MatSE Illinois

DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING

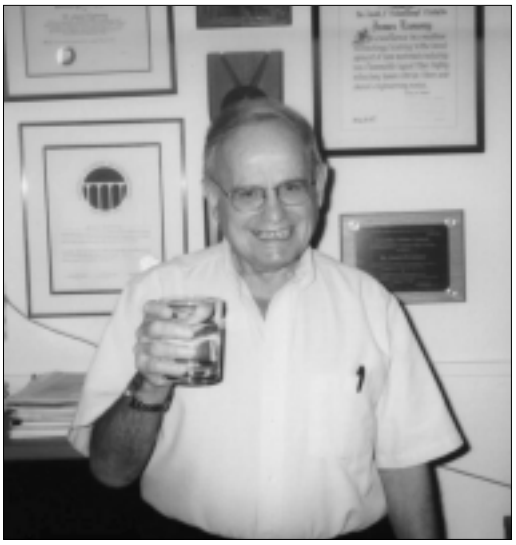
Alumni News

Fall 2002, Vol. 3, No. 7

University of Illinois at Urbana-Champaign

Economy to head new Science and Technology Center

The University of Illinois at Urbana-Champaign has received a grant from the National Science Foundation to create a science and technology center to develop advanced materials and technologies for water purification. The grant will provide $4 million in funding for each of five years, with the possibility of a five-year renewal.



Jim Economy toasts the new Science and Technology Center for advanced materials and technologies for water purification.

"The world is heading toward a severe water crisis," said Jim Economy, the director of the new center. "There are intelligence reports saying that within a decade or two, water – not food or fuel – will be the most serious shortage the world faces."

According to the United Nations, an estimated 1 billion people do not have access to clean, fresh water. Each year, 5 million people die of waterborne illnesses. The world's growing population will exacerbate the problem.

"The goal of the center is to develop revolutionary materials and systems for safely and economically purifying water to counter the impending crisis," Economy said. "Research will focus on improving disinfection and desalination processes, removing trace contaminants, and eliminating foulants that clog filters and reduce their effectiveness."

Illinois is the lead university for the center. Partner institutions are Clark Atlanta University and Stanford University; affiliated institutions are Ohio State University and the University of California at Berkeley.

At Illinois, the departments of MatSE, Chemical and Biomolecular Engineering, Chemistry, Civil and Environmental Engineering, Mechanical and Industrial Engineering, and Geology will be involved with the center. Also involved is the Waste Management and Research Center on campus.

David Cahill, Gerard Wong, Les Allen, Jian-Ku Shang, Erik Luijten, Jim Economy, Paul Braun, Yong-Qian Sun, and Jennifer Lewis (not pictured) are MatSE faculty members involved in the new center.

Some of the center's work will build upon carbon-fiber technology developed at Illinois. This improved adsorption process begins with inexpensive glass fibers, which can be woven into wear-resistant fabrics. The glass fabrics are dipped in a phenolic resin and then "activated" through a chemical reaction that etches small pores into the carbon. The nature of the reaction determines both the pore structure and pore-surface chemistry, which control the adsorption properties of the coated assemblies.

"Our ability to tailor the pore size and surface chemistry of the fibers provides us with a unique capability to design highly selective systems for enhanced adsorption of specific contaminants, such as pesticides and chlorinated hydrocarbons," Economy said. "Another family of ion exchange fibers has been developed that is extremely effective at removing trace metallic contaminants, such as lead, arsenic and mercury."

New membranes developed at the center will have micropores resembling those in the carbon fibers, Economy said. Extending through the membranes, these microchannels could offer a low-cost alternative to the reverse osmosis process currently used for de-

continued on next page

Science and Technology Center continued...

salination. Researchers will examine ways to tailor the surface chemistry of the membranes for specific adsorption properties and to enhance the hydrophilic character of the micropores.

Scientists at the center also will explore a new concept based upon phase-change materials. In one variation, researchers will examine the rapid crystallization and dissolution of water as a means of desalination, while in another they will look at the use of gas hydrates as a source of potable water.

Found on the ocean floor, these crystalline materials – called clathrates – form when water molecules create a cage-like structure around "guest molecules" such as methane, propane or isobutane. As clathrates form, the ocean's salt separates out, offering a potential supply of fresh water. Scientists will investigate techniques to efficiently split these materials into clean drinking water and fuel.

Construction will begin at the end of this year to turn the old machine shop at the back of the Materials Science and Engineering Building into the new Science and Technology Center. The renovation for the center will be complete by June 2003.

-University of Illinois News Bureau

MatSE undergraduate program ranked #1

The U.S. News and World Report's 2003 report on America's Best Colleges ranks the undergraduate materials engineering program at the University of Illinois the top in the nation. With 191 students, MatSE is much larger and offers a greater range of opportunities than the other schools. Our students can work as undergraduate research assistants, participate in the study abroad program (popular destinations include Australia and Germany), work as a co-op or intern for a company, and join socities such as the undergraduate materials organization. Students and faculty get to know each other at the fall picnic, student-faculty auction, intramural basketball, and other events throughout the year. Twenty undergraduates volunteered to assist the department at our Visit Day in October, talking to high school students and parents about their experiences in MatSE.

Hamer Fellows

The 2002 Donald W. Hamer Fellows began their graduate studies in August. The MatSE Department looks forward to the investiture of the first Donald W. Hamer Professor in the spring.

Pictured left to right:
James Rinne (Illinois Wesleyan), Geoff Brennecka (Univ. of MO-Rolla), Summer Rhodes (New Mexico Tech), Matthew Meitl (UIUC), Wendy Chan (Northwestern), Matthew Gordon (Virginia Tech, Univ. of WA-Seattle), Robert Shepherd (UIUC), Damon Hebert (Macalester College), and Jacob Palmer (Colorado School of Mines).

MatSE Illinois

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All ideas expressed in *Materials Science & Engineering Alumni News* are those of the authors or editor and do not necessarily reflect the official position of either the alumni or the Department of Materials Science and Engineering.

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Students and alumni recognized at spring banquet

The MatSE Department celebrated student and alumni achievement at the 2002 awards banquet on April 19 at the Urbana Country Club. Scholarships and cash awards were presented to over 30 students. Ken Kuna, president of the MatSE Alumni Board, presented awards to three alumni for their contributions to materials science and engineering and for service to the department.

Department head John Weaver, center, surrounded by undergraduate award winners.

2002-03 Student Awards

Alfred W. Allen Awards: Brian J. Becker, Laura L. Copp, Peter G. Hawkins, Philip S. Waggoner
A. I. Andrews Scholars: Laura L. Copp, Patrick J. Mahoney
Paul A. Beck Scholar: Brian M. Heidel
Harry J. Beckemeyer Jr. Scholar: Peter G. Hawkins
Louis R. Berner Scholar: Matthew A. Coughlin
Bob Bohl Scholars: Charles W. Holzwart, Karen M. Turek
Otto Sr. and Mildred Capek Scholar: Rachel A. Williams
Caterpillar Scholars: Jessica L. Bump, Matthew C. Read
Earl J. Eckel Scholar: Todd E. Martin
Arthur L. Friedberg Award: Matthew C. Read
M. Laird & Charisann Froberg Scholar: Yau-Ru Chen
Henry E. Grein Jr. Scholar: Kathryn L. Petersen
Kimberly Clark Scholar: Nicholas D. Orf
Kevin Moore Memorial Scholar: Rynae E. Boler
James A. Nelson Scholar: Brian J. Becker
Cullen W. Parmelee Scholars: Jonathan L. Hollander, Nicole M. Kwasigroch, Shawn C. Mack, Michael D. Mulholland, Timothy P. Tyler, Philip S. Waggoner
Norman L. Peterson Scholar, Daniel P. Markowski
Lucille and Charles Wert Scholars: Charles M. Enloe, Amanda M. Habas, Eric D. Pressly
3M Polymer Materials Scholars: Nathaniel D. Catron, Dana K. Levene, Nicholas D. Orf, Timothy E. Pachla, Katherine E. Pripusich-Sienkiewicz, Anthony J. Reische, Atif A. Shaikh

MatSE Alumni Board presents first award to undergraduate

The MatSE Alumni Board presented its first student award at the 2002 banquet. Board members Sheryl Tipton and Ken Kuna spearheaded the drive for an undergraduate award. The fund is being endowed through the gifts of current and ex-officio board members and corporate matching funds. Dana Levene, a senior in the polymers concentration, received $500. She is from Mount Prospect, Illinois, and has a grade point average of 3.7/4.0. Dana has interned with Kimberly Clark Corporation and is currently teaching a freshman orientation class. She is vice president of Keramos and belongs to the Undergraduate Materials Organization and Sigma Kappa Sorority. We extend our thanks to the members of the Board who are investing in future alumni through this new MatSE Alumni Board Award Fund!

Dana Levene

2002 Alumni Awards

Loyalty Award: Clifton Bergeron (BS Cer '50, PhD Cer '61)

Clifton Bergeron has enjoyed a long affiliation with the University of Illinois, as a student, professor, department head, and honorary member of the MatSE Alumni Board. A native of California, Clif attended the University of Kansas prior to entering the service in World War II. Following discharge, he enrolled at the University of Illinois where he received his B.S. degree in Ceramic Engineering. From 1950 to 1955, Clif was employed in the Ceramic R&D laboratories of the A. O. Smith Corporation in Milwaukee. He then moved to St. Joseph, Michigan, and was a member of the engineering staff of the Whirlpool Corp. He returned to the University of Illinois in 1957 as a research associate in the Ceramic Engineering Department, received his doctoral degree, and was appointed a

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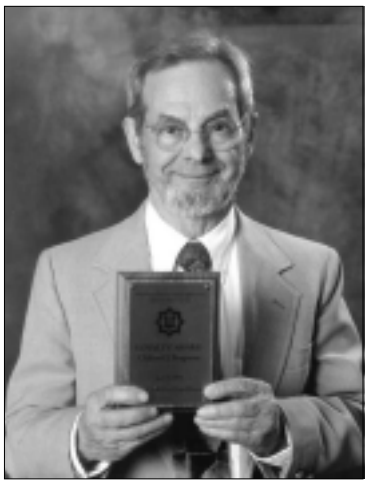
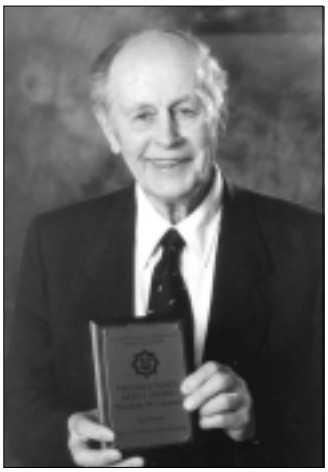
professor in 1967. He served as head of the department from 1978 to 1986 when he resigned the headship to devote himself full time to teaching and research. He retired from the university in 1988 and was granted emeritus status.


Clifton Bergeron

At the university, he taught courses dealing with the properties of materials, phase equilibria, reaction kinetics, and the chemistry and technology of glass. He conducted research in the areas of high temperature coatings, properties of glass, and crystallization kinetics in glasses. He authored more than 100 papers and co-authored a textbook on phase equilibria that was adopted by most of the ceramic engineering departments in the country. Clif has received the College of Engineering Everitt Award for Teaching Excellence and the American Ceramic Society Outstanding Educator Award. He is a fellow of ACerS and has served as chairman of the Ceramic-Metal Systems division and president of the Ceramic Education Council. Over the years, Clif has been active in the MatSE Alumni Board and, as the co-chair of the awards committee in years past, has been instrumental in recognizing alumni for their achievements.

Distinguished Merit Award: Woodrow Carpenter (BS Cer '39)

Woodrow Carpenter has played a leading role in the enamel industry. He has founded two companies, a publication, a society, and even a museum—all dedicated to enamel. At the University of Illinois, he researched enamel under Prof. Andrews. Following graduation, he took a job as a research engineer at the Ingram Richardson Manufacturing Company. After serving four and a half years in World War II, he returned to Ingram Richardson and moved to Cincinnati. In 1947, he attended a lecture by Kenneth Bates, an artist who was to profoundly affect his life and career. Woodrow's fascination with art enameling led to his forming a business to manufacture a wide variety of colored enamel frits for the art enamellers. The business grew and the number of artists working in the medium also grew. Around 1954, he and a partner started a business to manufacture porcelain enameled (glass-lined) vessels for the chemical processing industry. Their company, the Ceramic Coating Company, located in Newport, Kentucky, specialized in fabricating large steel vessels and coating them internally with chemically resistant porcelain enamel.


Woodrow Carpenter

Meanwhile, his interest in art enamel remained strong. The need for the dissemination of scientific information and reliable technical information among the art enamel community prompted Woodrow to start a periodical. In 1982, the publication "Glass on Metal," was initiated with one of Woodrow's staff members as editor. The magazine was well received and by 1986 the Enamelist Society was chartered. The publication was turned over to the new society to serve as their newsletter. The society has grown and now sponsors international meetings and workshops.

In the 1980s, Woodrow and his wife Irmgard, a recognized enamel artist, purchased a building near their Cold Spring, Kentucky, country home and converted it into a museum dedicated to the art and history of porcelain enamel. The Enamelist Museum has a collection of about 800 works, dating from circa 200 A.D. to the present.

Young Alumnus Award: Jeffrey S. Moore (Ph.D. MatSE '89)

Jeff Moore, a professor of materials chemistry, has a reputation for being one of the rising stars in his field. He received his B.S. in chemistry at the University of Illinois in 1984 and then continued his studies in Materials Science and Engineering, receiving his doctoral degree under Prof. Stupp. After graduation, Jeff was an NSF postdoctoral fellow at Caltech and later an assistant professor at the University of Michigan. He rejoined the University of Illinois in 1993 as a faculty member in the Chemistry Department. Jeff is affiliated with the Beckman Institute where he is the co-chair of the "Molecular and Electronic Nanostructures" research theme. He is an associate editor for the Journal of the American Chemical Society and has been a prolific researcher as evidenced by his extensive number of publications—over 160. In 2000, Jeff was named the William H. and Janet Lycan Professor of Chemistry at the University of Illinois. His previous honors include the Office of Naval Research Young Investigator Award, NSF Young Investigator Award, ACS Arthur C. Cope Scholar Award, and School of Chemical Sciences Teaching Award. He was also an Alfred P. Sloan Fellow and Dreyfus Teacher-Scholar.


Jeffrey Moore

Jeff's research involves synthesizing and studying large organic molecules and discovering new polymeric materials. His research group is large, with 14 graduate students, 3 undergraduates, 3 postdocs, and 5 visiting scientists.

Engineer's firm makes metal molds for parts

For a while after college, Dawn White (BS Met '79, MS Met '81, PhD Mech E '86) did what welding experts tend to do. She worked for a machine-building company in Minnesota, then took a job in Ford Motor Co.'s research labs, where she says she "learned a ton" about cars, quality and costs in six years. She was a team leader on a rapid-tooling project, but knew her career would be limited in such a vast, bureaucratic company.

Dawn left Ford in 1999 to join North Coast Technology Investors, a venture capital firm in Ann Arbor, as its first entrepreneur-in-residence. She soon hatched an idea for making the metal molds needed to form all kinds of plastic and metal parts for products ranging from cars and refrigerators to toys and cosmetics cases. Traditionally those molds, or tools as they are known in the industry, are made by taking a big hunk of metal and machining away what you don't want. Dawn wanted to shape the mold from strips of aluminum, using ultrasonic bonding. It would be quicker, cheaper, cleaner and especially useful for rapid prototyping, if she could make it work.

With $400,000 in seed money from North Coast, Dawn formed Solidica in January 2000. Solidica "is not software, not telecom, not internet, not any of those failed sectors," Dawn says. "North Coast is not about those bubble sectors either." North Coast is working now with her to raise $5 million more.

At first, Dawn was Solidica's only employee. She wanted to make the original $400,000 stretch as far as she could. So rather than hire a bunch of people and buy a lot of equipment, she turned to the Edison Welding Institute in Columbus, Ohio, a nonprofit research center. For nine months, she drove from Ann Arbor to Columbus once a week to test her technology ideas. In March 2000, she hired Jerry Janson, a sales executive who had sold some of the tooling industry's first rapid-prototyping machines in the 1980s.

By July 2001, just 19 months after she left Ford, her new company had built and delivered four test machines to different customer sites. One went to Raytheon, the big defense contractor. Another went to Ivex Packaging, an Illinois-based firm recently bought by Alcoa.

Solidica now has 15 employees building and selling its first production machines, which shape tools via ultrasonic bonding of aluminum strips and then do some precise machining to create the final tool shape. Dawn does not want to have to build a customized product for each customer. The first two Solidica production machines are now on the plant floor in Ann Arbor, being shown and demonstrated for potential customers. Each carries a price tag of $465,000. Janson expects to sell seven machines this year and 35 next year.

Dawn isn't thinking small. Her core technology—forming shapes by cool ultrasonic bonding—can also work with stainless steel and other metals beyond aluminum. The machine for making aluminum tools is merely the first of eight or nine products she envisions developing from the core technology.

Her goals: Build a company with $100 million in sales in five years. If that requires White to spend more time managing and less time being an inventor, well, she's trying.

"One of the hardest things is to let go of the detailed technical work," she says. "This was my idea. I want to be in there doing that work, because it's fun." But she gave in a while ago and hired another materials scientist to help her with the heavy-duty metallurgy.

Now she is spending nearly half her work time selling Solidica to potential investors, raising the money to keep the firm growing. She spends most Saturday mornings at the office, plus a couple of hours early on many Sunday mornings. She and her husband, James Fash, a Ford engineer, have a 7 1/2-year-old daughter, Annika, at home. It's a harried life, that of the inventor, entrepreneur, mother, and wife.

-excerpt from an article by Tom Walsh, *Detroit Free Press*

A number of MatSE alumni have used their skills to start companies of their own. We would like to feature these alumni in upcoming issues of the Alumni News. Do you have a story to tell? Contact the editor at brya@uiuc.edu or ph: 217-333-8312.

Cutting fuel cell costs

Paul Osenar (PhD MatSE '98) and his partners started Protonex Technology Corporation in October 2000. Protonex manufactures fuel cells more efficiently, which means customer savings. Paul, the chief technology officer for Protonex, explains:

"To date, fuel cell costs have remained extremely high since few companies have applied true manufacturing expertise to their production methods. Protonex is capitalizing on this opportunity.

The Protonex core technology is the application of manufacturing methods developed over the past 20 years in the area of premium filtration devices to proton exchange membrane fuel cells. Unlike current methods that require a large component of skilled labor, our designs and methodologies allow simple lay-up and packaging of the fuel cell stacks. Our fuel cells are assembled without separate gaskets or dynamic seals, resulting in significant improvements in yield and reliability. The result: Protonex is able to manufacture fuel cells at a fraction of the price of our competitors (today roughly 80% less), even at relatively modest volumes. At high volumes, our fuel cells will compete with simple battery applications that represent dramatically large markets.

Protonex designs and manufacturing methodology are subject to two pending patents. The Protonex team is well versed in the state of the art fuel cell technologies. Dr. Enayetullah headed the proton exchange membrane fuel cell development efforts at H Power [HPOW] from inception. The other technical founders also have extensive experience in fuel cell stacks and materials."

The company, based in Marlborough, Massachusetts, has five full-time employees.

Thanks to all who contributed to MatSE during Fiscal Year '02

The student awards highlighted in this issue would not be possible without the support of our alumni and friends.

The list of donors includes alumni and friends who have helped maintain MatSE's outstanding reputation. Included are individuals who directed their gifts to MatSE between July 1, 2001 and June 30, 2002. [We check the list carefully, but if we have overlooked you, please contact the Editor at 217-333-8312 so that we can correct our records.]

Some MatSE alumni chose to support other units of the University of Illinois; those gifts are not listed here but will be acknowledged by those units. If you wish to direct gifts to MatSE, please indicate MatSE on your check and on the donor form.

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Lowell Hoffman
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William Hoskins
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Rory Kirkpatrick
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George Krock
John and Doris Krumwiede
Kenneth Kuna
Joseph and Wyvona Lane
Ronald Larson
Kevin Leedy
Carlos Levi
Arnold Litman
George Mah
Lawrence Martin
Frederick Matson
Donald McCreight
David McDevitt

Did you know?

MatSE alumni can now give to their alma mater online:

http://www.mse.uiuc.edu/alumni/giving.html

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Keith Meyer
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Roger Miller
George Hugh Morris
Robert Musur
Michael Nevitt
Mark Ohls
Elizabeth Opila
Dallas and Ann Pasley
Valentino and Sandra Stange Patarini
Frederick Petersen
Michael Pfeifer
Robert and Carol Pounds
William Powers
Gino and Carolyn Primus
Leonard Radzilowski
Thomas Remec
Robert Rita
Martin and Eileen Roche-Kopchak
Donald Romani
Philip and Landee Roth
Gregory Ruschau
James and Bonnie Salsgiver
Ronald Scanlan
Kevin Schaal
Charles Schenk
Norman Schoeppel
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Sheryl Tipton
William and Marie Tredway
Stewart Veeck
Robert Vernetti
Robert Walson
James Lee Watters
Robert Wells
David and Claire Wilcox
Forrest Williams
Wendell Williams
Ming Wu
Kent Yancik
Philip Zapp
Greg Zeigler
Kenneth Zeman
Jacob Zindel
Peter Ziolkowski

Note: Individuals listed in boldface are currently Presidents Council members. As of January 1, 1995, individuals must pledge $15,000 over a 10-year period to become Presidents Council members.

For more information about this program, contact: University of Illinois Foundation, Harker Hall, MC-386, 1305 W. Green Street, Urbana, IL 61801.

Department of Materials Science & Engineering Fund

Yes, I want to support MatSE with my gift of: ❑ $1,000 ❑ $500 ❑ $250 ❑ $100 ❑ Other:_____

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- ❑ Bob Bohl Scholarship Fund [3-71507]
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MatSE relies upon the support of corporations and foundations, in addition to gifts from alumni and friends. This corporate and foundation support is essential for maintaining high-quality teaching and research within the department. We would like to thank the following corporations and foundations that contributed to MatSE during fiscal year 2002 (July 1, 2001 – June 30, 2002). An asterisk indicates corporations and foundations that provided matching funds to supplement the gifts of alumni and friends. If you work for a company that offers a matching gift program, please be sure to include a matching gift form with your donation.

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Illini Reception

Alumni and friends attending the fall Materials Research Society (MRS) meeting in Boston are invited to join us for an Illini reception. The reception is scheduled for 6:00-8:00 p.m. Tuesday, December 3, in the Hampton A/B room at the Sheraton Boston Hotel. For more information, contact Cindy Brya, Coordinator of Alumni Relations and Development (brya@uiuc.edu, ph: 217-333-8312).

Obituaries

Eugene Edward "Ed" Barton (PhD Met '69) died January 18, 2002, in Roanoke, Virginia. He retired from Pratt & Whitney Aircraft as a metallurgical engineer and received his B.S. and M.S. degrees from Virginia Polytechnic Institute. After retiring, Ed enjoyed life as a volunteer swim instructor and lifeguard. He had many hobbies including caving and sailing and was a member of the Gem and Mineral Society. Ed was a member of the Colonial Avenue Presbyterian Church. Surviving are his wife of 42 years, Claire, a son and daughter, and two grandchildren.

Robert Day (BS Cer '38, MS Cer '49) died on August 18, 2002, in Republic, Missouri. He was born in Springfield, Missouri, and married Marion Kidder in 1941; she died in 1997. He supervised radar device assemblers and construction of brick manufacturing plants in Kansas, Illinois, and Indiana. In 1960, he worked in a research laboratory in Geneva and later worked for a refractory company in Mexico, Missouri. He and his wife also owned a dairy farm. At age 63, he started his own business. He was a member of the Triangle Fraternity and Shrine Klowns. Survivors include two sons and three grandchildren.

John Meridith Durrant (BS Cer '44) died on March 11, 2002, in Williamsburg, Virginia. He served in the Navy during World War II. He was a member of the Triangle Fraternity and received an MBA from Governors State in University Park, Illinois. He retired first from U.S. Steel, Southworks Plant, after 31 years of service and later from Betz Environmental Engineering Consultants. John served in the Coast Guard Auxiliary and belonged to the Christopher Wren Association. He is survived by his wife of 57 years, Rita, a son and daughter, and three grandchildren.

George Eadie (BS Met '49, MS Mining '56) died July 21, 2002, in Eldorado, Illinois. He served in the Army Air Force during World War II and received numerous awards including a Purple Heart and Distinguished Flying Cross. His professional career included operations in Pennsylvania and Illinois, teaching mining at the University of Illinois and Southern Indiana University. He was editor of the professional magazine "Coal Mining" in Chicago and served for a number of years as a department head at the Illinois State Geological Survey in Champaign-Urbana. He was an active member of the Society for Mining Engineers, having been division chairman of the coal division, and serving three terms on the board of directors of the society. Survivors include his wife of 59 years, Ruth, two daughters, and four grandchildren.

Robert Hafner, Jr. (BS Met '40) died on February 11, 2002, in Zanesville, Ohio. He retired from Clow Corporation in 1980.

Richard Mast (MS Mining '60) died on June 22, 2002, in Lakewood, Colorado. He was born on October 4, 1931, in Chicago. He served in the U.S. Army and attended the University of Illinois where he received his BS in geology before earning his MS degree in mining engineering. Dick was a pioneer in oil and gas resource assessment, working as a geologist for the Illinois Geological Survey from 1957-1973 and the U.S. Geological Survey from 1973-1995. He served the USGS as chief of the branch of oil and gas resources and as regional geologist of the central region. He coordinated the USGS 1992 national oil and gas resource assessment for which he received the Department of Interior distinguished service award. He is survived by his wife Joyce, two sons, three daughters, and four grandchildren.

Kalinath Mukherjee (MS Met '59, PhD Met '63) died on May 18, 2002, in Okemos, Michigan. He was born in Calcutta, India, in 1932 and immigrated to the United States in 1957. He was a proud Illini and his children's first song was the University of Illinois fight song. Kali became a naturalized citizen of the United States in 1966. In 1967, he joined the faculty at Polytechnic Institute of Brooklyn as an associate professor. At Brooklyn Polytechnic, he was promoted to professor in 1972, and in 1974 was appointed head of the Department of Physical and Engineering Metallurgy. He joined the College of Engineering at Michigan State University in 1980 where he served as chairman of the Department of Metallurgy, Mechanics and Materials Science from 1985 until 1998. During the course of his illustrious career, Prof. Mukherjee was advisor to 38 Ph.D. candidates. He was a fellow of the American Association for the Advancement of Science and the American Society of Metals. In 1997, Michigan State University honored him with the title of University Distinguished Professor. Kali is survived by his wife Patricia, a son, and a daughter. In memory of Dr. Kalinath Mukherjee, donations may be made to the National Parkinson's Foundation.

Lawrence Russell (BS Met '51) died May 23, 2002, in Kokomo, Indiana. He was born November 22, 1926. He served in the U.S. Navy in World War II. He was employed as a metallurgist for Stellite Corporation in Kokomo. Surviving are his wife, Rose, one son, and two daughters.

Carl Schaefer (BS Cer '39) died on August 28, 2001, in Flint, Michigan. He was born on May 3, 1916, in Alton, Illinois. After graduation from the University of Illinois, he came to Flint. He started his career at AC Spark Plug and rose to the head of the ceramic department. During his career at AC Spark Plug he developed processes and products that were later patented. He also designed the spark plug used for aircraft during World War II. He retired in 1981 with 42 years of service. He was an active member of the American Ceramics Society. He had many interests: photography, travel, classical music, and archeology. Survivors include a brother and nephews and nieces.

Herman Smith Jr. (BS Met '39) died on May 20, 2002, in Elk Grove Village, Illinois. Born in Paris, Texas, Mr. Smith spent most of his childhood and young adulthood in Chicago. He was hired by U.S. Steel Corp. after graduation and worked in its offices in Chicago, Utah and Pittsburgh over the next 30 years. He then was employed for 10 years at Kaiser Steel Corp. in Chicago and California. While still with U.S. Steel in the 1960s and 70s, he was sent to Japan, Russia, and Germany to serve as a consultant for what was then an innovative industry process known as continuous

casting. The process, invented by a team of engineers of which he was a member, streamlined steelmaking by using liquefied steel that was continuously fed, rather than poured, into casts that had to be cooled off. It also improved the quality of manufactured steel. He served in the Army Air Forces in World War II. He was a lifelong lover of the arts, music and science. For the last 28 years, he lived in California, prior to his move to the Chicago suburbs to be closer to his family. Surviving are his wife Maxine, two daughters, a son, ten grandchildren, and four great-grandchildren.

Benjamin Tudor (BS Met '50) passed away on May 17, 2002, in Abingdon, Illinois. He was a native of Taylorville, Illinois. He served in the U.S. Navy during World War II. He retired from Pittston Coal Company in Dante, Virginia. He was a member of the VFW, American Legion, Masons, and Shriners. He was a loyal Illini and a member of the University's President's Council. Survivors include his wife Josephine, four children, and five stepchildren.

Glen Wensch (BS Met '46, MS Met '47, PhD Met '49) died on July 11, 2002, in Urbana. He was born November 15, 1917, in Chicago. He worked in plutonium research at Los Alamos Scientific Laboratory and was later a Fermi Pioneer. He worked for the federal government in the Atomic Energy Commission, later known as the Department of Energy. He also was involved in international atomic energy, primarily in Europe. Glen helped organize the Department of Materials Science and Engineering Alumni Association and served as its first president. He received the UI's Loyalty Award, its first Constituent Leadership Award, and the College of Engineering's award for distinguished service in engineering. After retirement, he became a consultant in the energy field for Argonne Laboratories and was active in Champaign task forces studying the problems of the downtown area. He was also active in the Air Force Association, serving as Illinois state secretary and state president. He participated in the Champaign Rotary and was named man of the year by that group. He was a Paul Harris Fellow, a fellow of the American Society for Metals. He was in the Army Air Force during World War II and was awarded the Distinguished Flying Cross and five Air Medals. Surviving are his wife of 59 years, Lois, a son and daughter, and two grandchildren.

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Class Notes

1950s

Edwin Jacobson (BS Met '52) has retired as president and CEO of Heartland Partners, Heartland Technology. He will remain on the Heartland Technology board and will serve as a consultant. The company is a Chicago-based real estate partnership with properties in 14 states. Heartland Technology is engaged in electronic contract manufacturing through its subsidiary Solder Station One and holds general partner interests in Heartland Partners.

1960s

John Will (BS Cer '66) is the chairman of an ASTM International Committee on Refractories. He is director of quality assurance and engineering for Riverside Refractories in Pell City, Alabama. Before becoming part of the Riverside Refractories staff, Will worked at General Refractories and A.P. Green Refractories.

Lawrence Happ (BS Met '68) runs his own engineering consulting business called Hapco Ltd. Hapco does contract manufacturing work and consultant work for southwest Missouri companies, plus conducts manufacturing apprentice training programs for local firms. Larry also does contract work for Integrated Biosystems Inc. He provides technical and operational support for the biopharmaceutical industry, mainly process and equipment building. Larry married Edna Thorman on August 10, 2002. They live in Springfield, Missouri.

1970s

Robert Levis (MS Met '75) is presently vice president and general manager of Air Products Asia, based in Singapore for the past 3 years. Prior overseas assignments with Air Products include Brazil, Japan, and Taiwan. He is married with two sons, one at Lehigh University and the other at the University of Delaware. Robert writes that his golf handicap is 11.

Zvi Flanders (BS Met '79) started his own company providing software support. Huron Consulting has data mining services for sales, human resources, and finance departments using ACT and crystal reports.

Paul Studebaker (BS Met '79, MS Met '82) serves as editor in chief of Control Magazine. His magazine covers control systems for the process industries (www.controlmag.com). Paul and his wife, Bettyann, have two sons, Benjamin and Adam, ages 10 and 8, and live in Valparaiso, Indiana. He writes that he still rides the BMW motorcycle he had in college, commuting several times a week to his office in Itasca, Illinois, a one-way distance of 80 miles.

We want to hear from you ...

and find out what has been happening in your life. Your fellow alumni, as well as the MatSE Department, want to hear about your activities. The Alumni News is mailed twice a year and is also available on-line at www.mse.uiuc.edu/alumni.html.

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1980s

Toni Grobstein Marechaux (BS Met '81) was named a fellow of ASM "for dynamic contributions in bringing materials engineering issues to the forefront and for developing sustained national materials policies." She is the director of the National Materials Advisory Board, National Academy of Sciences, in Washington, D.C.

1990s

Laura McWhorter Artates (BS Met '90) is working as an environmental engineer in the Pollution Control Division of the Nashville Metro Public Health Department. She is also active in various spinning, weaving, and other textile art pursuits.

Igor Szafranek (PhD Met '90) is director of process and manufacturing for OpTun, Ltd. in Haifa, Israel.

Bruce Bradford (BS Met '93) is a staff attorney in intellectual property for Sara Lee Corporation. He is based in Winston-Salem, North Carolina. Before becoming an attorney, he was a program engineer for GE Aircraft Engines in Ohio. Bruce attended law school at the University of Michigan. He joined Sara Lee after serving as an associate in a Chicago law firm since 1997. Bruce and his wife, Rachel Lokken, have one son, Kwadwo Woods-Lokken.

Jared Sponzilli (BS Met '96) married Elizabeth Marberry on September 15, 2001, in Warrenville, Illinois. He is employed by Derland Aerospace Co. in Bedford Park, Illinois. His wife is employed by Fermilab Children's Center in Batavia.

George Matamis (BS MatSE '97) graduated from Arizona State University with a M.S. degree in Chemical Engineering. He is currently a staff process/integration development engineer (0.09um Flash memory technology) for SanDisk Corporation. For the next two years, George will be on an engineering assignment in Japan.

2000s

Janice Lih (BS MatSE '00) married **Dave Eddington (BS MatSE '00)** on August 4, 2002 in Madison, Wisconsin. Janice is a research specialist in x-ray lithography at the Center for Nanotechnology at the University of Wisconsin, Madison. Dave just received his M.S. degree in Biomedical Engineering from UW-Madison and is working towards his Ph.D.

Greg Sleight (BS MatSE '00) married Jeanna Capito on September 23, 2001, in Sonoma, California. He is employed as a research engineer at Glad Manufacturing R&D in Willowbrook, Illinois. His wife is employed as a program manager at Lifelink Early Headstart in Bensonville, Illinois.

Faculty News

Howard Birnbaum will receive the 2002 Von Hippel Award at the fall Materials Research Society meeting in Boston. The award, MRS's highest honor, recognizes those qualities most prized by materials scientists and engineers--brilliance and originality of intellect, combined with vision that transcends the boundaries of conventional scientific disciplines. The Von Hippel Award includes a $10,000 cash prize, honorary membership in MRS, and a trophy.

Paul Braun, David Cahill, and **Jennifer Lewis** have been named Willett Faculty Scholars. These awards are targeted for faculty members who are in a relatively early stage in their career and are excelling in their contributions to the University. The awards provide discretionary funds for a minimum of three years.

Steve Granick was invited by the City of Paris, France to hold the Paris-Sciences Professorship, May-July 2002. He delivered a series of lectures, open to the public, on his research.

Moonsub Shim joined the faculty in the area of nanomaterials. He received his Ph.D. from the University of Chicago in 2001 and was a postdoc at Stanford before coming to Illinois. *Look for more on Moonsub Shim in the Spring 2003 Alumni News.*

Under construction

The Boneyard Creek has vanished from sight from Goodwin Ave. to Mathews Ave. and construction on the Boneyard project should be complete by the end of the year. The Bardeen Gardens will be planted in the spring, turning the southern tip of Engineering Quad into an attractive and relaxing area. The second, third, and fourth floors of the Materials Science and Engineering Building are being renovated. When finished, there will be new laboratories, offices, and a classroom on the west end of the fourth floor. MSEB construction is scheduled for completion by the end of May 2003.

From the head

There is much to celebrate as we start the 2002-03 academic year.

Our freshman class numbers 68—a healthy increase from 53 for last year. Many of the freshmen indicate interest in biomaterials, and our biomaterials labs are now in full swing. Many thanks to Ken Kuna, Howard Friedman, and the Alumni Board for their assistance in making the biomaterials lab possible. Again this year, all of the freshmen will participate in an Engineering Open House project.

Our entering graduate class numbers 36. This is consistent with our target of 40 per year or about 200 Ph.D. students in steady state. Students hail from the U.S. but also three other continents: Africa (Nigeria), Europe (France, Spain) and Asia (China, India, Korea, Hong Kong, Singapore). Several have Hertz, NSF, NDSEG or equivalent fellowships, and nine are Hamer Fellows.

Materials science continues to be an attractive discipline for women—26% of our undergraduates and our graduate students are women, a percentage that is well above that of the College of Engineering.

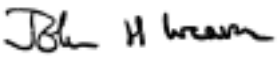
The high school visit day attracted nearly 200 students and parents, our largest recruitment event ever. The graduate open house was also splendid with visitors coming from seven states to learn more about research opportunities in MatSE.

Assistant professor Moonsub Shim joined us in July. He is busy setting up his lab, working with his four graduate students, and teaching Synthesis of Materials (MatSE 303). His area of emphasis is nanoscale materials and interfaces, including carbon nanotubes.

Professor Carl Altstetter retired in July after 44 years of service to the department and the college. Professor Richard Gaylord will retire in December after 28 years of service. Both will be professors emeriti and will continue to be active in the department.

Pacal Bellon was promoted to associate professor and David Cahill was promoted to professor.

Renovation of the Materials Science and Engineering Building (formerly Metallurgy and Mining, formerly Physics) is progressing nicely. Each day, we enjoy the construction workers, their loud music, and their dust! When the project is complete in May, we will have invested almost $5 M to convert the old machine shop and multiple wings of MSEB into modern labs and offices for groups active in biomaterials, bioengineering, soft materials, photonics, and nanomaterials. The space around MSEB will also be much improved by spring as the Bardeen Gardens are completed and the creek area is beautified. We hope to embark on the next phase of MSEB renovation in the foreseeable future.



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