates coursework to real-life situations and involves undergraduates in research projects.

Ramakrishna Mukkamala, assistant professor of electrical and computer engineering, is internationally recognized for his recent innovations in cardiovascular monitoring by signal processing. He received an NSF CAREER Award in March 2007 for his project: "Integrated Research and Education in Cardiovascular Signal Processing for Automated and Less Invasive Monitoring of Central Hemodynamics." Passionate about teaching, he emphasizes the understanding of major concepts, rather than rote memorization, and provides students with a means to apply theory through real-world computer assignments. Students remark that his highly interactive lectures "provoke critical thought" and "develop the problem solvers and inventors of tomorrow."

U.S. Army Honors Associate Dean Wolff

Thomas F. Wolff, associate dean for undergraduate studies in the College of Engineering, was recognized by the U.S. Army for his work on a report on the performance of levees in Hurricanes Katrina and Rita. He was a member of the Internal Technical Review Team responsible for the nine-volume Interagency Performance Evaluation Team (IPET) report, authored by more than 150 experts affiliated with government agencies, consulting firms, and universities. Wolff received the U.S. Army "Commander’s Award for Public Service" by Major General Don T. Riley, Director of Civil Works, U.S. Army Corps of Engineers. This award is the fourth highest honor that the Army can bestow upon a civilian.
Professor Matt Mutka was appointed chairperson of the Department of Computer Science and Engineering effective February 1, 2008. He joined the department in 1989 as assistant professor after receiving his PhD in computer science from the University of Wisconsin–Madison in 1988 and spending a year at the University of Helsinki as a visiting scholar. He earned his bachelor’s degree from the University of Missouri–Rolla (1979) and his master’s degree from Stanford University (1980) — both in electrical engineering. He previously served as the CSE department’s associate chair (5/99 to 5/01) and acting chair (8/99 to 12/99). Most recently, he served as acting chair from September 2007 until February 2008.

His research interests include computer systems and networking, mobile computing, pervasive computing, and network-centric robotics. His scholarly work has resulted in more than 130 journal publications, book chapters, and refereed conference papers. He has supervised 17 PhD graduates.

Mutka has served on the editorial boards of several prestigious journals and is currently on the boards of Pervasive and Mobile Computing, Wireless Communications and Mobile Computing, and Service Oriented Computing and Applications. He is program chair for the Sixth Annual IEEE International Conference on Pervasive Computing and Communications (PerCom 2008). He is on the program committee for the 28th International Conference on Distributed Computing Systems (ICDCS 2008); the Fifth Annual International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MobiQuitous 2008); and the International Symposium on a World of Wireless, Mobile and Multimedia Networks 2008 (WoWMoM 08).

He is a senior member of the Institute of Electrical and Electronics Engineers (IEEE) Computer Society and a member of the Association for Computing Machinery.

"Professor Mutka brings a record of excellence in research, teaching, and public service to this position," says Satish Udpa, dean of the College of Engineering. "We look forward to continuing to work with him in advancing the mission and goals of the CSE department and the college."
The MSU Center for Service-Learning and Civic Engagement (CSLCE) launched a new award category this year — the Service-Learning and Civic Engagement Award — to recognize individuals from each MSU college for innovative and sustained efforts in linking faculty and students with the community through academic, curricular, and/or co-curricular service-learning and civic engagement. College of Engineering honorees George C. Stockman, professor and associate chairperson; Teresa I. VanderSloot, academic adviser; and Adam Pitcher, systems analyst — all members of the Department of Computer Science and Engineering (CSE) — were recognized April 1 at the Kellogg Center. Celebrating its 40th anniversary this year, the CSLCE is the oldest continuously operating service-learning center in the country.

Pitcher, VanderSloot, and Stockman conceived and helped bring to fruition the Information Technology Empowerment Center (ITEC) located in the former Holmes Street School on Lansing’s east side. (See story on p. 14, “Collaborative IT Effort Empowers Students and Residents.”) Pitcher, president of the Holmes Street School Community Neighborhood Association, was a driving force behind the transformation of the former school. He and a friend came up with the idea for a technology center and enlisted the help of colleague Teresa VanderSloot, CSE academic adviser. From there, a host of groups and individuals became involved. ITEC offers hands-on activities designed to teach science, technology, engineering, and mathematics (STEM) skills to youth and families. The nonprofit center will provide access to computers and high-speed Internet in a low-income area where many families do not own computers. VanderSloot is president of the ITEC Board of Directors and Pitcher and Stockman are board members.
The College of Engineering honored faculty and staff members for excellence in teaching, scholarship, and service at the 18th annual Engineering Awards Luncheon on March 27, 2008, at the University Club.

Six faculty members received Withrow Teaching Excellence Awards: Truman C. Surbrook, professor of biosystems and agricultural engineering; Carl T. Lira, associate professor of chemical engineering and materials science; Richard W. Lyles, professor of civil and environmental engineering; Richard J. Enbody, associate professor of computer science and engineering; Gregory M. Wierzba, associate professor of electrical and computer engineering; and Giles J. Brereton, associate professor of mechanical engineering.

Betty H. C. Cheng, professor of computer science and engineering, received the Withrow Distinguished Senior Scholar Award for her achievements in the design of high-assurance software systems.

Robert J. McGough, associate professor of electrical and computer engineering, received the Withrow Distinguished Junior Scholar Award for his contributions to biomedical engineering, particularly in the area of hyperthermic cancer therapy.

Leslie L. Leone, assistant dean for undergraduate studies, received the Withrow Student Service Award for 37 years of excellence in advising students and as director of the cooperative education program.

Jackie Carlson, director of the Division of Engineering Computing Services (DECS), received the Gloria Stragier Award for Dedicated and Creative Service in the management and maintenance of computing resources in the college.

Withrow Awardee Retires after 37 Years of Exceptional Service to Students

Les Leone, the 2008 winner of the Withrow Student Service Award and assistant dean for undergraduate studies, has held almost every student service position in the college, bringing innovation and excellence to each. Over a 37-year span, he has assisted over 10,000 Spartan Engineers in the pursuit of their degrees and careers.
People say, "With Les, the students always come first." Co-workers view him as an excellent leader whose work ethic cannot be matched. He is known as a "walking encyclopedia of engineering academic history and university policies." Bernadette Friedrich, director of student advancement in The Center for Spartan Engineering, says, "He has been a mentor to me, encouraging me to cultivate my skills and explore professional and academic opportunities within MSU and beyond. He is also a mentor to others at MSU and in the co-op profession. Many of my colleagues here and around the country seek him out for career advice."

When he became director of Applied Engineering Sciences, Leone breathed new life into the program, creating an alumni advisory board, successfully initiating a program endowment fund, and working toward a possible first-time ABET accreditation visit in 2010. He is co-author of the best-selling freshman textbook, *Engineering Your Future*. Through an introductory course he developed and has taught for more than 15 years, "Engineers and the Engineering Profession," he has helped hundreds of students to understand the many aspects of engineering and choose a focus for their own studies.

As director of cooperative engineering education for 20 years, Leone coordinated the needs and interests of 400 co-op students in nine engineering majors with more than 200 employers annually. He has received the American Society of Engineering Education’s Alvah K. Borman Award and the Clement J. Freund Award for meritorious contributions to engineering cooperative education. He also received the Michigan Council for Cooperative Education’s Don Hunt Service Award for outstanding leadership in Michigan cooperative education, as well as MSU’s Distinguished Academic Staff Award.

Tom Wolff, associate dean for undergraduate studies, says that “For the past 37 years, the college has had the good fortune of being able to count on Les’s generosity and willingness to go the extra mile to do the right thing. We will truly miss him and his cheerful, ‘can-do’ spirit. Leone’s résumé paints the portrait of a man who has dedicated his entire professional life to the College of Engineering and its students. The impact of his devotion will be a guiding force well into the future.”

**Luncheon**

Les Leone (left) with Dean Satish Udpa.

Tom Wolff (left) with Les Leone.
NSF CAREER Awards

■ Selin Aviyente, assistant professor of electrical and computer engineering, received an NSF CAREER Award for her project, “Integrated Research and Education in Functional Brain Networks.” To understand the brain as an integrated system, it is crucial to identify dynamic functional networks underlying observed neural activity and quantify these interactions across the brain. This framework is applied to the study of the brain related to psychopathologies including schizophrenia and impulse control problems. Several educational programs tightly integrated with this research include outreach activities for k–12 female students and developing an undergraduate signal processing course with a focus on neuroscience applications.

■ Tongtong Li, assistant professor of electrical and computer engineering, received an NSF CAREER Award for her project, “On Highly Efficient and Reliable Wireless Networks” through advanced multilayer methodologies. She breaks new ground in developing highly efficient, inherently reliable access control mechanisms and airlink interfaces. By exploiting cryptographic techniques and inherent ambiguity in signal detection over multiple access channels, her design guarantees strong information confidentiality and integrity over wireless networks. By integrating these technological advances into the undergraduate/graduate curricula, she expects to train a highly skilled and diverse workforce in the area of wireless communications and networking.

ASEE Award

■ Craig Gunn, academic specialist for mechanical engineering, received the Alvah K. Borman Award at the American Society for Engineering Education’s 2008 Conference for Industry and Education Collaboration for his efforts in promoting cooperative education in engineering. A full-time academic specialist, he created and maintains a communication program for the Department of Mechanical Engineering. He co-authored a textbook, Engineering Your Future, first published in 1999, which has been declared a best seller. He has served as an editor for the newsletters of three separate state, regional, and national cooperative education organizations and published over 60 papers on engineering communication.

Fellow Awards

■ Daina Briedis, associate professor of chemical engineering and materials science, was elected a fellow of ABET, Inc., the organization responsible for the accreditation of educational programs in applied science, computing, engineering, and technology. She received the 1985 MSU Teacher-Scholar Award and the State of Michigan’s 1990 Teaching Excellence Award, and was elected Outstanding Teacher four times by her students. She coordinates quality improvement efforts in MSU’s chemical engineering program. Recently Briedis has been an American Institute of Chemical Engineers (AIChE) Representative Director on the ABET Board of Directors. She has published a number of articles on accreditation, curriculum redesign, assessment, and quality improvement and has conducted multiple workshops on assessment.

■ Eldon Case, professor of chemical engineering and materials science, was named a fellow of ASM International, a professional materials society with more than 37,000 members, in recognition of his contributions in the area of microcracking and fatigue behavior of structural ceramics and bioceramics. Case is also a Fellow of the American Ceramic Society and is associate editor of the International Journal of Applied Ceramic Technology. He received the MSU Teacher-Scholar Award in 1989 and has won the College of Engineering’s Withrow Teaching Excellence Award four times (1993, 1995, 1998, and 2006).
Venkatesh Kodur, professor of civil and environmental engineering, was elected a 2007 fellow of the American Concrete Institute (ACI). As a member of the 2001 ASCE/FEMA “Building Performance Assessment Team” established to study the World Trade Center collapse, he helped generate an extensive report for U.S. congressional committees. He has published over 175 technical papers on fire resistance of structural members and contributed significantly to professional organizations including: ASCE, ACI/TMS, and the SFPE Standards Committee. He is associate editor of the ASCE Journal of Structural Engineering, has delivered invited keynote presentations at numerous international conferences, and won the NATO Award for Collaborative Research.

Lalita Udpa, professor of electrical and computer engineering, was selected as a 2008 fellow of the Institute of Electrical and Electronics Engineers, Inc. (IEEE) for her contributions to forward and inverse electromagnetic nondestructive evaluation (NDE) methodologies. She is also a fellow of the American Society for Nondestructive Testing (ASNT). Her group’s modules, integrated with commercial systems, have been employed by Honeywell for engine disk inspection in commercial aircraft; by the Electric Power Research Institute for analyzing eddy current signals from steam generator tubes in nuclear power plants; and by the Navy for analysis of signals from the inspection of submarine hull welds. Boeing uses her three-dimensional computational models based on finite element analysis for optimizing the design of GMR sensors and systems for detecting small defects embedded in multilayer structures. Her research team received the Federal Aviation Administration’s “Better Way” award in 2005 for their “Turbo Magneto-Optic Imaging for Inspection of Alodine Fasteners.”

National Leadership and Service

Ron Harichandran, chairperson of the Department of Civil and Environmental Engineering, served on a committee that just completed the American Society of Civil Engineers’ (ASCE) latest “BOK,” or body of knowledge. Released on February 19, this document sets forth what civil engineers must know in the 21st century. The 182-page reform and expansion of current educational requirements for civil engineers makes clear that today’s four-year degrees are not sufficient for tomorrow’s professionals. The new BOK, to take effect by 2015, advocates 30 additional credits in the form of either a master’s degree or practical experience in order to obtain licenses and practice professionally. New skills and dimensions of civil engineering practice are built into the pre-licensing requirements. Jeffrey Russell, head of the civil and environmental engineering department at the University of Wisconsin–Madison, says, “New complexities are driving a need for change, as well as global competition and customers with higher expectations.”

Daniel T. King, academic adviser for the Department of Civil and Environmental Engineering, has been elected chair of the Engineering and Science Advising Commission in the National Academic Advising Association (NACADA), effective October 2008. According to the NACADA president and the executive director, “His election is not only a fine tribute from his peers, but also a recognition of significant professional contributions to and excellence in the field of academic advising.” King will provide leadership to the commission regarding engineering and science advising, promoting participation in NACADA activities and programming, and proposing and facilitating activities and publications to advance the professional development of its members and contribute to the general body of knowledge of the commission.

—Compiled by Lynn Anderson
Design Days
Redesign of a recumbent cycle for Mid-Michigan Medical Center; a lightweight and electromechanical desk chair for children with cerebral palsy; a portable audio-visual book reader for individuals with disabilities; and an automotive warning system that would alert drivers to obstacles in the road, icy conditions, or heavy traffic were among the innovations presented during the College of Engineering Design Days this past year.

Held at the end of fall and spring semesters, the event showcases the accomplishments of the next generation of engineering designers, innovators, and entrepreneurs. At the same time, it provides an opportunity for interaction between pre-college students and college students who are currently involved in a variety of engineering disciplines.

On the first day of the two-day event, College of Engineering freshmen present their cornerstone projects through prototype designs and posters. Middle school students from around the state participate in special activities involving “hands-on” learning as part of the Dart Foundation Day of Innovation and Creativity for students in 7th–12th grade, which has become a regular part of Design Days.

On the second day, College of Engineering student teams, involved with projects that demand the integration of engineering theory and practice, are in the spotlight. Robotic competitions, innovative machines, and prototype design builds are highlights of the day. High school students will have the opportunity to participate in design activities that allow them to explore engineering principles and to interact with other high school and college students through evaluation of MSU student projects.

"It provides a link between early notions of dabbling in technical challenges and the launching of a successful career," says Maureen Blazer-Adams, Design Days coordinator.

Spring semester, the Applied Engineering Sciences program and the Department of Civil and Environmental Engineering participated in the event along with the Department of Computer Science and Engineering, the Department of Electrical and Computer Engineering, and the Department of Mechanical Engineering.

"The continued growth in participation not only allows the College of Engineering to showcase more students — in particular those involved in the senior capstone design program — but it serves as an invaluable opportunity..."
for pre-college students to experience the different avenues of engineering and their importance in the technological fields,” says Blazer-Adams.

Headliners of the event are the graduating seniors as they present their capstone design projects through posters and oral presentations. The projects provide unique opportunities for students and faculty to collaborate with more than 35 industrial sponsors on design projects. Each senior is a member on a team that has designed a new or improved product or process for a project sponsor, including: Boeing, General Motors, IBM, Lear Corp., MACSTEEL Jackson Division, Microsoft, Motorola, NASA, Shell Oil Co., and Whirlpool Corp.

“This unique opportunity to interact with corporate technical mentors can provide answers to the unknowns that often cross students’ minds when contemplating a career path,” Blazer-Adams adds.

**MSU Formula Racing Team**
The MSU Formula Racing Team showcased its award-winning racecar at the 2008 North American International Auto Show (NAIAS) at Cobo Hall in Detroit in January.

The team displayed racecar 41 (2006) and racecar 9 (2007). Both cars placed in the top 10 at Formula SAE and Formula SAE West competitions.

Formula SAE is a collegiate competition series sanctioned by the Society of Automotive Engineers. It hosts more than 300 teams in nine competitions around the world annually. Students are challenged to design, manufacture, and market a small open-wheel racecar for a specific target market.

“MSU’s approach to the competition is similar to the philosophies of many original equipment manufacturers when building concept and production vehicles,” says Adam Zemke, operations consultant and manager for the MSU team. “The MSU cars are excellent showpieces of how collegiate education can be applied directly to the multitude of vehicles at NAIAS.”

The MSU team also presented its Go Clean E85 development campaign during the show. Beginning with the 2009 MSU Formula SAE car, the team intends for all future MSU racecars to be powered by E85 ethanol-blended fuel.

“The team plans to highlight the multitude of performance benefits that come with practicing environmental responsibility,” Zemke says. “The powertrain system is currently in research and development to support this change without negatively impacting vehicle performance.”

The team participated in three competitions this year. Formula SAE VIR, the newest of the FSAE-series competitions in the United States, hosted 50 teams at Virginia International Raceway April 23–26, 2008. Formula SAE was held at Michigan International Speedway (MIS) May 14–18, 2008. The team placed 9th in the presentation category and 34th overall out of 106 teams. FSAE West, limited to 80 teams, was held June 25–28, 2008, at California Speedway.

For the 2008 season, the MSU team partnered with the Make-A-Wish
Foundation of Michigan under the team’s Race for a Cause program. The organization accepted pledges based upon the number of laps (maximum possible is 44) that Car 51, the 2008 MSU Formula SAE car, completed at the Formula SAE MIS and Formula SAE West endurance races this year; 100 percent of all pledges raised were donated directly to the Make-A-Wish Foundation of Michigan. The team hoped to raise $5,000, which is the average cost of a wish through the Foundation.

The MSU Formula Racing Team is a student-run organization. To learn more about the organization or its initiatives, visit the Web at www.msuformularacing.com. To view a documentary video about the team, go to www.egr.msu.edu/egr/publications/today/fsae-video/.

**Baja Race Team**

The 2007 season was one of the best in history for the MSU Baja team. For the first time, the team competed with two cars in all three Society of Automotive Engineering (SAE) sanctioned events, one of which requires the cars to be amphibious. The final SAE-sanctioned race of 2007 was the Baja World Challenge, with 125 teams competing from around the world; the MSU team landed a 4th place overall finish.

Always looking to try new ideas and be leaders in innovation in the SAE Baja competitions, the MSU team designed the 2008 car with a new approach. The vehicle’s chassis was modified slightly, which makes it stronger, while allowing room to run the team’s first-ever four-wheel-drive system. Incorporated into the new car is a first-ever hydrostatic transmission and completely redesigned braking system.

The team’s new vehicle is the first-ever Baja SAE vehicle to sport a four-wheel-drive system. And that vehicle performed well at the first racing event of the 2008 season, which was held May 1–3 at Tennessee Technological University. The team also raced last season’s car at that competition.

They won the Autodesk Design Communication award for their written design validation, and received 5th and 7th places for overall design of the two vehicles. The team placed in the top 15 in each of the dynamic events and was honored by Honda for 3rd place overall dynamic performance.

The MSU team then traveled to Caterpillar’s Edwards Demonstration Center in Illinois, May 29–31, to compete along with 90 other teams. MSU received a stand-alone award for innovation for successfully racing the first-ever high performance four-wheel-drive Baja SAE vehicle. They also placed 3rd in the hill climb, 4th in the rock crawl, and 10th in acceleration. The team placed in the top 20 with both vehicles in every other event in the dynamic and static portions of the competition; after the endurance event, they were 20th and 24th overall.

The team also competed in the June 11–14 SAE World Challenge in Montreal, Canada.

Keep up with MSU Baja news and competition results by visiting the Web site at www.egr.msu.edu/baja.

**Solar Car Team**

Summers are a time for engineering students to test new skills, and a team of students from the MSU College of Engineering will have an opportunity to try something really exceptional.
They plan to drive 2,400 miles across the United States and Canada in a car that they built — a car that runs without a single drop of gas. The car is named “Brasidius,” after a famous Spartan general. Brasidius, with the help of MSU’s Solar Car Team, is on track to join 26 other solar cars and student teams in the 2008 North American Solar Challenge this summer.

The Challenge is a nine-day solar car endurance race that begins July 13 in Dallas, Texas, and finishes in Calgary, Alberta. During the race, each UFO-like car will be driven in ordinary traffic at highway speeds. It will be propelled solely by renewable solar energy collected from its eight square meters of solar panels.

There have been many advances in solar racing — commonly called “raycing” — since its beginnings about 20 years ago. Emerging from a hodgepodge of hobbyists and environmental enthusiasts, it has grown into a high-tech competition driving the cutting edge of solar technology and automobile efficiency. MSU’s solar team is relatively new and will be up against teams with decades of experience. However, the team believes it will be an exciting competition and a good test of their vehicle.

If the team is successful in the North American Solar Challenge, they would like to take Brasidius to the World Solar Challenge in Australia. No matter what the outcome, the team will use data from the race to work on “Brasidius II.” Helping coordinate all of these activities is Norbert Mueller, assistant professor in the Department of Mechanical Engineering, who serves as the team adviser.

In April, the team presented the benefits of solar power at an event called Greener Delta — an annual environmental awareness day put on by nearby Delta Township. The team was able to demonstrate their car, explain how solar power works, and introduce K–12 students to what’s involved in an engineering project.

To find out more about the solar car and to get the latest news about the car and events, visit the team’s Web site at www.egr.msu.edu/solar.
Fitch Beach Outstanding Graduate Research Awards

Three PhD students received awards from the Fitch H. Beach Endowment on the basis of technical oral presentations and the overall quality of their research. The awardees were: (first place) Robert Stedtfeld, environmental engineering; (second place) Karthik Nandakumar, computer science; and (third place) Sudeshna Pal, biosystems engineering. They received $3,000, $2,000, and $1,000 respectively. The winners were honored March 11 at a noontime seminar in the College of Engineering.

Hendricks Wins Entrepreneurial Faculty Fellowship

Troy Hendricks, a PhD student in chemical engineering, was one of five fellows selected to comprise the first class of “Entrepreneurial Faculty for the 21st Century University.” This new program is sponsored by the MSU Graduate School and the Michigan Center for Innovation & Economic Prosperity (MCIEP) at James Madison College. Each fellow receives a $5,000
stipend to support professional development in entrepreneurship and innovation. The primary goal of the fellowship program is to provide opportunities for a diverse group of MSU graduate students to consider what entrepreneurship and innovation mean in the context of an academic career.

Hendricks’s research focuses on preventing wrinkling and patterning in conductive nanomaterials using thin polymer films. He has submitted three patents with his faculty adviser, assistant professor Ilsoon Lee. Hendricks was also awarded a Dissertation Completion Fellowship by the MSU Graduate School.

VanderLaan Receives Goldwater Honorable Mention

Donald VanderLaan, an electrical engineering junior and member of the Honors College, received an “honorable mention” in the 2008 competition for Goldwater Scholarships. A Butler Scholar, Yates Scholar, General Motors Scholar, and Walker Memorial Scholar, VanderLaan is a member of Tau Beta Pi Engineering Honor Society and the Eta Kappa Nu Honor Society. He is a project consultant for the Electronics Circuits and Systems Laboratory and serves as a researcher with Professor Robert McGough in the electromagnetics laboratory. He was the first author in a journal article submitted for peer review and an invited presenter to the International Symposium on Applied Electromagnetics and Mechanics. He also volunteered at an orphanage in Kenya where he built and wired a barn and chicken coop. VanderLaan’s career goal is to teach electromagnetic theory at the university level. The Goldwater Scholarship is among the most competitive undergraduate scholarships in the nation. Goldwater Scholars and Honorable Mentions are selected on the basis of academic merit from a field of over 1,000 mathematics, science, and engineering students who are nominated by the faculties of colleges and universities nationwide.

Cornwell Receives Page Fellowship

Paul Cornwell, a first-year PhD student in computer science and engineering, was awarded the Carl V. Page Memorial Graduate Fellowship by the department. Recipients are selected on the basis of a demonstrated interest in and aptitude for computer science studies. The fellowship was established in memory of Carl V. Page, professor and founding member of the computer science department at MSU. Page served as CSE’s first graduate director and had a critical role in promoting the department’s research mission. Cornwell earned his BA from Northern Michigan University with a double major in computer science and psychology and a minor in mathematics. He is pursuing artificial intelligence research in the Embodied Intelligence Lab under Professor John Weng.

Walker Receives NSF Fellowship

Bess Walker was selected to receive a National Science Foundation (NSF) Graduate Research Fellowship. In her first year of graduate study, she is pursuing a PhD under the direction of computer science and engineering assistant professor Charles Ofria, who is director of the Digital Evolution Lab. Walker’s

PHOTO BY KIM GLASS THOMPSON

Paul Cornwell
research focuses on how ecosystems affect the evolution of complexity.

The NSF Graduate Research Fellowship provides three years of support for graduate study leading to research-based master’s or doctoral degrees and is intended for students who are at the early stages of their graduate study. Last year, Walker won a Graduate Student Fellowship for Interdisciplinary Research in Quantitative Biology, which was sponsored by the Quantitative Biology and Modeling Initiative at MSU.

ME Senior Covers German Auto Show

Eric Tingwall, a mechanical engineering and journalism senior, won the opportunity to cover the Frankfurt Auto Show in September for Inside Line through a 500-word essay he submitted to the on-line magazine. Inside Line’s executive editor Michael Jordan said Tingwall’s essay showed insight, along with a gift for bringing a personal perspective to his topic. During his four-day stay in Germany, Tingwall was able to test-drive the new Saturn Astra and to meet leaders of the automobile industry. The Frankfurt Auto Show is one of the largest and most important international auto shows in Europe.

Longanbach Receives Mickey Leland Energy Fellowship Internship

Sara Longanbach of Mulliken, Mich., and a first-year student in the materials science and engineering PhD program, has received a summer internship in the Mickey Leland Energy Fellowship (MLEF) Program through the U.S. Department of Energy’s Office of Fossil Energy. She accepted an offer for a 10-week internship at Pacific Northwest National Laboratory in Richland, Wash., where she will investigate the corrosion and protection of high temperature materials for application in slagging coal gasifiers. “It’s a great opportunity to gain experience in a national lab environment,” says Sara. The MLEF Program is dedicated to recruiting women and underrepresented minorities to careers in the DOE’s Office of Fossil Energy. Sara received her bachelor’s degree in materials science from MSU in 2007.

Miloaga Takes First Place in Poster Competition

PhD student Dana G. Miloaga received first place in the graduate student poster competition at the Materials Science & Technology 2007 Conference and Exhibition, held in September in Cobo Hall, Detroit. Miloaga’s poster was entitled “Conductive ‘Green’ Nanocomposites from Polylactic Acid.” She received a $250 cash prize as the first-place winner. Under the guidance of Professor Lawrence T. Drzal, Miloaga is researching nanocomposites based on polymers obtained from natural sources.

Simard Receives Outstanding Paper Award

Andreanne Simard, environmental engineering doctoral student, won an outstanding student paper award from the American Geophysical Union’s Hydrology Section. The paper, “Predicting Groundwater Flow and Contaminant Transport Using a New Source of Data,” was recognized as “among the best of a strong group of student presenters that sets an example for her fellow students and the entire AGU membership.” The paper’s co-authors are Simard’s adviser, Shu-Guang Li, professor of civil and environmental engineering, and project team members Qun Liu, research specialist, and Richard Mandle from the Michigan Department of Environmental Quality. Simard completed her PhD in 2007 and is currently employed as a project engineer at Golder Associates in Lansing, an engineering firm specializing in ground engineering and environmental services.
resources (polyhydroxybutyrate and polylactic acid) and a novel nano-sized carbon-based material.

CSE Student Creates New E-Mail Service

Computer science senior Daniel Fiordalis stepped up to the plate to address problems he had noted in the existing MSU e-mail system. He created State-Mail.com, his own e-mail service, which includes more features than its MSU counterpart. He worked on State-Mail for more than five months, beginning in January 2007, then assigned 20 beta testers to critique the system. About 400 MSU students use State-Mail, according to Fiordalis. MSU students can log in by entering an MSU Net ID and password. Though the site’s novelty might raise security concerns, Fiordalis says students have nothing to worry about. “It would be a waste of time for a thief to try to hack this database because there is nothing to steal.”

Economics sophomore Christina Ewere says, “I logged in on both systems and found out that while I had already started reading my e-mail on State-Mail, MSU’s e-mail was still loading.” Gugulethu Mabuza, another electrical engineering senior who works with the Web site, created a visual of the site to show its capabilities. This played a big part in State-Mail’s winning a People’s Choice Award at World Usability Day, an international celebration that strives to increase public awareness of the need to make services and products simpler to use, held Nov. 8 at the Kellogg Center.

(Excerpted from an article by Sean Ely, “Student Creates New E-Mail Service Called ‘State-Mail’,” published Nov. 25, 2007, in the State News)

ECE Design Team Wins Award in International Competition

A senior capstone design team in electrical and computer engineering, working jointly with a student team from Huazhong University of Science and Technology (HUST), Wuhan, China, and a student from the University of Bologna, Italy, won Honorable Mention in the Mondialogo Engineering Competition. The team developed and prototyped a screening system capable of taking a standard set of medical diagnostic measurements for people in areas without access to regular medical care. They were awarded 5,000 Euros (about $10,000) and a medal, which was presented to two team members (Wa-Jiw Casey from MSU and Li Ji from HUST) in Mumbai, India, in December 2007.

“There were hundreds of teams in this competition,” says Erik Goodman, professor of electrical and computer engineering and the coordinator of ECE capstone design projects. “Teams from developed countries were paired with teams from developing countries to design something that would be useful in the developing country.” The worldwide contest was established by DaimlerChrysler (renamed Daimler) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

MSU team members were Kevin Scheel, Joseph Hines, Kurtis Hessler, Janelle Shane, and Wa-Jiw (Thomas) Casey, all of whom graduated in May 2007. The team’s faculty facilitator was ECE Professor Tongtong Li. A second team worked on improving the prototype during the 2007 fall semester as part of a second capstone design project. Goodman visited China in May to discuss the possibilities of putting together another team in partnership with HUST to explore the next step in the project. “It would not be part of a contest, but we could bring the project closer to implementation,” says Goodman.

—Compiled by Lynn Anderson
For many young people, a bachelor’s degree, especially a BS in engineering, is all they need to start a career. But Ryan Tuck and Megan Ferber, both 2007 graduates of the Applied Engineering Sciences (AES) program, were not quite ready to step into the working world. They wanted something more from college before starting a career. A special program allowing them to get a master of science degree in operations and engineering management in two semesters has turned out to be just what they were looking for.

This master’s program, available to MSU engineering graduates, is a nine-month lock-step program that is completed over the fall and spring semesters. Srinivas (Sri) Talluri, professor of operations and supply chain management in the Eli Broad Graduate School of Management, directs the program. “It allows graduates with good technical training to develop management skills. That’s what companies want today,” says Talluri. “The program covers all the functional areas of business.”

The program is unique because it is offered only to engineering graduates, not to graduates in other colleges. There are numerous requirements for entering the program, including signing up within nine months of graduation, having a 3.2 cumulative undergraduate grade point average, and having taken the prerequisites. If necessary, students who otherwise qualify but lack a couple of prerequisite courses can take them in the summer before the start of the master’s program.

Both Tuck and Ferber entered the master’s program in the fall of 2007 and received their MS degrees in May 2008, just one year after receiving their BS degrees. They already had positions with corporations after graduation and were excited about their career paths.

As incoming freshmen in the College of Engineering, they both registered as having “no preference” and both tried another major, but when they each independently heard about the AES program, they decided it was a good fit for them. “I like talking to people. I wanted to use my technical background to do something in business,” says Tuck. “With the AES program you have a leg up on the traditional engineering students because of the supply chain classes.”

Ferber has known that she wanted to be an engineer since high school. She loves math and science but, like Tuck, she wanted to combine a technical background with something in business. “The AES program is the best. It opens up all kinds of opportunities,” says Ferber.

Because they had all the prerequisites for the master’s program, both were able to do internships in the summer of 2007. Tuck had an internship with Dell Inc. in Austin, Texas. “The internship gave me a taste of both the operations and engineering sides of the business, and I decided I really like the engineering side better.” He landed a full-time position with Dell in Austin. After completing the master’s program, Tuck joined Dell as a quality assurance engineer, a job dealing with long-term problem solving, something he especially likes.

Ferber took an internship with S. C. Johnson & Son, Inc. in Racine, Wisc. She was excited about the opportunities that the internship provided and wished she had had other internship experiences throughout her college career. S. C. Johnson offered her a full-time position, which she accepted. “Now I am ready to move along with a career,” says Ferber, who is going into the supply chain side of the busi-

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**Master’s Degree Program in Operations and Engineering Management**

This program integrates the engineering and business education of MSU students to produce graduates who have a solid understanding of both engineering and business principles as they apply to operations management. Here is a recap of this opportunity and the requirements for this special program.

- The program is available only to MSU engineering graduates.
- Students must meet grade and prerequisite requirements.
- Students must enter the master’s degree program within nine months of graduation; the program begins with the fall semester.
- Students take five classes (3 credits each) in the fall semester and five classes (3 credits each) in the spring semester.
- For more information on this master’s program, contact Srinivas Talluri, director of the Master of Science in Operations and Engineering Management program, talluri@bus.msu.edu.
ness as a vendor-managed inventory planner. She will be located in Racine, near Milwaukee. Both Ferber and Tuck received excellent starting salaries, higher than they would have received with just a bachelor’s degree.

“Our classes in this master’s program fit nicely with what we did in our internships,” says Ferber. “They are well organized and there is not much overlap.” The classes are small, so there is excellent interaction with faculty members. While Tuck and Ferber were the only students in this master’s program, they took some classes along with students who had accounting, business, advertising, and marketing undergraduate degrees.

The Operations and Engineering Management Master’s Program includes 24 credits related to supply chain, three credits in finance, and three in management. “I liked the classes because we did a lot of case studies. It was very interactive and I like that,” says Tuck. To finish out their master’s program, Ferber and Tuck completed a capstone project with Demmer Corporation in Lansing instead of writing a thesis. They worked with Demmer’s management team to create a strategy map and balanced scorecard. That meant applying the tools and concepts discussed in the classroom to actual business problems.

Their advice to other engineering students is to take a look at all the options as an undergraduate student. “The AES program may be a great fit for what you want to do in a career,” says Ferber. The same applies as undergraduates approach graduation — look at what other options are available instead of immediately accepting a job. Tuck suggests that undergrads become involved with student groups, such as the Society of Applied Engineering Sciences, and complete as many internships as possible. “No internship is bad,” he says. “You may not like a particular internship, but in the end that will be good background for making a career choice.”
September 20, 2002, marked the official launch of The Campaign for MSU. The goal for the university-wide campaign was $1.2 billion; of that, the College of Engineering set an extremely ambitious fundraising goal of $209 million.

By the close of the campaign in fall 2007, the College of Engineering had raised a total of $200 million in cash, pledges, gifts-in-kind, and bequest commitments. While this amount is just short of the college’s $209 million goal, it still represents the largest amount raised by any single unit at MSU during the campaign.

Endowment giving was a priority during the campaign and especially notable was the establishment of a number of new endowments or the securing of endowment commitments for the future. The college documented 94 new endowments for a total of $32 million. Considering that Engineering has a total of 170 endowments, this means that 55 percent of all endowments created over the college’s 100-year history have been established in the last eight years. Put another way, the college increased the number of endowments by 124 percent during the campaign.

While all gifts to the College of Engineering are meaningful and appreciated, endowment gifts offer a dependable and perpetual source of financial support. This is especially important in a time of uncertain state funding. Endowment gifts offer donors a perpetual legacy of caring for the institution and a source of pride for coming generations.

As impressive as this recent success has been, the College of Engineering will continue to seek new endowment gifts in the coming years.

PACE Gift

Several years ago, the College of Engineering entered a new era of problem solving, thanks to the Partners for the Advancement of Collaborative Engineering Education (PACE), a program that provides hardware, software, training, and much more to strategically selected academic institutions worldwide. MSU was selected as the first PACE school.

An initial $55 million software and hardware gift gave students the opportunity to utilize the tools being used by industry. (Prior to this, the college had been using a software package called AutoSketch, which had limited usefulness in terms of mechanical design and collaboration features.) The College of Engineering has taken a lead role in integrating these PACE tools into mainstream courses.

An additional $60 million came from Mechanical Dynamics Incorporated (MDI) for a virtual prototyping software called ADAMS — Automatic Dynamic Analysis of Mechanical Systems. MSU’s College of Engineering has trained more than 2,700 students in the use of these industrial-grade software packages. Access to this software makes our graduates more valuable to industry. MSU engineers are able to “hit the ground running” and require less on-the-job training in order to be productive. The college has also received 13 high-powered workstations from HP valued at approximately $55,000, and 25 personal navigators from 3D Connections valued at $1,500.

Reprinted from Developments (Fall 2007), a publication of University Development at MSU.
Approximately 41 schools are part of the PACE program, which continues to expand. To date, PACE has donated more than $200 million worth of software to MSU’s College of Engineering.

**Funding for Energy & Automotive Research Laboratories**

In August 2007, the college dedicated its Energy & Automotive Research Laboratories, a world-class facility in which students and faculty perform fundamental research and develop ideas to the proof-of-concept stage from which industry will be able to identify the potential and carry them forward into commercial realities. The laboratories include two test cells for engine and powertrain testing, a cold room for cold start experiments, and energy laboratories for teams of faculty and their students to work together on basic research in the field of energy and transportation.

Approximately half of the $10 million funding for establishing the Energy & Automotive Research Laboratories came from donors. The college is extremely grateful to both corporate and private donors for helping to turn this exciting new facility into a reality. It is already having a substantial impact on the college’s ability to attract major funding for leading-edge research and is enabling the college to play a major role in the campus-wide initiative to support the emerging bioeconomy. The Department of Mechanical

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Three PACE-related competitions have been held in the college, with industry representatives serving as judges. In this photo, instructor Bob Chalou introduced the seven judges and explained the judging criteria to the class prior to the first-ever PACE Virtual Product Development Competition held at MSU on December 3, 2003.

Dean Satish Udpa addresses the crowd at the August 2007 dedication ceremony for the Energy & Automotive Research Laboratories.
Engineering has recruited new faculty to strengthen its expertise in the areas of energy and automotive research and is engaged in a further search with the Department of Electrical and Computer Engineering. These new appointments will both enhance the programs offered to undergraduate and graduate students and further increase the college’s ability to conduct world-class research.

**Von Ehr Scholarships**

James R. Von Ehr II, a 1972 computer science graduate and successful entrepreneur who has long demonstrated his commitment to MSU and the college through service and philanthropy, established a $1 million endowed scholarship fund in May 2006 to benefit College of Engineering undergraduates.

Brian Goldberg, who was valedictorian of his high school class in Mount Olive, New Jersey, was one of the first four recipients of the scholarship in fall 2006. Here is what he has to say about being selected as one of the first four Von Ehr Scholars:

“I came to MSU to earn a degree in the excellent civil engineering program that the college offers. Everyone knows that college is very expensive these days, especially for out-of-state students. Coming from New Jersey, I knew it would be very difficult for my family and me to finance an education at MSU as opposed to the in-state Rutgers University, to which I had already received a very generous scholarship. My father knew how much I wanted to go to Michigan State and told me that we would make it happen somehow.

“A week before I finished my senior year in high school, I received a letter from the College of Engineering about a new scholarship that had been created — the Von Ehr Scholarship. My father slapped the application down on my desk and told me that I had a week to complete it so I better get to researching! I put a lot of time into writing the essay, because I knew what a difference it would make. When I received a letter notifying me that I had been chosen as one of the first Von Ehr Scholars, it really lifted a lot of financial pressure off my family and me. This scholarship is one of the primary reasons that I was able to come to MSU and stay here.

“Personally, I cannot thank Mr. Von Ehr enough for his generosity and the opportunity that he has given me and the other Von Ehr Scholars. It has made a significant difference in my college education and I am not sure I would be where I am today without the help that he has given me. On behalf of the Von Ehr Scholars, I would like to say ‘thanks a million’ to Mr. Von Ehr.”

While at MSU, Goldberg has been active as secretary of the American Society of Civil Engineers student chapter, a member of H-Star (Honors College Public Relations), and a resident mentor in one of the campus residence halls.

**Hong Endowed Chair in Electrical Engineering**

The Richard M. Hong Endowed Chair in Electrical Engineering was established in September 2002. Electrical engineering alumnus Richard Hong (MS ’67; PhD ’70) created the endowment to support a distinguished faculty member within the department. It allows the college to continue building distinguished leadership for teaching and research in critical areas in electrical engineering.

MSU Distinguished Professor Jes Asmussen, a member of the department for 35 years, was selected to fill the position. Asmussen is intimation-
Mary C. Mertz-Smith, assistant director for alumni relations, joined the college in January 2008 as a member of the dean’s staff. She serves as the primary liaison between alumni and the college by working with the College of Engineering Alumni Association Board; overseeing the college’s awards process and spring banquet; and organizing Homecoming festivities. She also arranges periodic alumni events around the country that provide opportunities for alumni to gather and connect with each other and the college.

A native of Lansing, Mary began her career at MSU’s Wharton Center and comes to the college from the Office of the Vice President for Governmental Affairs. Her proudest accomplishment is finally becoming an MSU alumna herself in 2005 when she completed her BA in humanities, a 30-year project from beginning to end (not continuous or full-time, she quickly adds). She also serves on boards for both the Kresge Art Museum and the MSU Museum.

Mary is delighted to assist engineering alumni in any way she can. She can be reached in the office of Engineering Development and Alumni Relations at (517) 355-8339 or via e-mail at mertzsmi@egr.msu.edu.

—Compiled by Laura Luptowski Seeley

Mertz-Smith Joins College
In memoriam

■ John H. Allen (BS Civ Egr ’51) of El Segundo, Calif., died in 2007. He is survived by his wife, Elaine.

■ Emil H. Carlstrom (BS Elec Egr ’49) died July 1, 2007. His daughter, Nancy Williford, kindly sent us a set of snapshots of the campus from the late 1940s to add to the College of Engineering archives.

■ Clair W. Cooley (BS Elec Egr ’41) of Royal Oak, Mich., died March 3, 2008, at the age of 88. Born in Lansing, Mich., he was the first in his family to pursue a college education. He worked for the City of Lansing trimming trees to pay for his MSU education. He graduated Magna Cum Laude. His continuing education included Harvard and MIT radar schools for commissioned army and navy officers, Wayne State University telephone transmission school, and Cooperstown Data Communications School. He served in the U.S. Army Air Force (Air Corps Electronic Subdivision, Communications School. He served in the U.S. Navy during World War II, completing his military service in 1946. After working for the Ford Motor Company in Dearborn, Mich., for a number of years, he moved in 1954 to Towanda, Pa., where he was employed by Sylvania Electric Products for 32 years until his retirement in 1986. He was a member of the SS Peter & Paul Catholic Church in Towanda, where he is remembered for kindness, joy, exuberant faith, generosity, and his powerful singing voice during morning mass — “a testimony to faith.” He is survived by: Darlene, his wife of 57 years; his children: John of Easton, Pa., Gregory of Milford, Mich., Christopher of Westchester, Ohio, Richard of Gladwin, Mich., Cynthia Lance of Granada Hills, Calif., James of Loris, S.C., and Todd of Towanda; eight grandchildren; and four great grandchildren. His interment included full military honors.

■ Richard L. “Dick” Koss (BS Metallurgy Egr ’55) of Towanda, Pa., died Feb. 23, 2008, at the age of 83. He served his country in the U.S. Navy during World War II, completing his military service in 1946. After working for the Ford Motor Company in Dearborn, Mich., for a number of years, he moved in 1954 to Towanda, Pa., where he was employed by Sylvania Electric Products for 32 years until his retirement in 1986. He was a member of the SS Peter & Paul Catholic Church in Towanda, where he is remembered for kindness, joy, exuberant faith, generosity, and his powerful singing voice during morning mass — “a testimony to faith.” He is survived by: Darlene, his wife of 57 years; his children: John of Easton, Pa., Gregory of Milford, Mich., Christopher of Westchester, Ohio, Richard of Gladwin, Mich., Cynthia Lance of Granada Hills, Calif., James of Loris, S.C., and Todd of Towanda; eight grandchildren; and four great grandchildren. His interment included full military honors.

■ Eugene E. Hanson (BS Elec Egr ’57) of East Fishkill, N.Y., died Nov. 9, 2007, at the age of 77. (Photo is at approximately age 27.) He had lived in East Fishkill for 50 years and was employed as an electrical engineer at IBM for 30 years until his retirement in 1987. He served in the U.S. Navy during the Korean War. He was predeceased by Virginia, his wife of 50 years, and his daughter Beth Ann. He is survived by sons Eric, Gregory, Kurt, and Christopher and four grandchildren.

■ Eugene N. Russell (BS Civ Egr ’57, MS Structural Egr) of DeWitt, Mich., retired in 1998 from his position as a professor at Lansing Community College. He taught for 31 years in the Civil Technology Program. Prior to that, he taught for seven years at MSU in the Department of Civil Engineering. He and his wife, Karine (Klinkhamer) (BA MSU Elem Ed ’57), have two daughters and two sons who have blessed them with five granddaughters and five grandsons.

■ Robert S. FitzHugh (BS Elec Egr ’43) of Santa Fe, New Mexico, died in 2007.

■ Virgil Goblirsch (BS Mech Egr ’49) of Livonia, Mich., died Nov. 8, 2005.

■ Richard L. “Dick” Koss (BS Metallurgy Egr ’55) of Towanda, Pa., died Feb. 23, 2008, at the age of 83. He served his country in the U.S. Navy during World War II, completing his military service in 1946. After working for the Ford Motor Company in Dearborn, Mich., for a number of years, he moved in 1954 to Towanda, Pa., where he was employed by Sylvania Electric Products for 32 years until his retirement in 1986. He was a member of the SS Peter & Paul Catholic Church in Towanda, where he is remembered for kindness, joy, exuberant faith, generosity, and his powerful singing voice during morning mass — “a testimony to faith.” He is survived by: Darlene, his wife of 57 years; his children: John of Easton, Pa., Gregory of Milford, Mich., Christopher of Westchester, Ohio, Richard of Gladwin, Mich., Cynthia Lance of Granada Hills, Calif., James of Loris, S.C., and Todd of Towanda; eight grandchildren; and four great grandchildren. His interment included full military honors.

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Class Notes

1940s

■ Bob Tripp (BS Mech Egr ’49) at age 81 is officially retired but volunteering as a personnel administrator for Wycliffe Bible Translators, USA, in Waxhaw, N.C., south of Charlotte. He spent 41 years with the Amarakaeri Indians, a small “stone-age” group in the jungles of Peru, where he translated the New Testament into their language and also wrote a dictionary/grammar and literacy and school books for them. He married his wife, Martha, 32 years ago when he was 50. She was also a translator with Wycliffe in Peru. Right after college, he worked as an engineer. He worked in the plant layout department of Ford’s automatic transmission plants in Cincinnati, and later in the design department at Norfolk Naval Shipyard and the engineering department at Camp Lejeune Marine Base in North Carolina. Martha has written a book, Jungle Jewels and Jaguars, which was just released by Book Marketing Solutions, LLC, in Traverse City, Mich. bob-martha_tripp@sil.org

1950s

■ Jack R. Lulofs (BS Elec Egr ’51) is happily retired in Klamath Falls, Ore. Before retiring in 1988, he worked as an automotive engineer at GM Proving Ground, as a radar engineer for Bendix Radio, and for 35 years as an aerospace engineer in southern California. He has three children and six grandchildren.

■ Eugene N. Russell (BS Civ Egr ’57, MS Structural Egr) of DeWitt, Mich., retired in 1998 from his position as a professor at Lansing Community College. He taught for 31 years in the Civil Technology Program. Prior to that, he taught for seven years at MSU in the Department of Civil Engineering. He and his wife, Karine (Klinkhamer) (BA MSU Elem Ed ’57), have two daughters and two sons who have blessed them with five granddaughters and five grandsons.

■ Jerrold Winger (BS Chem Egr ’57) has recently written a book, The Delta of Technology (AuthorHouse, 915.00) to introduce his Delta Model. Tracking the top one hundred corporate spenders in R&D in
the United States from 1978 to 2000, he found a way to calculate the connection between R&D and profits. Using just three factors — sales, earnings, and R&D investments — Winger says companies can determine whether or not they are benefiting from their R&D investments (See www.jerroldwinger.com/). Winger retired in 1997 after a 40-year career with the Eveready Battery Co., now the Energizer Battery Co. He was director of technology for many years, and in the final three years of his career he developed and successfully implemented a project management system for the operations group. He received a lifetime achievement award in 1997 called the Eveready Excellence Award, for his work in technology and quality. He currently lives in Grafton, Ohio, with his wife, Sallie, where he continues to write. He is also the author of Small Boats—Mechanics and Materials, a reference guide.

1970s

**Nelson Adrian Blish** (MS Systems Egr ’70), of Rochester, New York, published his second novel — The Taking of the King — in 2006 (Penguin Books). It is a tale of Russians trying to steal a U.S. submarine after the collapse of the Soviet Union. His first novel, Ishmael’s Son, is now in its second printing (Glencannon Press, 2003). It's the story of a terrorist attempt to smuggle a missile into the United States on board a cargo container ship. Blish earned his BS at the U.S. Naval Academy at Annapolis ('69), then his master’s at MSU. He attended nuclear power school and submarine school, then served seven years on the USS Alexander Hamilton (SSBN 617), retiring from the Naval Reserves as a captain in 1999. He earned his JD from William and Mary College in 1979. Since then, he has served as counsel for Philip Morris and senior counsel for Cooper Industries. He has been in his present position as senior counsel for the Eastman Kodak Company since 1995, with responsibility for intellectual property developed by the health imaging group and document imaging. He, himself, is an inventor on 20 U.S. patents. nelson.blish@kodak.com

**John Webb** (BS Mech Egr ’79) heads Aetna’s Business Alliances and Government Businesses units. Aetna president and head of business operations Mark Bertolini describes John as a “seasoned business leader with a sharp focus on customer relationships who will lead his organization to strong, profitable growth.” Aetna is headquartered in Hartford, Conn. (See related article on page 53.)

1980s

**Jalal (Jay) Abrahimzadeh** (MS Mech Egr ’83) of Mission Viejo, Calif., is working as a senior development engineer. He is married, with four children, and very happy. He recently changed the first letter of his last name from “E” to “A,” he says, “to make it more difficult.” jabrahimzadeh@gmail.com

**Tim Bishop** (BS Civ & Env Egr ’86) of Charlotte, N.C., is a principal and sales engineer for Heyward Incorporated, a Manufacturer’s rep firm for water and wastewater process equipment. He previously worked for the Lansing Board of Water and Light and for EE&T, a consulting firm. tbishop@heyward.net

**Brian Goldsworthy** (BS Egr Arts ’82) of Royal Oak, Mich., is an information specialist for EDS in Detroit. He recently celebrated 22 years with EDS and has supported auto-related manufacturers the entire time.

**Daniel Johns, PE** (BS Civ Egr ’83) has been named managing principal for Walker Parking Consultants in Los Angeles. The largest parking consulting firm in the nation, Walker has worked on parking structures throughout California, including a recent project at the UC–Berkeley campus and the Corona Metrolink Station. Johns is actively engaged from conceptual development to design, bidding, planning, scheduling, budgeting, and construction administration. He has been with Walker since 1983. He has successfully implemented several multi-year capital improvement protection programs for large cities, universities, health care facilities, and other organizations that own or operate multiple parking structures.

**John McCalla** (BS Mech Egr ’89, MS Mech Egr ’91) was named president and CEO of Warn Industries in Clackamas, Ore., effective Nov. 1, 2007. He is responsible for all operating aspects of the business. He will focus on new product development and market development. He joined Warn in 1994 and was previously vice-president of the Warn industrial and powertrain divisions. Before that, he was employed at General Motors. The outgoing Warn president cites McCalla’s “exceptional product awareness and connection to the company’s international customers.”

**Steve Niparko** (BS Civ Egr ’83) of Littleton, Colorado, was recently promoted to senior vice president of Arcadis U.S., Inc., where he has been general counsel since 2002. Arcadis is an international company providing consultancy, engineering, and management services in infrastructure, environment, and facilities, with over 12,000 employees in 13 countries. steve.niparko@arcadis-us.com.

**Roger Phillip** (BS Elec Egr ’80) of Oakland, Calif., is vice president of marketing for Oslo Software in Menlo Park, Calif.

**Alan Powell** (MS Chem Egr ’88) of North Wales, Pa., is a process engineer in global engineering services for Merck & Co., Inc. He was recently appointed principal engineer in the bio/vaccine engineering group. At the 20th Annual ASME Bioprocess Technology Seminars in San Diego, he taught sections of the Bioprocess Equipment Design and the Bioreactor & Fermentor Design courses.

**Jeffrey T. Smith** (BS Elec Egr ’80) of San Diego, Calif., has been awarded a U.S. patent for “Flexible interconnect cable with grounded coplanar waveguide.” The patent is assigned to Applied Micro Circuits Corporation.
manufacturing companies to boost efficiency and profitability. Before starting Staffeld Engineering Services, Staffeld was vice president of a global polyurethanes manufacturer for six years, and worked for Mobil Oil Corporation for over 13 years in a variety of positions including: research and development; process modeling and optimization; economic analysis; and technology sales and licensing. He earned an MS ('83) and a PhD ('88) in chemical engineering at the University of Pennsylvania. He is an adjunct professor of chemistry at Lehigh Carbon Community College and an adjunct professor of business and computer science at DeSales University. He also serves on his township's environmental advisory committee. He lives with his wife, Leslie, and two children north of Philadelphia. peter@staffeld.com

Robert (Rob) M. Tykal (BS Mech Egr ’84) was appointed president of Jacobs Vehicle Systems, a wholly owned subsidiary of Danaher Corporation, in 2007. Prior to joining Danaher, Tykal spent four years with MTU Drive Shafts, LLC where he was the president and CEO, leading formation and start-up activities in Charleston, S.C. Prior to MTU, he was employed for 18 years by Detroit Diesel Corp., where he served as vice president and general manager, leading the Series 2000 and 4000 business units with $200 million in sales. He played a key role in leading joint international development of two new engine families with German partners. Jacobs Vehicle Systems, headquartered in Bloomfield, Conn., is the world’s leading producer of vehicle retarding and valve actuation technologies. Tykal lives near Hartford with his wife, Patty (Geaney) (BS Egr Arts ’83), and three daughters.

1990s

Peter Cianci (BS Mech Egr ’91) of Commerce Township, Mich., was named president of DTE Gas Storage, Pipelines and Processing, a wholly owned subsidiary of DTE Energy, in Nov. 2007. Cianci is responsible for the management and development of the company’s non-utility gas storage and pipeline assets. He has more than 15 years of experience in the energy industry, where he has worked in business development, marketing, facilities planning, gas control, and supply planning. Most recently, he had held the position of vice president of DTE Gas Storage, Pipelines and Processing since 2006. Prior to that, Cianci was manager of business development and midstream services for MichCon, DTE Energy’s natural gas subsidiary.

George Kotes (BS Mech Egr ’98) is the senior gear engineer for Axle Driveline at Ford Motor Company in Sterling Heights, Mich. He received a master’s degree in mechanical engineering from Oakland University in Dec. 2007. gkotes@yahoo.com

Michael P. Serafin (BS Comp Sci Egr ’95, MS Elec Egr ’96) was recently promoted to director of software development at Lenel Systems International, Inc., a UTC Fire and Security company. Lenel is a global leader in the development and delivery of scalable, integrated systems for the commercial security market, with more than 15,000 system installations in 93 countries. He started with Lenel in 1998 as a senior software engineer primarily focused on integrating access control hardware into Lenel’s software security product. After that, he served as manager for the electronic systems group for six years. In his new role, he heads up development efforts in access control, digital video, intelligent video, identity management, and other security-related areas. Prior to working at Lenel, Serafin was employed at Eastman Kodak. He lives with his wife and two children in Victor, N.Y. He is a life member of the MSU Alumni Association, as well as being treasurer for the MSU Alumni Club of Rochester, N.Y. serafin@rochester.rr.com

G. Dale Wesson, PE (PhD Chem Egr ’97) was appointed associate vice president for research at Florida A&M University in Tallahassee, effective February 22, 2008. He received his BS from the Illinois Institute of Technology and his MS from the Georgia Institute of Technology, both in chemical engineering. He has nine years of industrial experience at the Dow Chemical Company. His research interests are in the area of computational fluid dynamics of confined swirling flows, and he has secured over $1.8 million of research funding. His current research projects include the modeling of fluid flow and heat-transfer in graphite foam matrices. He and his graduate students have also successfully modeled blood flow through heart valves and coronary arteries. He was awarded the 2001–02 “Dr. Henry C. McBay Outstanding Teacher Award” by the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers. gwen.Wesson@famu.edu

2000s

Savinay Berry (MS Elec Egr ’00) became a citizen of the U.S. in 2002 and is currently pursuing a master’s in the business program at Kellogg Business School at Northwestern University in Evanston, Ill. berrysav@yahoo.com

Scott Brodie (BS Comp Sci Egr ’06) is a full-time employee of Microsoft Corporation, working in Redmond, Wash., at Carbonated Games, an internal studio that develops casual games for a
number of Microsoft platforms. While he was a 2006 summer intern, he and two other interns created “Aegis Wing,” a downloadable video game for the Xbox 360 console, which debuted in May 2007 on the Xbox Live service. Brodie is the former president of Spartasoft, an MSU student group for those interested in creating video games.

Shana Bailey Castelli (BS Mech Egr ’00) of San Francisco, Calif., is a senior R&D engineer at Boston Scientific.

Patrick J. Collora (BS Comp Sci Egr ’06) of Lansing, Mich., is a computer programmer for Auto Owners Insurance.

Nicholas M. Fedesna (BS ’01 Egr Arts) lives in Chicago and has been working as an animation programmer for White Rabbit Games in Elk Grove Village, Ill., for the past two years.

Christopher M. Francis (BS Mech Egr ’02) has joined Howard & Howard Attorneys, PC. He will practice in the Bloomfield Hills, Mich., office as an intellectual property attorney. He concentrates his practice in patent, trademark, and copyright law with an emphasis on obtaining and enforcing patents for clients. He is a member of the State Bar of Michigan and is registered to practice before the United States Patent and Trademark Office. He received a juris doctor from Wayne State University in 2006. He was an intern in Howard & Howard’s Intellectual Property Intern Program from June 2004 to December 2006.

From 2002 to 2004, Francis worked for General Motors as a Vehicle Assembly Engineer, where he applied statistical problem solving techniques to identify and eliminate vehicle initial quality and warranty issues. During his undergraduate education, he worked as a co-op engineer for TRW Automotive in the area of brake actuation development and as an engineering intern at General Motors in the area of Aero/Thermal/Sealant/Splash development. Francis has prepared and prosecuted patent applications in numerous mechanical technologies including medical devices, automotive steering components, automotive suspension components, automotive driveline components, automotive seating and headrest assemblies, building HVAC systems, building entryway systems, and machining devices.

Matthew G. Klawon, PE (BS Civ Egr ’00) joined URS Corporation Great Lakes in Jan. 2007. He is a traffic engineer in the Farmington Hills office. He coordinates traffic engineering services in southeast Michigan and manages projects and mentors junior staff in a wide range of traffic engineering and planning disciplines, including signing and pavement marking, traffic signal optimization, and traffic impact studies. URS has been ranked first in Engineering News-Record’s list of the nation’s top 500 design firms six years in a row. Klawon previously served as the county traffic engineer for the road commission of Macomb County, Mich.

Dave Seyffert (BS Mech Egr ’00) works for Andretti Green Racing. He is currently the assistant engineer for racecar driver Tony Kanaan on race weekends, where, among other duties, he is in charge of fuel strategy for the race, which includes determining how far the car can go on a tank of fuel. In the shop he does many of the team’s simulation programs in preparation for upcoming events. He is also involved with the team’s wind tunnel program. During 2007 he was the assistant engineer for Dario Franchitti, who won the Indy 500 and the IndyCar Series Championship in 2007. Just before his graduation from MSU, Seyffert completed an independent study based on racecar vehicle dynamics with mechanical engineering professor Steven Shaw. He began his career with a small race team in Indianapolis, then moved to Andretti Green Racing.

Jason Teshuba, CEO, and his brother Mike Teshuba, Chief Technical Officer, with MSU alumnus Mike Goulas and friend Ryan Whalen, launched mangolanguages.com in August 2007. Based in Novi, Mich., the company offers users an efficient way to learn a foreign language online at their own pace. The site opened with 100 lessons in nearly a dozen foreign languages, with plans to expand to other languages. There is a patent pending on their unique approach.

Eric Tritch (BS Appl Egr Sci ’05) is a commodity manager at Graco’s Minneapolis headquarters since graduating from MSU. After two years with Graco, he was recognized on the “Players” page of the July 2007 issue of Purchasing Magazine, which features a supply chain management “mover and shaker” in each issue. Graco handles fluids, such as painting and roofing materials, for contractors and commercial businesses like Home Depot. Commodity managers, like Eric, also supply companies like Jiffy Lube and Toyota with lubrication, finishing, sealant, and adhesive products. Tritch traveled to the company’s office in Shanghai, China, in August 2007 to visit suppliers. He received a promotion in 2007. He is working on an MBA at the University of St. Thomas in Minneapolis.
Three Engineering Alumni Receive MSUAA Awards

An exceptional scientist and leader, Ghassem Asrar (MS Civ Egr ’81) has had a tremendous impact on the advancement of agriculture and a vast array of research priorities across the nation. He was named deputy administrator for the Agricultural Research Service (ARS) of the U.S. Department of Agriculture in 2006, after working with NASA for nearly 20 years. His new position includes responsibilities associated with six national programs that support researchers at 70 locations throughout the United States developing technologies and strategies to help farmers and ranchers manage agriculture to provide food, fiber, and renewable bioenergy to the nation in ways that guarantee abundant and high-quality fresh water and clean air, along with healthy, sustainable agroecosystems.

In his years of association with NASA, Asrar championed many of the space agency’s earth science priorities. He was one of the early pioneers to develop NASA’s Mission to Planet Earth, which became a multi-billion-dollar research program focused on understanding global environmental change. As chief scientist for NASA Mission to Planet Earth and Earth Observing System, Asrar established the NASA Earth System Science Education and Fellowship program, which has trained more than 800 young scientists. He also helped establish earth science education in K–12 schools across the country and earth system science courses at more than 60 major U.S. universities and colleges. While with NASA, Asrar also served on the National Agricultural Research, Extension, Education, and Economics Advisory Board — a group that provides consultation to the U.S. Secretary of Agriculture and land-grant colleges and universities on research, extension, and educational priorities in food, fiber, and agriculture. The board also provides guidance to the White House Science Advisor’s Office, and to U.S. House and Senate agriculture and appropriations committees/subcommittees. Asrar has left a legacy at NASA in the earth sciences with a programmatic strategy to support scientific research, technology development, and satellite missions for future decades.

He holds three graduate degrees from MSU: an MS in soil biophysics, an MS in civil engineering, and a PhD in environmental soil physics. He conducted research and trained students for nine years in academia before joining NASA and has authored more than 75 peer-reviewed scientific papers, primarily in the fields of land surface studies and biosphere/atmospheric interactions. He has received numerous awards and honors, including the American Institute of Aeronautics and Astronautics Group Achievement Award (2006); the NASA Exceptional Service Medal (1999); the NASA Exceptional Performance Award (1997); and the Distinguished Visiting Senior Scientist Award from NASA’s Jet Propulsion Laboratory (1991).

Surinder Kapur (BS ’64, MS ’65, PhD ’72 Mech Egr) is the founder, chairman, and managing director of India-based Sona Koyo Steering Systems Ltd. He received the Joon S. Moon Distinguished International Alumni Award at the 16th annual MSU International Awards Ceremony in 2006. Kapur is helping India emerge as an exporter of quality engineering goods, particularly automobile components.

As chairman of both the National Committee on Quality and the Total Productive Maintenance Club of India, Kapur is an active proponent of industrial and manufacturing quality. In recognition of his various achievements as an industrial entrepreneur, innovative manager, technical pathfinder, and industrial leader, the Indian government appointed him a member of the National Manufacturing Competitiveness Council. He has also chaired several Confederation of Indian Industry national committees.

Kapur and his company have earned many honors, including recognition as a Global Growth Company by the World Economic Forum in 1997, recognition as India’s Fastest Growing Company by Business Today in 2004, the Award for Visionary Execution by Oracle in 2003, the Deming Application Prize in 2003, and the Amity Leadership
Social welfare is an integral part of Sona’s business philosophy. Initiatives under Kapur’s leadership are aimed at contributing to community welfare and preserving the environment. In one village, the company has repaired roads and the local temple, developed a home for the elderly, organized periodic health related checkups, and provided vocational training for members of the community.

Jeff Schmitz (BS Mech Egr ’97) is an energetic and successful alumnus who recognizes the importance of giving back — both as a volunteer and a donor — to his alma mater.

As a student, Schmitz immersed himself in various activities and organizations on campus. He served as project manager for the 1997 Formula SAE Team. Under his leadership, the MSU team received the Outstanding Sportsmanship Award, the Spirit of Excellence Award, and placed tenth overall at the international Formula SAE competition. He was also president of Tau Beta Pi, a homecoming court member, and a recipient of the Outstanding Senior Award. After graduation from MSU, he earned a master’s degree in mechanical engineering at Oakland University (1999) and an MBA from the University of Michigan (2003).

As an alumnus, he has been a mentor and steward for the MSU Formula SAE Team since 1998. He fosters relationships with current and past team members through career development, recruitment, mentoring, and financial and personal time contributions. During his tenure as a vehicle development engineer at DaimlerChrysler, Schmitz was the team leader for the DaimlerChrysler college relations team, where he coordinated recruiting and diversity activities, and rallied support for the DaimlerChrysler In-House campaign. In the latter role, he encouraged his colleagues to take advantage of DaimlerChrysler’s 2:1 matching gift program, which triples the size of their gift. Schmitz has also been an invaluable volunteer adviser to the college. He served two terms on the College of Engineering’s Alumni Board, and was a member of the Board of Visitors for the Department of Mechanical Engineering for one term. Most recently he was on campus during Design Days as a judge for the prestigious Edison award for excellence in the senior capstone project.

Schmitz is a long-time donor who has given annually since he graduated in 1997. He and his wife, Karen, are members of the Beaumont Tower Society. They have directed most of their support to the College of Engineering, particularly the MSU Formula SAE Team. In fact, they were among a group of young alumni and friends who recently established the Gary L. Cloud MSU Formula Racing Team Endowment, a fund that offers a permanent, flexible stream of support to the team.

“I owe my success to the education and opportunities I experienced at MSU,” says Schmitz. “I’m happy to be in a position to give back, and I hope other alumni will do the same. Together, our support will ensure that future generations of engineering students have the opportunities and resources to succeed. I can’t think of a better way to invest.”

After several years in auto manufacturing, he spent three years working with A. T. Kearney as a consultant for automotive OEMs and suppliers all over the country. He says, “It was an exciting time. I helped multiple companies save millions of dollars — but I didn’t have enough time to spend with my family.” He made a career move from cars to chocolate in January 2007. He is now senior manager for strategy at The Hershey Company in Hershey, Pennsylvania. The company has more than 13,000 employees worldwide and produces more than a billion pounds of chocolate products each year. His strategy team focuses primarily on examining new markets, new distribution possibilities, and operational improvements.

PHOTO BY HARLEY J. SEELEY

From left to right: Ghassem Asrar, Surinder Kapur, and Jeff Schmitz.
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.

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

UPDATE

* ☐ YES. PUBLISH MY E-MAIL ADDRESS SO CLASSMATES CAN GET IN TOUCH WITH ME.
 ☐ NO. DO NOT PUBLISH MY E-MAIL ADDRESS.

Career Services Web Site Open to Alumni

The Michigan State University Alumni Association and the MSU Career Services Network have joined forces to add alumni services on MySpartanCareer.com, a career services Web site.

MySpartanCareer.com, which launched last fall for MSU students, is the official and exclusive job listing service for MSU. Employers seeking MSU students for jobs or internships can list their employment opportunities on the site. Students can search for full- and part-time positions on or off campus — as well as internships — and send résumés directly to employers and apply online.

Adding the alumni component broadens the scope of career opportunities for all, especially recent MSU graduates, and provides employers with an additional hiring outlet. All prospective employers can register on the career services site at no charge, and they don’t have to be alumni of the university. They can post jobs and perform searches on the résumé database.

MSU alumni who are members of the Alumni Association can review job postings, update their résumés, and obtain information about campus career fairs.

“It’s a very robust Web site,” says John Hill, director of Alumni Career Services. “Within the first week we had 3,700 employers participate. We’re turning into a broader network where alumni will have more job opportunities and employers will find more prospective candidates.”

Eventually, the site will provide more value-added features including virtual career fairs and alumni networking capabilities, Hill adds.

“Down the road we can replicate the data, so that, for example, jobs in the Chicago area can also be posted on the Web site of our Chicago alumni club,” Hill says. “It’s another opportunity to build and grow Spartan communities across the country and connect them back to the university. It’s also a showcase of MSU’s commitment to alumni and their needs.”

—Kristin K. Anderson, University Relations
College of Engineering alumnus John J. Webb (BS ’79 mechanical engineering), Aetna’s senior vice president for government/public sector and business alliances, has spearheaded a partnership with Magic Johnson Enterprises (MJE) to improve health care and reduce the number of uninsured, particularly among the employees of entrepreneurial and urban business owners.

“Over a two-year period, I led a team that worked to identify the best partner for Aetna in our quest to impact health care at the street level,” says Webb. “Aetna has a great message, yet we needed a special way to deliver it. Through our research, we began to see that our company and MJE had complementary strengths, yet similar values. Ultimately, we found that Magic’s business endeavors made him the ideal messenger for the diverse communities that we serve.”

“This relationship will combine Aetna’s strengths as an experienced and innovative health care company with Magic Johnson Enterprises’ knowledge of diverse communities in key urban areas,” said Ronald A. Williams, Aetna chairman and CEO, during an event held at the Magic Johnson Theater in Harlem to announce the alliance. “We want to improve racial and ethnic equality in health care.”

“Our hope is that through this alliance we can engage people and businesses at the community level to take charge of their health care,” says Earvin “Magic” Johnson, chairman and CEO of Magic Johnson Enterprises. The goal of this multiyear partnership is to empower individuals to ask questions, seek answers, and create a demand for high-quality health care that respects their cultural preferences.

“To solve the dilemma of health care in America,” says Webb, “We need to apply creativity and non-traditional means. The demographics and challenges are evolving. Therefore, it takes our best problem-solving skills matched with technology and an understanding of the human element to address the needs as we move forward.”

U.S. Representative Charles B. Rangel, chairman of the House Ways and Means Committee, said of the partnership, “Taking concrete steps to provide affordable health care coverage is key to moving our country forward and reducing the number of uninsured, many of whom are disproportionately represented in low-income urban communities.”

“Aetna is one of the nation’s leading diversified health care benefits companies, serving approximately 36.4 million people with information and resources to help them make better informed decisions about their health care. Visit their Web site at www.aetna.com.”

Magic Johnson Enterprises, formed in 1987, serves as a catalyst for community and economic empowerment by making available high-quality entertainment products and services that answer the demands of ethnically diverse urban communities. Learn more at www.magicjohnsonenterprises.com.

For updates on how Aetna and Magic Johnson Enterprises are working together to address the pressing health issues of urban areas, visit www.communityvitality.com.
“Hot” Jobs for Engineering Grads

Microsoft has hot jobs to offer engineering graduates. And they have come up with a unique way to recruit students.

Over the years, Microsoft has come to campuses for some intense interviews and recruiting, but they want students to know that interviewing with them is a great thing and that there’s another side to Microsoft. They wanted to do something that demonstrated that flair, so they invented the Job-cuzzi. Mock job interviews are conducted in the Job-cuzzi by Fred, the mock interviewer. He asks incredibly difficult questions, like “What is your name?” and “Do you like chocolate?” He also entices people walking by, with a: “Don’t let the future scare you. Soak in it.”

The Job-cuzzi is part of Microsoft’s new recruiting campaign “to entice the most loveable of geniuses to come interview” with them. To learn more about the campaign, visit their new minisite at hey-genius.com.

A Job-cuzzi, Microsoft’s way of having fun and doing their part in making the interview process a little more comfortable, was held at MSU in the Engineering Building on Friday, February 22. Trieu Nguyen (right), computer engineering junior, is interviewed by Fred, the mock interviewer. As he conducted interviews, he would often shout out to students passing by: “Hello, Genius!” or “How’s your brain today?” To view the video from the MSU Job-cuzzi, go to www.egr.msu.edu/story/jobcuzzi.

PHOTO BY HARLEY J. SEELEY

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