MSU’s Civil Infrastructure Lab

An Explosive Success
As some of you are probably aware, Dean Janie Fouke assumed her new position as the provost and senior vice president for academic affairs at the University of Florida this summer. I felt deeply honored and privileged to be asked to take on the role of acting dean effective June 8, 2005.

The College of Engineering made great strides under Dean Fouke’s leadership and we are grateful to her for leaving the college in excellent shape. Although we have much to celebrate, we have an opportunity, as the torch is passed, to take stock of where we are, look into the future, and determine what adjustments in strategy are needed to position ourselves to become the best engineering program in a land-grant university setting. Questions that are being asked in the college include: What can we do to make our educational offerings distinctive? How can we equip our students with skills to thrive in a complex world where the rules of the game are constantly changing? How can we help our research enterprise grow in ways that benefit humanity? How can we organize ourselves to respond to the needs of society at large? I seek your input on these issues as we prepare ourselves for the future.

As we ask ourselves these important questions, we are already striving to provide some of the answers. In this issue, you will read how:

- Rigoberto Burgueno utilizes our Civil Infrastructure Lab to evaluate an innovative material—self-consolidating concrete—that offers manufacturing advantages and has the potential to improve the safety and quality of our infrastructure.
- Christina Chan and Mark Worden are making cutting-edge contributions in the areas of health and the life sciences.
- Evangelyn Alocilja is engaged in developing novel biosensors with applications in food safety and bioterrorism surveillance.
- Brian Magerko is helping students apply their creativity in designing 3-D computer games through a new interdisciplinary specialization, which will give them the tools they will need to succeed in the industry.
- Dean Aslam is able to evoke interest in science and technology among children through an innovative summer camp.
- Ranjan Mukherjee and his colleagues made news recently for their work on telemedicine devices.

As we go to press, the devastating impact of Hurricane Katrina on the lives of people living near the Gulf Coast is beginning to sink in. As the tragedy unfolds, faculty, staff, and students are springing into action to provide help to those in need of assistance. We have opened our classrooms to students from educational institutions in the affected areas, provided a temporary home to faculty members wanting to continue their research activities, and made contributions to relief organizations.

Professor Thomas Wolff, associate dean for undergraduate studies and associate professor in the Department of Civil and Environmental Engineering, has been named to the ASCE Levee Assessment Team. In cooperation with the Corps of Engineers and the California Division of Water Resources, the team will assess the performance of the levees under loads above the design assumptions. Wolff has more than 35 years’ experience in the field.

I look forward to working with all of you—faculty, staff, students, alumni, and friends of the college—as we pull together to meet our goals this next year. We are ready to respond creatively and effectively to the needs of our students and the needs of society. And as always, we welcome your input.
vangelyn Alocilja, associate professor of biosystems engineering, received funding in July 2005 from the National Science Foundation to develop a nano-transducer based on polyaniline, a highly conductive polymer, reinforced with single-walled carbon nanotubes (SWNT). She is working with co-investigators Amar Mohanty, associate professor of packaging, and Vladimir Tarabara, assistant professor of civil and environmental engineering.

Since 2001, Alocilja’s research group has been studying and synthesizing conductive polyaniline and polypyrrole as transducer nanomaterials for various biosensor architectures, including antibody-based and DNA-based biosensors. The group will apply the highly conductive organic nano-transducers under development to next-generation biosensor design in order to produce highly reliable, stable, robust field-based diagnostic devices.

Biosensors integrate biological sensing elements with electronic transducers. Interactions between biological sensing elements and the molecules to be detected—proteins or DNA fragments—are directly converted into electronic signal by the transducer. Biosensors represent a conceptually novel approach to real-time, simultaneous detection of multiple biohazardous agents: samples require minimal processing, and biosensors allow rapid testing in the field but don’t preclude post-analysis culture in the laboratory.

Unfortunately, there is no technology available today that provides field-based, real-time identification of contamination. Existing methods can take anywhere from 2 to 14 days for confirmation, and they sometimes require extensive sample preparation. But real-time detection of multiple pathogens is critical to the prevention and control of widespread damage from natural or intentional contamination. “By rapidly recognizing impending threats, decision makers can take preventive measures right away,” explains Alocilja.

In previous projects funded by the Michigan Animal Industry Initiative and the U.S. Department of Agriculture, Alocilja developed a highly sensitive biosensor that uses polyaniline to amplify the signal and detect BVDV, or bovine viral diarrhea virus, a pathogen devastating to cattle. Alocilja is currently testing this biosensor in semi-field conditions with co-investigator Dr. Daniel Grooms, associate professor in the College of Veterinary Medicine.

Alocilja also received funding from the U.S. Department of Homeland Security through the National Center for Food Protection and Defense to develop biosensors for food protection. “Improved electrical conductivity of these nano-biosensors translates into unprecedented sensitivity and enables the design of novel sensing devices for other applications as well,” says Alocilja, “including homeland security, food safety, environmental quality, and public health.” She expects that reinforcing the polyaniline solution with solubilized SWNT will result in an even greater increase in signal transduction and therefore heightened sensitivity of the nano-biosensor.

“These devices will offer an additional tool to protect the public from foodborne illness, reduce the health risk of microbial contamination in the food supply chain, strengthen food safety measures, and improve bioterrorism surveillance,” says Alocilja. “The opportunity to save even one life is worth all the efforts. This thought energizes me and helps me persevere. And being a land-grant institution, I believe that MSU is with me in this passion.”

—Kimberlee Roth

A version of this article first appeared in the July/August 2005 issue of the Biosystems & Agricultural Engineering Newsletter.
Strategic Partnership Grants Bolster Interdisciplinary Research at MSU

Christina Chan and R. Mark Worden, both professors of chemical engineering and materials science, have each received a Strategic Partnership Grant from the Michigan State University Foundation.

The foundation’s Strategic Partnership program awards major grants ranging from $500,000 to $1 million to develop research areas key to positioning MSU as one of the country’s leading research universities.

Each professor received a three-year, $750,000 grant—Worden for work in the area of nanotechnology for the health and life sciences, Chan for research in systems biology.

Worden’s research focus is developing “nanostructured interfaces” that include membrane proteins and imitate the biological processes that occur in cells. The objective is to reproduce these processes in devices. Currently he is working with biologists who are sequencing genomes. Once sequences are mapped, his research group will produce the proteins encoded by the genes and put them in the devices to understand how such proteins work. The development of biosensors, screening systems for biological or chemical warfare agents, highly sensitive diagnostic tools, and drug delivery systems are just some possible applications.

The grant also provides funding to bolster the university’s nanotechnology infrastructure more generally, explains Worden. “This is a campus-wide initiative that incorporates diverse areas: biology, medicine, physics, materials science, electrical engineering, and others.”

Worden is coordinating the efforts of three additional co-principal investigators: Michael Garavito, professor of biochemistry and molecular biology; Donna Wang, professor of medicine; and Ilsoon Lee, assistant professor, chemical engineering and materials science. More than a dozen faculty from several departments and colleges serve in an advisory capacity.

Related efforts include the development of a new Web site, www.nanomsu.org, which will provide a central point of contact and information about nanotechnology at MSU for researchers worldwide. It will also alert MSU researchers to funding opportunities.

Other efforts include organizing nanotechnology symposia, matching research teams with appropriate funding sources, assessing research strengths and gaps, recruiting faculty, and developing new nanotechnology programs for students.

The timing couldn’t be better, says Worden. “The federal government has made a huge investment in nanotechnology through the National Nanotechnology Initiative, and we want to be well positioned at MSU to participate.”

Chan’s research focus is developing mathematical tools to analyze high-throughput gene, protein, and metabolite data. High-throughput methods provide a global view on the cellular processes but require mathematical and statistical analysis to reveal underlying regulatory mechanisms. This interdisciplinary project will set the stage for establishing a Center for Systems Biology at MSU.

The research and subsequent models being created by Chan and co-principal investigators Timothy Zacharewski, professor, and David Arnosti, associate professor, in the Department of Biochemistry and Molecular Biology, will aid biotechnology and pharmaceutical companies in drug development and the discovery of novel genetic markers for drug efficacy and toxicity.

Additional collaborators represent a variety of disciplines across the university, including statistics, mathematics, pharmacology, physiology, and pathology.

“Disease processes are complex, involving networks of interactions,” says Chan. “The tools we develop, using both ‘top down’ and ‘bottom up’ approaches, will allow us to gain a more comprehensive understanding of the pathways involved in disease development, diagnosis, and treatment—not only genetic diseases, but those with a strong environmental component as well, such as Type 2 diabetes, Alzheimer’s, and obesity. We can use our technologies to extract information, such as which genes, proteins, and metabolites are involved in disease mechanisms. And these analytical tools will provide a more comprehensive and integrated picture of what’s going on.”

In addition to establishing the center, other goals include fostering interdisciplinary research; recruiting faculty, postdoctoral researchers, and graduate students in this growing area of inquiry; and commercializing the technologies developed. Toward those goals, Chan has developed a Web site for the center at www.cgr.msu.edu/sysbio/. She and graduate student Zheng Li have also formed a company, MetagenX, LLC.

Both Strategic Partnership Grant initiatives were officially launched on July 1, and Chan and Worden are excited to move forward. “There’s definitely a lot to do,” says Chan. 

—Kimberlee Roth
On August 3, 2005, a bridge girder experienced “explosive failure.” But no one was hurt because the beam was expected to fail. In fact, it was induced to failure by researchers inside MSU’s Civil Infrastructure Laboratory.

The 10,400-square-foot laboratory, officially dedicated on May 9, 2002, is now fully operational. And on one recent hot, muggy day, the largest-scale test to date took place inside the facility.

Researchers at the lab were testing bridge girders for a Michigan Department of Transportation (MDOT) demonstration project, a bridge to be built on highway M-50 over the Grand River near Jackson, Michigan. The two-year project received funding beginning in October 2004 from the Federal Highway Administration (FHWA) and MDOT, through the Innovative Bridge Research and Construction (IBRC) program. The testing at the MSU lab in August was to evaluate bridge girders constructed of an innovative type of material called SCC—self-consolidating or self-compacting concrete.

SCC, initially proposed by researchers at the University of Tokyo in the mid-1980s, is—like conventional concrete—composed of cement, water, and sand and gravel aggregates. However, the standard proportioning of these constituents is carefully modified so that with the help of chemical admixtures the resulting concrete can “flow like honey,” according to some.

“This new concrete is attractive to the concrete construction industry because you can tailor it to flow according to your needs,” says Rigoberto Burgueño, a structural engineer in the Department of Civil and Environmental Engineering and director of the Civil Infrastructure Laboratory. For instance, conventional concrete is a rather stiff con-
glomerulate and thus it is difficult to get it to fill
the forms used to cast concrete components
and to pass through the steel bars used as
reinforcement. “With SCC, you can obtain
a mix that is dense and yet flows without
segregation. And better flow allows for a
better concrete coverage around reinforcing
steel, a denser concrete mix, and the filling of
complex form geometries.” The end result is
a higher-quality product.

And SCC can flow without needing to be
“vibrated,” like conventional concrete. In this
process, metal rods with an internal rotating
mass shake at very high frequencies to release
some of the water molecules trapped in the
concrete. This “shears” the concrete mix,
thus making the concrete flow, Burgueño
explains. “Vibration helps the concrete move
and avoids segregation of its coarse constitu-
ents. The concrete needs to be well vibrated,
but not overvibrated. Too much and the
aggregate will settle, which leads to non-unif-
mor material properties in the product, and
lowers the concrete durability due to loss of
entrained air purposely introduced into the
concrete.

“The vibration procedure is tedious, time
consuming, and dangerous,” says Burgueño.
“The vibrators are noisy and they move vio-
lently.” Thus, workers are required to wear
protective devices and must be careful not
to get their hands or fingers caught between
the vibrators and the forms into which the
concrete is being poured.

The Japanese recognized the need to
develop a concrete that was less labor inten-
sive and safer to produce, and at the same
time allowed for more consistent properties
independent of placement procedures. They
began to experiment by varying the amount
of coarse aggregates (sand and gravel) from
standard concrete mixes and adding water-
soluble polymers in order to reduce friction
between particles, resulting in improved flow
without loss of cohesiveness and eliminating
the need for vibrating. The end product was
SCC.

The new concrete, which has been
reported to potentially speed the concrete
casting process by up to 40 percent, has
been used to construct bridges, tunnels, and
buildings in Japan since the early 1990s. It
has been used to build a number of bridges
in Europe and has caught on in Canada. While
SCC is not yet accepted in the United States
for building bridges and roads, it is widely
used in privately funded projects like parking
structures and in architectural products like
building wall panels and façades.

August 3, 2005. A four-point bending test begins on one
of the SCC bridge girders. The beams used in the testing
were fabricated by the Premarc Corporation in Grand Rapids,
Michigan, and are exact replicas of the girders used in the
Jackson, Michigan, bridge project. Each girder is 52 feet in
length and weighs about 16 tons. Here, the beam is simply
supported on reaction blocks at each end and load is applied
equally at two points centered above the beam via com-
puter-controlled hydraulic rams (actuators). The beams are
precast/posted box beams, having a rectangular section
with a Styrofoam (non-structural) core, 4.5-inch-thick walls
on the sides and bottom and a 5-inch-thick wall on the top.

Reinforced concrete test units are usually painted white
so that the cracks (the faint black lines in this photo) show
up more readily on the surface. As they spread, the paths of
the cracks are then traced by the researchers. The numbers
marked along the red lines shown here indicate the loading
or deformation events at which the cracks appeared. (The
number 60 in this photo indicates that the crack appeared at
an actuator load of 60 kips, or 60,000 pounds; 1 kip = 1,000
pounds.)

“Multiple internal electronic instruments are used to
measure the response of the test unit,” says Burgueño, “but
only a handful of results are usually readily available before
processing the data.” Thus, researchers take advantage
of being able to immediately monitor the behavior and
performance of the structure by observing and studying the
location, path, symmetry, and spacing of the cracks, as well
as the load or deformation levels at which they appeared.
“Cracks in reinforced concrete structures tell us what the
structure is ‘feeling,’” says Burgueño. “If a crack starts
appearing in an unexpected location, that raises questions.
This could be a new lesson accompanying the material or
structure under study or it could indicate a deficiency in the
design or something wrong in the setup.”
adopting this technology for roads and bridges,” says Burgueño, “because we are much more conservative in our design approaches and more cautious in implementing new technology, partly due to the litigious environment in the United States. And, in general, we have more regulations than other countries.” But transportation agencies are now beginning to investigate SCC and a small number of demonstration projects similar to the Jackson bridge are beginning to appear across the country.

“Concrete is a relatively old material and most of the design codes have been written based on specific proportioning rules, or mixes, optimized through many years of experience,” explains Burgueño. “Now, here comes this new concrete, in which we are drastically changing these proportions. So what does this mean for the performance of a structure? Do the recommendations and equations in the design codes need to be changed?”

Structural elements like bridge girders are designed to resist the loads imposed on them through: (1) bending (flexure), (2) lateral “tearing” of the material (shear), (3) longitudinal stretching or compression (axial) and (4) twisting (torsion). “For a bridge girder, the most fundamental types of resistance are flexure and shear, which are coupled responses,” says Burgueño. “As you go over a bridge, the beams bend as they resist the load.”

Flexure tests and shear tests were performed on eight beams total for the Jackson bridge project. Each test evaluated three beams of the new SCC material (each of a different SCC mix proportioning and admixture content) and one of conventional concrete. The steel reinforcements remained the same in all of the test beams, which were exact replicas of those to be used in the construction of the Jackson bridge—each was 52 feet long and weighed in at about 16 tons.

“We wanted to ensure that these SCC girders have equal or better capacity and behavior than those constructed of conventional concrete,” Burgueño says.

Based on the successful outcome of the tests at MSU’s Civil Infrastructure lab, three of the six girders in the Jackson bridge are SCC girders—instead of conventional concrete girders. Bridge construction began in early September.

In addition to documenting the performance of the girders in the laboratory, MSU researchers will continue to monitor the bridge for a year after construction is completed this fall. Deformation and temperature instruments were embedded in the three SCC girders—as well as in one of the conventional concrete girders. Bridge construction began in early September.

Only after MDOT has completely assessed the performance of SCC will they give the green light to future use of this new material.

Roger Till, engineer of structural research with MDOT’s construction and technology

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CIVIL INFRASTRUCTURE LAB

Research and Testing Conducted to Date

Since the start of operations in May 2002, diverse research projects at the Civil Infrastructure Lab have been funded by the National Science Foundation, the Federal Highway Administration, the U.S. Department of Energy, the U.S. Environmental Protection Agency, the Michigan Department of Transportation, the Precast/Prestressed Concrete Institute, and other agencies, collectively totaling approximately $1.6 million.

Faculty from the Department of Civil and Environmental Engineering involved in one or more projects are: Neeraj Buch (associate professor), Rigoberto Burgueño (assistant professor), Karim Chatti (associate professor), Ronald Harichandran (professor and department chairperson), Parviz Soroushian (professor), and Amit Varma (assistant professor, now at Purdue University).

Several projects have collaborators from other departments and academic units: Lawrence Drzal (University Distinguished Professor, chemical engineering and materials science and director of the Composite Materials and Structures Center), Manju Misra (visiting associate professor, Composite Materials and Structures Center), and Amar Mohanty (associate professor, School of Packaging).

Projects completed or currently in progress at the lab are:

- Development of sensors to monitor the bond integrity in concrete bridges rehabilitated with fiber-reinforced polymer composites
- Evaluation of the effect of repeated heat-straightening on the properties of steel beams impacted by high loads
- Development of efficient structural forms for beams and plates made from natural-fiber polymer composites (biocomposites)
- Study of methods of enhancing the durability of concrete wastewater infrastructure
- Development of refined glass-fiber composites for enhanced durability in concrete environments
- Investigation of the effects of microbial attack on concrete wastewater infrastructure
- Investigation of the structural performance and design of self-compacting concrete girders and the effect of the concrete mix proportioning on the bond of prestressing strands
- Development of enhanced eco-friendly, nano-reinforced biobased polymer composites for load-bearing structural components
- Evaluation of the effect of misaligned dowel bars on the performance of rigid pavement joints
- Evaluation of improved shallow depth repairs and patches for concrete structures
- Experimental evaluation and field monitoring of prestressed bridge girders made from self-compacting concrete
- Experimental evaluation of the effect of multi-axle trucks on pavement distress

Researchers use photographs to compare the pattern of cracks in one structure with the pattern of previously tested structures. “For instance, the path and spacing of the cracks is closely related to the type of concrete mixture and reinforcement layout that you have,” Burgueño points out.

David A. Bendert, a master’s student in civil and environmental engineering and the student in charge of the project, uses a digital vernier to measure strains in the concrete by recording the distance between small metal targets mounted on the beam’s surface. As the beam flexes, the top of the beam will contract and the bottom will expand.

Before the concrete was cast, “strain gauges,” electronic instruments that measure the deformation of the steel reinforcement strands, were placed inside the beam and along the surface of the concrete in key locations. But these very sensitive instruments could potentially be damaged during concrete placement and testing. The data gathered with the vernier (one of the oldest devices used to obtain strain measurements) is simply a redundant measurement, a backup to the electronic devices, should those devices fail. The manual measurements would be similar—but not identical—to the measurements recorded with the electronic devices.

Shown here are the seven-wire, prestressing strands of high-strength steel that run through the length of the beam. One of the concerns with SCC is that the bond between the concrete and the steel might not be as good as with conventional concrete. To determine if the strands suffer any slip during flexural testing, displacement transducers are attached to selected strands at the beam ends. If the bond is not strong enough, the strand will slip—relative to the concrete—and begin moving into the concrete beam. The displacement transducer will pick up such movement of the strand into the concrete, indicating that bond is being lost.

Each beam is also equipped with electronic transducers at key locations to allow researchers to understand the behavior of the test unit. "Global measurements include the maximum downward vertical deformation at the center and the beam rotations along the length," Burgueño explains. "Other instruments are used to ensure that the test setup is working properly; for example, rotation transducers perpendicular to the beam length monitor any beam twisting, which is not desired."
MSU Provost Lou Anna K. Simon carried out the official ribbon cutting at the May 9, 2002, dedication ceremony. Left to right: Raymond C. McVeigh, Great Lakes Cement Promotion Association, Inc.; Alton L. Granger, President, Granger Construction; Janice M. Granger; Lou Anna K. Simon, then-Provost; Ronald Harichandran, Chairperson, Department of Civil and Environmental Engineering; Janie M. Fouke, then-Dean, College of Engineering; and Robert J. Huggett, then-MSU Vice President for Research and Graduate Studies.

Left to right: Raymond C. McVeigh, Great Lakes Cement Promotion Association, Inc.; Bernie Cawley, Michigan Concrete Association; and Robert Risser, Michigan Concrete Paving Association.

Naming opportunities still available include: one faculty office, the Civil Materials Lab, the Environmental Testing Lab, the new Structural Fire Testing Facility, and the building. For more information, contact Richard McGowan, associate director of development, at (517) 355-8339 or egrdevel@msu.edu.
division, is the project’s research manager. “Educating the engineering faculty and students about MDOT’s problems related to bridges leads to a cooperative effort in solving Michigan’s infrastructure issues,” Till says. In turn, “the lab provides test data of full-scale bridge elements that allows investigation of alternatives that would otherwise take years of in-service use to obtain.”

Prior to the opening of the lab in 2002, MDOT used large-scale testing facilities at other universities, including the University of Michigan and Lawrence Technological University. Now, MSU is able to compete for MDOT and federally funded research projects involving large-scale testing of structures and pavements. “This unique facility,” says Burgueño, “allows us to evaluate the performance of structures to their ultimate extent in a controlled environment. We can apply precise loads and deformations simulating those experienced by structures during service, overload, and extreme events and carefully monitor their performance.”

“For students, seeing these experiments teaches them more than reading ten books. Being there to witness how materials and structures behave all the way to failure gives them a very different perspective.” But, he adds, “this is about the only environment where you want to see that! It is hoped that no student, no designer, will see that type of failure out in the field during his or her career.”

Seeing the lab used to its full potential is very gratifying, Burgueño says. “A lot of people do not know that this type of research is going on here at MSU. This is what is being done to improve the safety, quality, and longevity of our infrastructure.”

“Research pays off,” Till says. “By investigating and advancing new technology for infrastructure use, initial cost and future maintenance costs will be reduced.” And ultimately, it’s the citizens of Michigan, and the United States, who will reap the benefits of the research being carried out today at MSU’s Civil Infrastructure Lab—safer and better roads and buildings for tomorrow.

— Laura Luptowski Seeley

CIVIL INFRASTRUCTURE LAB

Chronology

- **SUMMER 1998**
  Planning begins

- **JANUARY 2000**
  Rigoberto Burgueño hired

- **OCTOBER 2001**
  Construction begins

- **MAY 2002**
  Dedication of lab

- **DECEMBER 2002**
  First research project in lab

- **MAY 2003**
  Lab becomes fully operational

- **AUGUST 2005**
  Largest-scale testing to date

Strains are the best measure of material performance and they can be related to the overall component response. Strain gauges are distributed at key locations—inside the beam in the prestressing strands and in the conventional steel reinforcement, and in the concrete on the top surface of the beam. The data collected by these instruments is recorded, together with the load and displacement measurements, and is stored in a central computer or data acquisition system. The beam bends under the load. The load per actuator at this point is 66.5 kips. Displacement at the center of the beam is 8.5 inches. As the actuator load reaches 68 kips, the compression zone in the beam begins to crush and a “spalled” or chipped region appears parallel to the surface of the concrete. The beam “at failure.” Capacity was reached at a load of nearly 70 kips, or 70,000 pounds of load at each of the two points, for a total of 140,000 pounds. Figuring that a mid-size SUV weighs about 5,000 pounds, this means that each girder alone could carry the weight of approximately 28 SUVs stacked on top of each other. The Jackson bridge will contain six girders—three of which will be SCC beams. The failure was “explosive” because the compression capacity of the concrete was exceeded. Failure was initiated by the crushing of the compression flange of the beam before rupture of the steel strands. Structures are designed to have “ductile” failures, which means they will deform significantly before failing, which is the type of failure exhibited by this beam. While the tested beam failed because of crushing of the concrete, the internal strain gauges indicated that the steel strand had reached its yielding limit, the beam showed significant cracking, and the beam was deformed—or displaced—11.1 inches at its center when it failed. The load applied in this particular test was only a fraction of what is possible with the lab’s equipment; each of the hydraulic rams shown here is capable of applying up to 328,000 pounds of load in compression and 260,000 pounds of load in tension with a stroke—or displacement—of up to 40 inches.

Closeup of beam at failure.
Computer Science Specialization That’s All Fun & Games

The Department of Computer Science and Engineering’s commitment to innovation and the importance of interdisciplinary education will manifest itself through an exciting new curriculum in which students are able to apply their creativity and passion for digital games. Beginning fall semester 2005, CSE undergraduates will have the opportunity to pursue a specialization in game design and development.

Together with students from telecommunications, information studies, and media (TISM) and studio art, computer science majors will acquire the skills and experience to prepare them for jobs in the game development industry. In addition to learning design fundamentals, principles, and theory, students will engage in active problem solving, work together on design and production, and explore the history of digital games and their impact on society. Students will work on a collaborative project with industry-based clients in the program’s capstone course.

Brian Magerko, an assistant professor in TISM who holds a joint appointment in CSE, will be bringing his expertise in 3D and artificial intelligence game design to the program. He will also teach an elective seminar on interactive storytelling and believable characters.

“Global video game hardware and software sales top $10 billion annually—surpassing what U.S. consumers spend on movie tickets.”
— USA Today, quoted in washingtonpost.com, November 8, 2004

Magerko’s passion for the field and his research experience with new game mechanics and forms of interaction will be valuable resources for students as they tackle the unique challenge of designing 3D games. “The largest typical challenge,” Magerko says, “is the integration of artwork and gameplay in a seamless manner. More than any other genre, 3D games have pushed consumers’ expectations of complex animations and characters, larger and more lush levels, and realistic physics and lighting.” Another important yet commonly overlooked challenge, he adds, “is the integration of story and novel gameplay into the gaming experience.”

TISM assistant professor Brian Winn, co-founder of the program, says “MSU is uniquely positioned to offer a specialization in this area.” Faculty members are involved in research and development areas that include gender issues, games and society, artificial intelligence, and games for educational purposes.

The rich interdisciplinary focus of the program will give students the tools they need to succeed in the industry. “In the specialization,” Winn explains, “we are trying to parallel the environment and experience of working on a development team in the game industry as much as possible. The number one thing human resource managers in the game industry state they are looking for in a good employee is the ability to communicate and collaborate effectively within a multidisciplinary team.”

“Each student in the specialization will learn more about the process that the students from other disciplines go through in their craft,” Magerko says. “CSE students will learn how to create and integrate artwork into games. They will gain a shared vocabulary that will be invaluable when working alongside artists or designers after graduation.”

Magerko says he is excited about being a part of this new program. “Hopefully my experience as someone who researches new game mechanics and new forms of interaction in games will bring a different perspective to the courses I teach, as well as to my research group. I consider myself both a scientist and an artist, so I can’t imagine finding a better fit for me as a teacher.”

For more information about the game design and development program, go to dmat.msu.edu/degrees/gamespecialization.html.

— Kim Thompson

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Highest programmer salary: $211,500
72% of all engineers and programmers receive additional compensation on top of their salaries; average additional compensation: $21,872
Highest game designer salary: $190,000
65% of all game designers receive additional compensation on top of their salaries; average additional compensation: $16,890

Source: Game Developer magazine’s 4th Annual Salary Survey, 2005
GAME DESIGN & DEVELOPMENT SPECIALIZATION

Selection Criteria & Required Courses

Selection Criteria

- Completion of major-specific prerequisites
- Junior standing
- GPA of 3.0 or higher within major
- Submission of a portfolio of work demonstrating expertise relevant to game design and development in digital media design, computer science, and/or art
- Work experience may be considered

CSE Prerequisites

- CSE 231: Introduction to Programming I
- CSE 232: Introduction to Programming II
- CSE 331: Algorithms and Data Structures

Required Courses

- TC 339: Digital Games and Society
- TC 445: Digital Game Design
- TC 455: 3D Game and Simulation Design
- TC 498: Collaborative Game Design

INTERNATIONAL ACADEMIC CONFERENCE ON THE FUTURE OF GAME DESIGN & TECHNOLOGY

Future Play 2005

October 13-15, 2005, at Michigan State University

- Students will have opportunities to meet industry game developers, exhibit their games, and learn the latest trends in development.
- Recordings of keynote addresses and interviews with industry speakers will be available for classroom use.
- A limited number of half-price registration slots are available to students ($125.00).

Conference Themes

- Future game development. Addresses academic research and emerging industry trends in the area of game technology and game design.
- Future game impacts and applications. Includes academic research and emerging industry trends focused on designing games for learning, for gender, for serious purposes, and to impact society.
- Future game talent. Designed to provide a number of industry and academic perspectives on the knowledge, skills, and attitude necessary to excel in the games industry.

More details available at www.futureplay.org

Games Created by Spartasoft,
an MSU student organization devoted to all aspects of game development

Ballistic
3D action puzzle game viewed from a 2D perspective
Technologies: DirectX
Credits: The Spartasoft Spring 2005 group project; numerous Spartasoft members
Play Options: Windows version available shortly
Web Site: spartasoft.msu.edu

Breakin’ Battle
Two players dance against each other to score big points and win the crowd in this competitive break dancing game.
Technologies: DirectX
Credits: Casey Meekhof, Chris Bray, Frank Tuma

Robot Factory
Action puzzle game inspired by Tetris
Technologies: Macromedia Director 8.5
Credits: Patricia Banyas, Jeff Beaudoin, Michael Meyer, Nishreen Upletawala
Play Options: Run in browser

Violation
Parking tickets are on the rise and you’ve had enough! Pilot your giant robot through MSU’s campus in 3D and destroy the parking services vehicles.
Technologies: Macromedia Director 8.5, Shockwave 3D
Credits: Casey Meekhof, Chris Bray, Kenny Lee, Ming Tang
Play Options: Run in browser, download for Windows, download for Mac

Squest
A squid has been abducted from his ocean home. Find your way back to the ocean from your aquarium prison by using your tentacles to latch onto the environment and swing your way out of the fish tank, into the sewers, and finally back to the sea.
Technologies: Dark Basic
Credits: Patricia Banyas, Jeff Beaudoin, Michael Meyer
Child’s Play: Robotics Summer Camps at MSU

Children in grades K–12 are learning to build and program intelligent robots that can sense and respond to their environment. In summer camps at MSU, in a classroom setting called “K to PhD,” students develop science, technology, engineering, mathematics, and social skills. Arranged “old-school” style, with the youngest in front and high schoolers in back, they do hands-on experiments under the supervision of MSU faculty and graduate students.

Dean Aslam, associate professor of electrical and computer engineering, initiated the robotics camps in 2003, and they have been going strong ever since, with six short courses per summer, each one consisting of four two-hour days. More than 150 students have attended each of the past two summers. In groups of two or three, the children sit around a laptop computer, a robotics inventions system (RIS), and/or a microcontroller programming station (for high schoolers) exploring the fascinating world of robotics and micro- and nanotechnologies.

All of the children use RIS kits marketed by LEGO® MINDSTORMS™. Each kit includes over 700 elements. A software program guides them through a series of steps. With each successful attachment of a part, a friendly voice from the computer says, “Good job. That’s right.” They use PCs to write the program code for their robot, and then wirelessly download the program using infrared technology similar to the interface between a remote control and a TV. The children’s excitement reaches its peak when they present their robotic creations to their mentors and parents during the last 30 minutes of the camp.

The children are grouped and trained according to their abilities and previous experience rather than by their ages. In general, however, the youngest (K–2) are introduced to cognitive principles such as motion, light, and basic human-machine interactions before they start using the RIS. Grades 3–8 learn about robot design, building, and programming. Grades 9–12 learn more detailed microcontroller-based design and programming, using advanced concepts from physics, chemistry, mathematics, and biology.

Although some children have been exposed to “nano” ideas through television, for example the cartoon series Jimmy Neutron, Aslam starts with things that children can see (and possibly put their hands on) in their daily lives, then progresses to talking about things they cannot see but can perceive with their highly imaginative brains. One way he introduces micro and nano concepts is through a discussion of spider silk. He shows a video of a fifth-grade boy taking a sample of a spider web and placing it under an optical microscope. Then a slide of the spider silk is shown enlarged, as magnified by the microscope. Aslam informs the children that the diameter of a strand of silk is one micrometer. Next, based on an electron microscope’s view of the spider silk, he points out even smaller fibers making up the spider silk that are only one nanometer in diameter.

He then introduces his students to the concept of WIMS (wireless integrated microsystems) devices, which are made up of a “brain,” a microcontroller (a single-chip computer), sensors, actuators, and a wireless interface.

continued on page 14
Dean Aslam has a clear sight on commercializing his microsystems robots. He is forming a new company to develop services and products that he will market through his robotics camps. Commercializing the camps offers the business challenge of balancing his love of science and technology education with market realities. It’s a struggle to find an ideal balance on the toy continuum between mindless addiction and educational rigor. The challenge is to build fantastically alluring toys for children that integrate a high degree of scientific learning into their experience.

To date, Aslam’s educational programs have been using RIS (robotics inventions system) kits and microcontroller programming tools for school programs and robotics camps. Marketed by LEGO® MINDSTORMS™ (originally developed at MIT’s Media Laboratory), the RIS kit includes over 700 elements, including attaching sensors, motors, and gears, and costs $200. Over the past year, Aslam has developed his own “MSU smart-robot” with the intention of marketing the robot at a more affordable cost. He explains that this new robotics toy has many more creative capabilities than the current RIS when completed. It is expected to be the smartest and smallest in its price category, and it will not become obsolete, because its brain, microcontroller, and sensors will be user upgradeable.

Aslam has attracted international interest in his programs, including several keynote presentations at conferences and a startup investment in his company from A.J. Boggs & Company of Okemos (www.ajboggs.com). “The fun of building your own robotic creations with powerful capabilities will keep children playing indefinitely. And as robotics components become smaller, the power of these toys to interact and entertain will only grow,” states Clarke Anderson, CEO of A.J. Boggs.

Children today are leaving behind traditional toys, preferring to play with communication gadgets like phones and Internet devices, computer and video games, and music players. To compete in this market, Aslam combines communication, games, and music with fascinating electronics, all with the goal of teaching physics, math, engineering, and logic. With help from A.J. Boggs, he has begun negotiations with MSU’s Intellectual Property Office, and together they hope to make the MSU smart-robot the next top toy on the market.
WIMS are currently used in microwave ovens, refrigerators, and toys. He tells his students that cutting-edge research and development of smaller and more powerful WIMS devices will lead to many useful products.

He predicts the development (already started in Korea) of a pill-sized robot that, once swallowed, has the potential for reading and recording internal human body functions/diseases, such as temperature, pH levels, and tumors. In addition, the robot will send reports wirelessly to a nearby PC/PDA. Further development—i.e., a microsystem called “lab-on-chip”—could enable the robot to analyze blood and administer medication directly to any part of the internal body. Nanorobots, when developed, will be small enough to be injected into the bloodstream to perform such functions as identifying cancerous tissues.

Aslam’s camps are an outgrowth of a project called the Engineering Research Center for Wireless Integrated MicroSystems (WiMSERC) founded in 2000. A partnership between the University of Michigan, Michigan State University, and Michigan Technological University, the WiMS ERC combines U of M’s programs in sensors and microsystems, MSU’s leadership in materials—especially in diamond and in carbon nanotubes—and Michigan Tech’s world-class expertise in packaging, micromilling, and hot embossing. The $30-million center is funded by the National Science Foundation, with additional contributions from the State of Michigan, the three partnering core universities, other federal agencies, and a consortium of some twenty companies.

WiMS ERC is working to create microsystems that will have a pervasive impact on society during the next two decades, merging micropower circuits, wireless interfaces, biomedical and environmental sensors and subsystems, and advanced packaging.

One of the important goals of the WiMSERC is to develop interdisciplinary educational programs in microsystems—a positive step toward preparing the engineering leaders that we will need in the near future. Aslam has taught MSU students for more than 16 years. His pioneering programs in k–12 education use microelectromechanical systems (MEMS) to illustrate scientific principles and to highlight the exciting careers available in engineering.

He started the educational aspect of the WiMS ERC work with an introductory short course at a local high school and a WiMS short course at MSU’s Diversity Programs Office in 2000, and now, five years later, he has robotics programs in four Michigan school systems: Okemos, Ovid-Elsie, and Oakland public schools, and Woodcreek Magnet School. In 2003, Aslam’s educational programs were dubbed “MiCRoSYSTEMS,” an acronym for Michigan Cognitive Robotic Studies for Youth in Science, Technology, Engineering, Math, and Social Skills. He believes that igniting a spark of interest in America’s next generation in micro- and nanotechnologies is an opportunity to keep future jobs in the United States.

—Vanessa Mitchner and Lynn Anderson
Researchers from the College of Engineering and the Department of Surgery are working to develop a novel telemedicine device: a robotic arm that doctors can use to provide breast exams to patients in remote areas via the Internet. Ranjan Mukherjee, associate professor of mechanical engineering, is heading the effort along with co-investigators Matt Mutka, associate professor of computer science and engineering, and Ning Xi, professor of electrical and computer engineering.

Though several years away from clinical trials, the device is already receiving wide media attention. “The technology itself is intriguing,” says Xi. “It combines the Internet with robotics, topics that are interesting to many people. From an applications point of view, everyone—women and their brothers, fathers, husbands, and sons—acknowledges the importance of breast cancer screenings. It has far-reaching impact.”

The technology would enable a doctor in one location to use a handheld, breast-shaped haptic device to control a robotic hand in another location. The robotic hand examines the patient, and the two pieces of hardware are linked via the Internet. Force and tactile sensors in the robotic hand transmit information back to the handheld device, creating a feedback loop that provides sensation to the doctor. An ultrasound transducer in the robotic hand also generates an ultrasound image.

The combination of sensation with the ultrasound rendering allows the doctor to simultaneously see and feel the breast tissue and any lumps that may be present. The patient and doctor use audio and video capabilities to communicate during the exam.

Real-time sensation and communication make synchronization of data over the Internet a linchpin for the system’s success. “Video data, audio data, data about touch and action—each has a different delay over the Internet, but what the doctor sees and feels have to be in sync,” says Xi, who developed the robot’s tactile sensors and recently received a patent on “synchronization and task control of real-time Internet-based super-media.”

Mutka and Xi have developed tools using event-based synchronization technology, novel schemes to determine trends in bandwidth availability and approaches for using multiple network paths to reduce network delays. Together their approach enables reliable and safe telediagnostics.

Patient acceptance poses another hurdle. Before the system is ready for testing on humans, the group will design a “human-friendly” robot. “It’s difficult to know exactly what we mean by that right now,” says Mukherjee, “other than it needs to evoke confidence in patients’ minds. We don’t want to use an industrial robot that might seem scary. We have to design something that women will be comfortable with.”

The project on super-media enhanced telediagnostics of breast pathology has been in the works for two years. Additional collaborators include Carol Slomski, chairperson of MSU’s Department of Surgery, and Keith Apelgren, professor of surgery. “This is a cooperative effort,” says Xi. “Medical professors have their own language and training, and that’s different from traditional engineering training. In order for this technology to have broad application in medicine, we need to work together.”

Researchers are awaiting word on funding for the next five years. If all goes well, the system could be tested by doctors—using silicone breast models—within the year. Human trials would follow after five years and the system could be in use in medical settings within 10 years. To date, preliminary testing has been “very encouraging,” says Mukherjee. “And if we successfully address all of the technical challenges, the patient and the doctor will both feel as though they’re right in the same room.”

—Kimberlee Roth
ROBOTIC ARM FOR REMOTE BREAST SCREENING

Media Coverage

▶ MSU Today, June 10, 2005. (See msutoday.msu.edu/research/index.php?article=10Jun2005-1)

▶ The Engineer Online, June 15, 2005.

▶ The Great Lakes IT Report, the leading daily technology e-newsletter in the Midwest published by WWJ Newsradio 950, June 17, 2005.


▶ WLNS-TV 6 news, June 30, 2005.


▶ NewScientist.com news service, July 5, 2005. (See www.newscientist.com/article ns?id=dn7630)

▶ The Tonight Show with Jay Leno monologues:

  ▶ July 6, 2005. (See www.nbc.com/nbc/Video/player/autoplay.v.1.html?c=The_Tonight_Show_with_Jay_Leno/M_2961_msn. Works best with Internet Explorer or Netscape.)

  ▶ July 13, 2005. (See www.nbc.com/nbc/Video/player/autoplay.v.1.html?c=The_Tonight_Show_with_Jay_Leno/M_2966_msn)

▶ Go Digital, a BBC news broadcast on technology, August 1, 2005.
College of Engineering Alumni: Where Are They?

1978 Totals
Alumni in US: 11,689
International alumni: 295
Lost alumni: 1,603

2004 Totals
Alumni in US: 25,646
International alumni: 943
Lost alumni: 2,818
The College of Engineering was the first college on the MSU campus to establish its own alumni organization. Back in 1959, alumni of the college, some 8,000 strong, felt that both the college and its graduates could benefit from a closer working relationship. They desired an organization designed specifically to meet the needs and interests of engineers. The University Alumni Office sanctioned the college’s proposal and the Engineering Alumni Association, governed by a 32-member board, was officially established on December 3, 1959.

Today, more than 45 years later, the college boasts an alumni base of more than 27,000 and nearly 2,000 are members of the Engineering Alumni Association, a constituent organization of the MSU Alumni Association. A 16-member College of Engineering Alumni Association Board continues to play a strong role in nurturing the relationship between the college and its graduates—for mutual benefit.

“The Board serves to advise the College of Engineering on affairs relating to alumni relations, industry relations, development, stewardship, curriculum development, marketing, publications, and other issues,” says chairperson Lynn Bechtel (mechanical engineering ‘91), vehicle engineer, full-size trucks, General Motors Corporation. “The Board brings a unique perspective to the college in that the members represent both the alumni and industry. There are many parallels to the issues facing both industry and the college; however, the approach for addressing these issues may differ. The Board offers insight into the parallels as well as a new perspective from which to understand and approach the issues.”

Bechtel first became aware of the Alumni Board shortly after graduating. “I have always been a Spartan at heart—while I was at MSU and now as an alumna,” says Bechtel. “My experiences while at MSU left a lasting impression on me, to the extent that after only a few years following graduation I wanted to get reconnected and give back to the university that gave me so much.”

In 1995 she met with a development officer from the College of Engineering simply to share her ideas on how to get young alumni reconnected with MSU, or so she thought. “Instead, I found myself with a nomination to join the Board!” she says.

Bechtel joined the Board in 1997, began serving a second term in 2003, and was named chair in January 2005. The work of the Board, she says, is important to her because, “First, as an alumna, I am proud of my alma mater and proud to be a Spartan engineer. The work of the Alumni Board is critical; it ensures that the college continues the tradition of graduating outstanding Spartan engineers. Second, as an industry representative, I am a customer of the end product of the college—the students and the research. The Alumni Board works to keep the College of Engineering moving forward in a positive direction in both education and research while building upon the strong tradition of graduating the best engineering students possible.”

Bechtel adds, “Alumni desire for MSU to continue to graduate outstanding and highly desirable Spartan engineers—as a matter of personal pride and tradition, and for recruitment into the industry they represent. Alumni also desire for MSU to excel in its research, as this benefits not only industry, but mankind as a whole.”

She has two words of advice for other alumni who may be considering getting involved—“Do it!” Board membership is open to all College of Engineering graduates, with primary consideration given to those individuals who demonstrate a willingness and
ability to spend considerable time, and exert significant energy, on behalf of Board projects. “If there are alumni who are Spartans at heart, and who have a desire to get reconnected to the College of Engineering, the Alumni Board would like to hear from you,” says Bechtel.

The Board is a diverse group of alumni from all across the country, representing various industries and various engineering disciplines. “The one common thread is that all members have a deep desire to serve the college and are committed to the role to which they were elected,” Bechtel notes.

Each member is required to complete a minimum four-year term. The Board meets formally twice a year on campus—usually spring and fall. Between meetings, members may be involved in project work, typically through conference calls or e-mail correspondence. Some members participate on project committees, which are created on an as-needed basis. Board members also represent the college at key functions and activities like ribbon cuttings, campaign events, commencement, open houses, recruitment events, and special awards ceremonies. The Board is also instrumental in providing assistance with promotion and selection of awards for alumni.

Direction and support for Board activities is provided by the Office of the Dean and administered by Vicki Essenmacher, the alumni relations coordinator in the Office of Engineering Development.

“Having been actively involved with the college for the past eight years has personally been a rich and rewarding experience for me,” says Bechtel. “I highly encourage anyone to consider getting reconected and actively involved with their alma mater. It is the alumni, together with MSU, who will keep the college strong and moving forward in the years to come.”

For more information on how you can reconnect and get involved with the college, contact Vicki Essenmacher at (517) 355-8339 or vicki@egr.msu.edu. For information about the homecoming tailgate party, see the back cover of this magazine. —Laura Luptowski Seeley

### Current Alumni Board Members

**EXECUTIVE COMMITTEE**

<table>
<thead>
<tr>
<th>Name</th>
<th>Term</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satish Udpa, Acting Dean*</td>
<td>2005–08</td>
<td>Vice President, Marketing and Strategy, IBM Personal Computing Division, Morrisville, NC</td>
</tr>
<tr>
<td>Vicki Essenmacher, Board Secretary*</td>
<td>2005–08</td>
<td>Vehicle Engineer, Full-Size Truck, General Motors Corporation, Warren, MI</td>
</tr>
<tr>
<td>Lynn Bechtel (bs me ’91), Chairperson</td>
<td>2002–06</td>
<td>Project Manager, Nooter/Eriksen, Fenton, MO</td>
</tr>
<tr>
<td>Dave Pahl (bs ee ’86), Vice Chairperson</td>
<td>2002–06</td>
<td>President, Automotive Fuels Consulting, Inc., Clarkston, MI</td>
</tr>
<tr>
<td>Mike McDonald (bs che ’87), Past Chair</td>
<td>2002–06</td>
<td>President, Automotive Fuels Consulting, Inc., Clarkston, MI</td>
</tr>
<tr>
<td>John Nathan (bs ee ’92)</td>
<td>2005–08</td>
<td>Director of Engineering, Seat Systems Division, Lear World Headquarters, Southfield, MI</td>
</tr>
<tr>
<td>Kevin Goh (bs cse ’78, MBA ’81)</td>
<td>2002–05</td>
<td>General Manager, Texas Instruments, Inc., Dallas, TX</td>
</tr>
<tr>
<td>Dave Sanders (bs me ’82)</td>
<td>2002–05</td>
<td>General Manager, Texas Instruments, Inc., Dallas, TX</td>
</tr>
<tr>
<td>Stephen Perkins (phd cse ’97)</td>
<td>2002–05</td>
<td>General Manager, Texas Instruments, Inc., Dallas, TX</td>
</tr>
<tr>
<td>Jeff Schmitz (bs me ’97)</td>
<td>2002–05</td>
<td>General Manager, Texas Instruments, Inc., Dallas, TX</td>
</tr>
<tr>
<td>Keith Swaffar (bs ce ’77, MS ’79)</td>
<td>2002–05</td>
<td>Executive Vice President &amp; CEO, NTH Consultants, Ltd., Detroit, MI</td>
</tr>
<tr>
<td>Keith Swaffar (bs ce ’77, MS ’79)</td>
<td>2002–05</td>
<td>Executive Vice President &amp; CEO, NTH Consultants, Ltd., Detroit, MI</td>
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**MEMBERS**

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<tr>
<th>Name</th>
<th>Term</th>
<th>Position</th>
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<tbody>
<tr>
<td>Deepak Advani (bs cse ’86)</td>
<td>2005–08</td>
<td>Owner Operator, Stan Esphenship PE, Anaheim Hills, CA</td>
</tr>
<tr>
<td>Betty Bowesox (bs me ’81)</td>
<td>2004–07</td>
<td>Retired, BP Amoco, Plainwell, MI</td>
</tr>
<tr>
<td>Joe Colucci (bs me ’58)</td>
<td>2004–07</td>
<td>Retired, BP Amoco, Plainwell, MI</td>
</tr>
<tr>
<td>President, Automotive Fuels Consulting, Inc., Clarkston, MI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stan Espenship (bs che ’64)</td>
<td>2002–05</td>
<td>Retired, Arcadian Corporation, Mountain Lakes, NJ</td>
</tr>
<tr>
<td>Mike McDonald (bs che ’87)</td>
<td>2002–05</td>
<td>Supply Chain Leader, The Dow Chemical Company, Midland, MI</td>
</tr>
</tbody>
</table>

*Ex-officio member

**FIRST OFFICERS OF THE ENGINEERING ALUMNI ASSOCIATION**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
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<tbody>
<tr>
<td>Chairperson</td>
<td>Major Albert Sobey (’09), Flint, MI</td>
</tr>
<tr>
<td>First Vice Chairperson</td>
<td>C. Earl Webb (’12), Okemos, MI</td>
</tr>
<tr>
<td>Second Vice Chairperson</td>
<td>Claud B. Erickson (’22), Lansing, MI</td>
</tr>
<tr>
<td>Secretary-Treasurer</td>
<td>Agnes McCann, East Lansing, MI</td>
</tr>
</tbody>
</table>

*—Source: Spartan Engineer, May 1966, p. 13*
The College of Engineering honored faculty and staff members for excellence in teaching and service at the 15th annual Engineering Awards Luncheon on March 31, 2005, at the University Club. The John D. and Dortha J. Withrow Endowed Teacher/Scholar/Service Award Program recognizes faculty of the College of Engineering who have demonstrated excellence in instructional and scholarly activities and rendered distinguished service to the university and the student body. The Gloria Stragier Award recognizes non-academic staff members for dedicated and creative service. The Withrow Student Service Award, which recognizes academic staff members who serve students, was presented for the first time this year.

Faculty and Staff Honored at 15th Annual Awards Luncheon

In the image:

- Back row, left to right: Clark Radcliffe, professor, mechanical engineering, Withrow Teaching Excellence Award; Timothy Grotjohn, professor, electrical and computer engineering, Withrow Exceptional Service Award; Rigoberto Burgueño, assistant professor, civil and environmental engineering, Withrow Teaching Excellence Award; William Northcott, assistant professor, biosystems and agricultural engineering, Withrow Teaching Excellence Award. Front row, left to right: Joyce Foley, department accounting, electrical and computer engineering; Selin Aviyente, assistant professor, electrical and computer engineering, Withrow Teaching Excellence Award; Abdol H. Esfahanian, associate professor, computer science and engineering, Withrow Teaching Excellence Award; Ramani Narayan, professor, chemical engineering and materials science, Withrow Distinguished Scholar–Senior Award.

Left: Carl Lira, associate professor, chemical engineering and materials science, Withrow Teaching Excellence Award. Center: Fang Z. Peng, associate professor, electrical and computer engineering, Withrow Distinguished Scholar–Junior Award. Right: Cynthia Sarver, academic adviser, undergraduate studies/chemical engineering and materials science, Withrow Student Service Award. Sarver was recently promoted to assistant to the dean for student services.
Ramani Narayan, professor of chemical engineering and materials science, was the recipient of a Governor’s University Award for Commercialization Excellence (U-ACE), which was presented on June 15 in Ann Arbor, Michigan.

Presented for the first time this year, the Governor’s U-ACE program is designed to inspire and reward a public university researcher—and key team members—whose research advances the development and commercialization of new technologies into viable products and services that benefit the local, state, and national economies and contributes to the improvement of the overall quality of life in Michigan.

The awards will be granted annually to one researcher from Category I institutions (those with average annual research expenditures under $100 million), and one researcher from Category II institutions (those with average annual research expenditures exceeding $100 million).

Out of the Category II participants, Narayan was selected as one of three finalists. His research has led to several products, including biodegradable starch foam materials used for packaging and shipping, as well as for toys and arts and crafts; biodegradable films used to produce compostable bags for retail carry-out and yard waste disposal; and modified polysaccharides for topical ocular drug delivery used for glaucoma, antibacterial, and anti-inflammation treatments. The technologies have been licensed to KTM Industries, BioPlastic Polymers and Marshall Plastics, and Biopolymer Innovations, respectively.

Narayan’s commercial developments have led to the creation of 40 jobs in Michigan with annual salaries of more than $41,000 and have generated more than $4.8 million in sales. It is anticipated that within five years these technologies will generate $142 million in sales and create 135 to 160 jobs in the state.

Narayan is currently on the board of directors of ASTM International, one of the world’s largest voluntary standards development organizations, whose activities encompass metals, paints, plastics, textiles, petroleum, construction, energy, the environment, consumer products, medical services and devices, and many other areas. He also serves as U.S. technical expert and convener to the International Standards Organization (ISO) Technical Committee (TC 61) on Plastics. In addition, he serves on the board of directors of Northern Technologies International and on the technical advisory board of Tate & Lyle, two large publicly traded companies.

Brian Thompson, professor of mechanical engineering, was recently appointed as a Senior Outreach & Engagement Fellow. This advisory/consultant panel of distinguished investigators at MSU was established by the office of University Outreach & Engagement. The Fellows meet with visiting scholars, advise the assistant provost, and serve as a visible sign of MSU’s focus on engaged scholarship. Although the designation is for life, Fellows agree to serve a three-year term. The 24 current Fellows have appointments in sociology, education, psychology, journalism, nursing, business, medicine, agriculture, law, engineering, food safety and toxicology, family and child ecology, geography, the museum, and MSU extension.
Four outstanding engineering faculty were selected as named chairs and honored at the College of Engineering spring commencement ceremonies on May 8, 2005. The college initiated the Faculty Scholars Program to recognize highly accomplished faculty members.

Criteria for selection include: (1) research accomplishments, including the quality and impact of the scholarship, and (2) the individual’s record of advising and mentoring graduate students.

All tenure-track faculty in the college are eligible for nomination, except those who hold endowed chairs. Each department may nominate up to two candidates by April 1 each year. From the pool of candidates, two faculty members are selected annually by the dean of the college, with consultation and advice from the department chairs and the associate deans. There is no limit to the number of times a person may be selected for an award.

The new awards consist of a title and an annual stipend of $5,000 each year for five years.

The award titles were selected to honor former College of Engineering deans who are now deceased.

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The award titles were selected to honor former College of Engineering deans who are now deceased.

2004–05 Awardees

Ning Xi was named the 2004–05 John D. Ryder Professor of Electrical and Computer Engineering.

Christina Chan was named the 2004–05 George W. Bissell Associate Professor of Chemical Engineering and Materials Science.

2005–06 Awardees

Fang Zheng Peng was named the 2005–06 Edwin Willits Associate Professor of Civil and Environmental Engineering.
New Faculty

**Terence D. Brown**, assistant professor, electrical and computer engineering, effective June 16, 2005, received his bachelor’s and master’s degrees in electrical engineering and a PhD in electrical and computer engineering from the Georgia Institute of Technology, Atlanta, in 1996, 1998, and 2003, respectively. During the 2000–2001 academic terms, he was with Philips Semiconductors, providing design support for the ASIC technology group. Prior to joining MSU in 2005, he was a research engineer at Teck Vond Enterprise Incorporated, a privately held consulting company located in the suburbs of Atlanta. Brown was a Georgia Tech “President’s Fellow” and is a member of the IEEE Electron Devices Society and the Computational Intelligence Society. His primary research interests involve the design, growth, and investigation of compound semiconductor structures for device applications using in-situ monitoring, coupled with statistical analysis and advanced modeling techniques.

**Venkatesh Kodur**, professor, civil and environmental engineering, effective August 16, 2005, received his bachelor’s degree in civil engineering (1984) from Bangalore University and his MSc (1988) and PhD (1992) in civil (structural) engineering from Queen’s University, Kingston. Before coming to MSU, he worked as a senior research officer at the National Research Council of Canada (NRCC) in the structural fire safety field. His research interests involve evaluation of the fire resistance of structural systems through numerical modeling and large-scale fire experiments, characterization of the materials under high temperature, and non-linear design and analysis of structural systems. He is an associate editor of the *Journal of Structural Engineering*, chairman of the ASCE Committee on Structural Fire Protection, and secretary of the ACI-TMS Committee 216 on Fire Protection. He has won many awards including the NRCC outstanding achievement award (2003) and the NATO award for collaborative research (1997). Kodur was part of the FEMA/ASCE Building Performance Assessment Team that investigated the collapsed WTC buildings as a result of September 11 incidents. The report from this investigation has been submitted to U.S. Congressional committees.

**Nikolai V. Priezjev**, assistant professor of mechanical engineering, effective August 16, 2005, earned his PhD (2002) in physics from Brown University in Providence, Rhode Island. He received his BS (1997) in physics and applied mathematics from Moscow Institute of Physics and Technology and his MS (1999) in physics from Brown University. Before coming to MSU he held a postdoctoral research position in the Department of Chemical Engineering at Princeton University. His research interests include molecular simulations of complex fluids, interfacial phenomena, transport phenomena in micro and nanofluidic systems, fluid flows at the solid boundary and thermocapillary fluid motion, hybrid multiscale methods, liquid crystals, and statistical mechanics.

**Jian Ren**, assistant professor, electrical and computer engineering, has changed status from fixed term to the tenure system, effective August 15, 2005. Ren earned his PhD in electrical and computer engineering from Xidian University. Before coming to MSU, he was with Avaya Labs, where he worked on the design and research of security solutions and technologies. His research interests are in the areas of wireless and wireline network security, computer system security, cryptographic primitives, sequence design, error-control coding, and information theory.
Laura Dillon was appointed chairperson of the Department of Computer Science and Engineering (CSE) in August 2005. The appointment is initially for two years. She has been serving as interim chairperson since August 2003. Dillon joined MSU in 1997 after twelve years as a faculty member at the University of California, Santa Barbara. She earned a BA (1974) and MS (1976) in mathematics from the University of Michigan and an MS (1981) and PhD (1984) in computer science from the University of Massachusetts, Amherst. Her primary area of specialization, formal methods for the specification and validation of concurrent software systems, falls within the broad areas of programming languages and software engineering. As interim chairperson, Dillon has worked with faculty in CSE and around campus to develop a strategic vision for the future of computing and information at MSU. She also encouraged the formation of Women in Computing, a new MSU student organization that aims to increase the number of women majoring in computing and science and that provides mentoring and networking opportunities for students. Dillon was recently re-elected to the executive board of the ACM (Association for Computing Machinery) SIGSOFT (Special Interest Group on Software Engineering). She is currently an associate editor of ACM Transactions on Software Engineering and Methodology, and previously served as an associate editor of IEEE Transactions on Software Engineering and as the area editor in software engineering for Communications of the ACM. She has been an ACM distinguished lecturer since 1995.

Timothy A. Grotjohn was appointed acting chairperson of the Department of Electrical and Computer Engineering in June 2005. He succeeds Satish Udpa, who was named acting dean of the college on June 8. Grotjohn started his career at MSU in 1987 as an assistant professor in electrical engineering, became an associate professor in 1993, and a full professor in 2000. Prior to joining MSU he completed his PhD in electrical engineering at Purdue University (1986). He received his MS (1984) and BS (1982) in electrical engineering at the University of Minnesota. His research interests include the modeling, design, diagnostics, and control of microwave plasma sources and plasma-assisted material processes. This work focuses on the use of models, including electromagnetic, plasma dynamic, and plasma chemistry models, for the design and control of microwave plasma reactors used for materials processing. A recent area of interest is the scaling of microwave plasma sources down to small sizes for use in Microsystems. While a student, Grotjohn was a summer employee on the technical staff at AT&T Bell Laboratories. He was a visiting researcher at the Institute of Microelectronics in Stuttgart, West Germany, for two months in 1986 and spent a total of about four months as a visiting professor at the University of Paris–North in France between 1996 and 1999.

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The College of Engineering has been ranked 5th in the nation as a top engineering graduate school for Hispanics, according to information released recently by Hispanic Business magazine.

“We are extremely proud to be recognized as a very good place for Hispanic engineers,” says Percy Pierre, professor of electrical engineering and directory of the Sloan Scholars Program. “This is a testament to the MSU tradition of access and quality in meeting the national need for engineering talent.”

MSU recruits, mentors, educates, and graduates Hispanic engineering students through the Sloan Engineering Program with support from the Alfred P. Sloan Foundation and initiatives in the College of Engineering and The Graduate School. Over the past seven years, Sloan Program initiatives have fostered a 36 percent increase in the enrollment of African American and Hispanic doctoral students in the college while maintaining a retention and graduation rate of over 90 percent.

Hispanic Business magazine reports on cultural trends and institutions important to the U.S. Hispanic community. Since 1998, they have been compiling the list of top business and law schools for Hispanic graduate students. This is the first year that engineering schools have been included.

Ranking ahead of MSU in the Top 10 list are the University of Texas at El Paso, Georgia Institute of Technology, University of Central Florida, and San Diego State University. Completing the list are Rice University, University of Texas at Austin, West Virginia University, Iowa State University, and the University of California, Irvine.

To view the list of Top 10 Engineering Schools for Hispanics, go to www.hispanicbusiness.com/news/newsbyid.asp?id=25199&cat=Magazine&more=more-magazine.

To read the article in Hispanic Business, go to www.hispanicbusiness.com/news/newsbyid.asp?id=25164&cat=Magazine&more=magazine.

—Laura Luptowski Seeley
The successful partnership between MSU and the automotive industry was celebrated at an event at Ford Field in Detroit in April. Alumni and friends from DaimlerChrysler, Ford Motor Company, General Motors, automotive suppliers, and Detroit area donors gathered to enjoy an evening celebrating MSU’s sesquicentennial and its next 150 years. Basketball analyst and MSU Academic All-American Gregory Kelser was master of ceremonies for the evening.

MSU’s ongoing relationship with the automotive industry was a focus of the event. James Padilla, Ford Motor Company president and COO, provided the automotive perspective. MSU administrators and guests who spoke included Board of Trustees Chairperson David Porteous, President Lou Anna K. Simon, men’s basketball head coach Tom Izzo, women’s basketball head coach Joanne P. McCallie, The Campaign for MSU co-chair Lynn Myers, electrical engineering alumna and DaimlerChrysler employee Maia Broadway, and senior class gift campaign coordinator Andy McCoy.

With Ford Field in the background, attendees had their photos taken with Sparty. An area focusing on academic and unit accomplishments allowed donors and alumni to see the latest and greatest offerings from their colleges.

—Linda Dunn, University Development

This article first appeared in the summer 2005 issue of Developments, University Development’s newsletter highlighting significant gifts and activities associated with The Campaign for MSU.

MSU and the Motor City: The Next 150 Years
A common misperception among young alumni is that they are not yet in a financial position to make a significant contribution to their alma mater. In fact, support from young alumni is absolutely critical for continuing excellence in the College of Engineering. One group of young alumni recently proved that it’s never too early to make an impact.

Eight former members of MSU Formula SAE (Society of Automotive Engineers) pooled their resources to create the Gary L. Cloud MSU Formula Racing Team Endowment, which will provide a steady and flexible stream of income to be used where the team needs it most. These young alums—all under age 35—named the endowment for mechanical engineering Professor Gary Cloud, in honor of his steadfast support as adviser to the Formula SAE team.

Raising the $30,000 needed to establish the endowment took a surprisingly short amount of time. One donor, for instance, pledged $2,500 over five years—an annual gift of $500. The gift was matched dollar for dollar by his employer, General Motors. His gift, along with similar gifts from other young alums, soon totaled almost $35,000.

Pooled funds like the Cloud Endowment are an excellent alternative for those who want to provide long-term support, but who may want or need to share the commitment with others. For example, a $30,000 endowed scholarship could be divided among six individuals who give $1,000 per year for five years. Further, if an individual works at one of the 1,000-plus U.S. companies that have matching gift programs, he or she can double or triple the amount of the gift. The entire contribution—including the employer’s match—is credited to the individual. To find out if your company participates in a matching gift program, please check with your employer.

The College of Engineering invites alumni and friends of all ages to support endowments such as this. For information on how to contribute to the Cloud Endowment, to request a comprehensive list of other endowments for which you may provide support, or to explore the possibility of creating an endowment of your own with a cash or planned gift, please contact the development office at (517) 355-8339, or egrdevel@egr.msu.edu.

—Bobbi Burns
NEW ENDOWMENTS
July 1, 2004, through June 30, 2005

- Truman B. Bishop Endowed Memorial Scholarship in Chemical Engineering. Established by Ruth Bishop (BS Chem 1941) and family.
- The Gary L. Cloud MSU Formula Racing Team Endowment. Established by Formula SAE Team alumni.
- Harry L. and Minet E. Conrad Supplemental Engineering Fund. Established by Roger (BS CEE 1967) and Shelia Conrad.
- Lee and Cheryl Dell Endowed Fellowship. Established by Lee (BS CEE 1966) and Cheryl Dell.
- The Dr. Pandeli Durbetaki Endowed Graduate Research Fellowship in the Department of Mechanical Engineering for the Field of Thermal Sciences. Established by Pandeli Durbetaki (PhD ME 1964).
- The John F. and Jacqueline K. Foss Endowment for Experimental Fluid Dynamics. Established by John Foss (professor of mechanical engineering) and his wife Jacqueline (MA Education 1979).
- The Joseph and Olivia Ishikawa Endowed Scholarship in Engineering. Eugene Carter created this scholarship in 2005 in honor of Joseph and Olivia Ishikawa in tribute to their long-standing commitment to higher education and their professional contributions to MSU. It is intended to provide support for full-time undergraduate students in the college who have demonstrated substantial financial need. In addition, it is Dr. Carter’s wish that female and/or first- or second-generation immigrant students be given preference for the award, to the extent applicable under law.
- Walter A. Ludka Endowed Fund of Excellence in Chemical Engineering and Materials Science. Established by Walter A. Ludka (BS Chem 1956) and Carol Murrell.
- The Robert and Carol Murrell Endowed Scholarship/Fellowship in Electrical Engineering. Established by Robert (BS EE 1956) and Carol Murrell.
- The Leo V. and Rebecca Noshime Endowed Fellowship in Structural Engineering. Established in 2004 by Leo (BS CEE 1938) and Rebecca Noshime.
- The Jack D. and Marilyn E. Rutherford Endowed Fellowship in Engineering. Established by Jack (MBA 1978) and Marilyn Rutherford.
- John R. and Carrie L. Wales Endowed Scholarship/Fellowship. Established by John (BS ME 1950) and Carrie Wales.

The College of Engineering alumni, faculty, staff, and friends listed at right have made a financial commitment to Michigan State University qualifying them for lifetime recognition in one of the university’s nine donor societies. This Honor Roll includes new society members from July 1, 2004, to June 30, 2005.

Although we have made every attempt to ensure the accuracy of this list, errors do sometimes occur. If a mistake has been made, we apologize sincerely and encourage you to contact us at (517) 355-8339.

- Dollar amounts listed are minimums for recognition in each giving society. Current gifts can be cash, securities, property, or gifts-in-kind and are payable over a five-year period. When establishing a planned gift, credit can be given for previous cash gifts.

Kedzie Society
$1,000,000 cash or $1,500,000 planned gift
C. Robert & Kathryn Weir

Abbott Society
$250,000 cash or $500,000 planned gift
Robert T. Cleland
Professor John & Mrs. Jacqueline Foss

Snyder Society
$100,000 cash or $200,000 planned gift
Roger & Sheila Conrad
Leroy & Cheryl Dell
Richard L. & Marilyn B. Erratt

Hannah Society
$50,000 cash or $100,000 planned gift
Dennis & Carole Groh
Walter A. & Julie M. Ludka
John & Cynthia Reinker
John & Carrie Wales

Beaumont Tower Society
$25,000 cash gift
Richard A. & Linda W. Conlin
Dr. & Mrs. Mackenzie L. Davis
Mr. & Mrs. David Van Maele
Robert & Carol Murrell
E. Eugene Carter & Rita M. Rodriguez
Terry & Carol Stygles

 Presidents Club
$10,000 cash gift
Thomas & Sandy Brayman
Brian & Cathy Brenton
David & Joan Donnay
James O. Fishbeck
Gregory A. Fowler
John & Theresa Holmstrom
Richard & Carol Johnson
Marcia L. Lampela
D. Jack & Vonda A. Eckard Lemon
Reid & Betty Mccleland
Ms. Karen Newman
Lauren & William Piontkowski
Henry & Betty Roemmelt
Mark D. & Ann Lessner Schwartz
Gary Milnarich & Chris Silkwood
Bill Simons
John Ogren, a 1965 chemical engineering graduate, was recognized at a May 7 Engineering Alumni Awards Banquet and again at the May 8 commencement ceremony. He received the prestigious Claud R. Erickson Distinguished Alumnus Award, which is given annually to a College of Engineering graduate who has attained the highest level of professional accomplishment; provided meritorious service to the college and the engineering profession; and engaged in significant voluntary service. He also received the Red Cedar Circle Award from the Department of Chemical Engineering and Materials Science for distinguished service to the profession and outstanding commitment to the community.

Ogren’s stellar career in industry spans 37 years at the senior management level, including the oversight of projects in Europe, South America, and Canada. After receiving his bachelor’s degree from MSU in 1965, he started as a process engineer for Conoco in Ponca City, Oklahoma. A few years into his career, he was given the responsibility of designing a large natural gas processing facility in England. He soon became the technical services superintendent of that plant. Progressing rapidly through increased levels of responsibility, he ultimately became senior vice president of administration. Conoco was acquired by DuPont in the mid-1970s, at which time Ogren not only negotiated a complex asset sale arrangement, but also ensured compassionate treatment for the affected employees. Recognizing his abilities, DuPont tapped him first to be president of DuPont Canada and later executive vice-president for DuPont’s human resources, worldwide.

In 1983 Ogren completed the Stanford Executive Program, which trains executives for high-level global management. He retired from DuPont in the early nineties to become president and CEO of Production Operators, an oil well services company in Houston. Under his leadership, the company moved to number one among its competitors, while its stock price more than doubled. After retir-
ing in 1999, he served as chairman of Visual Intelligence Systems, Inc., a Houston-based digital orthographic mapping company, until the company was sold in 2002. He is currently a non-executive chairman of WellDynamics, a high-tech oilfield service company, and serves on the boards of Wood Group, Core Laboratories, and Intrepid Energy. He recently completed a term as president of Silver Fox Advisors (a prominent group of retired CEOs and entrepreneurs who mentor business leaders).

Ogren is a registered Professional Engineer in Oklahoma and a member of the American Institute of Chemical Engineers, the Society of Petroleum Engineers, and the American Petroleum Institute.

He married his wife, Chris, while they were students at MSU. They have three children—Eric, Brent, and Heather—and four grandchildren. Over the years, the Ogrens have been vitally engaged in community affairs and philanthropic endeavors. The Ogren Family Trust supports many local causes. They are involved in the hands-on running of several community service groups, which they also support financially.

The Ogrens have provided substantial financial support to the MSU College of Engineering, in particular for the 1997 addition to the Engineering Building—the Dow Institute for Materials Research. They also established the Lisa A. Knaup endowed scholarship in the College of Education in 1997 in honor of their late niece. John is a past member of the advisory board for the Department of Chemical Engineering and Materials Science and of the College of Engineering alumni board.

A long-term associate of Ogren’s says: “He is one of the most principled men I have ever known.” Another colleague says: “John is making a difference in Houston. He defines the word ‘charismatic.’ He is inspiring, keenly aware of possibilities, compassionate, and fun. He and Chris have always shared their lives, time, resources, and talents with others.”

### Call for Nominations

The Claud R. Erickson Distinguished Alumnus Award is given annually to a College of Engineering graduate who has attained the highest level of professional accomplishment, provided distinguished and meritorious service to the College of Engineering and the engineering profession, and engaged in voluntary service at the local, state, national, and/or international level. The award was first given to Claud Erickson in June 1982. Mr. Erickson was a distinguished alumnus and received four engineering degrees from MSU beginning with a bachelor of science in 1922.

The deadline for 2006 consideration is Friday, January 6, 2006. Nominations not selected will be kept for future consideration.

### Qualification Criteria

- Graduate of the College of Engineering at Michigan State University. Please list the candidate’s graduation dates and departments.
- Minimum of 20 years’ professional experience in an engineering or engineering-related field. Please provide a short listing of the candidate’s experience.

### Selection Criteria

- Is recognized as a leader in engineering, engineering education, the related sciences, or technical management. Please provide validation.
- Is actively involved in the community and has acted in private life in ways that reflect credit to the individual, to the community, and to Michigan State University. Includes involvement in national engineering or engineering-related technical/professional associations. Please provide validation.
- Has contributed in some meaningful way to the College of Engineering or to Michigan State University. Please provide validation.
- Note: If available, we highly encourage you to submit the candidate’s résumé/CV, letters of support, news clippings, press releases, etc., with your nomination.

### Nomination Forms

To request a nomination form, or if you have any questions about the Claud Erickson Award, please contact Vicki Essenmacher at (517) 355-8339, or vicki@egr.msu.edu.

A nomination form may also be downloaded at www.egr.msu.edu/egr/development/alumni/awards/erickson.php.
The College of Engineering honored eight distinguished alumni who have brought honor to the college through their exceptional achievements, both professional and philanthropic, at a May 7 banquet at the Kellogg Hotel and Conference Center.

**Applied Engineering Sciences Distinguished Alumni Award**
Jane E. Sydlowski  
(BS ’86, Engineering Arts)

**Biosystems and Agricultural Engineering Distinguished Alumni Award**
Benson J. Lamp  
(PhD ’60, Agricultural Engineering)

**Red Cedar Circle Award in Chemical Engineering and Materials Science**
John Ogren  
(BS ’65, Chemical Engineering)  
John Warren Pridgeon*  
(BS ’58, Metallurgical Engineering)

**Computer Science and Engineering Distinguished Alumni Award**
Julie Louis-Benaglio  
(BS ’79, Computer Science)

**Civil and Environmental Engineering Distinguished Alumni Award**
Ben C. Maibach III  
(BS ’68, Civil Engineering)

**John D. Ryder Electrical and Computer Engineering Alumni Award**
Brian M. Kent  
(BS ’80, Electrical Engineering)

**Mechanical Engineering Distinguished Alumni Award**
Joseph C. Klewicki  
(BS ’83, PhD ’89, Mechanical Engineering)

**Claud Erickson Distinguished Alumnus Award**
John Ogren  
(BS ’65, Chemical Engineering)  
*posthumous
Dean Janie Fouke addresses attendees after a delicious meal at the Kellogg Hotel and Conference Center.

John Pridgeon received the Chemical Engineering and Materials Science Red Cedar Circle Award posthumously. His wife, Nancy, accepted it on his behalf.

Many of John Pridgeon’s relatives, glad to see him honored, attended the banquet with John’s wife, Nancy. All but four of the family members pictured live in Michigan. Left to right: Dean Pridgeon (John’s brother and former president of the MSU Board of Trustees); Becky Pridgeon (BS mathematics ’67) (John’s niece, Dean’s daughter); Marcille (MS Human Ecology ’54) and Tom Dalgleish (John’s sister and her husband); Janet Pridgeon (John’s sister-in-law, wife of Marvin); Robert Godsky and Laurie Pridgeon (John’s son-in-law and daughter from New York City); Sharon Pridgeon (John’s sister-in-law, wife of Thomas); Lisa Pridgeon Craighead (John’s daughter from Fairfield, Connecticut); Thomas Pridgeon (PhD Educ Admin ’74) (John’s brother); Nancy Pridgeon (John’s wife, attended MSU but married John before graduating, from Charlotte, North Carolina); and Marvin Pridgeon (John’s brother, BS Agricultural Engineering ’50).

Department chairperson Laura Dillon (left) presented Julie Louis-Benaglio with the Computer Science and Engineering Distinguished Alumni Award.

Department chairperson Martin Hawley (left) presented both Nancy Pridgeon (John Pridgeon’s wife) and John Ogren with a 2005 Chemical Engineering and Materials Science Red Cedar Circle Award.

Brian Kent family. Left to right: Daniel (son), Brian, Linda (wife), Stephen (son)

Jane Sydlowski accepts the Applied Engineering Sciences Distinguished Alumni Award.

Ben Maibach (left) received the Civil and Environmental Engineering Distinguished Alumni Award from department chairperson, Ron Harichandran.

Eann Patterson, department chairperson; Joe Klewicki; and John Foss, professor of mechanical engineering. Foss, a former mentor and currently a colleague of Joe’s, presented Klewicki with the Mechanical Engineering Distinguished Alumni Award.

Benson Lamp accepts the Biosystems and Agricultural Engineering Distinguished Alumni Award

2005 award winners. Left to right: Benson Lamp, Jane Sydlowski, Brian Kent, Julie Louis-Benaglio, Ben Maibach, Dean Janie Fouke, John Ogren, Nancy Pridgeon (for John Pridgeon), and Joe Klewicki.

To read more about the award winners or about the awards, go to www.egr.msu.edu/egr/development/alumni/awards/program-06.pdf.

For more information on nominating a College of Engineering graduate for an alumni award, please contact Vicki Essenmacher at (517) 355-8339 or vicki@egr.msu.edu.
2005 Breakfast Brings Together
“Graduates of Lasting Distinction”

The seventh annual College of Engineering GOLD Club Reunion Breakfast took place June 10 at MSU’s Kellogg Hotel and Conference Center. Attendees included 68 engineering alumni who graduated 50 or more years ago, their guests, a few current students from the Formula SAE team, and a number of engineering faculty and staff. Hosting the event was Lynn Bechtel, a 1991 mechanical engineering graduate and the current chairperson of the college alumni board. It was noted at the morning gathering that this group of attendees alone had given or pledged over $3.9 million to MSU.

Remembrances . . .

Master of All I “Survey” . . .

Ole Sarto (mechanical ’42). A group of us were doing a survey around Olds Hall as part of the civil engineering laboratory program. It was mid-winter, bitterly cold, the wind was howling around the building, and we were finishing up our survey, going around the back of Olds Hall where the parking lot was. As we put the stakes in, one of our wiser members said, “We don’t have to put stakes in here. Just put your finger in the snow and we’ll measure to that.” Well, that way we could get in out of the cold quicker. So we went with the “finger
in the snow” method: first one point, then another point, then a third point. Just as we rose from the third point, we looked up, and stepping out of his car in the parking lot was the department head for civil engineering, Professor Allen. We weren’t quite sure what the result would be. But I thought you’d like to know that after finding the finger method of surveying, we were ready to deal with whatever came our way.

Jack Withrow (mechanical ’54). I’ve known Ole forever. He and I used to work together at Chrysler before it was DaimlerChrysler. I always thought he was bright, but when he talked about that surveying class, I began to wonder. He’s a good engineer, but apparently not a very good planner. When I had to take surveying, I took it in the spring. My group went over and surveyed what is now the Adams Field. That’s where all the girls came out for their phys ed classes, in their shorts and so forth. So, Ole, you’re OK, but you don’t plan very well.

In the Doghouse

James Hubbard (civil ’39). Everything Dean Fouke said about Agnes McCann was true. Neither Dean Fouke, nor I, nor anybody else could do the lady justice. I worked for Aggie for a couple of years. Lewie Patterson (Pat) and I prepared student schedules for the next term. There was a large room on the first floor of Olds Hall, where people from all over the state—and the U.S., actually—came to interview students. Pat must’ve gotten Aggie a little bit irritated one day; she was a little snappy. So Pat and I bundled up four or five empty drawing boards, and in the corner of the big room we built a little shelter and put a big sign on it that said “Doghouse.” Later some visitors came in to interview students.

A Blast from the Past

Doarde Triponi, a 1953 metallurgy graduate, presented Dean Janie Fouke with a replica of a set of bookends created by the American Foundrymen’s Society (AFS) student chapter at the foundry pictured on the back cover of the historical issue of Currents Magazine (Vol. 4, No. 2). The original bookends, created in 1955 while Triponi taught engineering classes at MSU, commemorated the centennial anniversary of MSU. Only a small number were created.

This year, Triponi used the original design and mold to have a few sets of bookends made in honor of MSU’s sesquicentennial anniversary. He gave one set to Janie Fouke, as the first female dean of the College of Engineering, and planned to give another set to Lou Anna Simon, as the first female president of MSU. One of the original bookends was on display at the GOLD Club Breakfast.

Triponi spent eight years as an instructor at MSU. He says with nostalgia, “The students of ’55 were the last class of the old college (MAC) and the last people to enjoy the shops. That’s when the foundries and the machine shop were eliminated.” From MSU, he went to GMI as an associate professor.

“Although the shops and foundry are gone,” he says, “the college is still racing go-carts. In our era, each department made their own go-cart, but everyone used the same engine, supplied by Clinton Engines Company of Maquoketa, Iowa. They had an annual race around Circle Drive. The dean of engineering and the dean of agricultural engineering raced each other in two little cars, and then the students representing their departments raced each other. The last year I remember, the metallurgical group had a material failure in their car!”
and Aggie set them up in the big room. Pat and I were across the hall in the main office. Aggie came storming in, saw us, stopped, and started to giggle. She said, “I just saw that dadgum doghouse sign.”

**The Quonset Experience**

**Doarde Triponi (metallurgical ’53).** Aggie McCann was secretary to the dean, but she ran engineering. I remember one occasion when a student had flunked a course. He was in her office arguing with her about it. He said he didn’t have to take it over. She said, “You do.” He said, “I want to see the dean.” She said, “Go right ahead.” He came back out and said, “Sign me up.”

**Ed Bozian (mechanical ’50).** I was one of 1,500 pre-engineering guys, mostly ex-GIs, who came here in the fall of 1946. We all had to be bedded down somewhere. I was one of the 600 guys who were sleeping in cots stacked two and three high in Jenison Fieldhouse, waiting for the Quonset huts to be built. When I graduated to the Quonset huts in early 1947, that was a major advance in luxury for me.

**Paul Fair (electrical ’50).** Did anyone here live in the Quonsets in 1946? You probably remember that was a very cold winter. I learned one thing in the Quonsets. After taking midterms, which were pretty bad, I realized, “If I don’t get myself out of here soon, I won’t be here to enjoy my sophomore year.” So I had to walk from my Quonset to the library, which was a pretty long walk, to study. But I did make it. I worked for Agnes in 1947 and ’48 and ’49. I had an old car, and she helped me somehow earn the money to keep it running.

**The Phys Ed Requirement**

**James Blanchard (civil ’42).** I have a paralyzed left arm, so I couldn’t wrestle, I couldn’t box. So I’d sign up for some athletic class each semester, as required, and then go upstairs and get a drop slip. Aggie McCann said, “You’ve got to have some kind of physical education on your record in order to graduate. Can you swim?” I said yes. She said, “Well, why don’t we sign you up for advanced swimming? All you have to do is go in there, practice a little bit, show up for class and then leave.” This was in the old gymnasium on Circle Drive. So I was standing there by the pool, and little old Jake Daubert, the swimming coach, looked up at me and said, “What in the world are you doing here?” I said, “Well, I’ve got to have some kind of physical ed in order to graduate.” He said, “Fine. Can you swim?” I said, “Yeah.” So I jumped in the pool and swam some laps, and that ended the class. That’s all we did for four or five weeks. But here’s what really got me through. We had a written final examination on all of the rules for swimming. I think I got an A on that.

**Harper Lee Camp (chemical ’39).** I have to tell you about a very smart civil engineering student. In our day, you didn’t get a degree if you couldn’t learn to swim. That boy took swimming four times, and I don’t know whether he ever learned to swim, but I think he finally got his degree.

**A Family Tradition**

**Marvin Osborn (chemical ’41).** Aggie did a lot of arranging for me as I was going through the curriculum. When it came time for the final term, I was missing one course, a required course. I had to have it to graduate, and it wasn’t being offered. So she twisted a few arms, and as a result, I took a substitute course. I graduated in the spring of 1941. My family has four generations of MSU alumni: my father, my wife and me, two of my kids, and my grandson. Two of those entered MSU on alumni distinguished scholarships. We are very thankful to Michigan State.

**Paul Thompson (civil ’55).** MSU is a family tradition. My father graduated in 1929 as a civil engineer. My mother graduated in 1929 in home economics. In a little over two hours from now, I’m going to take my 98-year-old mother over to the Kedzie Reunion (for all MSU graduates from 1955 and earlier), so there will be a 50-year graduate and a 76-year graduate there.

**Electrified Engineers?**

**Charles Nelson (electrical ’55).** Once when we were waiting for our final exam to start, a thunderstorm was going on. We were watching people scurrying along between drops, and a lightening strike came and hit about ten feet from a guy in our class, and knocked him down. I didn’t see him at the final, and I’ve often wondered . . .
Delmer Parker (electrical ’55). In the fall of ’54 I was being initiated into Tau Beta Pi. We were given a night mission. My group was to go down to Sexton High School’s athletic field and determine the design of their lighting system. We got there sometime after midnight. We climbed over the big fence surrounding the field, and someone (not me) was dumb enough to climb a pole—it was pretty high, 60 or 70 feet—to find out the light bulb size so we could calculate the electrical load. We got that and decided what the service requirements were. We had our data and were ready to go, when a whole bunch of squad cars pulled up. We had carried our equipment in a newspaper bag, and the police thought we were stealing something. They found nothing inside but slide rules. They were dumbfounded. They made some calls, I think to Dean Ryder. Anyway, they let us go, and we finally finished our report and put it on the desk at 8:00 a.m., saying that at a certain time a squad car arrived and we were all placed under arrest.

Water Carnival Revival

John McLaughlin (civil BS ’54, MS ’79). I was in one of the last groups that graduated from MSC. I really enjoyed the water carnival on the Red Cedar. I know that the Red Cedar probably isn’t fit to go swimming in, at least I assume that’s why the carnival stopped happening. But with the advent of environmental engineering, it seems to me that it would be a good challenge for some environmental engineering students to try to bring that event back on campus.

(Editor’s note: The Water Carnival is being brought back on October 7, 2005, as part of a weekend-long series of events to celebrate MSU’s sesquicentennial.)

Janie Fouke said farewell to the MSU College of Engineering in her address to the GOLD Club on June 10. “Some of you know that I’m about to leave Michigan State University,” she said. “I have been named as the next provost and senior vice president for academic affairs at the University of Florida. This GOLD Club gathering is especially poignant to me, because in 1999, this was the event where I was first introduced as the next dean of the College of Engineering. About a dozen of you were here that day. I didn’t have any green and white clothes at all. Now I have lots.”

She enumerated what she saw as the highlights of the past six years. “Research funding is at an all-time high. We have increased the number of faculty. Faculty-written grant proposals are about 80 percent higher than five years ago. Of MSU’s four Goldwater scholars named this spring, three were College of Engineering students. The College of Engineering has raised almost $180 million in gifts and pledges, which is 86 percent of our Capital Campaign goal. Many of you have been a great part of this effort, and you should be very, very proud of that. The collective total that the alumni in this room today have given to their alma mater over the years is $3.9 million. That’s just you. The people in this room. I knew it was going to be a big number, but it took me aback. Thank you. Thank you. We have doubled the rate at which we create endowments, with 22 new endowments just this past year. The Agnes McCann Memorial Student Endowment fund is growing, with $28,000 received this past year, three times the amount received the year before. Just last month, MSU and a major Chinese manufacturer of electric railway locomotive engines established the ZELRI-MSU Power Electronic Research Center, and we are about to break ground for a new building for energy and automotive research.”

Looking to the future, she said, “We have an interesting dilemma: We want to be on the cutting edge, and yet we must also ensure that our students are well-rounded in the fundamentals. Their careers will not be static. The world around them is going to change very rapidly. So their primary skill set must include the ability to educate themselves and keep themselves up to date.”

She closed by passing the torch: “I’m so proud of the things that the college—the students, faculty, and staff—have accomplished in the past six years. And you, as alumni, have made a priceless contribution with your support. I will really miss the friendships we have built. Now, I leave the college in superb hands; the MSU Board of Trustees earlier this week named Satish Udpa as the new acting dean.”

Dean Janie Fouke Comes Full Circle
Timothy Howes, a chemical engineering junior from Brighton, Michigan, won the award for his paper on genetic engineering of plants to increase their resistance to infection and enhance their liquid-retention capabilities.

Howes’ research falls under metabolic engineering, which he describes as a systematic approach to genetic engineering. Practical applications of the research include creating crops that are more resilient, and modifying plants to enable them to absorb contaminants from the ground—a technique used in environmental bioremediation.

He says the award will help in applying to graduate school and in proving his commitment to research. He plans to earn a doctorate in chemical engineering and “work out of a university in research, and collaborate with industry in applying my research to practical applications.”

Howes says he is glad he chose MSU because of its focus on agricultural biotechnology. “They’re really good at getting undergrads involved in research.” He works with John Ohlrogge, University Distinguished Professor in the plant biology department.

A graduate of Brighton High School, Howes’ interest in the life sciences got him involved in biochemical engineering and steered him toward metabolic engineering.

Howes likes to scuba dive in Hawaii and Florida. But, he’s looking further south as he eyes study abroad programs in Central America—and the scholarship will help him afford the trip.

Until then, he has a busy calendar with two undergraduate research projects lined up. Howes spent the summer at the Keck Graduate Institute in Claremont, California. In the fall, Howes headed to Osaka University in Osaka, Japan, for a project funded by the National Science Foundation.

Janelle Shane, an electrical engineering sophomore from Niles, Michigan, says, “This kind of recognition reflects not only on my personal efforts, but also on the College of Engineering as a whole, and the wonderful support that MSU’s faculty and students have given me.”

Shane, who plans to study optics in graduate school, is involved in research in noninvasive detection and treatment of cancer, and the detection of hazardous chemicals in the environment.

She encourages students looking to achieve distinction in their fields to get involved with a research group. “It’s a great way to learn things that you would never be exposed to in a typical classroom, and to see the real-life applications of what you’re learning.”

Shane’s mother, a biochemistry professor, has been her role model. Shane has also been
inspired by an aunt who researches optics as an electrical engineer and who “has never missed a chance to talk about why her job is the coolest and most fascinating ever.”

Shane, who counts working on her research as one of her most enjoyable activities, was drawn to MSU by the opportunities it presented for undergraduate research and a competitive scholarship. She now works with Marcos Dantus, professor of chemistry.

Shane is secretary of MSU’s chapter of the Society of Women Engineers (SWE), enjoys classical piano, and is a volunteer for Habitat for Humanity. She’s also a keen photographer and won third place in the student division of the 2003 MSU Global Focus international photography contest. The photo she entered was taken in France and was entitled “In the Cathedral Courtyard.”

Matthew Stasiewicz, a sophomore in biosystems engineering and philosophy from Grosse Pointe Woods, Michigan, first learned about the existence of the Goldwater Scholarships through a workshop at the Honors College. He applied only when his professor urged him to.

He is currently researching food safety models for meat that will make the cooking process more efficient in killing harmful pathogens. “There are simple models out there that use traditional kinetics initially developed in the 1920s. I’m updating some of the models and taking new ideas from different microbiology concepts and models,” he says.

Stasiewicz is proud of his research and the fact that others appreciated it. “It’s going to motivate me to do my work. It really gives me a good start for my research and I’m sure it’ll look great on my resume.” He aims to get a doctorate and continue in food science and food safety. “I hope to become a professor—to teach and do research.”

Stasiewicz thinks the faculty and other experts in the field help further a student’s research interest—which is why he’s a member of the International Food Technologists Student Association. “Being a member of such an organization helps; the networking is really key,” Stasiewicz says. “They have an annual meeting where people from all over the world come in for a big food industry expo. I presented my work at the undergraduate research paper competition at the event last year. I got to talk with other people in the field. It was a really cool experience.”

For all his interest in his research, Stasiewicz didn’t know exactly what he wanted to do until he came to MSU. A professorial assistantship with Bradley Marks, associate professor of biosystems engineering, who recognized his aptitude for the subject, pushed him to research in the field. “I got really interested in it. I love it, so I keep doing it,” he says. And, of course, a passion for math, science, and food played a part.

Stasiewicz is also intrigued by the ethical questions raised in his field of research—and he’s exploring different schools of thought with a minor in philosophy.

When he’s not conducting experiments in his favorite place on campus—his laboratory—he plays strategy games. One thing that gets him going is the MSU Go Club, which he initiated. It’s an organization for players of “go”—a game of oriental origins akin to chess.

But over the summer, Stasiewicz planned to be in the lab, completing his internship in the College of Engineering. He says he is grateful for the Goldwater Scholarship because it will allow him to focus on his work.

—Arjun Kashyap
For the first time ever, MSU fielded two vehicles in the mini baja competition, and the two vehicles were backed by the largest team ever in the history of the MSU mini baja program, according to Pete Schupska, mini baja chief engineer. Twenty students were involved; the team’s faculty adviser is André Bénard, associate professor of mechanical engineering.

The 2005 team competed in the Mini Baja 100 in Arizona and the Mini Baja Midwest in Ohio. They placed 18th and 29th out of 131 teams in Arizona, and 16th and 47th out of 141 teams in Ohio. Highlights include a 3rd place in maneuverability, 10th place in rock crawl, 13th place in hill climb, 14th place in acceleration, and 18th place in endurance. The team presented a strong design with a 5th place sales presentation, 7th place powertrain design, 10th place suspension design, and 15th place chassis design.

“Mini baja gives students the opportunity to meet a design challenge and apply the engineering fundamentals learned in the classroom. The challenge is to design, construct, test, and race a small, off-road vehicle while at the same time raising funds and maintaining a university schedule,” says Schupska. “This challenge forces students to utilize classroom knowledge while working in a team environment and balancing many responsibilities. These skills are invaluable and are the focus and intent of collegiate design competitions.”

“2006 brings a promising season with new challenges,” he says. “We plan to enter two vehicles again, and also to return to the amphibious competition—Mini Baja East—for the first time since 1998. This will be another exciting year for everyone involved.”

For more about the team, visit www.egr.msu.edu/baja.

Mini Baja Team

The Arizona race was hosted by Caterpillar at their Tinaja Hills training and testing facility. The race took place in the training area. The MSU team poses beside a Caterpillar 797 off-highway dump truck typically used in open mining. Back row, left to right: Tim Locker, Ben Usher, Pete Schupska, Neal Koenig. Front row: Andy Gillett, John Benghauser, Erin Johnson, Emily Duszynski, Brian Kunkel.
R andee Bierlein, a computer science senior, has been awarded a scholarship from the Ann Arbor Association for Women in Computing (AWC-AA), an organization dedicated to the advancement of women in the computing fields in business, industry, science, education, government, and the military.

The scholarship recognizes outstanding women pursuing a career in a computer-related field. The selection criteria were based on motivation, passion, thoughtfulness, creativity, skillful communication, and participation in the computing community.

The Ann Arbor Chapter of the Association for Women in Computing is part of a national organization. AWC, founded in 1978 by 15 women in Washington, D.C., is one of the first professional organizations for women in computing. The initial purpose of the group was to establish and encourage communication among women in computing. The scope of the organization has grown to include professional networking, continuing education, and mentoring.

Bierlein will attend the AWC-AA’s Top Michigan Women in Computing Gala held in November, where she will be honored along with other women who have made outstanding contributions in computer-related fields.

Carlos Sanlley, an environmental engineering PhD student, was selected to receive the Jacqueline Shields Award, a $3,000 scholarship, from the Air & Waste Management Association (A&WMA) at its annual conference in June. The A&WMA supports “the future environmental leaders of our world in research, teaching, engineering, and environmental practice.”

Sanlley was also recently recognized by the Michigan Water Environment Association (MWEA). For excellence in academic pursuits, he received the $1,000 Jack H. Wagner Scholarship. Sanlley, who completed his bachelor’s degree in chemical engineering at the Universidad Nacional Pedro Henriquez Urena in the Dominican Republic, is an officer in MWEA’s MSU student chapter.

The MWEA, established in 1925, is one of Michigan’s oldest organizations. It represents more than 1,700 water-quality professionals statewide who are dedicated to preserving, restoring, and enhancing Michigan’s water resources. MWEA is a member association of the Water Environment Federation (WEF), an international organization with more than 100,000 members worldwide.

Tracy Kamikawa (far left), a biosystems PhD student, and Shannon Mcgraw (left, with Vangie Alocilja), a senior in biosystems engineering, were selected to present posters at a conference in Boston, April 27–28, sponsored by the U.S. Department of Homeland Security. The conference, “Working Together: R&D Partnerships in Homeland Security,” brought together more than 600 attendees from universities and research institutes, national laboratories, private sector firms, and the government in support of homeland security research and development. The goal of the student poster session was to provide a forum in which students could present and discuss their work, meet their peers, and introduce themselves to more senior members in the field. The program was open to students currently in the Scholars and Fellows program and DHS Centers of Excellence.

Professor Emeritus Mackenzie Davis (right) accepts an award on behalf of the MSU student chapter of the Environmental Engineering Student Society (EESS) during the Air & Waste Management Association (A&WMA) Annual Conference Honors & Awards Ceremony in June in Minneapolis, Minnesota. MSU’s chapter of the EESS won first place in the Large School Category—Student Chapter Award for outstanding performance as a chapter. Heather Halbeisen, environmental engineering master’s student, is chapter president. Carlos Sanlley, environmental engineering PhD student, is vice president. Faculty advisers are Vladimir Tarabara, assistant professor of civil and environmental engineering, and Kirk Riley, specialist, civil and environmental engineering.
What were your highlights/challenges during spring semester?

Spring semester, I was once again working at DENSO Manufacturing Michigan Incorporated. This was my fourth and final rotation for my cooperative education. Throughout my co-op at DENSO, I have rotated between the process and die design departments. During my final rotation I worked with the mold/die design group. While working at DENSO spring semester, I was continually challenged with new projects that would prepare me for working in the real world. I was able to work on projects that involve testing, designing, and implementation of various parts—like designing slide retention into molds, improving air leak issues, and adding material guides to stamping dies.

The mold/die design department had been changed since I was there last time; it now includes stamping, so I was able to become involved with stamping dies. While this was challenging to learn, I am thankful that I was able to learn more aspects of DENSO’s manufacturing processes before I left.

Throughout my four terms working at DENSO, I have learned the value of doing a co-op. There are many things that I have learned on the job that I could never learn in a classroom. If there are any young engineering students reading this, I would definitely recommend doing a co-op while at college.

Another highlight of my spring semester was that working—and not taking classes—allowed me to have time to come home and not worry about studying! I had time to try to learn to play the guitar. I also enjoyed being able to play basketball and soccer to keep me active.

The main highlight of spring semester, though, was going on spring break with Cutting Edge Ministry. The group drove 18 vans down to Orlando, Florida. It was an amazing trip—spending time with my friends, studying the Bible, and hearing our speaker, Tom Harmon.

What are your plans for the summer?

This summer I will be going to school full-time. The first summer session, I will be taking ME 410 (Heat Transfer) and MSE 250 (Materials Science and Engineering). The second summer session, I will be taking STT 351 (Probability and Statistics for Engineers) and IAH 211C (Area Studies and Multicultural Civilizations: The Americas).

In addition to going to classes, I will be enjoying my summer weekends. I have plans to go camping, fishing, and jet skiing in Michigan. I also hope to make trips out of state to Cedar Point Amusement Park, Chicago, and wherever else I have time for. Unfortunately, I do not have any plans to go skydiving or run a marathon this summer, but who knows!

When will you be graduating?

I will be going to school during summer, fall, and spring semesters. I will get another job for the following summer, possibly back at DENSO. Then I will finish up my schooling and graduate in the fall of 2006.
Left to right: Jacob Kirshman, Greg Kehrier, and Tracy Kamikawa.

semester teaching pre-calculus as a math TA, and I was pleasantly surprised in April when I received an award from the Department of Mathematics for undergraduate teaching excellence. I had always tried my best to be a great TA, so it was very nice to be recognized.

Also this year I was one of the Symposium Day co-chairs on the AIChE (American Institute of Chemical Engineers) board. My job was to organize the 15th annual AIChE Symposium Day, an event held at the Kellogg Center where speakers from various industries and academic settings give presentations to Chemical Engineering and Materials Science students. It required a huge amount of effort to raise the $5,000 budget from corporate donations, and to recruit speakers, organize facilities and food service at the Kellogg Center, sign up students for the event, and so on. In the end, the day was a huge success. We had speakers from General Motors, DaimlerChrysler, Pfizer, Eli Lilly, the University of Michigan, and Shell Oil Products. The keynote address was given by John Hockstra, a very entertaining speaker formerly of Dow Chemical. I felt incredibly relieved when the day was over and all the efforts that AIChE expended in organizing it were finally rewarded.

▶ How does it feel to be graduating? What are your plans for the summer?

It feels exciting and scary. I’m excited to know I’ve earned a degree and I’m very confident in my abilities to succeed. On the other hand, it’s scary because I’m not completely sure what I want to do next. I’m trying to decide if I want to start working, or stay in school longer. It’s a tough decision. The two companies I previously interned with didn’t offer me a position, and I don’t have a job lined up yet. So far this summer I have been looking for a job and doing a little soul-searching, trying to figure out whether or not to stay in school, and if I do, what to study. Should I apply for graduate school in chemical engineering, or maybe stay for a second bachelor’s degree in something else I’m interested in, like computer science or math? I’m having trouble deciding.

Tracy Kamikawa
GRADUATE STUDENT (HONOLULU, HAWAII)
BIOSYSTEMS ENGINEERING

▶ What were your highlights/challenges during spring semester?

I had a heavy course load spring semester, but I enjoyed my classes. I learned a lot about food protection and defense, which I hope to apply in my future career as I develop a biosensor for the detection of foodborne pathogens. I am also looking to expand my work into SARS (severe acute respiratory syndrome) and anthrax. I still have a great interest in homeland security, and am excited to continue work in the field with regard to food protection as well as public health.

Outside of coursework, my greatest challenge spring semester came with my diagnosis of thyroid cancer. My doctor found a small lump in my throat during a routine checkup, and after a series of consultations and a battery of tests, I underwent a near-total thyroidectomy in late April. They say if you’re going to have cancer, this is the one to have, as treatment typically does not extend after the surgery. It has only been a week since I came out of the hospital, and I already feel fine. My mom used the procedure as an excuse to visit from Hawaii, so we were able to spend some time together. At first I did not inform any of my friends or professors of my illness to prevent them unnecessary worry, but as the surgery fell right before finals, I wanted to make them aware of my situation. I truly appreciate all of the amazing support and kindness that I received in the past few weeks.

▶ Last time, you said that you were working to organize a partnership with MSU and the National Institutes of Health in Bethesda, Maryland. What is the status of that?

We’ve made great progress, and found many potential relationships. Currently, I am discussing a partnership with the FDA Center for Biologics. There is great overlap in our interests, and we hope to form a collaborative relationship that will benefit both of our research needs. There I will have access to the foremost scientists studying BSE (bovine spongiform encephalopathy, or mad cow disease), anthrax, and SARS.

▶ Do you have plans to return to the DC area soon?

I am currently living in Arlington, Virginia, and taking MSU classes online. I hope to finish my courses by next fall so that I can focus entirely on my research in Bethesda.

▶ What are your plans for the summer?

I do not yet have firm summer plans for course or lab work, but I will most likely spend some time in the lab and take a couple classes to finish up my requirements. My sister, a junior in high school in Hawaii, will be staying with me for a few weeks here in Arlington. We will travel to New York for one of those weeks, to shop and to see as many Broadway shows as we can. It will be her first trip there and my second, and will surely be exciting. I am looking forward to somewhat of a break after this last year, and intend to enjoy it while I can! ☺
Class Notes

1950s

A. Ray Chamberlain (BS Ag Egr ’51) of Denver, Colorado, received the W. N. Carey, Jr., Distinguished Service Award in January 2005 for his outstanding contributions to transportation research and his extraordinary service to the Transportation Research Board (TRB). He is the vice president of Parsons Brinckerhoff and former director of the Colorado Department of Transportation. He holds an MS from Washington State University and a PhD from Colorado State University, where he served as president from 1969 to 1980. During his 15-year membership in TRB he has held leadership positions on several committees. He was president of the American Association of State Highway and Transportation Officials in 1992 and is a national associate of the National Academies. He received the Order of the Aztec Eagle from the president of the Republic of Mexico.

Joe Colucci (BS Mech Egr ’38) ofClarkston, Mich., is an inductee to the Brooklyn Technical High School Alumni Hall of Fame for distinguishing himself as a leader in his profession and making outstanding contributions to our society. Brooklyn Tech is a science and engineering high school with about 80,000 graduates. The hall of fame has about 30 members, with five more to be inducted in November 2005.

Cesare G. Ugianskis (BS Elec Egr ’57) of Sherman Oaks, Calif., spent 28 years with Hughes Aircraft Company before retiring in 1989. He worked as a volunteer for the International Executive Service Corps from 1992 to 2000, spending five years in newly independent Lithuania as IESC country director. ugiansakis@hotmail.com

1960s

John H. Boldt, P.E. (BS Ag Egr ’61) is retiring and relocating to Colorado Springs after 21 years as director of Collier County’s Stormwater Management Department in Naples, Fla. He has been named the first director of the Association of Christian Design Professionals (ACDP), which provides prayer and financial support for Engineering Ministries International (EMI) (www.emiusa.org). A group of volunteer engineers, architects, and land surveyors, EMI provides free technical design services to Christian organizations serving the extremely poor in third-world countries. EMI is 20 years old and has worked on 400 projects in 80 countries. john.boldt@emiusa.org

Lee Burgett, P.E. (BS ’61, MS ’62 Mech Egr) of La Crosse, Wis., was installed as president of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) in June 2005. During his term, he is focusing on technology, including standards development and support of research. He has held many leadership positions in ASHRAE, and is an ASHRAE fellow and a recipient of the ASHRAE Distinguished Service Award. He holds an MBA (’72) from the University of Wisconsin. Since his retirement from Trane as Vice-President–New Ventures, he serves as a consultant to Trane and others.

Robert J. Fitzgerald (MS Elec Egr ’65), retired in Switzerland, Fla., says he enjoyed the photos of Professors Emeritus Lawrence Wayne Von Tersch and Julian Kateley on pages 10–11 in Currents 4:2. Fitzgerald retired in December 2004 from Navair Depot in Jacksonville, Fla., after 10+ years. He had previously retired in 1994 from Northrop/Grumman as engineering manager for the EA-6B Prowler, the U.S. Navy’s tactical jamming aircraft, (Prowler electronic warfare) after 29+ years.

William F. Marcuson III, P.E. (MS Civ Egr ’64) is the 2005–06 president-elect of the American Society of Civil Engineers (ASCE), of which he is a fellow and honorary member. He received his BS in civil engineering from the Citadel and his PhD in civil engineering from North Carolina State University. Marcuson joined the USAE Waterways Experiment Station in Vicksburg, Miss., in 1970, researching soil behavior related to geotechnical problems, seismic design and analysis of embankment dams, and seismically-induced liquefaction of soils. He served as director of the geotechnical laboratory from 1981 until his retirement in 2000. He is a consultant on geotechnical projects, ground improvement, and dam safety. He has been asked to deliver the 15th Mueser Rutledge Lecture to the New York City Metropolitan Section of the ASCE on Nov. 8. He also delivered ASCE’s 1999 Karl Terzaghi Lecture and is a member of the National Academy of Engineering.

Walter P. Shiel (BS Elec Egr ’69) of Lake Linden, Mich., with his wife Kerrie, both Michigan natives, recently relocated their publishing company, Slipdown Mountain Publications LLC, from Texas to the Keweenaw Peninsula. Walt is the author of dozens of articles published in magazines in the United States, the United Kingdom, and Australia and the popular aviation history book Cessna Warbirds, declared by Airpower Journal to be “a true military aviation enthusiast’s delight.” Kerrie creates the original artwork used on the covers of the...

**1970s**

Roger Brunner (BS Comp Sci ’72) of Fairbanks, Alaska, was selected as general counsel for the University of Alaska in December 2004. He earned his law degree from Notre Dame University. While attending law school in Japan, he met his wife, Niesje, a fellow student who is now a superior court judge in Fairbanks. They have both practiced law in Fairbanks since 1976. In his new position, he will work in concert with other lawyers, rather than on his own, as he has been doing until now. He has two daughters.

Kimberlee Bernson DeBosier, P.E. (BS Civ Egr ’77), president of Bayside Engineering, Inc., in Tampa, Fla., received the 2004 Florida West Coast Engineer of the Year Award. She is the first woman to receive this award. She also received the 2005 Florida Institute of Consulting Engineers Community Service Award. She holds an MBA from Louisiana State University. She co-founded Bayside Engineering in 1995 with the mission of “superior engineering through teamwork.” The company has received several awards. She is active in the Florida Engineering Society (FES) and the Florida Institute of Consulting Engineers (FICE) and has served as an officer in both. She served as chairperson of the Tampa-Hillsborough County Expressway Authority Board from 1999 to 2003. She also serves in a variety of other community service organizations. kdebosier@baysideng.com

Carl Dukes (BS Civ Egr ’76), owner of Joliet Dodge, Inc., for the past 15 years, received a 2004 De LaSalle Award for outstanding service, leadership, and vision in support of his community from Lewis University in Rome-oville, Ill. Dukes was involved in the recent creation of the $12 million Joliet Area Historical Museum and served as the first president of its board of directors. He is on the board of directors for the Joliet Region Chamber of Commerce and mentors teenagers from the local high school. He is also an advocate for the recruitment and retention of minority-owned businesses in the Joliet area.

Edward McSweeney (BS Civ Egr ’77) has joined C. F. Jordan LP construction company as executive vice president of the federal division. He has more than 25 years of construction experience, most of it in federal projects. He has managed international projects in Asia, the Middle East, and Africa.

Donald Robinett (BS Mech Egr ’71) joined Collins & Aikman as plant manager for operations in Evart, Mich. Previously, he was assistant general manager for New United Motor Manufacturing, Inc., a Toyota/GM Joint Ventures Company in Fremont, Calif., where he was responsible for paint operations. He has extensive industry experience. He also holds an MBA (’72) in production management from MSU.

**1980s**

David Anderson (BS Env Egr ’83) of Walnut, Ill., is Lee County’s new part-time solid waste coordinator, as well as being a full-time assistant engineer for the Lee County Highway Department. He previously worked in Seattle on an environmental cleanup and in Las Vegas at an ozone treatment facility. He lives with his wife, Tina, and two children on the farm where he grew up and still helps his father with the farm work. As solid waste coordinator, he helps organize recycling and educational events.

Kdebosier@baysideng.com

Narendra B. Dahotre (MS Metallurgy ’83, PhD Mat Sci ’87) has been named a Fellow of ASM International, The Materials Information Society. He was cited by past president of ASM Robert C. Tucker, Jr., “for pioneering contributions to the research and development of surface engineering and laser based processing of materials.” Dahotre is a professor in materials science and engineering at the University of Tennessee, Knoxville.

Kim K. de Groh [maiden name van den Ende] (BS ’85, MS ’87 Mat Sci) received a Stellar Award from the Rotary National Award for Space Achievement (RNAFA) Foundation for “outstanding contributions to the understanding and enhancement of spacecraft materials durability, as well as exceptional mentoring and
outreach efforts.” The award was presented on April 22 by astronaut and deputy chief of the Astronaut Office, Janet Kavandi and by International Space Station Expedition-9 astronaut Edward Michael Fincke at the National Space Trophy Dinner in Houston, Texas. De Groh is a senior materials research engineer at NASA Glenn Research Center in Cleveland, Ohio. She attended the dinner with husband Henry de Groh. She has received numerous other awards, including two of NASA’s top honors: the NASA Exceptional Achievement Medal; and a Space Flight Awareness Honoree Award for “contributions to the Hubble space telescope multilayer insulation failure review board and impacts on Hubble Servicing Missions.”

**Dorothy (Cummins) Grimm** (BS Chem Egr ’82) of Libertyville, Ill., is a medical product development program manager for Baxter Healthcare Corp. in Round Lake, Ill. She was married in 2002 and earned certification as a project management professional in 2004. She earned an MBA (‘94) at the University of Chicago Graduate School of Business.

**Christopher Krupiarz** (BS Comp Sci ’89) is an engineer for the Applied Physics Laboratory, Space Division, at Johns Hopkins University in Baltimore, Md. He wrote a great deal of the software for the Mercury Messenger spacecraft that left Cape Canaveral in August. The spacecraft will take six and a half years to travel five billion miles to Mercury, where it will take pictures and send them back to earth. (When the Mariner 10—the last manmade object to visit Mercury—flew past in the mid-seventies, less than 50 percent of the planet’s surface was imaged.) While waiting for the Messenger to reach Mercury, Krupiarz will be writing and testing software for NASA’s Mars Exploration Program. He lives near Baltimore with his wife, Barbara, and two sons, Joseph and David.

**Timothy J. Mitchell, P.E.** (BS ’80, MS ’81 Civ Egr), regional manager in the Kalamazoo, Mich., office of Soil and Materials Engineers, Inc. (SME), in April 2005 was named a principal in recognition of his hard work, teamwork, commitment, and dedication. He has 24 years’ experience in providing solutions to geotechnical engineering challenges and constructability issues. He is a past-president of the American Society of Civil Engineers/Southwest Branch, a member of the Michigan Society of Professional Engineers, a chapter honor member of Chi Epsilon/MSU, and has taught civil engineering courses at MSU and Western Michigan University.

**Jeff Sobieraj** (BS Elec Egr ’83) of Laguna Niguel, Calif., is director of sales for Synopsis, Inc., in Irvine. sobieraj@cox.net

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**Seth Adam Drucker** (BS Elec Egr ’93) of Royal Oak, Mich., joined Clark Hill PLC in Detroit as an associate attorney in December 2004. He graduated from the University of Michigan law school in 2004. He focuses his practice on automotive industry law, bankruptcy law for corporate debtors and secured and unsecured creditors, and corporate restructuring. He worked for nearly a decade as an automotive product development engineer, predominantly at General Motors; he was involved in the development of many successful vehicle lines, including GM’s popular full-size trucks. He is an active member of the Society of Automotive Engineers. sdrucker@clarkhill.com

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**Gregory Gertsen, P.E.** (BS ’92, MS ’93 Civ Egr) was elected in September 2004 to the status of senior associate/stockholder at Albert Kahn Associates, Inc. (AKA) in Detroit. He joined AKA’s structural engineering department in 1993. His responsibilities include developing overall concepts and coordination of structural system issues within the total building design criteria. His recent experience includes Cadillac Place (General Motors Building Redevelopment) in Detroit for the State of Michigan, the Granger Center at Ferris State University in Big Rapids, and the Harborside Office Building and Parking Garage for Acheson Ventures, LLC, in Port Huron. He resides in Dearborn, Mich., with his wife, Debbie, and daughters Madeline and Nicole.

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**Robert T. Gorski, P.E.** (BS Civ Egr ’94) joined the HDR Engineering, Inc., Chicago office, on March 7, 2005, as a transportation project manager. He has over 11 years’ experience in transportation engineering and construction. A member of the American Society of Engineers (ASCE), he has been involved with the Illinois section for the last seven years. In 2004 he began a two-year term as director of the Illinois section board; he is also chair of the transportation group. Most recently, he served as communications chair and editor of the Illinois section newsletter.

**Jake Kaufman** (BS Mech Egr ’97) has worked with Husky Injection Molding Systems since graduation. He started as a project engineer in a factory near Toronto, then moved to California in 1999, where he is the area manager for service and sales, based in Hermosa Beach.
Karun D. Naga (BS Mech Egr ’98) is the intellectual property counsel for the Mentor Corporation in Santa Barbara, Calif. Prior to joining Mentor, he represented technology clients in intellectual property matters in San Diego and Los Angeles for four years with Jones Day, an international law firm with 30 offices worldwide. In 2005, he joined Mentor, a leading medical device company in the medical aesthetics and urology industries, as its first in-house intellectual property attorney. He manages all the company’s technology and IP legal matters. He received his J.D. (2001) from the University of Michigan Law School. karun_naga@hotmail.com

Steven M. Roberts, PE (BS Civ Egr ’93) joined Wade-Trim’s Governmental Services Group in February 2005. Based in the Bay City, Mich., office, he is responsible for assisting clients with project development, maintaining ongoing relationships, and managing projects for local government clients. He has ten years’ experience in the planning, design, and construction of public utilities and transportation projects.

Michael J. Thelen, PE (BS ’91, MS ’92 Civ Egr), senior project engineer in the Lansing office of Soil and Materials Engineers, Inc. (SME), was named a senior associate in April 2005 for his hard work, teamwork, commitment, and dedication. He manages geotechnical engineering evaluations and prepares designs to address shallow and deep foundations, ground improvement, earth retention systems, and other related geotechnical concerns. He also provides consulting during construction of new facilities and building renovation projects. Michael chairs the American Society of Civil Engineers (ASCE) Lansing/Jackson branch’s geotechnical engineering committee.

Wayne A. Zolnierek, PE (BS Civ Egr ’91) was named a principal at the Spicer Group in Saginaw, Mich., in October 2004. He joined the firm in 1991 as a staff engineer and is currently the group director for construction services. He is a member of the American Society of Civil Engineers, the Michigan Society of Professional Engineers, and the Michigan Road Builders Assoc., and is a licensed contractor.

2000s

Dustin Bettendorf (BS Comp Sci ’01, BS Elec Egr ’01) joined the Chicago office of Brinks Hofer Gilson & Lione, one of the nation’s largest intellectual property law firms, as an associate in October 2004. His practice was concentrated in the trademark, patent, copyright, and trade secret law areas. In September 2005, he relocated to Grand Rapids, Mich., to join the firm of Warner, Norcross & Judd, LLP. He received his J.D. from DePaul University College of Law, Chicago.

Rebecca Curtis (BS Civ Egr ’00) received her Professional Engineering license from the state of Michigan. She is a project engineer in Orchard, Hiltz, & McCliment’s structures group, specializing in the structural design of bridges. She holds an MS in Civil Engineering from the University of Michigan (’01). Through her involvement with the Structural Engineering Association of Michigan, she is a presenter in Explorathon, a program designed to attract young girls to a future career in math or science.

Chris Dronen (BS Civ Egr ’01), along with business partner Nathan Butler, both graduates of Chelsea High School, recently opened an outerwear apparel company called Urdu Imports, which makes clothing with wool exteriors, lined with fleece. Headquartered in Chelsea and Ann Arbor, Mich., the company currently sells through their Web site (www.urduimports.com) and traveling promotional events on college campuses. Dronen says his memories of walking to winter classes at MSU helped shape the product line.

Anthony B. Hays (BS Mech Egr ’00) of Howell, Mich., was promoted to manager of the mechanical systems business unit at the Ann Arbor–based Michigan Aerospace Corp. He was formerly the program manager for the company’s satellite docking system technologies. Michigan Aerospace products include mechanisms for undersea and aircraft applications. They provide optical, opto-mechanical, and mechanical systems.

Stephanie Luster-Teasley (MS Chem Egr ’01, PhD Env Egr ’03), assistant professor of civil and chemical engineering at North Carolina A&T State University since January 2005, received a National Women of Color in Technology Educational Leadership Award. The presentation takes place October 22 at the Women of Color in Technology Conference in Atlanta. She earned her BS in chemical engineering at North Carolina A&T State.

Steven P. Schultz (BA Mat Sci ’01) of Petoskey, Mich., is a math/physics teacher for Harbor Springs Public Schools. ☛
John A. Basso (BS Chem. Egr ’50) of Mountain Iron, Minn., died March 28, 2005, at the age of 79. He was retired from Pickands-Mathers. He is survived by his wife, Dona, and their four children.

Galen Brown (BS ’61, PhD ’72 Ag Egr) died June 8, 2005. He held an MS from the University of California –Davis. During his career, he was employed by the USDA Agricultural Research Service at cooperative research locations with land-grant universities in California, Ohio, and Michigan. He worked on harvesting and handling projects for dates, cling peaches, prunes, apricots, pears, citrus, avocados, boysenberries, grapes, blueberries, jojoba, tart and sweet cherries, and an array of other fruits and vegetables and nursery crops. He retired from the USDA in 1995 and joined the Florida Department of Citrus as the harvesting program administrator, working cooperatively at the University of Florida Citrus Research & Education Center at Lake Alfred. He retired again in 2003 after cooperative work to develop commercially viable mechanical harvesting systems for processing citrus. He also initiated R&D projects on fruit abscission and automated robotic harvesting for citrus. He had over 200 professional publications, received several awards, and was recognized as an expert nationally and internationally. His family established the Galen K. Brown Endowment Fund in his honor to support a biosystems/agricultural engineering graduate student conducting research in fruit and vegetable mechanization.

Thomas Webber Culpepper (MS Mathematics ’50) (engineering faculty emeritus) of Lansing, Mich., died April 10, 2005, at age 83. He graduated from the University of South Carolina in 1946. He earned an MS in mathematics at MSU, and completed additional graduate work at the University of Michigan. He was in the Navy V12 program during WW II. Hired in 1947, he was a member of the MSU electrical engineering faculty for forty years, with promotions to assistant professor, then associate professor during the early fifties. In 1973 he became assistant dean and coordinator of continuing education. He was director of cooperative education from 1981 to 1986, retiring in 1987. He is remembered with fondness and admiration by those he worked with in the College of Engineering. He is survived by his wife, Marilyn Mayer Culpepper; his sister, Bobbie (Frank) Young; and many nieces and nephews.

Jack Daigle (BS Civ Egr ’51) of Kentwood, Mich., died July 31, 2004. He is survived by his wife, Marjorie.

Bruce G. Douglas (BS Elect Egr ’62) of Carmel, Ind., died March 7, 2005, at age 69. He was a naval submarine veteran of the Korean War. A Professional Engineer registered in both New Jersey and Indiana, he worked for Exxon Research & Engineering for 24 years, retiring in 1985. He was a member of Alpha Sigma Phi and a Life Senior Member of IEEE and a Life Member of ISA. He was also a member of St. Paul’s Episcopal Church. He is survived by his wife of 48 years, Janice E. Mann Douglas; daughter Pamela M. Douglas; stepmother F. Jean Wise Douglas; brother Paul W. (Marian) Douglas; sisters Wendy J. (Robert) Brockett and Patricia R. (Roberto) deMagalhaes.

George H. Dye (BS Civ Egr ’47) of Dallas, Texas, formerly of Lansing, Mich., died September 21, 2004. After 37 years as a sales executive for Arkwright-Boston Factory Mutual Insurance Co., he retired in 1984. He is survived by two daughters, Stephanie L. Dye (BA marketing ’79) and Cynthia L. Bialek; and two granddaughters, Cara and Marissa Bialek.

John Theodore “Ted” Ehrman (BS Mech Egr ’49) of Benziecona, Mich., died December 26, 2004. He was a member of Tau Beta Pi. He is survived by his wife, Elizabeth.

Victor Joseph Grumblatt (BS Mech Egr ’42) of Cocoa Beach, Florida, died March 30, 2005. He was the oldest of seven brothers. He worked for LORD Corporation in Erie, Pa., for many years before retiring. He is survived by his wife, Ruth King Grumblatt.

Daniel L. Hanson (BS ’73, MS ’77 Civ Egr) of Canton, Mich., died February 12, 2005, at age 54. He was the owner of Hanson Engineering P.C. He is survived by his wife, Sharon; children Teri and Mark; mother, Theresa Hanson-Waldie; siblings Phyllis Hanson and Mary Jo (Daniel) Clark.

John A. Hess, Jr. (BS Chem Egr ’50) of Redington Shores, Fla., died in December 2002. He is survived by his wife, Martha.

Elmer LeValley Kirk, P.E. (BS Elec Egr ’28) of Arroyo Grande and Pismo Beach, California, died January 14, 2005, at age 97. His engineering work included design and construction of chemical, steam, and geothermal electric power plants, heavy industrial plants, and electrical distribution systems. While at MSU, he was an officer in the U.S. Army Reserve Horse Cavalry. He earned an MS in mechanical engineering from Purdue University. He lived in Liberia and Guinea, West Africa, for five years working on upcountry rural electrification. As a volunteer he later designed and supervised construction of a church in Kenya, East Africa. He was a member of Rotary International and a Paul Harris Fellow, a member of New Life Community Church and its King’s Crew in Pismo Beach, and a member of New Life Community Church and World Neighbors. He is survived by children Marian G. Kirk, Joyce Kirk Coleman, and John W. Kirk; five grandchildren; and eight great-grandchildren. He was pre-deceased by his first wife of 20 years, Gladys Hawley Kirk; his second wife of 42 years, Sara Elizabeth “Betty” Mooney Kirk; and by grandson Aaron E. Kirk.
Frank I. Makarauskas (BS Elec Egr ’50) of Grand Island, Florida, died July 5, 2004. He was a B-24 navigator during WW II, worked in the electrical power field, and ended his career as an industrial agent for the State of Michigan. He is survived by his wife of 60 years, Dorothy Makarauskas, and four children: Frank W., (BA Bus Admin ’70), James, Judith (BA Educ ’77), and Mary Jane (BS Nat Sci ’88).

George Mead (BS Egr ’40) of Baton Rouge, Louisiana, died February 12, 2005, at age 84. He was a captain in the U.S. Army during WW II. He worked as a chemical engineer for Pontiac Motors, Minnesota Mining and Manufacturing (3M), Borden Chemical, and other companies in Michigan and Wisconsin. He was a chemical engineer with Ethyl Corporation in Baton Rouge, Louisiana, in the plastics division, beginning in 1964 and retiring in 1983. During his life, he was a member of the school board in Levittown, Pennsylvania; Shiners; Cajun Clickers Computer Club; the Civil War Round Table; and Venice-Nokomis United Methodist Church. He was also a deacon in a Congregational Church. He is survived by his daughter, Jane Martin; his son, William Mead; a nephew he raised as his son, Frederick Osborn; and numerous grandchildren. He was preceded in death by his wife, Willette, aka Emma Myers Mead (MSU’43).

Alan Clair Nelson (BS Chem Egr ’32) of Pensacola, Florida, died September 9, 2004, at age 93. His first job was for the Pure Oil Company in Pensacola. Over the course of his career, he worked for several oil companies and lived in Port St. Joe, Atlanta, Saudi Arabia, Beruit, New York City, and Libya until his retirement from Exxon in 1967. He is survived by daughter Cordelia (Vernon) Fields; stepdaughters Francis Fox and Elizabeth Holsberry; daughter-in-law Carol B. Nelson; ten grandchildren; and eleven great-grandchildren. He was predeceased by his first wife, Janet; his son, Dr. Jan A. Nelson; and his second wife, Addie.

Rory Shaw, P.E. (BS Civ Egr ’90) of Rosemead, Calif., died February 20, 2005, at age 47. After earning a BA in mathematics from MSU (’79), Shaw joined the U.S. Navy as a lieutenant. He served in the nuclear power training unit, then aboard the USS Truxton, a nuclear-powered cruiser. In 1985 he returned to MSU where he earned a BS in civil engineering. He was an outstanding engineering student at MSU and an active member of the concrete canoe team. He was on the team the year they went to the nationals. He traveled from California to attend Dr. Mack Davis’s retirement celebration in 2003. After graduation, he was recruited by the Los Angeles Public Works Department and was working as an emergency engineer at the massive Sun Valley sinkhole when the ground gave way and he fell 30 feet to his death. Shaw received many awards during his tenure with the Department of Public Works, including a Meritorious Achievement Award and a Going Beyond Expectations Citation. His technical expertise and commitment to service led him to the position of Chief Emergency Construction Engineer for the city’s 6,500-mile-long sewer system. He is survived by his mother, Shirley; his sister, Leslie (James) Botti; and a niece and nephew. The Rory M. Shaw Memorial Endowed Scholarship/Fellowship Fund has been established by his family to help support MSU students majoring in civil and/or environmental engineering.

Click O. Smith, Jr. (BS Aeronautical Egr ’50) of the District of Columbia, died January 12, 2004, at age 73. He served in the Air Force from 1951 to 1985, retiring with the rank of Major General, having received the Distinguished Service Medal, Legion of Merit with oak leaf cluster, Distinguished Flying Cross with four oak leaf clusters, Air Medal with 16 oak leaf clusters, and the Purple Heart. He was head of the CX Task Force that led to the development of the C-17. After retiring he was Vice Director of Logistics and Deputy Director for Strategic Mobility in the Office of the Joint Chiefs of Staff, then worked as a consultant for the Logistics Management Institute. He was chairman of the board of elders at McLean Bible Church for 10 years and was chairman and chief check pilot of Mercy Medical Airlift, an organization that provides free air transport for people needing medical care far from home. He flew 10,000 hours for MMA and accumulated a total of 30,000 hours, virtually unprecedented for a military or general aviation pilot. He had over 10 years of experience as an aerospace research test pilot and flew 68 different types and models of bombers, fighters, and transports. He held master’s degrees in business and international affairs from George Washington University. He is survived by his wife, Iris; children David Smith and Debbie Szabo; and two grandchildren.

Harvey J. Smith (BS Elec Egr ’30) of Muskegon, Mich., died June 23, 1999. He is survived by his wife, Florence L.; daughter Amy VanWeelden of Wisconsin; and three grandchildren.

William “Red” Francis Taffee, Jr. (BS ’34, MS ’39 Chem Egr) of Anniston, Ala., died March 9, 2005, at age 82. He became an ordained deacon on March 2, 1975, in Birmingham, Alabama. He is survived by his wife, Lois Luedders Taffee; daughters Kathleen Chandler and Beth Brouillette; eleven grandchildren; and one great-grandson.

Roger B. Wood (BS Mech Egr ’57) of Englewood, Florida, died May 13, 2004, at age 75. He often talked of his time at MSU. MSU was a big part of his and his family’s life. He is survived by his wife, Llani, and two sons.
MSU Engineers
Serving Our Country

Glenn A. Rushman (BS Civ Egr ’47) of Bay City, Mich., served in the Army Air Force and flew 57 combat missions during WW II. He earned the Distinguished Flying Cross, the Air Medal with six oak leaf clusters, the Distinguished Unit Badge, and the EAME Theater Ribbon with four bronze stars. After the war, he attained the rank of lieutenant colonel in the Air Force Reserves before retiring. He worked 30 years for Dow Chemical Company before retiring as a senior project supervisor in 1982. His granddaughter is now attending MSU.

Karl Tebeau (BS MMM ’88, MS Mat Sci and Egr ’91) has worked as a materials engineer at the U.S. Army Tank Automotive Research, Development, and Engineering Center ( TARDEC) in Warren, Mich., since graduation, and he lives in Shelby Township. His advisor at MSU was Professor Eldon Case.

Glenn Rushman in the cockpit of his P-51 Mustang in Bodney, England.

WW II and The Bluenosed Bastards of Bodney

I received my silver wings on March 12, 1944, at Spence Field, Ga. I married my MSU sweetheart, Elna Murphy (an education major), in June 1944, and she went to Punta Gorda, Fla., with me for my P-40 training.

One day six planes were pulling into line to do aerobatics. I was fifth in line. We had climbed to 12,000 feet when I heard a noise at the rear of the plane. My aircraft veered to the right and began to spin towards the ocean. The plane at my rear had run into me and cut off my tail section. Here we certainly had two very sweaty pilots!

I did everything I had been taught, to recover from a spin, but nothing worked; the stick and rudder just flopped around. With my P-40 headed straight down, it didn’t take a lot of thinking to make a hasty exit. It was one of those days, because the emergency canopy release didn’t work, and I had to hand-crank the canopy open. As I unfastened my seat belt, the spinning plane threw me out of the cockpit. I immediately counted to ten, “one . . . ten” and pulled the ripcord. The parachute opened. I was heading for a small island off Fort Meyers, but started to drift. The thought of crocodiles reminded me to pull the opposite cord and keep myself heading towards land. I came down on the shore in a few inches of water and was met by a local farmer who had seen the chute.

Meanwhile, the flight line officer told my new bride that we were out doing some night flying and I would be late, then set out in a Piper Cub with a doctor to see if I was all right. His Cub cracked up trying to land in some tall grass. Then a truck was dispatched to pick us all up, but it was involved in a traffic accident! However, a boat was sent to get us, which made it both ways, and all was well. (Incidentally, pilot number six also had to bail out.)

The next month (I was certainly combat ready), I was shipped overseas to England where I was assigned to the 486th Fighter Squadron, 352nd Fighter Group of the 8th Air Force stationed in Bodney, England. Because of the blue noses of our P-51s, and our heroic actions against the German Luftwaffe, we became fondly known as the “Bluenosed Bastards of Bodney.”
I volunteered for a special assignment in Iraq from December 2004 through April 2005 as an Army Materiel Command, Forward Assistance in Science and Technology advisor. I was based in Camp Victory on a three-man team consisting of an Army major, an Army master sergeant, and me (as senior civilian materials engineer). Our two goals were to install a mortar detection system called UTAMS (Untended Transient Acoustic Measurement and Signal Intelligence System) and to travel the country talking to command battle staff and the soldiers themselves, looking for technological capability gaps.

The UTAMS we installed locate and identify the sources of acoustic events, including mortars, rockets, cannons, IEDs, small arms, RPGs, etc. My master’s thesis dealt with propagation of acoustic waves, so I was able to set up the detector arrays and explain the physics and behavior of the various acoustic phenomena.

Our primary mission was to find soldiers’ technical capability gaps and start prototype projects. We had a very short path back into the Army’s Research and Development community. Projects started by our team included HMMWV safety items such as Roof Integrity Strengthening, Turret Gunner’s Sling Seat and Safety Harness, Turret Gunner’s Remote Night Vision, Passenger Seatbelt Extension, and Rear Panel Enhancement; Stryker Top Parapet Armor Kit; EOD Bomb Suit Night Vision and accessories, EOD Talon Robot Tool Kit, Infantry/Scout Squad Dismounted Comms Kit, Welder’s Pictorial Guide to Field Expedient Armor Solutions, and a Daylight Standoff Warning Light for Entry Control Points.

Our team was essentially responsible only to itself, going wherever we needed via Blackhawk and CH-46 helicopters and joining road convoys in our up-armored HMMWV. We flew to a number of remote forward operating bases, including Fallujah, Ramadi, Hit, Tikrit, Balad (LSA Anaconda), and a few Green Zone bases. We also convoyed to the Green Zone via Route Irish (that infamous road of death—thankfully without incident).

Life in Camp Victory was relatively safe, with the only real threat being the possibility of a mortar dropping in your lap at any given instant. The camp has a huge amount of activity—truck convoys always on the move and helicopters always in the air. We saw historic times: Iraq’s first free elections in 50-some years in January, then the huge swap-out between III Corps going home and the 18th Airborne Corps from Fort Bragg taking the reins in February.

Local Iraqi laborers told me that, even with the current danger and chaos, their lives were better than when Saddam ruled, and expressed great hope for the future. I want to return to Iraq in a few years to see what the Iraqi people have made of their country, now that we’ve given it back to them. Right now, there’s a lot of dust in the air and blast barriers everywhere. I hope the U.S. never looks like that. But that’s why we’re there, doing what we do. This assignment was the coolest hard thing I’ve ever done.

—Compiled by Lynn Anderson

KARL TEBEAU

Army Science Advisor in Iraq

Top: Tebeau installing a UTAMS array. Center: Tebeau (far left) after dismounting a Stryker convoy in Mosul. Bottom: Tebeau exploring wreckage of the Victory over America Palace.
William (Bill) Campbell (BS Mech Egr ’54) of Carmel, Ind., says: “The individual pouring what looks like cast iron is Joe Sigafoos, professor of foundry. He did a great job and was well respected. I remember quite a bit from his class 50 years later, even though I never worked in that industry.”

Fay Cunningham (BS Chem Egr ’48) says: “I started MSU (MSC then) in 1940 in forestry, after a stint in the old Civilian Conservation Corps (CCC). After two terms, I changed to engineering. All freshman engineers were required to take a term of pattern-making, foundry, and forge. I believe the picture on the back of Currents was taken in the foundry, in a small building behind Olds Hall. We had to make sand molds, and at the end would melt pig iron and make a “pour” into the molds. The gentleman in the picture was the professor of the course. He had an unusual name, Sigfoos or Siggerfoos or something similar.

“I entered the army after two years of engineering. I was assigned to the special engineering detachment (SED), Manhattan Project, Corps of Engineers. I had a small but important part in the development and testing of the early atom bombs. After discharge in August 1946, I left Bikini Atoll and a month later was reenrolled at MSU finishing up my degree in chemical engineering. I then joined the Upjohn Company in Kalamazoo for 40 years, where I became a research manager and ended up director of chemical production. I maintained my connection with MSU, serving on the engineering alumni board for several years in the mid- to late ’80s, and was president the year Dean Von Tersch retired. I also helped establish a 10-year fellowship supported by Upjohn within the college and interviewed and hired a number of chemical engineering graduates from MSU over the years. I was pleased to see that, of the nine deans of the College of Engineers pictured on your cover, I personally have known five.

“My wife and I spend winters in Sarasota, Fla., and summers in Littleton, Colo. Please say hello to Martin Hawley [chairperson of chemical engineering and materials science], whom I have known since he started grad school.”

Charles DeVries (BS Mech Egr ’54) of Waconia, Minn., says: “This photo shows the pouring of castings as part of a foundry and pattern-making course in a manufacturing processes series. The castings were then machined and assembled in the next course into small air compressors. As students we did all of the molding, shake out, and cleaning of the castings. The instructor pouring the iron is Mr. Sigerfoos.”

Douglas J. Harvey (BS ’49, MS ’51, PhD ’55) of Sterling Heights, Mich., says: “The photograph is Professor Sigerfoos pouring gray cast iron into stacked dry sand molds. The picture was taken in the mechanical engineering foundry. Castings being made were most likely flywheels to be machined in the mechanical engineering machine shop for the air compressors being made by the students. Dean Ryder abolished the foundry as he felt the methods then used would be replaced by newer technology. Gray cast iron is still being used for many parts. The ladle and molds seen in the photo are typical of those presently used in low-production foundries. However, the picture is dated by the lack of safety apparel.”

Robert A. Henry (BS Civ Egr ’60), chairman of the Robert Henry Corporation, South Bend, Ind., says: “I enrolled at Michigan State College in March of 1955 after four years in the U.S. Navy and was originally in electrical engineering. I changed my major because of my part-time job in the construction industry while in school and was graduated a civil engineer in June of 1960. (Harry Truman was our commencement speaker.) I saw the MISTIC computer in operation on one of the tours given to freshman engineers. It would be interesting to know the capabilities of MISTIC in calculations per minute or second and did it have any memory. What comparisons could you make to the desktop computers that we all use today?”
“The other reason for this letter is the picture on the outside back cover of the magazine showing ‘1953–Casting Metals.’ It was, I believe, an ME 200 series class called ‘Manufacturing Processes.’ Students were exposed to various manufacturing processes such as a sheet metal shop, pattern-making, foundry, etc. We made a toolbox in the sheet metal segment of the class, using the press break and spot welder. In another segment we were required to make a pattern for a nameplate (see photo, above) which was then used to make a sand mold into which molten metal was poured. We then did a minor amount of machining to complete the nameplate.

“My business is a family-owned construction company doing commercial and industrial construction throughout the Midwest. We, in fact, constructed an addition to a Menard’s store in Lansing last year. Another division of our company does underground electrical work installing electrical services for residential and commercial customers of American Electric Power (AEP) in Ohio, Indiana, and Michigan. Right after graduating, I worked as a project manager for a large construction firm in South Bend and now have completed 30 years in the business that I started. My oldest son is now president and two of my other sons are in management positions in the company. All three are shareholders in our business.”

Kenneth L. Herrick (BS Metallurgical Egr ’54) of New London, N.H., says: “The person pouring molten metal into a clay bonded green sand mold is Professor Charles Sigerfoos of the Mechanical Engineering Department. Look at the 1953 Wolverine Yearbook to verify. The hairstyle gives it away!

‘Professor Sigerfoos was a ‘hands-on guy.’ He taught the course in foundry practice and technology, which was very popular with the students. These courses ended up with the complete fabrication of all the parts for a one-cylinder air compressor that was then assembled and tested. The foundry laboratory operated a small cupola for melting cast iron plus other furnaces to melt aluminum and copper base alloys. Students operated all the equipment, but Professor Sigerfoos took special care of the melting, which was considered a bit dangerous.

“Along about that time (1950–54) there was continuous debate on the direction engineering education should take, i.e., practical vs. theoretical. Mechanical engineering was taking a strong stand for practical, while metallurgical was emphasizing more and more theoretical, or at least tipping the balance in that direction under the leadership of Dr. Austen J. Smith, department head. Some metallurgical engineering students actually "looked down" on the foundry industry in general as a less desirable place to spend one’s professional career.

“Although I tended to side with my fellow metallurgy students supporting the rival American Society for Metals, I ended up working my entire career in the foundry industry! Professor Sigerfoos was a powerful influence.

“I certainly enjoy receiving Currents. This
past issue was especially interesting. Keep up the good work.”

William E. (Bill) Kamradt (BS Metallurg Egr ’53) of Indianapolis, Ind., says: “The individual pouring molten metal (probably aluminum) into metal-weighted sand molds is Professor Charles Sigerfoos. He was the head of the foundry when I was a student at MSC (1949–1953). At that time students made the molds, melted the metals, and poured the castings, which were then machined and assembled to produce single-cylinder air compressors that were sold to whomever wished to buy them. I bought one and it performed admirably.

“I served two years in the army and in 1955 became employed by the Chrysler Corporation. I served successively as an engineer and quality control manager in their Highland Park laboratory, Huber Ave. Foundry, and finally in the Chrysler Indianapolis Foundry, from which I retired in 1989.” Bill is enjoying retirement with Virginia, his wife of 51+ years.

Jack C. Lane (BS Mech Egr ’56) of Ramona, Calif., says: “I was president of the student chapter of the APS my senior year, under the guidance of Dr. Charles Sigerfoos, who is the person in the “Looking Back” photo. MSU during those years had a great foundry, as well as other mechanical shops and laboratories. It was a sad day when they removed them and decided the engineering profession only needed to be taught ‘theory.’ Believe me, every engineer I hired years later could have benefited from this experience of hands-on training. Even today, most graduating engineers could use a lot more practical training than they are getting.

“The picture depicts the pouring of molten cast iron from a large ladle, supported by an overhead crane. Charley is controlling the pour into the molds, which were previously prepared by compacting a black sand, mixed with a binding agent and pressed around a pattern that was identical to the part you wanted to reproduce. In this particular case, we poured castings for all the component parts that would eventually assemble into a small air compressor, as a senior project. All the individual castings would have to be machined as part of our machine shop training, before our final assembly training.

“I’m sure I was somewhere in the background when this photo was taken, because we had these large pours near the end of summer break, and I was always part of the enlisted crew, since I worked as a technician in my spare time. I worked with three professors in these labs, helping with experiments for their PhDs. And I also did many illustrations used in their theses. Although I chose not to follow the foundry industry, I enjoyed my work there under Dr. Sigerfoos and the others, as it enriched my engineering background.

“I’m retired, but I am still involved with the high-tech company I founded 27 years ago, so I stay active with new developments and product improvements. I hope I have helped shed some light on the picture, as it was of special interest to me.”

Richard C. Meissner (BS Mech Egr ’49) of Ludington, Mich., says: “The picture shows Professor Charles Sigerfoos pouring iron in the MSC Foundry. He was my mentor. He led me into the foundry industry and helped me obtain my first two positions. In 1960 I joined National Steel and sold to the foundry industry for the next 42 years, full- and part-time. Retired at 79.

“Thanks for the memories.”

Donald E. Meyer (BS Mech Egr ’53) of Lake Orion, Mich., says: “I really appreciated your 2005 Special Historical Issue of Currents. It brought back many memories of my college years while Lorin Miller was Dean of Engineering. While I was at college, I had heard about the fire that destroyed the original engineering building and Wells Hall but never saw any photos of it. That article was very interesting.

“The gentleman pouring molten metal in the photo on the back cover was Professor Sigerfoos, head of the foundry lab. He was an outstanding instructor and a friend to his students. I can’t identify the fellow in the background controlling the height of the ladle with a chain hoist.

“I was graduated with the class of 1953 with a BS in ME, specializing in automotive engineering. The engineering lab courses I took were very interesting and informative. They helped provide an excellent foundation for my career as a truck engineer with General Motors. The hands-on experience with then-current manufacturing processes helped me understand how parts were made. Each student designed and manufactured an air compressor that they could buy for $15 at the end of the courses. We used mine for many years. I still use the sheet metal toolbox that I made in metal lab. Those classes were fun! I was really sorry when I heard they were all dropped later, as I believe they provided valuable experience to engineering students.

“Keep up the good work with your excellent magazine.”

Herbert Mitson (BS Mech Egr ’51) of Bedford, Ohio, says: “It has been a long time, but I think that the photo is Professor Sigerfoos pouring either cast iron or aluminum castings. Around this time his foundry classes were making air compressors. These items had aluminum pistons and cast iron housings.”

Ivan Morse (BS ’50; MS ’54 Mech Egr) of Cincinnati, Ohio, was on the MSU mechanical engineering faculty from 1950–61. He received his PhD from Purdue in 1961. He then joined the mechanical engineering faculty at the University of Cincinnati, where he taught for 34 years, retiring in 1995.

He says: “The photo on the back cover of Currents 4:2 is Charles Sigerfoos. In the ’50s, the standard class project was to design and manufacture a one-cylinder air compressor. The two primary shops were the foundry (Professor Sigerfoos) and the machine shop (Professor VanderSlice). There were a number of engineering shops in those days: the sheet metal shop, the forge, the foundry, the machine shop, and a woodworking shop for making patterns for molds.

“In the photo, Professor Sigerfoos could be making a flywheel, crankcase, or cylinder head. The parts then went to the machine shop where students machined them and assembled them into air compressors (see photo,
right). Aluminum castings were also made in the foundry, pouring molten aluminum into molds for pistons and other parts. By the senior year, each student had assembled a complete air compressor and could purchase it for about $5.00, which many did. I took mine home to my father’s farm. He began using it right away to inflate tires, etc. Then my brother used it for a while. In recent years I have been using it myself to inflate tires, blow dust off my lawnmower, etc. It is still working just fine.”

Arden D. Pridgeon (BS Mech Egr ’49, BA Bus ’61) of St. Joseph, Mich., says: “The person pouring iron was my foundry professor Charles Sigerfoos. He was very dedicated to the foundry industry and opened the door for many graduates to enter the industry. I was employed by Benton Harbor Malleable Industries, Benton Harbor, Mich., 1949–65, and later by Western Michigan University as a professor to teach and develop their cast metals program from 1965–90. I was in contact with Charlie Sigerfoos many times during my career, and he remembered me as one of his students; he always introduced me as one of his Michigan State graduates. He remained a good friend of mine until his death.”

Gene Rundell (BS Mech Egr ’52, MS Metallurgical Egr ’55), of Traverse City, Mich., says: “I am almost certain that the person is Professor Charles Sigerfoos. He taught foundry during the junior year and offered senior year classes in all aspects of foundry practice. I took all of these classes. Probably there are not many who remember that MSU had a foundry complete with a working cupola for melting cast iron. The foundry also included a ‘Detroit rocking furnace’ used for smaller quantities of cast iron and gas-fired facilities for melting aluminum. My thesis for an MS in metallurgical engineering was entitled ‘The Effect of Some Melting and Pouring Factors on the Chilling Tendency of Gray Cast Iron.’ I would have spent considerable time in the foundry using the Detroit rocking furnace as the source of cast iron (in 1953 and 1954). Professor Howard Womochel was my adviser and was a teacher in the finest sense of the word. We remained friends for years after I left MSC (it was MSC then).

“Judging from the picture of Professor Sigerfoos, the ladle was probably taken from a ‘tap’ of the cupula. I have a small replica of the MSC cupula, cast from aluminum melted in the foundry. If you, or the department, have a place to display it, I would be happy to give it to you. Any notation should read: ‘In memory of Professor Howard Womochel.’ If anyone has information about Prof. Womochel’s son, Daniel, I would appreciate hearing about him.”

Don Schimmel (BS Mech Egr ’52) of West Bloomfield Township, Mich., says, “This picture was taken in the engineering foundry. The foundry poured cast iron and aluminum. These castings, along with forgings and machined parts, were assembled into a single-cylinder air compressor. There was a series of ME classes that all related to the manufacture of the air compressor. I still have and use the compressor that I assembled in the machine shop class. Hands-on engineering.”

Tom Schwer (BS Mech Egr ’50) of Mandeville, La., says: “I believe the person is Prof. Sigerfoos in the foundry during a ‘pour.’ This was all part of a program where students designed an air compressor (in Prof. Fairbanks’s class), made wooden patterns in the woodshop, followed by making a sand mold. Then came the casting process in the MSC foundry behind Olds Hall. The picture shows molten liquid metal being poured into the top half of the mold (or cope) by Prof. Sigerfoos. When cooled, the castings were taken to the machine shop for finishing. Finally, we studied the properties of the iron we cast in Prof. Womochel’s metallurgical class. The result was that every student completing the process had a working air compressor (complete with a 12” flywheel!) and a real understanding of the manufacturing process. This was a great ‘hands-on’ experience that unfortunately has been lost in engine school today. In my working life I was amazed how this activity gave me engineering ‘street smarts’ that so many from other schools simply could not fathom. ‘Great issue of Currents! Really enjoyed it. Plan to keep it for the archives. Sorry Olds Hall is not part of the engine school anymore. Had many classes there.’

Harold T. (Hal) Shaw, Jr. (BS Mech Egr ’54) of Leland, Mich., says: “I believe it is foundry instructor Joe Siegafoos, who is shown pouring iron into permanent molds to make castings that will be machined by the engineering students and later assembled into working air compressors. The iron was melted in our own on-campus cupola as a laboratory project.”

Kenneth Spray (BS Mech Egr ’54) of Niles, Mich., recognized Professor Sigerfoos right away. He says that Sigerfoos died a few years ago; he had been living in a nursing home near his daughter, Berdine, in Florida. Spray describes himself as “one of Aggie’s boys,” and remembers that she “ran the college.” He spent 15 years in foundries, 12 working for GM. He earned his master’s in metallurgical engineering from Notre Dame in 1974. Though retired now, he works every morning in a friend’s metallurgy lab. He and his wife, Elaine, have four children.”
Charles Sigerfoos was born and raised on a farm in Elkhart, Indiana, on the St. Joseph River. His father, Will, worked for the New York Central Railroad. His grandfather, Crayton Sigerfoos, was well-educated and taught school in the Penn Township area of Cass County, Michigan. Crayton Sigerfoos’s mother—Charles’s great-grandmother—Cynthia, was one of the 16 children of Charles Osborn, an influential anti-slavery Quaker. Osborn, a native of North Carolina, relocated to Wayne County, Indiana, in 1819, a year after publishing the first anti-slavery paper in the United States, the Philanthropist, at Mt. Pleasant, Ohio, in 1817 and 1818. Charles Sigerfoos was one of several family members to be named for his great-great-grandfather, Charles Osborn.

Sigerfoos earned his undergraduate and graduate degrees from Purdue. He first became interested in foundries while working summers in the New York Central Foundry shops at Elkhart, Ind., and at the Williams Brothers Brass Foundry. He taught mechanical engineering at Purdue for five years, then joined the faculty at MSU in 1935. He taught the foundry engineering shop courses in the mechanical engineering department until 1963, when he transferred to the Department of Engineering Instructional Services to teach engineering graphics courses. Then, in 1968, he returned to mechanical engineering and taught ME 280: Manufacturing Processes until his retirement in 1973, after 38 years at MSU.

George Van Dusen, dean emeritus, was quoted in a 1997 MSU Engineers Alumni Magazine as saying, “[Charles Sigerfoos] was a poet of the practical. Before the co-op program existed, Charlie hired students to work as interns in his own local company. He excelled in creating an important linkage between the classroom and the industrial world.”

Sigerfoos received the first Thomas W. Pangborn Gold Medal Award from the American Foundrymen’s Society (AFS) in 1956. In granting the award, they said of him: “In Charlie Sigerfoos the hallmarks of the true teacher are evident . . . kindliness, encouragement, and the intangible of earned respect. In consequence, many former students return year after year to seek his counsel and report their continued progress.”

During a leave of absence from MSU, Sigerfoos served as a consultant for the U.S. Agency for International Development in 12 foreign countries.

Sigerfoos served as chairman of the Michigan section, American Society for Engineering Education, and as chairman of the Central Michigan Chapter of the American Foundrymen’s Society. He was also the organizer and faculty adviser to the AFS Student Chapter at MSU, the organizer and chairman of the annual Michigan Regional Foundry Conference, and was instrumental in establishing the Foundry Educational Foundation scholarship program at MSU. He was constantly active on committees of the AFS Education and Sand divisions, allowing university facilities to be used for several research projects of the Sand Division.

He was an active Rotarian in Michigan and Florida. He was a member of People’s Church, East Lansing, for 54 years. Charles and his wife, Esther (Holben), had two daughters, Berdine and Beverly. Both girls attended Michigan State. Berdine (Fagan) (BA Elem Ed ’53) died in 2000. Beverly (Simon) lives in Avon, Minnesota, with her husband, William (Bill) Simon (BS Horticulture Marketing ’50). Charles and Esther had seven grandchildren and seven great-grandchildren. They retired to Sanibel Island, Florida, and Ft. Myers, Florida. Esther died in 1993, Charles in 1997. They were both buried in East Lansing, where they had lived together for 54 years.
What a surprise to see Charles Sigerfoos on the back cover of Currents! He was my father’s first cousin. There could be no nicer gentleman. He and his family kept two of my out-of-town dates for J-hops as overnight guests. He even loaned me his car to pick them up! There were many, many more favors too numerous to mention here.

Time is overdue for documentation of his MSU-related experiences. He was, of course, head of the foundry department. Before and after retirement he consulted for and owned foundries. He and his wife participated in many MSU-sponsored tours, including some pertaining to foundry activities.

Again, I’m so pleased you finally “found” him!

Charles was a strong believer in MSU’s engineering shop courses. He hated to see them discontinued. My wife Lois’s twin brother, Louis Patterson (BS ’56 building construction), went through them, as did I. We both brought home the “project” air compressors . . . still have them!

Two stories from Charles’s life stand out like beacons for me: My father, William Lloyd Garrison Blyly (named for the famous anti-slavery newspaper editor), was a little older than his cousin Charles. Once he sent Charles to Jimtown School with the scent bag from a skunk. Yes, it was opened in the schoolroom. The incident apparently did not cause any permanent damage to Charles’s reputation. He ended up marrying the principal’s daughter, Esther!

The other story took place long after Charles’s retirement, when he went through hip joint replacements, first one side, then the other. The first one failed, and then also the other! He had further surgeries, perhaps five total, and was able to continue to get around, although he used a walker from 1993 until his death in 1997. He carried the broken hip joints in his glove compartment for “show and tell.” He actually took them to the metallurgy lab at MSU and had them analyzed for defects. He had the manufacturer totally shaken up until he convinced them that he was only trying to help.

Daughter Beverly Simons’s comments:

It really makes me feel good that you are interested in my father’s life and teaching at MSU. I was so proud of him: kind, caring, thoughtful, generous, and never had an unkind word toward anyone. I’ve often wished I could be more like him.

After graduating from East Lansing High School, I took home ec classes, then business classes at MSU. I left college to marry Bill. We were married July 12, 1952. I think ours was the second wedding in the newly built MSU memorial chapel. I was just 19 years old, but Bill was 26—a veteran and a college grad. We’ve been married 53 years. We have four children, Chuck (Charles!), Connie, Craig, and Cary. Berdine had 3 sons; Roger died in a car accident at age 16, Loren died of diabetes at age 47, and Glen is a lawyer in Atlanta, Ga.

Excerpt of 1973 letter from Esther Sigerfoos to daughter Beverly:

Our tulips are beautiful, lilacs and peonies will soon be in bloom. We drove through campus on Sunday, and it is just beautiful—flowering shrubs, trees, tulips, etc. are just gorgeous. We didn’t get out to walk in the gardens, but saw them at a distance. The retirees’ luncheon on Friday was very nice. There were 46 new retirees, and with the past retirees and spouses, there must have been about 300 at KC [Kellogg Center] for the affair. Each new retiree was introduced by the head of his department (Dr. Little for Mech. Engr.).

Dr. Little gave a very nice resume of Dad’s teaching career—saying he had been at MSU for 38 years, plus 5 years before coming here, so 43 years in the education field. He went on to say that Dad had had 17 overseas assignments (12 countries) with AID (Agency for International Development), had written numerous published papers, and had rec’d a gold medal for his work with students and the AFS organization. I was also introduced and asked to stand—then Dad was presented his “Diploma of Merit” from Dr. Wharton (MSU President) as a picture was taken. This same procedure was used for each retiree. This was a very impressive ceremony—guess I was more impressed than Dad, as he was glad when the congratulations were over and he could leave. Ha!

—Compiled by Lynn Anderson
Let Us Hear From You!

NAME (INCLUDING MAIDEN NAME)

STREET ADDRESS

CITY / STATE / ZIP  IS THIS A NEW ADDRESS? □ YES  □ NO

E-MAIL ADDRESS*  TELEPHONE

CLASS  DEGREE

OCCUPATION / JOB TITLE

EMPLOYER

BUSINESS STREET ADDRESS

BUSINESS CITY / STATE / ZIP

UPDATE

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Letters to the Editor

Donald Arquette (BS Elec Egr ’53) of Sarasota, Florida, writes: While I greatly enjoyed the special historical issue [Currents Magazine, Vol. 4, No. 2, 2005], I was disappointed that there was no mention of the Electrical Engineering Building that was constructed sometime around 1949 and was the pride of the Engineering College until 1962 when the Shaw Lane building was constructed.

Editor’s Note: The Electrical Engineering Building, built in 1947, was occupied by the Department of Electrical Engineering until the new Engineering Building was built on Shaw Lane in 1962. The old Electrical Engineering Building now houses the Computer Center. See photos below.

James R. Carr, P.E. (BS Civ Egr ’50) of Grand Rapids, Mich., writes: Thanks for the memories. It was really fun to read about all the good times at MSC.

Keep up the memories of Aggie McCann. I don’t know how we would have made it through registration without her help. She continued service to her engineers after we got out of school. While I was in the Aleutians, during Korea, she sent me “stuff” about once a month, including copies of the Spartan Engineer and copies of cartoons to cheer us up.


However, there were two articles on PM 1225 in TRAINS magazine that were conspicuously, I think, not cited. The latest was on the Polar Express a few months ago, and I think there was an earlier one too. I also believe that a current executive at Kalmbach Publishing is an MSU grad, and was active in the 1225 restoration.

Editor’s Note: This astute reader is right on both counts. TRAINS magazine did, indeed, publish two substantial stories about the Pere Marquette 1225. The first one ran in the April 1989 issue, and the other—the Polar Express story—appeared in January 2005. Photocopies of the articles or entire back issues are available by contacting Kalmbach Publishing’s customer service staff at (800) 533-6644.

Kevin Keefe, a 1973 graduate of MSU’s School of Journalism, has recently been promoted to vice president of editorial for Kalmbach Publishing Co. He was previously editor of TRAINS magazine and associate publisher.

“Kevin was another of the early, dynamic, and extremely important members of the MSU Railroad Club,” according to Randy Paquette (BS Elec Egr ’71), a member of the MSU Railroad Club in 1969 and the individual credited with the idea of trying to get the locomotive operating again.

After the article ran in Currents, Paquette says that many people from his past have contacted him to reconnect. He tells the Currents editor: “I owe you much for the renewed conversations with dear friends and the fond memories.”

Paquette says he and his brother, Wayne, met with Don Childs, retired machine shop supervisor, and Chuck Julian, another member of the Project 1225 team, in Cedar Springs, Mich., in September at the White Creek Railroad. Childs was demonstrating his live steam model Atlantic type, 4-4-2 locomotive—a fully operational, coal burning locomotive that is capable of pulling cars carrying adults. “It is a whole other railroad industry!” says Paquette.
At first glance, the original Engineering Building and the R.E. Olds Hall of Engineering appear to be identical. There are, however, slight differences in the exterior architectural detail. Note the “diamond” pattern between the 2nd and 3rd floors of Olds Hall versus the “rectangular” pattern between the 2nd and 3rd floors on the original Engineering Building. Also note the “penthouse” structures on the top of the Engineering Building and their absence on Olds Hall. Today, Olds Hall houses primarily University Relations offices including the Vice President for University Relations, Marketing and Creative Services, and Media Communications; Campus Park and Planning offices are also located there.

Do you have memories about your experiences as an engineering student in Olds Hall that you would like to share? Contact us at editor@egr.msu.edu.

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Door prizes will be given!

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