often when people think of an engineer, they envision an individual who learns extremely technical information by rote, a spectacled figure who converses on a Mensa level, but doesn’t know who won the most recent World Series. They picture someone in a lab coat with a pocket protector, calculator and safety goggles. This antiquated stereotype of engineering is not reflective of what being an engineer, or an engineering student, is all about.

Notre Dame engineering students are much broader than the one-dimensional view some people have of them. In class they are inquisitive and focused on academic achievement. Outside of the classroom they are as diverse as the many fields of engineering open to them. Many are caring individuals who give freely of their time in service to those in need. Others enjoy the challenges of athletic, as well as academic, pursuits. In their aspirations and commitments, these future leaders are extremely well balanced.

continued on page 3 ➤
In my first message to you three years ago, I indicated that I had two overarching objectives as Dean of the College. One is to develop an undergraduate educational program that is stimulating, responsive to the needs of the 21st century, and among the best in the world. The other is to advance the prominence of research activities in critical areas of technology and to join the ranks of this nation’s premier private research universities. It’s time for a progress report.

The past year has been marked by considerable progress in implementing changes to the curriculum for first-year engineering intents and in activating the new Engineering Learning Center. The curriculum and the Learning Center were described in the last issue of this newsletter, and this year more than 300 first-year students experienced cross-disciplinary and collaborative activities that depart significantly from traditional approaches to teaching and learning. Considering the difficulties associated with offering such a program to a large number of students and doing so with faculty of varied backgrounds from each of our departments, the first attempt was a huge success. There are certainly opportunities for improvement, but the foundation for what we believe to be truly innovative approaches to the introduction to engineering is firmly in place.

Curriculum assessments and enhancements are also underway in each of our departments. Aided by a $500,000 grant from the National Science Foundation, the aerospace and mechanical engineering department is, for example, undertaking a major curriculum revision, with design and system intelligence designated as central themes to be integrated throughout the curriculum. In chemical engineering curriculum changes are being influenced by a shift in related technologies to biological materials, including products and processes based on new discoveries in molecular biology. In geological sciences, an exciting new curriculum is being developed to emphasize linkages of the field with important environmental issues.

Juxtaposed with curriculum changes in each department, the College is encouraging developments that cross departmental boundaries. The effort has been endorsed by the General Electric Foundation, which recently provided a $300,000 grant for the development of multidisciplinary modules to be used in the Learning Center. The College has also initiated development of two elective courses that meld engineering and business principles and will be offered for the first time in 2001-02.

In research our strategy has been to match faculty assets with areas of strategic importance and to develop collaborative programs that include faculty from different departments within the College and from different colleges within the University. One manifestation of the strategy has been the establishment of research centers to more effectively and comprehensively address critical areas of technology. The Center for Nanoscience and Technology was established two years ago and is well on its way to becoming a national leader in the emerging and important field of nanotechnology. Established less than a year ago, the Center for Molecularly Engineered Materials has already become a focal point for multidisciplinary research in materials. The Center for Flow Physics and Control was recently approved by the University, and other centers are under various stages of consideration in areas such as the mitigation of natural hazardous events, high-performance computing, and biomechanics.

Collectively, the Centers are enhancing the College’s visibility as a contributor to world-class research, as well as increasing its success in the national competition for resources to support the research. Over the past two years this support has increased more than 140 percent. I hasten to add that many of our undergraduates work with faculty on research projects, thereby enhancing their educational experience.

However, we are finding that Fitzpatrick and Cushing Halls are unable to meet the needs of our new approaches to education and research, and plans are well underway to construct a new multidisciplinary education and research building. The building will house an enlarged learning center to support collaborative and experiential activities throughout the undergraduate curriculum, as well as specialized research laboratories required for research in nano and materials engineering. I will say more about our plans in subsequent issues of this newsletter.

I will conclude by mentioning that our efforts to more broadly and effectively communicate the advantages of a Notre Dame engineering education are beginning to bear fruit. I have previously shared with you my concern for the decline in engineering enrollments nationally and at Notre Dame, which I believe are deleterious to the future well-being of our society. I’m pleased to report that at Notre Dame the declines have been reversed, and there is a definite upward trend in undergraduate enrollments. Although SAT scores are not the ultimate measure of success, it is also noteworthy that the average score of this year’s engineering intents has risen substantially to a new high of 1383 and exceeds the University average by 30 points. We look forward to working with these students in the years ahead.

Frank P. Incropera
McCloskey Dean of Engineering
Brosey Professor of Mechanical Engineering

...we are finding that Fitzpatrick and Cushing Halls are unable to meet the needs of our new approaches to education and research...
Engineering Students Are Curious and Critical Thinkers.

Engineering is the practice of adapting natural phenomena to fulfill basic human needs. Therefore, engineers are by nature, and necessity, curious. They are compelled to understand why “things” operate like they do. And, they are driven to find ways to use their own abilities and ideas to make “things” work better. Consider the new products, materials, and processes that have changed the world in the last 100 years, almost all of which were developed by engineers.

A constantly evolving field, engineering has become extremely complex and multifaceted. Today’s engineering students must be tops academically, excelling in mathematics, physics, and chemistry. Given that, it is not surprising that of the incoming class of engineering students — those entering the University in the fall of 2001 — 91 percent are in the top 10 percent of their classes, and 73 percent placed in the top five percent.

Equally as impressive is the fact that all of the Notre Dame engineering students who took the most recent Fundamentals of Engineering (FE) examination passed on their first attempt. The FE exam is the initial step students must take to become licensed as a professional engineer. Among accredited engineering programs, the national pass rate is only 73 percent.

It is hard to sound humble when blessed with students of such high caliber. The truth is that College of Engineering students have worked hard to be outstanding scholars. One student, Rebecca Glatz, a 2001 graduate of the Department of Civil Engineering and Geological Sciences, has not only excelled in the classroom, but she has also developed a unique crystal structure, calcium uranyl oxide hydrate. Her discovery brings with it important implications for the disposal of nuclear waste in Yucca Mountain, the site proposed by the U.S. Department of Energy as a geological repository for nuclear waste. Researchers at Argonne National Laboratory have expressed interest in her results, as tests conducted at Argonne with spent nuclear fuel under simulated Yucca Mountain conditions produced a calcium-uranium phase they had previously been unable to identify. Glatz, a native of Ames, Iowa, and her adviser, Peter C. Burns, Massaman Associate Professor of Civil Engineering and Geological Sciences, are now preparing a manuscript on her discovery for publication in an archival journal.

Jason Keith, a recipient of the 2001 Eli J. and Helen Shaheen Graduate School Award who is currently an assistant professor at Michigan Technological University in Houghton, Mich., completed his dissertation under the direction of Bayer Professor of Engineering Hsueh-Chia Chang and David T. Leighton Jr., professor of chemical engineering. While at Notre Dame Keith developed a new design for a catalytic converter that can reduce automotive emissions up to 90 percent.

In addition to Glatz and Keith, three of the 10 candidates for valedictorian of the Class of 2001 were engineers. (See the related article on page 7.) These students, and others like them, are bright young men and women with promising futures.

They Are Fierce Competitors.

One of the nation’s top-40 rated players, Steve Ratay, of Arlington Heights, Ill., takes his golf game as seriously as he does his studies in computer science and engineering. Ratay has turned in some of the top performances in the history of Notre Dame golf, with a 73.50 season stroke average.

Jabari Holloway, of Riverdale, Ga., graduated in 2001 with a degree in computer engineering, but he’s still on the football field. One of the four Notre Dame captains for the 2000-01 season and rated third nationally among tight ends by The Sporting News, Holloway was drafted by the NFL’s New England Patriots earlier this year.

College of Engineering students are active participants in varsity sports, including baseball, fencing, lacrosse, football, golf, soccer, track, and rowing. They are on the cheerleading squads and serve as student managers. Many of these engineering student-athletes are also on the Dean’s List each semester.

Steve Ratay, left, a computer science and engineering major, is currently ranked ninth in the Notre Dame record book, with a career average of 75.46. A 2001 graduate of the computer science and engineering department, Jabari Holloway, above, will spend this fall on the gridiron with his NFL teammates. The New England Patriots drafted Holloway earlier this year.

... all of the Notre Dame engineering students who took the most recent Fundamentals of Engineering examination passed on their first attempt.

Women’s soccer standout Vanessa Pruzinsky, a chemical engineering major, was selected to the Verizon/Citiesports Academic All-America At-large Team for fall and winter sports. She is only the 11th Notre Dame student-athlete to earn this honor as a sophomore.
Far from One-dimensional, Engineering Students Are Well-rounded Individuals.

Engineering is a technically challenging program, while the University of Notre Dame is inherently a liberal arts institution. Some might question the compatibility of these seemingly incongruent curricula. Yet, engineers, who are creative people, see the benefits of both technical and liberal arts studies, as does the University.

All undergraduates are required to take eight courses in the humanities, which include theology, philosophy, history, social science, and fine arts or literature. These courses, and the individual interests of engineering students, help define and determine the direction a student might take in engineering.

Some students opt for a five-year course of study in order to pursue dual degrees. In May 2001, Christopher Russo earned dual degrees in electrical engineering and philosophy. A native of Detroit, Mich., Russo was recently accepted into the Medical Engineering and Medical Physics Program of the Harvard MIT Division of Health Sciences and Technology. He was one of the fewer than 20 applicants chosen for this program from a pool of almost 900 students. The five-year doctoral program gives students like Russo extensive exposure to medical sciences so they may investigate important problems at the interfaces of technology, biomedical science, and clinical medicine.

Finally, Engineering Students Are Service-minded.

Many students have a strong desire to serve their communities and their world while they’re in school. As a Catholic institution, Notre Dame encourages such activity, and 80 percent of the student body participates in local and international service during their four years at the University through initiatives like the Appalachian Seminar, the Urban Plunge, and a variety of volunteer projects. Often, however, that service does not relate directly to what students learn in class.

In contrast, Engineering Projects for Community Service (EPICS) gives students opportunities to interact with people in their communities, while addressing real engineering needs, ranging from the development of wetlands management programs to designing software for not-for-profit organizations.

According to EPICS adviser Curt Freeland, an assistant professional specialist in the Department of Computer Science and Engineering, one student project focused on the development of a computer system for the Center for the Homeless in South Bend, Ind. The system features a touch-screen monitor and card reader to help the Center track its volunteers.

Another group, led by Lloyd H. Ketchum Jr., professor of civil engineering and geological sciences, has helped construct bridges and other structures. Some of the civil engineering and geological sciences students are also involved in a Small Community Mentoring Center (SCMC), a prototype water and wastewater systems educational center whose objective is to bring a university and large city together to mentor nearby smaller communities.

These local programs have proven very successful. But Notre Dame engineering students are just as concerned about their global community. Many participate in international service projects. One of the most recent occurred in April 2001 when Stephen E. Silliman, professor of civil engineering and geological sciences, led a group of students to Haiti to train villagers in water pump repair. Although it was Silliman’s third trip, it was the first for many of the students. The experience helped them understand how to place engineering in a social context while giving them the opportunity to expand clean water resources in underdeveloped areas.

And, it’s not only undergraduates who give of their time and talents. Approximately 12 percent of each year’s graduating class commits themselves to a year or more of volunteer service. For example, Jennifer Ehren, the University’s 1999 valedictorian and a chemical engineering major, has spent the last two years as a volunteer teacher at St. John High School in Gulfport, Miss.

What do all of these engineers have in common? They are exciting, creative, and balanced people who strive to achieve at all levels — personal, academic, and athletic. They have not asked “How much do I get out of it?” Instead, they have asked, “How much can I give?” They are people who will change the world in this new century.
n April 2001 the University of Notre Dame received a $90,000 gift from the Ameritech Foundation to expand the Ameritech Pre-college Minority Engineering Program (APMEP). “We are pleased to announce our continued support of this important program,” said George S. Fleetwood, president of Ameritech Indiana. “Ameritech is committed to helping young adults from all backgrounds get the experience necessary for them to be successful in their careers.”

Developed by the Minority Engineering Program within the College of Engineering, the APMEP has been supported by Ameritech since its inception in 1995. During that time APMEP has introduced more than 200 minority students to engineering.

Originating from a specially equipped classroom on the Notre Dame campus, APMEP uses a two-way videoconferencing system to link students, teachers, and volunteers at four sites throughout the state — three in the South Bend/Mishawaka area and one in Indianapolis. Participants meet on the first and third Wednesday of each month from October through May. The sessions, however, are more than classroom lectures. They actively engage the students in a variety of activities.

APMEP students get homework. They are given technical writing assignments to complete with their families. They are expected to record and present their findings, and they even take virtual field trips to corporations throughout the United States. Each activity is designed to promote teamwork, develop research skills, and provide a sense of accomplishment in a job well done. “This program represents exactly the kind of partnership we hope to grow with corporations and the community,” said Rev. Edward A. Malloy, C.S.C., president of the University.

According to Steve Silliman, professor of chemical engineering, and geological sciences, water follows circuitous paths, responding to variations in subsurface geology. In this module students will use probabilistic and numerical models of groundwater and chemical transport to study the degradation of organic contaminants in groundwater.

The Ameritech Pre-college Minority Engineering Program (APMEP) is an afterschool instructional program designed to stimulate interest in engineering among minority middle school youth. APMEP incorporates two-way interactive video as part of its educational efforts, enabling students at sites throughout Indiana to participate in real time with instructors and other students in the program.

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In 1999 the Indiana General Assembly created the 21st Century Research and Technology Fund for the purpose of expanding the high-technology sector of the state’s economy. Approximately $50 million was allocated to the program. The Assembly recognized that many organizations still operate under an outdated model of engineering, science and technology — specific to individual disciplines. In contrast, they noted that the technological advances of the last 30 years have come from interdisciplinary approaches in both the academic and corporate arenas. They were also aware of the economical and technological development programs in other states.

Similar to these programs, the Assembly sought to create a source of technological innovation and new business development in Indiana. It identified industries and/or technologies with significant potential for growth and developed goals for its efforts. These goals were to encourage academic-commercial partnerships, create intellectual and physical infrastructures, transfer technology into products and thus to the economy, and ultimately increase the state’s capacity to compete for research and development funds, both federal and private.

The areas of development targeted by the Assembly were genetics, proteomics, advanced materials, telecommunications, and photonics. Already a focal point for economic growth, genetics provides the basis for innovation in medical diagnostics, disease prevention, and therapeutic treatments. Discoveries made via genetic research could transform agriculture, as well as change the ways in which diseases are diagnosed and treated.

Proteomics offers advances in biological systems and cell biology. The development of advanced materials, particularly relating to micro and nanotechnologies, could create new approaches and capabilities for manufacturers. And, the expected breakthroughs in telecommunications and photonics for traditionally “wired” industries promise expanded capabilities and with virtually immediate and unlimited access to a variety of functions.

Since the beginning of the program a total of $49.2 million have been awarded by the Fund’s Board, of which Notre Dame has received $8.9 million. State officials believe that the number and nature of interactions between academic and commercial sector partners, particularly in the identified frontier areas, will ensure the success of this program and economic development in Indiana. The University, along with other academic institutions and corporations, have now joined in an effort to convince the Legislature to continue the 21st Century Research and Technology Fund for an additional two years.

**AN OVERVIEW:**

**21ST CENTURY RESEARCH AND TECHNOLOGY FUNDING FOR NOTRE DAME PROJECTS**

<table>
<thead>
<tr>
<th>Principal Investigator(s)</th>
<th>Department</th>
<th>Title of Project</th>
<th>Amount</th>
</tr>
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<tbody>
<tr>
<td>Gary Bernstein</td>
<td>Electrical Engineering</td>
<td>Development of a Microfluidics-based Blood Monitoring System</td>
<td>$1,070,536</td>
</tr>
<tr>
<td>Jean Bronnerke</td>
<td>Chemical Engineering</td>
<td>Environmentally Benign Solvents for Pharmaceutical Processing</td>
<td>$226,483</td>
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<tr>
<td>Frank Collins</td>
<td>Biological Sciences</td>
<td>Indiana Center for Insect Genomics</td>
<td>$1,503,007</td>
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<tr>
<td>Jacek Furdyna</td>
<td>Physics</td>
<td>Semiconductor Spintronics</td>
<td>$304,000</td>
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<tr>
<td>James Masson and Steve Schmid</td>
<td>Aerospace and Mechanical Engineering</td>
<td>Advanced Spinal Instrumentation</td>
<td>$1,998,967</td>
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<tr>
<td>Paul McEwen</td>
<td>Chemical Engineering</td>
<td>Combinatorial Synthesis of Microwave Ceramics</td>
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<tr>
<td>Kenneth Sauer</td>
<td>Electrical Engineering</td>
<td>Statistical Methods for Tomographic Image Reconstruction and Analysis</td>
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<td>Steve Schmid and James Masson</td>
<td>Aerospace and Mechanical Engineering</td>
<td>Minimally Invasive Orthopedic Implant Development</td>
<td>$1,867,958</td>
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<td>Robert Stevenson</td>
<td>Electrical Engineering</td>
<td>Video over the Internet</td>
<td>$114,594</td>
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<td>William Strieder</td>
<td>Chemical Engineering</td>
<td>Carbon-carbon Composites</td>
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<td>Arvind Varma</td>
<td>Chemical Engineering</td>
<td>Combustion Synthesis of Orthopedic Implant Materials</td>
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<td>Eduardo Wolf</td>
<td>Chemical Engineering</td>
<td>21st-century Infrared Sensing</td>
<td>$171,446</td>
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</table>

Interested in other signature research in the College of Engineering? Visit our website at [http://www.nd.edu/~engineer](http://www.nd.edu/~engineer).
An Engineering Overview

In April 2001 the University of Notre Dame and Honeywell initiated a five-year research partnership with the South Bend, Ind.-based Honeywell Aircraft Landing Systems, a leading supplier of aircraft landing systems, wheel and brake support, and repair and overhaul services. The agreement provides for a $1,280,000 grant from the company to support doctoral fellowships, research, and a visiting professorship in the University’s Center for Molecularly Engineered Materials.

Honeywell and Notre Dame have also initiated a five-year research partnership with Honeywell Aircraft Landing Systems. "We look forward to the innovation and discovery in technology and processes that will surely result," said Adriane M. Brown, vice president and general manager of Honeywell Aircraft Landing Systems. "We are interested in exploring new concepts and technologies to improve the life and reliability of high-temperature composites used for friction applications." These five fellows will be named and their projects identified before the 2001-02 academic year begins. However, their projects have already been selected. They include the "Thermochemical Investigation of Carbon-carbon Composite Brake Systems," "CVT/CVD of Pyrocarbon in Porous Carbon," "Thermal Characterization of Carbon Brake Materials," "Processing of Mesocarbon Microbeads in High-toughness Materials for Friction Applications," and "Blocking and Catalytic Mechanisms for Oxidation of Carbon-carbon Composite Friction Materials."

Honeywell Aircraft employs more than 1,400 people worldwide. Its parent company, Honeywell International, is a diversified technology and manufacturing leader with more than 120,000 employees in 95 countries.

Every year around Commencement, the College pauses to reflect upon its graduating class. Those first-year students who were considering engineering four years ago have transformed into critical thinkers, capable and eager to change the world through their service as engineers. Each of the engineering students in the Class of 2001 is special, and the College has great expectations of them as they embark upon careers in industry, military service, or graduate studies. This year three of them are deserving of special attention.

Of the 10 students who were valedictorian candidates for the Class of 2001, three were engineering undergraduates. Russell Ernst Jr., Rebecca Glatz, and Nick Petroni Jr. represented the College in the University’s search for a valedictorian. Each at the top of their departments, these students are well-rounded and extremely well-grounded in their respective fields. They are examples of the best and brightest the College has to offer.

Ernst, a native of McKees Rocks, Penn., graduated with honors from the electrical engineering department. He also received the department’s Lawrence P. Stauder award for outstanding achievement in electrical engineering. Among his other achievements, Ernst served as a research assistant in the department and as president ofEta Kappa Nu, the electrical engineering honor society. His research advisers, Professor Peter Bauer and Professor Craig Lent, characterize him as the type of student who “comes along only once in several years.”

An environmental geosciences major, Glatz was a superb student in the classroom as well as an experienced research assistant in the civil engineering and geological sciences department. In addition to the many departmental awards she received, Glatz was named a Goldwater Scholar in 2000. This scholarship is considered to be the premier undergraduate award of its type in the fields of engineering, natural sciences, and mathematics. She also recently received a graduate fellowship from the National Science Foundation.

Petroni made graduating with a degree in computer science look easy. His professors often commented that, even though he was becoming extremely proficient in his chosen field, he still valued the place of genuine human communion. In addition to his studies, Petroni participated in tennis and band. He also served as a resident assistant in Kourgh Hall.

Sharing the day with the Class of 2001 were President George W. Bush, who gave the Commencement Address, and Andrew Viterbi, a leading contributor to communications theory and its industrial applications. Viterbi received an honorary degree in engineering.

Andrew J. Viterbi, president of Viterbi Group LLC, received an honorary doctor of engineering during Commencement Exercises and was a featured speaker at the electrical engineering department’s Edison Lecture Series last fall.

President George W. Bush gave the Commencement Address during the 150th Commencement Exercises at the University on Sunday, May 20, 2001. He also received an honorary degree from Notre Dame President Rev. Edward A. Malloy, C.S.C., left, and Board of Trustees Chair Patrick McCartan, right.
his expertise was mathematics. Steiner followed the progress of his students closely, always ready to help. He believed that the inclusion of liberal arts studies in the engineering program offered students greater versatility and a broader outlook.

As Dean of the College, Steiner made a great impact on the course of engineering at Notre Dame, but he made an even greater impact on his students. In 1948 engineering alumni, students of “Pops” Steiner, established the Reverend Thomas A. Steiner Prize. This award is presented annually to seniors who exhibit a dedication to the application of engineering principles, a zeal for learning, outstanding leadership qualities, and a commitment to the values and tenets of the University.

This year’s Steiner Award recipients were: Rebecca Glatz, civil engineering and geological sciences; Nick Petroni, computer science and engineering; Michael Powers, aerospace and mechanical engineering; David Rink, electrical engineering; and Alison Weber, aerospace and mechanical engineering. The students were nominated by their departments and selected as Steiner honorees on the basis of their cumulative grade-point averages, campus activities, and community service while at the University.

An excellent all-round student, Rebecca Glatz has gained and given tremendously during her time at Notre Dame. In addition to her studies in environmental sciences, she was a research assistant in the Environmental Mineralogy Laboratory. She participated in multiple academic, athletic, and musical activities and also served as a role model for youth in the South Bend area through engineering and science exploration programs. A native of Ames, Iowa, Glatz was a 2001 valedictorian candidate.

Nick Petroni, who comes from Glassboro, N.J., was a member of Tau Beta Pi and the Association for Computing Machinery. A resident hall assistant, he was a section leader in the Varsity Marching Band, served on the Engineering Teacher of the Year Selection Committee, and placed second in the annual Arthur Andersen Case Competition. He was also a candidate for valedictorian of the Class of 2001.

Michael Powers, of Rochester N.Y., has been an active participant in department research programs, assisting in the design and construction of a prototype robotic manipulator. He is treasurer of Tau Beta Pi and a member of Pi Tau Sigma. He has also taken time away from his studies to volunteer as a tutor at the Boys’ and Girls’ Club and as an animal care worker at the Humane Society. Vice president of the Institute of Electrical and Electronics Engineers student chapter, David Rink is also president of Tau Beta Pi, treasurer of Eta Kappa Nu, and a member of the Electrical Engineering Honesty Committee. He has been involved in numerous interhall activities. Rink is a native of Richmond, Ky.

Alison Weber, of Erie, Pa., is also a member of Tau Beta Pi and Pi Tau Sigma. She served as vice chairperson for Junior Parents’ Weekend and was a student manager for Notre Dame athletic teams. In addition to working as a lifeguard at the Rolfs Aquatic Center and tutor during the academic year, she spent three summers working as an engineering intern at three major corporations.


ALTHOUGH “POPS” STEINER, AS HE WAS CALLED, TAUGHT A NUMBER OF DIFFERENT COURSES IN THE COLLEGE,
Senior Honors and Departmental Awards

AEROSPACE AND MECHANICAL ENGINEERING

Jerome L. Novotny Design Award in Thermal Science
Christopher Bosco

Patrick J. Deviny Scholarship Award
Jeffrey Mueller

Rockwell Automation Power Systems Design Award
Christopher Bosco
Jason Visner

Sigma Gamma Tau Honor Award
Nicolas Fehring

Vincent P. Goddard Award for Aerospace Design
Christopher Bosco
Jason Visner

Zahm Prize for Aeronautical Engineering
Nicolas Fehring

CHEMICAL ENGINEERING

American Institute of Chemists Award
Christopher Fredlake

Alumni Award
Mark Price

Faculty Award
Catherine Streembel
Kori Yelle

Materials Certificates
Matthew Koop
Joseph Steier

Research Award
Allison Weltner

CIVIL ENGINEERING AND GEOLOGICAL SCIENCES

American Society of Civil Engineers Activity Award
Patrick Lach
Julie Sherwin

James A. McCarthy Scholarship
Patrick Lach

COMPUTER SCIENCE AND ENGINEERING

Outstanding Computer Engineering Senior Award
Brian B. Simolon

Outstanding Computer Science Senior Award
Allan Huebner

ELECTRICAL ENGINEERING

Arthur J. Quigley Award
Kevin Hennessy

Basil R. Myers Award
Enrique Blair

International Engineering Consortium
William L. Everitt Award
Jakob Golab
Steven Reed

James L. Massey Award
David Rink

Lawrence F. Stauder Award
Russell Ernst Jr.

XEROX SCHOLARSHIP PROGRAM FOR WOMEN IN ENGINEERING

The goal of the Xerox Scholarship Program for Women in Engineering is to encourage outstanding female students as they complete their degrees in engineering. This year's honorees were:

Tracy Blichfeldt, chemical engineering
Mary Clark, aerospace engineering*
BoHyun Hartmann, chemical engineering
Agnes Kiss, computer science*
Anne Mierendorf, chemical engineering
Kimberly Rubelis, mechanical engineering
Kathryn VanWeede, civil engineering
Amy Wodostawly, chemical engineering
Kori Yelle, chemical engineering*

*Indicates that the honoree is a graduating senior

While Commencement Exercises highlight undergraduate achievements, the College of Engineering and the University wish to salute its graduate students. Again this year several graduate students have been honored for their teaching and research contributions.

This year the University's Kaneb Center for Teaching and Learning honored 45 students with Outstanding Graduate Student Teacher Awards. Recipients from the College of Engineering were:

Xiaoyu (Stacey) Gu, Abdelmaged H. Ibrahim, Susan D. Olson, Matthew L. Robinson, Sandeep Singh, and Gabriel Torres of the Department of Aerospace and Mechanical Engineering; William D. Haynes and Laurent Thiers from the Department of Chemical Engineering; Andrew J. Locock and Katherine C. Young of the Department of Civil Engineering and Geological Sciences; and NagaPraveen G. Kalla and Shannon Kuntz of the Department of Computer Science and Engineering.

Another student, a doctoral candidate in chemical engineering, Jason Keith, was named a recipient of the 2001 Eli J. and Helen Shaheen Graduate School Award. Keith has had a distinguished career as both a teacher and researcher while a student at Notre Dame. His teaching ability was recognized and rewarded by his selection as instructor for a thermodynamics course and participant in the EG111/112 pilot sequence during the 1999-2000 academic year. His research improved the dynamics of several important reactors and also resulted in the design of a catalytic converter system that could reduce pollution emission up to 90 percent. He wrote his dissertation, "Novel Reactor Designs for Pollution Reduction Utilizing Enhanced Transient Thermal Dispersion," under the direction of Bayer Professor of Engineering Hsueh-Chia Chang and David T. Leighton Jr., professor of chemical engineering.

The Shaheen Award was named in honor of a Notre Dame alumnus and his wife. It recognizes the top graduating doctoral degree recipients in the humanities, social sciences, science, and engineering. Each recipient is nominated by their individual departments and chosen for their superior grades, research, teaching ability, and other awards received during the course of study at Notre Dame.
In May 2000 Joel Spira, Lutron Electronics’ founder, chairman, and director of research, along with his wife, Ruth, established The Ruth and Joel Spira Award for Excellence in Teaching. This award recognizes outstanding faculty in the Departments of Electrical Engineering and Aerospace and Mechanical Engineering. It is presented annually for outstanding contributions in the classroom as well as undergraduate curriculum development.

Honorees are selected by a student committee consisting of representatives from the senior, junior, and sophomore classes. The first recipients of the award were Wolfgang Porod, professor of electrical engineering; Douglas Hall, associate professor of electrical engineering; and Patrick Dunn, professor of aerospace and mechanical engineering. Recipients for 2001 are Alan Seabaugh, professor of electrical engineering, and Edmundo Corona, associate professor of aerospace and mechanical engineering.

Known for their long-standing commitment to promoting excellence in engineering education, the Spiras have established similar awards at Purdue, Penn State, Cornell, Lehigh, Massachusetts Institute of Technology (MIT), Carnegie Mellon, and the University of Michigan.

Gary H. Bernstein, professor and associate chair of electrical engineering, has made significant contributions to the undergraduate teaching mission of the College and the department. He is particularly enthusiastic and has proven innovative in introducing engineering concepts to undergraduate students.

Since 1995 when J. Curt Freeland, assistant professional specialist, joined the computer science and engineering department, he has continuously demonstrated his commitment to undergraduate education. He developed and taught a pair of courses in computer systems and network administration that, according to students, are two of the most popular electives in the department. Freeland has authored multiple books on the same subjects and has developed and maintains a state-of-the-art computer and communications systems laboratory, which helps students put their theoretical predictions to the test. He is also associated with the Engineering Projects in Community Service Program, EPICS, in which he guides groups of undergraduates as they assist local service agencies.

The Kaneb Awards were created in 1999 through a gift from University Trustee John A. Kaneb. They are bestowed by individual colleges and departments on faculty who have been active in full-time undergraduate instruction for a minimum of five years. Nominated by their departments, honorees are chosen by a group of fellow faculty, current students, and recent graduates. This year the College of Engineering is pleased to present the Kaneb Teaching Awards to the following faculty members in recognition of their excellent service as educators.

Gary H. Bernstein, professor and associate chair of electrical engineering, has made significant contributions to the undergraduate teaching mission of the College and the department. He is particularly enthusiastic and has proven innovative in introducing engineering concepts to undergraduate students.

A driving force in the Bits-to-Chips course sequence, a program offered jointly by the electrical engineering and computer science and engineering departments, Bernstein also built the senior-level IC Fabrication Laboratory and initiated the IC Fabrication course. He joined the Notre Dame faculty in 1988.

J. Curt Freeland, assistant professional specialist of computer science and engineering, has been described by students and fellows as an enthusiastic and has proven innovative in introducing engineering concepts to undergraduate students.

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Massman Professor William G. Gray joined the civil engineering and geological sciences department in 1984. Since that time he has been described by students and fellow faculty members as a demanding instructor and active researcher. His organization of difficult subjects helps him present material to his students in a clear and concise manner.

William G. Gray, Massman professor of civil engineering and geological sciences.
manner. They know he has high expectations of them during their time at the University and in their future careers. His care and concern for the education of his students is apparent by his interaction with them inside and outside of the classroom.

An associate professor in the chemical engineering department, Edward J. Maginn is well known for his outstanding classroom teaching. He makes classes challenging, yet understandable. Maginn is also known for the time and attention he gives to his students outside of class. In addition to his teaching responsibilities, he is a team leader in the newly formed Center for Molecular Engineered Materials, a multidisciplinary group of University researchers working on the molecular level to develop new and stronger materials.

Mihir Sen, professor of aerospace and mechanical engineering, joined the College of Engineering faculty in 1986. He has proven many times that he is knowledgeable, capable, and effective in sharing his experience and excitement with students. He teaches with a passion for his subject and is held in the highest regard by department colleagues and students for the time he spends in individual tutoring sessions. Sen’s students often comment on his interest in their careers after they leave Notre Dame, and many of them avail themselves of his advice and counsel.

Whether it’s working with students in class on an assigned project, in the Automation and Robotics Laboratory, or on the Mini Baja car, Michael M. Stanisic, associate professor of aerospace and mechanical engineering, is often cited by students for his enthusiasm and ability to make difficult subjects comprehensible. Students have indicated that they developed an interest in the field of machine kinematics due to his example. Other students have said that his effectiveness in the classroom and assistance outside of it have confirmed that they chose the right field as a major.

The first award for Outstanding Teacher was presented in 1977 to celebrate a century of engineering instruction at Notre Dame. Within the College of Engineering, excellent faculty have continued to honor the tradition of learning that began so long ago. In recognition of the high caliber of instructors and students who have become part of engineering history at the University, the college selects one faculty member each year whose example merits special emphasis.

This year’s Teacher of the Year award was presented to James J. Mason, associate professor of aerospace and mechanical engineering, during the annual Honors Program on April 24, 2001. Since joining the faculty in 1993, Mason has consistently exceeded expectations, earning the respect and admiration of his colleagues. He has also received various departmental teaching awards.

His students regard him as a “creative and motivating teacher” whose passion for teaching and genuine interest in their welfare is evident in his willingness to help, “even with problems unrelated to his class.” At the same time, students recognize his courses as demanding. One student stated, “You dread going to class sometimes because he makes you work every day ... but it pays off.” The College of Engineering was pleased to honor Mason for his efforts as an educator by naming him the 2001 Outstanding Teacher of the Year.
Faculty members for the first full year of EG111/112, the first-year course sequence for all engineering intents, wanted to close out the academic year in a memorable way. What could be better than asking the question that the sequence is supposed to help students answer: “Who wants to be an engineer?” Using a game-show format that was a cross between “Jeopardy” and “Bookstore Basketball.” The students, who were already divided into 12 sections for the course, chose three representatives from each section to participate as each section’s team. These teams then competed with one another to answer the questions posed by the “host,” Thomas E. Fuja, professor of electrical engineering. These questions and problem-solving situations were based on material covered throughout the year.

As the students gathered for their last joint class in the DeBartolo Auditorium, there was a sense of excitement in the air. Some of the students even dressed for the occasion, wearing team colors, wigs, and other paraphernalia. While their teammates cheered them on, they vied with one another to answer the questions quickly and correctly. The winners, representing Team No. 1, were Chris Baughman, John Ryan, and Pedro Alves.

“This particular class session is not indicative of what happened throughout the year,” said Stephen M. Batill, associate dean for educational programs and professor of aerospace and mechanical engineering. “It is also a very good representation of how excited these students have become about what they have learned in EG111/112. We hope they have become critical and independent thinkers. More important, they have developed an appreciation and zeal for engineering that they did not have a year ago. We’re looking forward to their contributions to the College this fall as sophomores.”

Rockwell Automation Power Systems Design Award Presented

Milwaukee, Wis.-based Rockwell Automation Power Systems believes in encouraging young engineers in their studies. The company, in conjunction with the Rockwell International Corporation Trust, has joined with Notre Dame to provide an annual honorarium to two seniors for their senior design projects. The senior design course, which is offered during both fall and spring semesters, focuses on the product realization process and team design activities. In the past students have produced autonomous vehicles, automatic loading systems, and manufacturing process controls. Paul T. Gorski, vice president of engineering of Rockwell’s manufacturing facility in Greenville, S.C., presented the check during a visit to the College earlier this year.

Senior Christopher Bosco and Jason Vinser were the first recipients of the Rockwell Automation Power Systems Design Award. A leader in automation solutions, the company believes in encouraging young engineers in their studies. The company, in conjunction with the Rockwell International Corporation Trust, has joined with Notre Dame to provide an annual honorarium to two seniors for their senior design projects.

Mueller Receives Presidential Award

Roth-Gibson Professor of Aerospace and Mechanical Engineering Thomas J. Mueller received a special Presidential Award from the University in May 2001. The Presidential Awards are presented to members of the faculty or administration for distinguished service to Notre Dame over an extended period of time. The citation on Mueller’s award states: “This honoree has been an outstanding contributor to teaching, research, and administration in both his department and college. Early in his career he engineered a major reorganization of his college’s research support staff and also invested long hours assisting junior faculty in developing research funding support. Later, as chair of the Department of Aerospace and Mechanical Engineering, he led the way in a dramatic upgrading of the department’s graduate programs — an accomplishment that earned him the James A. Burns, C.S.C., Graduate School Award.”

Merz to Return to Teaching

James L. Merz, vice president for graduate studies and research, will return to teaching and research in June 2001 as Frank M. Freimann Professor of Electrical Engineering. During his five-year term as vice president, Merz has been responsible for the development and state of all postbaccalaureate work at the University, as well as the administration of all research conducted at Notre Dame. His accomplishments include creating interdisciplinary research centers such as the Center for Nano Science and Technology, the Walther Center for Cancer Research, the Keck Center for Transgene Research, the Center for Tropical Disease Research and Teaching, and the recently formed Center for Molecularly Engineered Materials, establishing partnerships with other universities on major research projects, and increasing fellowships and stipends to graduate students.

A 1959 graduate of the University, Merz returned to the College of Engineering to direct a team of researchers investigating the field of nanoscience, specifically Quantum-dot Cellular Automata. He had previously served as director of the Center for Quantized Electronic Structures at the University of California at Santa Barbara, a National Science Foundation science and technology center. The College welcomes his return to teaching and the vision he offers students as an internationally recognized scholar in the field of optoelectronic materials and devices.

In February 2001, Erica Cain-Ward was named the new director of the Minority Engineering Program. A 1993 graduate of the University, Cain-Ward most recently served as manager of recruitment and retention for the National Consortium for Graduate Degrees for Minority Students in Engineering and Science, Inc., a not-for-profit organization headquartered at Notre Dame. As director of the MEP she will oversee the program’s Academic Excellence Workshops, Mastering Techniques for Excellence in Engineering courses, the annual General Motors Scholars’ Competition, the Graduate School Connections program, the five-year Scholars Initiative, the MEP Alumni Network, and the Ameritech Pre-college Minority Engineering Program. For more information on the Minority Engineering Program, visit http://www.nd.edu/~mepnd/.

Brennecke Published as Part of ACS Anniversary

As part of the American Chemical Society’s 125th anniversary celebration, Joan F. Brennecke, professor of chemical engineering was invited to submit an article for inclusion in “New Voices in Chemistry.” Published in the March 26, 2001, issue of Chemical & Engineering News, “New Voices” highlighted the thoughts and aspirations of 171 top young chemical engineers, chemists, and business leaders regarding the future of the chemical industry.

Brennecke’s article, “Making Solvents Our Friends, Not Enemies,” discussed finding and using safe alternatives to volatile organic compounds, possibly the development of entirely new classes of solvents for reactions and separations. A Notre Dame faculty member since 1989, Brennecke is a pioneer in environmentally-conscious chemical process design, thermodynamics, solvent effects on reactions, and supercritical fluids.

IEEE Circuits and Systems Society Technical Achievement Award

Ruey-Wen Liu, Frank M. Freimann Chair of Electrical Engineering, has been selected to receive the 2001 Institute of Electrical and Electronics Engineers Circuits and Systems Society Technical Achievement Award for “his leadership and fundamental contributions in nonlinear circuit theory and blind signal processing and for his unceasing leadership in enhancing and sustaining the technical vibrancy of the Circuits and Systems Society.”

An annual award, this honor is bestowed on an individual with outstanding technical contributions over a period of years. It is based on the overall quality and originality of contributions as well continuation of effort.

Center for Nano Science and Technology Names New Director

Wolfgang Porod, professor of electrical engineering, has been named the director of the Center for Nano Science and Technology. He has served as the associate director of the Center since its inception in 2000. In his new capacity, he will coordinate the Center’s research and educational programs while also functioning as a focal point for the University’s activities in nanoscience and technology. Porod has been a member of the electrical engineering faculty since 1985. Led by College of Engineering faculty, the Center is comprised of a multidisciplinary team of researchers from the departments of electrical engineering, computer science and engineering, chemistry and biochemistry, and physics. It is the only research facility in the country addressing the concept of computing through Quantum-dot Cellular Automata (QCA). Pioneered at Notre Dame, QCA is a new paradigm for transistorless computing.

Porod replaces former director Gerald Iafrate, professor of electrical engineering, who is leaving Notre Dame to join the faculty at North Carolina State University. Although he will not be on the Notre Dame campus, Iafrate will continue collaborating with colleagues from the College.

For more information on the Center for Nano Science and Technology, visit http://www.nd.edu/~ndnano/.

Robert M. Dunn, former vice president of Corporate Manufacturing at IBM, has been named director of the new integrated engineering and business practice curriculum in the College of Engineering. “The program will help the College better prepare its students for the corporate world, and we believe the addition of Robert Dunn to our faculty will greatly enhance its effectiveness,” said Frank P. Incropera, McCloskey Dean of Engineering.

Dunn graduated from Notre Dame with a bachelor’s degree in engineering science in 1965. He earned a master’s degree in engineering mechanics from Pennsylvania State University in 1967 and a doctorate in aeronautical engineering from the University of Illinois at Urbana in 1972. He comes to the University with 30 years’ experience at the IBM Corporation, where his career involved the management of complex organizations and business relations in Asia and South America, as well as in Europe and North America.

Beginning in the 2001-02 academic year, Dunn will develop and teach two pilot courses in the program, “Integrated Engineering and Business Fundamentals” and “Advanced Topics in Integrated Engineering and Business Practice.” Both courses will examine the characteristics of modern industrial leaders. Participants will gain a working knowledge of the fundamentals of business practice and a more in-depth perspective of the role of engineering in business. They will also begin to develop the interpersonal and decision-making skills that are required to make significant contributions to a business enterprise.

The program was proposed by a joint committee of faculty from the College of Engineering and the Mendoza College of Business and is being developed with input from the committee and the College of Engineering Advisory Council. More complete information on the program will be featured in the next issue of Engineering Insights.
The Joint Engineering Council (JEC) at the University of Notre Dame has been in existence since the 1950s. I joined the JEC at a time when it had only had two active members. With just a president and treasurer, the JEC as it existed three years ago was about as bare bones as an organization can be. There were approximately 10 people at the first meeting I attended. It was a call to action to revive the JEC. During the next meeting, new academic year officers were elected, and the outgoing president gave everyone interested a position in order to ensure the council would be strong. Thus, there were six officers in the 1999-2000 JEC. It was a tough year, but the group revived most of the activities which had been JEC annual events.

I believe the reason we have had more success over the last two years is that we worked harder to get all engineering students involved. In the past the JEC would ask from within the organization for volunteers. Now, for our events, we publicize, invite, and encourage all engineering students to volunteer. We do this through mass e-mail messages and through signs in the Fitzpatrick Hall of Engineering.

In addition to gaining better participation, this tactic fits our mission. The JEC is an organization that was founded to represent and serve the entire student body of engineers at Notre Dame and to unite the other engineering student organizations on campus. Since JEC has no dues, all who work on our events are considered active members.

JOINT ENGINEERING COUNCIL OFFICERS
Outgoing officers (2000-01)
Max Wingert, president
Pat Shea, vice president
Julie Sherwin, secretary
Tom Hanley, treasurer

Newly elected officers (2001-02)
Pat Shea, president
Tom Hanley, vice president
Nicole Wykoff, secretary
Mark Randel, treasurer

Joint Engineering Council officers for the 2000-01 year were, left to right, Tom Hanley, treasurer; Max Wingert, president; Julie Sherwin, secretary; and Pat Shea, vice president. Wingert and Sherwin graduated in 2001. Pat Shea returns to JEC this fall as president with Tom Hanley serving as vice president.

We've come a long way since 1998 and are currently responsible for five student activities:
• The first responsibility of JEC is the production of a freshmen source book. The First-Year Handbook is a 32-page guide to being an engineer at Notre Dame. A resource given to every engineering intent the first week of school, the handbook includes a variety of invaluable information — from listing the times computer labs are open to providing a student dictionary of frequently used “Notre Dame terms.”
• The second JEC sponsored activity is Industry Day, a student-run career fair. In 2000 Industry Day featured 85 companies, a far cry from a few years ago when attendance registered around 40 corporations. To accommodate the increased corporate list, the fair was moved to the Joyce Center.
• During the academic year JEC participates in a school service project. Each week, groups of two to five Notre Dame students visit three different local elementary schools and interact with the kids in basic science experiments. Why? JEC volunteers believe this is a great way to serve the community as role models while also promoting engineering and science.
• In January 2001 JEC revived an old tradition. The group sponsored a clothing sale to students, faculty, and staff. Featuring affordable College of Engineering apparel, the sale was a huge success. A total of 200 sweatshirts sold in two weeks.
• One of the most enjoyable activities for JEC is Engineering Week. Corresponding with National Engineers Week, this is a time for all engineering students to relax and enjoy a week of fun with their fellow engineers. Each day features a new activity and focuses on a different engineering discipline. During Engineering Week the JEC also sponsors a daily breakfast and lunch for students in the College of Engineering. The week’s activities included a movie night, basketball tournament, bowling night, t-shirt tie-dye, and the Engineering Ball.

As a senior I will not be returning to JEC next fall. But the future is bright, and I am sure the newly elected officers have many exciting events planned for the engineering student body.

Editor’s note: This perspective on the history and mission of the Joint Engineering Council was provided by Max Wingert, JEC president for the 2000-01 academic year.
Thomas Gibbons ('85, ME) has been appointed director of regional development for the University of Notre Dame’s New York office. A double major in mechanical engineering and government and international studies, Gibbons has also studied at the Institute of European Studies in London, the National University of Costa Rica as a Fulbright Fellow, and at the New York Institute of Technology.

Kenny Harris ('78, CE) was recently named vice president for facilities for Arizona’s Tourism and Sports Authority, the agency that will build and operate a 17,000-seat stadium in Tempe. Harris has previously helped build the America West Arena, Phoenix City Hall, and the Arizona Science Center.

Annette Hashbrook ('85, AME) has been appointed a flight director at NASA’s Johnson Space Center. A resident of Clear Lake City, Texas, she has worked at the Space Center since 1987.

David Kirk ('79, EE) was named vice president of retail and manufacturing practices at Mobility, a professional services firm focused on mobile computing. Kirk holds three patents: Priority Interrupt Switching Apparatus for Real-time Systems, Strategic Memory Allocation for Real-time Systems, and Micro Channel Architecture for Real-time Multimedia.

Richard Manso ('79, CE) has been named general counsel of 2Roam of Redwood City, Calif., a leading global wireless software and service provider. While at Notre Dame, Manso was a member of the 1977 National Champion football team; he graduated cum laude.

Peter McAdam ('67, ME), most recently executive director at TRW Ventures, has been named new vice president of corporate development at Peregrine Semiconductor Corp. Headquartered in San Diego, Peregrine designs, manufactures, and markets high-speed communications integrated circuits for the semiconductor market. McAdam, who has a doctorate in electrical engineering, holds three patents in the area of communications technology.

David Tomasula ('92, CE) has been named an associate and part of the management team of LJB Inc., an engineering and architectural consulting firm. Tomasula joined the CON/STEEL Division of the St. Louis, Mo., office of LJB in 1996.

Tony Wrappe ('76, EE) has been promoted to senior vice president of marketing and product management for SnapTrack, Inc., of Campbell, Calif., a wholly-owned subsidiary of QUALCOMM Incorporated. Prior to this appointment, Wrappe had held the post of vice president of program management for the company’s wireless position location products and solutions.

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In the last issue of Engineering Insights it was reported that John Roncz was a graduate of the Department of Aerospace and Engineering. Although Roncz is a graduate of the University, he is not a graduate of the College of Engineering.

2001 Alumni Honor Awards

Each year the College of Engineering honors its current students and faculty for their dedication, commitment, and pursuit of excellence in engineering. It is only fitting that we also acknowledge outstanding alumni — those who represent the many faces of engineering, whose efforts and examples, professionally and personally, serve as an inspiration to the College, its students, and fellow alumni. This year’s honorees were Richard A. Bajura, W. Michael Hawes, Thomas Kerr McBride, and Vincent James Zipparro.

Bajura is the director for the National Research Center for Coal and Energy at West Virginia University (WVD). He graduated from the University of Notre Dame with a bachelor’s degree in mechanical engineering in 1962. By 1967 he had also earned master’s and doctoral degrees from the University in mechanical engineering, with a specialization in fluid engineering.

As deputy associate administrator for the International Space Station at NASA Headquarters in Washington, D.C., Hawes’ duties encompass directing the space station program activities including managing budget activities, establishing and implementing station policy, coordinating external communications, and serving as liaison with the Administration, Congress, industry, and the station’s international partners. He graduated from Notre Dame in 1978 with a bachelor’s in aerospace engineering. He received a master’s degree in engineering management in 1996 from George Washington University and is currently pursuing a doctorate in engineering management from that institution.

McBride graduated from Notre Dame in 1959 with a bachelor’s in chemical engineering. He then attended Graduate School at the University, focusing on mathematics. After several years serving as systems analysis specialist for the study of ballistic missile programs, he moved to Chicago to pursue a law degree, which he received from DePaul University in 1965. The same year he joined UOP Inc., of Des Plaines, Ill. McBride retired from UOP in February 2000, where he had most recently served as chief patent counsel.

Zipparro is chief engineer for Harza Engineering Company in Chicago, Ill., and a member of the firm’s board of directors. He received a bachelor’s in civil engineering from Notre Dame in 1963, which he followed with a master’s degree from the University in 1964. He had already earned a bachelor’s in physics from DePaul University. Zipparro joined Harza immediately after receipt of his master’s and has served the company in various capacities and on various projects around the world.

Sheshul Nagaraj, who completed a doctorate in electrical engineering in November 2000, received the 2001 Graduate Student Award for Excellence in Research. One of his contributions was the development of a new mechanism that can save up to 80 percent of the power consumption required of a handset in mobile communication devices. He has five journal articles in print, another five in preparation for publication, and 20 articles published in conference proceedings. Nagaraj is employed at Lucent Technologies in New Jersey.

Updates
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Editor’s Note:
Comments, suggestions, and news about alumni achievements, honors, etc., are always welcome.
To submit materials send hard copy or an e-mail to:
Editor
Engineering Graphics & Publications
357-E Fitzpatrick Hall
Notre Dame, IN 46556-5637
Nina.R.Welding.2@nd.edu
For more than a decade students from the third-grade class of Swanson-Highlands Elementary School in South Bend, Ind., have visited the College of Engineering. Each May as they tour the labs, these students see the many faces of engineering in action. This year was no exception.

They visited the Computer-aided Design Laboratory and the Robotics Laboratory, where they not only designed their own torus (doughnut) but also watched as faculty members programmed a robot to perform a simple repetitive motion. They tested the strength of steel and learned of the importance of force and compressive loads in the Solid Mechanics Laboratory. In the Fluid Mechanics Laboratory they helped to ignite a model rocket engine and measured the force of a water jet as they began to comprehend the correlation between force and velocity.

This year the Swanson students also visited the Engineering Learning Center where they investigated the design of an engineering system, one that joined computers with a mechanical system. They also studied the design of bridges and used a measurement device to test the force on a simple truss.

"Obviously, these students do not leave the College with a working knowledge of engineering," said James J. Mason, associate professor of aerospace and mechanical engineering, "and that's not our goal." What is the goal? To instill in each child a sense of curiosity, awe, and wonder at the world of possibilities engineering offers and to show them that as engineers they can build a better world.

The College would like to thank all those involved — faculty, staff, and students — for making the experience such a memorable one for the Swanson students.

Contact University Photographer Maureen H. Breden
Executive Director, Office of Marketing
University of Notre Dame
809.571.2417
mhb@nd.edu

Editors: Nina Welding, Marty Schalm

Contact Engineering Graphics at Nina.R.Welding.2@nd.edu

"Education is not the filling of a vessel, but the lighting of a fire." — W.B. Yeats