MICHIGAN STATE UNIVERSITY COLLEGE OF ENGINEERING • FALL 2007

THE BOND

DEPARTMENT OF CHEMICAL ENGINEERING & MATERIALS SCIENCE

Department Takes Lead in Bioenergy Research

Bioeconomy, bioenergy, biofuels… these are all buzz words of a nation eager to find alternative sources of energy. Researchers in the Department of Chemical Engineering and Materials Science (ChEMS) are at the forefront of this new era in energy, but they are not newcomers. "The department has been working in these areas for more than 30 years," says Martin Hawley, professor and ChEMS department chairperson. "Long ago we knew alternative fuels would be of importance. We have depth of experience. There is a whole team involved."

In other words, according to Hawley, the department has a lot of "horsepower." That puts the department and MSU on the cutting edge of alternative energy research, and they plan to stay there.

ChEMS researchers are working in several areas, including:

- Conversion technologies – This involves breaking down the sugars from various plant sources and focusing on their biochemical and catalytic transformation to useful fuels and chemicals.
- Sustainability – Because the department has strong ties to researchers in plant sciences, researchers can help with life cycle assessments (LCA) to determine whether a particular plant is a sustainable source for bioenergy projects.
- Fuels/engine designs – Ethanol has received most of the attention as a biofuel, but researchers in the department are working to tailor the next generation of biofuels to engine requirements.

The department's depth of expertise has led to substantial grants to further the research and showcase the department and MSU as a leader in biobased technologies.

This summer the U.S. Department of Energy (DOE) announced new funding for three bioenergy research centers. MSU will partner with the University of Wisconsin-Madison to establish one of the centers, called the Great Lakes Bioenergy Research Center. Based in Madison, this center will be funded with $125 million over the next five years. MSU will use approximately $50 million of that funding for basic research aimed at solving the most complex problems in converting natural materials to energy. The ChEMS department will be a major player in that effort. Bruce Dale, ChEMS professor and associate director of the MSU Office of Biobased Technologies, is heading up the area known as Improved Biomass Processing for the new research center. Dale is a nationally known leader in studying alternatives to fossil fuels. For more than 30 years, he has been actively involved in biomass technology.

In August, the DOE awarded funding for another project. A team of researchers from the ChEMS department and the mechanical engineering department will have $2.4 million for a project to develop advanced, low-temperature combustion designs for diesel engines using biofuel blends optimized for engine performance.

As the chemical engineering team, led by Professor Dennis Miller, designs these new fuels, the mechanical engineering department will test the fuels and work to create engines that can maximize the fuel performance.

A significant part of the biofuel work builds on earlier biofuel and fermentation work done by ChEMS researchers including Miller, Carl Lira, associate professor; Kris Berglund, University Distinguished Professor of chemical engineering and forestry; and Ramani Narayan, University Distinguished Professor in chemical engineering. "We are getting a smarter understanding of biofuels and their molecular characteristics," says Miller. "This is the next generation of biofuels."

continued on page 2

Bruce Dale, right, shows members of the MSU Board of Trustees some of the latest bioenergy research. Dale is professor of chemical engineering and materials science and associate director of the MSU Office of Biobased Technologies.

For more information on bioeconomy activities at MSU, visit. www.bioeconomy.msu.edu.

from the Chair

MARTIN HAWLEY

This is an exciting time in the Department of Chemical Engineering and Materials Science. More than 30 years ago, researchers in the department realized that America would need alternative fuels. This fall when crude oil prices rose above $90 per barrel, our department took satisfaction in the knowledge that we saw this trend and had taken action many years ago by stepping into the research gap to produce results with bioenergy research.

The faculty in our department is on the cutting edge of bioenergy research. The research is producing useable results, which, in turn, is allowing the department to obtain significant grants. These help the department not only in research, but grants and other funding sources also support PhD programs and graduate education. In addition, many of the department's researchers are taking their innovations and inventions to the marketplace, and other companies are looking at the research and getting ideas for new products and new applications.

The ChEMS department is a diversified department pursuing research not only in bioenergy, but other significant areas. Our department research themes are: energy and sustainability, nanotechnology and materials, and biotechnology and medicine. These areas of emphasis are drawing new faculty. We recently welcomed three new faculty members. Their distinguished backgrounds are adding to the strengths of the department. Meanwhile, our faculty continue to win prestigious awards and show leadership in critical areas.

All of this leads to an exciting environment for students to study and learn. Our undergraduates are exposed to a wide range of studies and activities to prepare them to make valuable contributions during their careers. Our graduate students and post-doctoral assistants are an integral part of research teams. In addition, over the years, the ChEMS department has encouraged collaborations, not only within the department, but with other engineering departments and within the MSU community, as well as with other researchers around the world. Industry partners are also important to provide practical input and test applications in real-life situations. This exciting environment creates results.

Our alumni are also vital to the department. Their efforts in a variety of fields continue to bolster the department's and MSU's reputation as a leader in chemical engineering and materials sciences. I want to take this opportunity to thank students, faculty, alumni, and friends for their dedication and support. I hope you enjoy this issue of *The Bond*.

Department Takes Lead in Bioenergy Research (continued from page 1)

The ChEMS department has also received substantial grants from the Michigan Economic Development Corporation 21st Century Jobs Fund as well as ongoing grants from the U.S. Department of Agriculture and the state of Michigan.

The key to success in getting these grants and in showing results is teamwork. "Researchers have been encouraged to have synergistic collaborations, which gives better capabilities," says Miller. "We can make fuels and answer the questions about how they will perform." Researchers in the ChEMS department work with agricultural economists, plant scientists, forestry experts, and other engineers and researchers in the College of Engineering to develop innovative solutions.

While research on biofuels is at the forefront, the ongoing research on biobased products is spurring basic research on how to produce chemicals from renewables (such as grass, wood, and agricultural crops) that can be used in place of petroleum-based products. "We are trying to find alternative sources for chemicals that are presently produced from petroleum. It is not about fuel. This is the other side of bioenergy research," says Robert Y. Ofoli, associate professor. "In general, the processes currently used to convert petroleum to chemicals don't work for renewables, because of differences in functionality. We have to develop a different set of processes and protocols. We are looking for alternative pathways." The research at this point is very basic, but eventually Ofoli and other researchers hope to develop protocols to efficiently produce chemicals from sources other than petroleum.

The bioenergy push took on an international perspective this summer when Kris Berglund went to Sweden with a delegation of bioeconomy researchers, state government officials, and business executives. The goal was to facilitate a transition to a bioeconomy in ways that benefit both Michigan's and Sweden's economies.

Hawley sums up the current atmosphere in the department. "It's an energized environment and a very exciting time for the department as well as the College of Engineering and MSU."

– Jane L. DePriest

Bioenergy Research Team Effort

Bioenergy research in the Department of Chemical Engineering and Materials Science is a team effort that involves numerous researchers. The core group includes:

Kris Berglund,
University Distinguished Professor
Bruce Dale, professor
Lawrence T. Drzal,
University Distinguished Professor
Carl Lira, associate professor
Dennis Miller, professor
Ramani Narayan,
University Distinguished Professor
Robert Y. Ofoli, associate professor
Robert Mark Worden, professor

New Faculty — Diverse Backgrounds Add to Strength of Department

Three new faculty members — Scott Calabrese Barton, Donald Morelli, and Jeffrey Sakamoto — are adding their expertise to the ChEMS department, and giving it new strengths.

Scott Calabrese Barton, assistant professor, joined the faculty in June 2006. He comes from Columbia University in New York City where he had been an assistant professor since 2001. Calabrese Barton received his PhD in chemical engineering from Columbia. His BS in aerospace engineering is from Notre Dame, and his MS in aerospace engineering is from the Massachusetts Institute of Technology.

Calabrese Barton was drawn to the ChEMS department because of its emerging strength in renewable energy technology. His research focuses on the development and characterization of materials for fuel cells, particularly direct methanol fuel cells and biofuel cells. These areas connect well with the bioenergy, biosensor, and alternative energy efforts going on in the department. He is also impressed with the amount of collaboration in the department. "From the very beginning there was a strong message that collaboration is encouraged in the department. These days collaboration is essential to successful research," says Calabrese Barton.

Another factor in making the move to the Midwest was the quality of life. "It is too expensive for a family in New York City. Affordable housing is difficult to find in the city, and we wanted a good education for our daughters." The family bought a home only one-half mile from campus and they are pleased with the quality of education that East Lansing Public Schools can offer. Calabrese Barton is originally from Michigan and has family in the Jackson area. His wife, Angela, is an associate professor in the College of Education, specializing in science education. They have two young daughters.

While East Lansing isn't downtown Manhattan, Calabrese Barton likes the fact that he and his family can walk to stores, restaurants, and local events. "One of our favorite family activities is to walk to campus on football Saturdays and watch the band warm up and march into the stadium. The MSU band is great."

Donald Morelli, professor, arrived on campus in January 2007. He is a solid-state physicist with more than 20 years experience in the automobile industry. He originally worked in the research labs at General Motors, then later with Delphi Corporation, developing electronic materials for auto applications. Morelli's PhD and BS are both in physics from the University of Michigan.

Why leave the business world for a university setting? "The auto industry is changing. It no longer has the luxury of doing the fundamental research needed to develop new technology," says Morelli, who has applied his expertise to ongoing thermoelectric projects in the department and college. "GM was one of the first research groups to get involved in the rebirth of thermoelectrics in the 1990s."

However, his current research is broader than thermoelectrics and involves getting a deeper understanding of the electronic, thermal, and magnetic properties of materials, and how to control them for practical applications.

Those practical applications are an important part of the research. "Academia generates a lot of knowledge, but sometimes that knowledge has no practical application. There is pressure now for more practical applications," says Morelli.

In addition to his research, he is teaching MSE 310 (a required course for materials science majors) and has found teaching to be a positive experience. "I am impressed with the quality of students and their eagerness to learn," says Morelli.

He and his wife, Connie, have three children. They continue to live in their Milford home, and Morelli makes the 50-mile trip to campus each day, so the kids can stay in the same school system. When he is away from campus, you may find Morelli playing basketball with a city recreation league. Chess and playing the piano are other pursuits for his spare time, but he admits, "I really enjoy spending time with my family."

Jeffrey Sakamoto, assistant professor, is the newest faculty member in the ChEMS department, arriving on campus in July. He comes from NASA's Jet Propulsion Lab (JPL) in California. Sakamoto has a PhD in materials science from the University of California at Los Angeles. His BS in materials science and engineering is from California Polytechnic State University, San Luis Obispo, Calif. As the senior staff scientist with the thermoelectric group at JPL, Sakamoto already had experience working with MSU's thermoelectric research team. "The support I have received from my colleagues both in and outside of the department has been tremendous," says Sakamoto. "Working with the thermoelectric research group here has made my transition from JPL practically seamless."

He is excited about what can be accomplished in thermoelectrics and says the team hopes to have results by the end of the academic year. Like others in the department and college, Sakamoto is impressed with the degree of collaboration. "I have enjoyed working with Professors Schock, Case, Hogan, and Morelli. We have worked together planning activities and writing proposals." In doing so Sakamoto has been introduced to several other thermoelectric experts in the Midwest.

Sakamoto is enthused about the research possibilities at MSU, but his new position will also give him an opportunity to teach. "I am excited about teaching a class this next semester that is highly relevant to my research," says Sakamoto. "I hope to incorporate my past NASA-related thermoelectric research into the MSE Ceramic Processing class."

Sakamoto and his wife, Deanna, have three young children, and the transition from sunny California to the Midwest so far has been a good one. "The family-oriented environment here is wonderful. All the elements for raising well-rounded, healthy kids are in place."

– Jane L. DePriest

Student Bond

Materials Science Student Wins Prestigious Goldwater Scholarship

Robert J. Friederichs, a materials science and engineering junior and Honors College student from West Branch, Michigan, is one of three MSU students named as Goldwater Scholars for 2007.

Friederichs believes baby boomers and others who are living longer lives will need joint replacement implants to be more wear-resistant, so his career goal is to earn an MD/PhD in biomaterials/biomedical engineering. He plans to conduct biomaterials research, practicing translational medicine at the interface between biomaterials development and clinical trials by researching orthopedic implants. His research mentor is Melissa Baumann, associate professor of chemical engineering and materials science.

Goldwater Scholarships go to sophomores and juniors who are planning graduate study and research careers in science, engineering, or mathematics. This is the second year in a row that three MSU students have been selected as Goldwater Scholars. The College of Engineering has produced eight of MSU's Goldwater Scholars since 1999; of those, six have been chemical engineering and materials science majors.

Gredell's Work Honored in Poster Competition

Joe Gredell, PhD student, won third place in the Genentech Biopharmaceutical Poster Award Competition at the Society of Biological Engineering's First International Conference on Biomolecular Engineering in Coronado, Calif. The poster, "Impact of Target mRNA Structure on Silencing Efficiency and Immune Stimulation in RNA Interference," describes his work investigating the biophysical and biochemical interactions that impact the successful application of the gene silencing technology, RNA interference. His work has implications in experimental therapeutics, functional genomics, and systems biology. S. Patrick Walton, assistant professor, is Gredell's faculty adviser.

ChEMS Seniors Honored in AICHE Competition

Seniors **Kate Greer** and **Joe Skuza** were awarded honorable mention in the 2007 American Institute of Chemical Engineers (AICHE) National Student Design Competition, as well as the Safety and Health Division Design Award for best team utilization of the principles of inherent safety. For more than 35 years, the ChEMS department has held the nation's best record for winning and placing in this AICHE competition.

Hendricks Wins Entrepreneurial Faculty Fellowship

Troy Hendricks, a PhD student, is one of five fellows selected to be the first class of "Entrepreneurial Faculty for the 21st Century University." This new program is sponsored by the MSU Graduate School and the Michigan Center for Innovation & Economic Prosperity (MCIEP) at James Madison College. Each fellow receives a $5,000 stipend to support professional development in entrepreneurship and innovation.

The primary goal of the fellowship program is to provide opportunities for a diverse group of MSU graduate students to: a) consider what entrepreneurship and innovation mean in the context of an academic career; b) examine the variety of institutional arrangements used by universities to carry out their entrepreneurial and innovation missions in order to help the students evaluate the academic settings in which they may wish to work; and c) connect graduate students to private entrepreneurs and venture capitalists who may be interested in their future work.

Hendricks's research focuses on the structure and patterning of thin polymer films. He has submitted three patents and has written six papers that have been published or accepted for publication. His faculty adviser is Assistant Professor Ilsoon Lee.

Miloaga Takes First Place in Poster Competition

Dana G. Miloaga, a PhD student, received first place in the Graduate Student Poster Competition at the Materials Science & Technology 2007 Conference and Exhibit, held in September in Detroit. (MS&T 2007 was a global forum for the materials community to explore structure, processing, and applications across multiple materials systems.) Miloaga's poster was entitled "Conductive Green Nanocomposites from Polylactic Acid." She received a $250 cash prize as the first place winner.

Miloaga is working under the guidance of Professor Lawrence T. Drzal. Her research is in nanocomposites based on polymers obtained from natural resources (polyhydroxybutyrate and polylactic acid) and a novel nano-sized carbon-based material.

ChEMS Graduating Senior Honored by Trustees

At its spring 2007 meeting MSU's Board of Trustees recognized graduating senior **Adam R. Southworth**. The ChEMS major was also a member of the Honors College. He was among 23 seniors to receive this honor, all of whom had achieved a perfect 4.0 grade point average. Board of Trustees Awards are granted at each commencement to students having the highest GPA at the close of their last semester in attendance. Southworth of Novi, Mich., graduated in May 2007. He is the son of Robert Talbot and Michelle Hages. He is a 2003 graduate of Grosse Pointe South High School. Southworth is now a graduate student at the Massachusetts Institute of Technology (MIT).

2007 Academic and Service Awards

The following ChEMS students received College of Engineering Academic Achievement Awards for their outstanding academic performance at MSU. In addition, students were honored for their exemplary service to the MSU community.

Outstanding Graduate Student Awards: Daniel Bernard Drazkowski and Sachin Pandurang Patil.

Service Award Recipients: Anthony Edward Golumbeck, Traci Marie-Sun Taylor, and Steven Thomas Wensing.

Undergraduate Academic Awards: Greeshma Enukonda, Jennifer Nicole Hall, Michael Charles Nelson, Traci Mari-Sun Taylor, and Matthew George Witter.

2007 Junior Competitive Exam

Three students have been honored with scholarships as winners of the 2007 Junior Competitive Exam. They are:

John Michael Pawlik,
first prize ($1,000 scholarship)

Rebecca VanHouwelingen,
second prize ($500 scholarship)

Justin Franks,
third prize ($250 scholarship)

Omega Chi Epsilon, the Chemical Engineering Honorary Society, organizes the Junior Competitive Exam during the spring semester. The group has done this for almost 15 years. The exam is taken on a volunteer basis by chemical engineering juniors, and the turnout has traditionally been good because of the substantial awards that have been given. The four exam problems, which cover the general areas of reaction engineering and control, mass transfer, fluid flow and heat transfer, and thermodynamics, are written and graded by program faculty. The Junior Competitive Exam was originally sponsored by Eli Lilly, next by Dow Chemical, and then by Eli Lilly again.

Etiquette Luncheon

Students Introduced to New Twist on Job Hunt

Last year the Department of Chemical Engineering and Materials Science began what it hopes will become a long-standing tradition. On December 7, 2006, with coordination by Professor Daina Briedis and Jen Somerville, ChEMS secretary, the department sponsored a unique learning opportunity for its junior and senior students by offering experiential learning on proper professional etiquette for social interactions and business meals.

Maria Aulisio of MSU's School of Hospitality Business gave a presentation on the basics of business and dining etiquette. She also addressed differences in international etiquette standards. The event was formally hosted by Chef Allan Sherwin (Dr. L.J. and Mrs. R.E. Minor Endowed Chef de Cuisine), who had made special arrangements for a meal following the presentation. Somerville observed that (almost) all students were able to immediately put into practice the manners they had learned for fine dining.

Employers and career advisers indicate that the business meal is becoming an important venue for evaluating a job applicant. Therefore, students should have the knowledge that allows them to enter these situations with confidence. Originally intended to be the culminating lecture of the junior-level ChE 301 course, "Chemical Engineering as a Profession," an invitation to this event was also extended to other juniors and seniors in the department. Last year 57 well-dressed students attended the presentation and luncheon. A similar event was held December 6, 2007.

Maria Aulisio of MSU's School of Hospitality Business gives students examples of some of the basics of business and dining etiquette.

"Meet the Dean" Alumni Receptions

College of Engineering Alumni Receptions were held throughout 2007 in Chicago, San Francisco, Dallas, Minneapolis, and Grand Rapids to welcome Satish Udpa as the dean of the College of Engineering. Martin Hawley, chair of the ChEMS department, participated in some of these events to get to know alumni. These receptions are held on an ongoing basis. Keep an eye on your mailbox and the Events section of the College of Engineering Web site (http://www.egr.msu.edu/) to see if an alumni reception will be held near you.

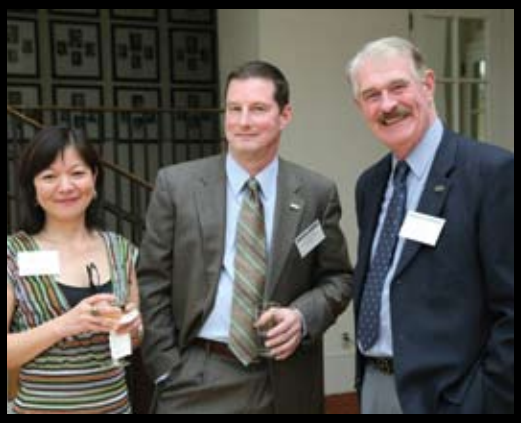

Photo by Michael Mustacchi

Martin Hawley (far right), chair of ChEMS, meets with Dave Mysona (Elec. Egr. '88) and his wife, Janie, during a Dean's Reception in San Francisco.

Faculty and Staff Bond

2007 Withrow Teaching Excellence Award

Carl J. Boehlert, assistant professor, received a Withrow Teaching Excellence Award at the 17th annual Engineering Awards Luncheon in March. This award recognizes faculty and staff who have demonstrated excellence in instructional and scholarly activities and rendered distinguished service to the university and the student body. Selection is based primarily on nominations from students.

Boehlert is an enthusiastic, approachable, and dedicated teacher who creates a comfortable and positive learning environment. Students appreciate his friendly attitude, sense of humor, and willingness to provide extra help and guidance beyond office hours. Boehlert is also active in promoting materials science to local high school students, and in supporting the Materials Science and Engineering (MSE) Society by helping to plan programs and field trips.

Briedis Named ABET Fellow

Daina Briedis, associate professor, has been elected a fellow of ABET, Inc., the organization responsible for the specialized accreditation of educational programs in applied science, computing, engineering, and technology. Briedis was honored at the ABET Awards Banquet in Lake Tahoe, Nev., in November. She was recognized for dedication, exemplary service, and commitment to ABET resulting in improved training considered key to the proper implementation of evolving accreditation process. She was one of five to receive the designation this year.

The ABET Fellow Award is presented annually to recognize individuals who have given sustained quality service to the ABET-related professions, in general, and to education within the ABET disciplines, in particular, through the activities of ABET.

Briedis has served as a ChEMS faculty member since 1982. She received the 1985 MSU Teacher-Scholar Award and the 1990 State of Michigan Teaching Excellence Award as well as being elected Outstanding Teacher four times by her students. Briedis has published or presented a number of articles on accreditation, curriculum redesign, assessment, and quality improvement in various journals, including *Chemical Engineering Education*, *Proceedings of ASEE Conferences and Expositions*, *Assessment in the Disciplines: Engineering (AIR)*, and the I*nternational Journal of Engineering Education*.

Case Named an ASM Fellow

Eldon Case, right, receives award citation from Dr. Lawrence Wagner, president and trustee of ASM International.

Eldon Case, professor, has been named a fellow of the American Society for Metals (ASM) International, a professional materials society with more than 37,000 members, in recognition of his contributions to microcracking and fatigue behavior of structural ceramics and bioceramics.

Case, who has received many honors and awards at MSU, is also a fellow of the American Ceramic Society, associate editor of the *International Journal of Applied Ceramic Technology*, and serves on the editorial boards of the *Journal of Materials Engineering and Performance* and the new journal, *Research Letters in Materials Science*.

Within the past five years, he and his colleagues have received research funding from the Air Force Office of Scientific Research, the Office of Naval Research, the Department of Energy, and the National Science Foundation.

Dale Selected for Top USDA Honor

Bruce Dale, professor and associate director of the MSU Office of Biobased Technologies, has been selected as the 2007 Sterling B. Hendricks Memorial Lecturer. This lectureship was established in 1981 by the Agricultural Research Service (ARS), USDA's primary research agency, to honor Hendricks and to recognize scientists who have made outstanding contributions to the chemical science of agriculture. Hendricks is most frequently remembered for discovering phytochrome, the light-activated molecule that regulates many plant processes.

Dale is an international expert in biofuels, having worked in cellulosic ethanol technology for more than 30 years and invented a breakthrough pretreatment for expansion (AFEX). Dale presented his lecture, "Why Cellulosic Ethanol Is Nearer Than You Think: Creating the Biofuels Future," in August 2007, during the American Chemical Society's meeting in Boston. Dale was also recently named editor-in-chief of *BioFPR*, a journal on sustainable products, fuels, and energy. Each issue presents a mix of news, patent intelligence, and feature articles as well as peer-reviewed articles.

Narayan Named University Distinguished Professor

Ramani Narayan was named University Distinguished Professor in June in recognition of his achievements. Narayan was one of 10 MSU faculty selected for the honor in 2007. This title is one of the highest honors that can be bestowed on a faculty member by the university. Those selected have been recognized nationally and internationally for the importance of their teaching, research, and public service. Narayan, who holds 14 patents, is researching sustainable biobased products, biodegradable plastics and polymers, and reactive extrusion polymerization. Developing LCA (Life Cycle Assessment) protocols for meeting a product's environmental stewardship is a particular focus area of his work. He is also an entrepreneur who has started several companies. One successful product is multi-colored foam building blocks marketed under the brand name "Magic Nuudles."

Alumni Bond

Erickson Distinguished Alumnus Award

Joon S. Moon (BS '60, Chemical Engineering) was honored with the Claud R. Erickson Distinguished Alumnus Award at the annual College of Engineering Alumni Awards Banquet in May. The award was established in 1982. Claud Erickson, for whom the award was named, was the first recipient. Since then, it has been given annually to a College of Engineering graduate with a minimum of 15 year's professional experience who has attained the highest level of professional accomplishment and has provided distinguished and meritorious service to the College of Engineering and the engineering profession.

Moon is an inventor, entrepreneur, visionary, and philanthropist who has made his dreams come true. He came to MSU from his native South Korea on the recommendation of an American GI. After MSU, Moon earned a PhD ('63) in chemical engineering from the University of California-Berkeley. He became a U.S. citizen in 1967. In 1969, he bought a manufacturing company in Howell, Michigan, thus founding Moon Chemical. He went on to form a number of successful companies, primarily in consumer products, plastics, and the swimming pool industries. Today, Moon owns two manufacturing companies that produce household and industrial cleaning products. He now spends most of his time in start-up capital ventures and investment management.

Moon met his wife, Zaiga, at MSU; she received her BA ('62) in Communication Arts and Sciences and later an MA from Stanford University. Moon and Zaiga raised four talented children. Their primary home is in Vancouver, but they spend several months a year in Sonoma Valley, Calif., where their two-acre vineyard produces 2,000 bottles a year of a blended Cabernet and Merlot wine, appropriately named Moonstar.

Moon provided significant leadership to the MSU Foundation during the 1990s. University Development Vice President Chuck Webb says, "Joon shaped MSU's future as chairman of both the board and its Technology Committee." Moon has also served as a member of the College of Engineering Alumni Board. As recognized by their membership in the John Hannah Society, Joon and Zaiga Moon have provided generous financial support to MSU. One of their prominent gifts was the Mirdza Kuze Library Endowment Fund, named for Zaiga's mother, which enabled MSU Libraries to begin a Baltic collection for Latvian, Lithuanian, and Estonian materials.

Red Cedar Circle Award

The Department of Chemical Engineering and Materials Science recognized two recipients of the Red Cedar Circle Award — William B. Larson and Richard V. Pisarczyk — at the annual College of Engineering Alumni Awards Banquet in May.

William B. Larson (BB '53, Metallurgical Engineering) began his career at the General Motors Research Laboratories, then moved to the GM Central Foundry Division in Saginaw where he became chief engineer. He directed the development of several innovations that led to significant cost savings and are in common automotive use today. From 1969–71 Larson managed GM's participation in the National Highway and Traffic Safety Administration's first safety vehicle program. Under his leadership, GM designed 22 vehicles for evaluation by NHTSA that incorporated the first application of many safety features in use today.

As director of GM's worldwide product planning group, Larson oversaw plans for downsizing GM vehicles in response to fuel economy legislation. While he was director of engineering for GM's Truck Group (1984 until his retirement in 1995), the entire product line was revised and won three "Truck of the Year" awards.

Larson served eight years on the MSU Development Fund Board. He was a member of the materials science and metallurgy visiting board and also served on the College of Engineering alumni board. He and his wife, Barbara, established an endowment fund for the college in 1990. In 1991, the College of Engineering bestowed on him its highest honor — the Claud R. Erickson Distinguished Alumnus Award.

He and Barbara live in Birmingham, Mich., and spend summers at their home on Torch Lake. They enjoy traveling and spending time with the families of their two children and six grandchildren.

Richard V. Pisarczyk (BS '68, Chemical Engineering) has been president of ExxonMobil Research and Engineering Company since 2005. He first joined Mobil Oil Corporation, Downstream in 1968, advancing through positions in manufacturing, planning, and supply, and in 1984 became manager of Mobil's Ferndale Refinery in Washington State. In 1994, Pisarczyk was appointed chairman and managing director of Mobil Oil Australia and relocated to Melbourne, Australia, for several years.

In 1997, Rich was named vice president, East/Gulf Coast Business, North America Marketing & Refining. Through the merger between Exxon and Mobil in 1999, he became Regional Director, Americas of ExxonMobil Chemical. In 2001 he was named Senior Vice President Basic Chemicals and two years later became Senior Vice President, Basic Chemicals and Intermediates.

ExxonMobil has been an MSU donor for 25 years, providing matching gifts at a ratio of 3:1. Pisarczyk visits MSU each year to deliver ExxonMobil's matching gift check.

Pisarczyk and his wife, Mary, established an endowed discretionary fund in 2002 to encourage progress and excellence within the department. They live in McLean, Virginia, where he has been a sponsor of programs that encourage middle school students to explore careers in science and mathematics. Their son, Michael, lives in Midland, Mich., with his wife, Jennifer, and their three children. Rich enjoys golf and woodworking and loves to vacation in Traverse City, Mich., and the Great Barrier Reef in Australia.

Please fill out both sections when making a gift or pledge.

KEEPING IN TOUCH

NAME

STREET ADDRESS

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

OFFICE TELEPHONE HOME TELEPHONE

E-MAIL

GRADUATION YEAR DEGREE

CURRENT OCCUPATION

EMPLOYER LOCATION

News of recent accomplishments, awards, or promotions (Use separate sheet if needed):

We want to know what's happening with you! Update us by mail at Attn: Publications, MSU, 3412 Engineering Bldg., East Lansing, MI 48824-1226; by e-mail at editor@*egr.msu.edu*; or by fax at 517.355.2288.

GIFT INFORMATION

☐ I/we wish to make a gift/pledge in the amount of $ _____
designated for: _____

My/our total gift will be paid as indicated:

☐ Check payable to "Michigan State University"

☐ Credit card charge to: ☐ MasterCard ☐ Visa ☐ Discover ☐ AmEx

CARD NUMBER EXP. DATE

NAME AS IT APPEARS ON CARD

SIGNATURE

☐ A pledge of the following duration (maximum 5 years): _____
Enclosed is my first payment of $ _____
Please send pledge reminders: ☐ Annually ☐ Quarterly ☐ Semiannually
beginning: _____ (MONTH) _____ (YEAR)

☐ This pledge replaces all other outstanding pledges.

☐ This is a joint gift with my spouse: _____ (SPOUSE'S NAME)

☐ I or ☐ my spouse (*check one*) works for a matching gift company:

EMPLOYER(S)

Please return to: Engineering Development, MSU, 3536 Engineering Building, East Lansing, MI 48824-1226, or make your gift online at *www.givingtomsu.edu*

FOR OFFICE USE ONLY

APPEAL CODE: 00972 STAFF RESP: ALLOCATION:

Department of Chemical Engineering & Materials Science
Michigan State University
2527 Engineering Building
East Lansing, MI 48824

CHAIRPERSON Martin Hawley

TEL (517) 355-5135
E-MAIL chems@egr.msu.edu
WEB www.chems.msu.edu

EDITOR Jane L. DePriest

Nonprofit Org.
U.S. Postage
PAID
East Lansing, MI
Permit #21

Juniors and seniors from the Department of Chemical Engineering and Materials Science participated in a unique learning experience designed to help them with proper professional etiquette for social interactions and business meals. See story on page 5.

Alumni Enjoy Golf Outing

Golf was on the agenda in August when the department held a golf outing for alumni at Shanty Creek Resort in Michigan. Martin Hawley, chairperson of the department, joined Stephen Bates, senior director of development for the College of Engineering, and several alumni for a game of golf. Later the group that included Mike Dennos, Russel Foy, Steve and Walter Ludka, Ron and Ruth Nugent, Duane and Irene Nugent, and Michael and Susan Maasberg had dinner at the resort, and Hawley gave them an update on happenings in the department as well as information about current events at the college and the university.