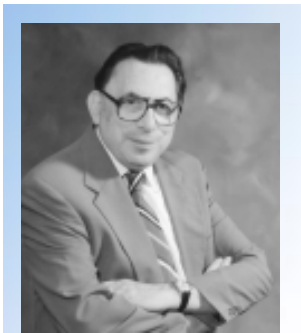


Erich Bloch Receives Dean's Award

The Dean's Award for Engineering Achievement is given this year to Erich Bloch (EE BS '52) for his exceptional contributions to the practice of engineering. Bloch received his education at the Federal Polytechnic Institute of Zurich and earned a Bachelor of Science degree in electrical engineering from UB.



Erich Bloch

Bloch rose through the ranks at IBM to become Vice President for Technical Personnel Development, a position responsible for managing the four IBM technical institutes.

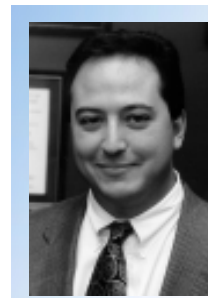
In 1984, he was appointed director of the National Science Foundation by President Ronald Reagan. In 1990, Bloch joined the Council on Competitiveness, a non-partisan forum of chief executives from the business, university and labor communities working to sustain U.S. competitiveness. He is also currently a principal with The Washington Advisory Group, LLC, which provides strategic counsel and management consulting to governments and organizations around the world.

For other Engineering Commencement coverage, see page

continued on page three

Alumni Awards

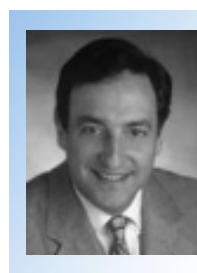
Ephraim Garcia (ASE BS '85, MS '88, Ph.D. '90) received this year's George W. Thorn Award, presented annually to UB graduates under the age of 40 who make outstanding national or international contributions to their career field or academic area.



Ephraim Garcia

A program manager with the Defense Advanced Research Projects Agency (DARPA) in the U.S. Defense Sciences Office, on leave from Vanderbilt University, Garcia drew acclaim for the design of tiny mesoscale, insect-like robots with vision systems that minimize risk to human combatants by surveying and observing battlefields.

His research and expertise in technologies critical to defense have led to his being designated a fellow with the Central Intelligence Agency. He was named a Presidential Faculty Fellow by President Clinton for 1993-1998. Garcia also serves on the UB School of Engineering Dean's Council.



Ira Flatow

Ira S. Flatow (IE BS '71) received a Distinguished Alumni Award for his exceptional career accomplishments and community service. He is the host of National Public Radio's award-winning program, "Talk of the Nation: Science Friday" and a 30-year broadcast journalist. He is also president of ScienCentral, a science-news service for television and the

continued on page three

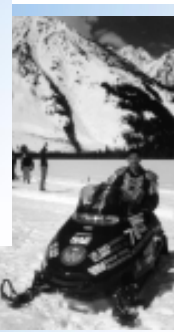
UB's "Green" Snowmobile Wins International Contest

A team of UB engineering students redesigned and retooled a Polaris snowmobile and beat competitors at the Inaugural Clean Snowmobile Challenge held in Jackson Hole, Wyo.

Bringing home \$17,000 in prize money for their school, the team captured top honors in four of the five categories, including low emissions and noise levels, best design and fuel economy. UB's four-



(l-r) Chris Wallin, Michael Kurczewski (driver), Daniel Drake, Adam Echter, Nick Ferraro, Eric Baker, Andrew Mills and Paul Nichols.



stroke-engine machine had a virtually undetectable reading in hydrocarbon emissions. It also featured fuel injection and a special catalytic converter.

It was quieter, thanks to an improved exhaust muffler, intake silencing, water cooling, and foam padding lining the hood of the engine. And it got 27.3 miles per gallon, or about double that of other machines.

Engineering Alumni Association News Inside:

President's letter	page 9	EAA Scholarships	page 11
Order of the Engineer ceremony	page 11	"Engineer of the Year" nominations	page 11
		Reunion 2000 announcement	page 9

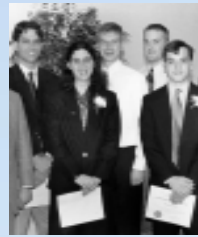
The 15th Annual Dean's Scholarship Reception



The Zimmer awardee with Christina Bloebaum, MAE chair



Jarvis award winners



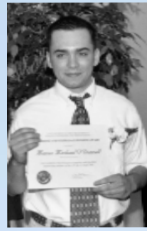
Senior Scholar award recipients



Rodger Fritz (right) of Lockheed-Martin with the Lockheed Martin undergraduate award winners



Jennifer Zirnheld with Dollinger Scholarship recipients



Townsend awardee



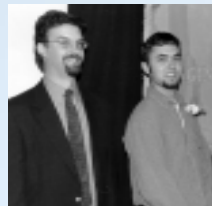
Rachel Rosen awardees



The Lockheed Martin graduate award winners



McLernon Scholarship recipients with Mike Ryan, associate dean for undergraduate education



(Above, l-r) Craig Forget (BS CIE '92, MS '96) with the Joseph Markle Dinner Memorial #4 Scholarship recipient



Electronic Data Systems award winners with Peter Scott (second from right), CSE director of undergraduate studies

The School of Engineering and Applied Sciences and the Engineering Alumni Association hosted their 15th annual reception for UB engineering students who received awards this year for academic excellence and leadership skills. Dean Karwan presided. See page 8 for a complete listing of award winners.

Moog Funds Engineering Fellowship

Moog Inc. has given \$125,000 to UB to fund a graduate fellowship in the School of Engineering and Applied Sciences (SEAS).

Richard A. Aubrecht, Ph.D., vice chairman of the board and vice president of planning and technology, said, "Moog is headquartered here in Western New York and we recognize the importance of supporting institutions like UB that are a critical part of the community and the culture." He noted that more than 60 UB engineering alumni work at Moog.



"For years we have enjoyed a good working partnership with Moog," said Mark H. Karwan, dean of the School of Engineering, "and this is the next step in our relationship with a company that we consider to be a community and engineering leader."

"In addition to supporting a fellowship, executives like CEO Bob Brady understand the value of partnerships, participating in activities like Industry University Day, as well as

chairing the Buffalo Niagara Partnership."

Karwan said that over the past 20 years, the university has provided many qualified graduates who have been hired by Moog. UB faculty members have collaborated on research projects with Moog engineers and faculty members have taught classes and seminars on-site for the company. He added: "Moog executives like Dick Aubrecht have reciprocated by serving on the SEAS Dean's Council and offering an industry perspective on engineering education and now by offering this fellowship."

Moog is a worldwide manufacturer of precision controls for aerospace, defense and industrial applications.

Buffalo Engineer is a publication of the School of Engineering and Applied Sciences--External Affairs and the Engineering Alumni Association, University at Buffalo. Robert E. Barnes, Ph.D., editor; Chris Barnes, associate editor; Pat Doeing, editorial assistant. Other contributions: the *UB Reporter* and the UB Office of Publications. Anyone wishing further information on the articles contained in this newsletter may call External Affairs at (716) 645-2768, fax (716) 645-2495, or e-mail Robert Barnes at rebarnes@eng.buffalo.edu.

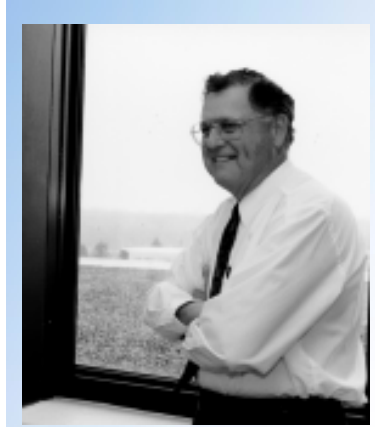
Gift Leverages \$260,000 for School

Robert H. Goldsmith, retired General Electric executive and UB graduate, has given \$125,000 to UB Engineering, which General Electric Co. is matching dollar-for-dollar and San Diego Gas & Electric has agreed to match on a partial basis, resulting in a total gift of \$260,000.

Goldsmith, a 1951 graduate, and his wife, Catherine, established the Robert H. and Catherine H. Goldsmith Scholarship Fund. "We are pleased to provide this opportunity for a student to continue his or her education through to a master's degree, which is fast becoming the degree of choice for the practice of engineering," Goldsmith said. "These matching funds allow us to more than double our support," he added, "and since the UB School of Engineering helped me immeasurably, it's gratifying to return the favor."

Mark H. Karwan, professor and dean of Engineering, said Goldsmith has served generously on the Dean's Advisory Council. "Bob Goldsmith saw the need to grow our graduate fellowship program based on his active participation in the Dean's Council, which has meant a major commitment of his time and money."

The first Goldsmith scholar is Moshe Shaked, a fourth-year student working on his combined bachelor's and master's of engineering degrees in Civil, Structural and Environmental Engineering. Shaked received the \$5,000 scholarship this fall.



Robert H. Goldsmith

The Allison Kent Simons Award

The family of Allison Kent Simons, a 1950 UB School of Engineering graduate and internationally known mechanical engineer who died in 1997, has established a memorial award for mechanical engineering students to be known as the Allison Kent Simons Award.

Mr. Simons was the inventor of "rubber springs" to minimize road vibration in truck seats and was named the American Society of Mechanical Engineers' 1958 "Engineer of the Year."

He spent the bulk of his career at Bostrom Manufacturing Co, now Signal. He supervised the expansion of Bostrom into Europe, eventually becoming a corporate officer and group vice president.

National Honors for George Lee

The American Society of Civil Engineers has chosen George C. Lee, Samuel P. Capen Professor of Engineering and director of the Multidisciplinary Center for Earthquake Engineering (MCEER) at UB, to receive the prestigious Nathan M. Newmark Medal for 2000.

The national medal, sponsored by the ASCE's Engineering Mechanics Division and its Structural Engineering Institute, is given to an ASCE member who has helped substantially to strengthen the scientific base of structural engineering.

Lee is cited for his achievements in both research, where he has made major contributions to the study and practice of making steel buildings safer during earthquakes, and education, where he was an early player in the move to build a program in earthquake engineering at UB, now one of the nation's most acclaimed. In research, Lee is honored "for his work on plastic analysis of structures and his research in aseismic design of structural and mechanical systems."

The citation credits Lee with the drive to establish earthquake-engineering education and research programs at UB, beginning in the 1970s. A member of the UB faculty since 1961, Lee served as dean of the UB School of Engineering and Applied Sciences from 1977-95.

Lee has also directed the university's Greater Regional Industrial Technology program, designed to help area businesses develop new products; founded the Engineering Career Institute, a summer program designed to supplement the technical education of UB engineering students; and launched the Buffalo-area Engineering Awareness for Minorities, Inc., a major effort to encourage minority students to pursue careers in engineering.

continued from page one

Dean's Award

Bloch has campaigned tirelessly to reform technical education. "One of the functions," he writes, "of the university, is the education of its students. This mission has at times been in conflict with the research mission. Education must, in fact, not just rhetorically, be the prime mission of universities." Currently, Bloch is a Distinguished Visiting Professor at George Mason University.

In 1985, Bloch was awarded the National Medal of Technology by President Reagan. He is a member of the U.S. National Academy of Engineering, the Swedish Academy of Engineering Sciences, and a foreign member of the Engineering Academy of Japan. In 1989, he was appointed Knight, First Class Royal Polar Star, by the King of Sweden. Bloch received the Bueche Award from the National Academy of Engineering and has been the recipient of UB's Distinguished Alumni and Clifford C. Furnas Memorial Awards.

Bloch was the first chair of the UB Engineering Dean's Council and was conferred the title of Chair Emeritus upon leaving.

continued from page one

Alumni Awards

Internet.

"I was the proverbial kid who spent hours in the basement experimenting with electronic gizmos, and then entering them in high school science fairs," says Ira Flatow.

Ira Flatow's career goes back thirty years. When he entered college, in 1967, to study for his engineering degree, Ira began working in radio at WBFO. He eventually became news director of the station.

In 1971, Flatow joined National Public Radio in Washington, where he covered medicine, health, technology and the environment for seventeen years.

Flatow was science reporter for "CBS This Morning" program (1989-90), host and writer of the Emmy Award winning science series "Newton's Apple" (1982-87) and veteran science correspondent for National Public Radio. His latest book is entitled *They All Laughed...From Light Bulbs to Lasers: The Fascinating Stories Behind the Great Inventions That Have Changed Our Lives*. It follows on the heels of his highly successful book *Rainbows, Curve Balls and Other Wonders of the Natural World Explained*.

Peace Bridge Designs Come To Life Virtually At UB

Until now, the proposed bridge and toll plaza designs have been available only as blueprints. But thanks to a partnership between the Center for Computational Research (CCR), IBC Digital and the Virtual Reality Lab in the UB Department of Mechanical and Aerospace Engineering, observers can “walk through” or “fly through” virtual-reality representations of each of the proposed bridge and toll plaza designs.

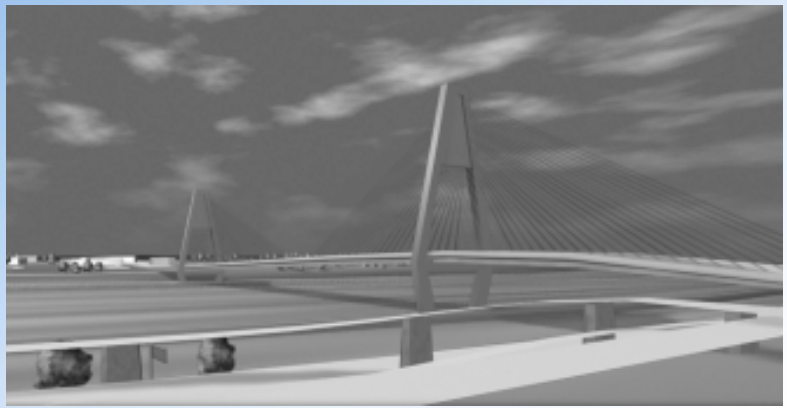
“In virtual reality, you literally will be able to stand in Front Park, look out over the vista and see the bridge,” said Ben Porcari, president of IBC Digital. “It’s very hard to make a \$350 million decision based on line drawings or blueprints.”

The models are now available to the public in an immersive three-dimensional environment in CCR, located in Norton Hall on the UB Amherst Campus.

Russ Miller, Ph.D., CCR director and UB professor of computer science, said CCR “is thrilled to be able to provide state-of-the-art technology and expertise to the community. The combination of IBC Digital’s animation capabilities, UB’s Virtual Reality Lab expertise and the resources available in the Center for Computational Research provides an excellent example of the synergism that is possible when a New York State university and the private sector cooperate on an issue that is important both to the public and government.”

“It’s very simple to say, ‘this design will eliminate four blocks of houses;’ it’s quite another to see them just disappear before your eyes as you do in the animations,” Porcari said.

The work at UB is being coordinated by Thenkurussi Kesavades, Ph.D., professor of mechanical and aerospace engineering and director of UB’s Virtual Reality Lab. The designs may be viewed at the CCR Web site at www.ccr.buffalo.edu and at the IBC Digital Web site at www.ibcdigital.com.



Alternative “B” with cable-stayed bridge, view from U.S. plaza. From the Center for Computational Research’s web site.

Engineering Commencement

At this year’s Engineering Commencement, Provost David Triggles and Dean Mark Karwan presided. The student address was given by Joseph M. Moritz, president of New York Nu, Tau Beta Pi who received a BS in Chemical Engineering. Also participating were the Banner Carrier, Jackman J. Prescod, who received an ME in Civil Engineering; Stephanie D. Schinzing, who received a BS in Industrial Engineering, delivered the Salutation; and Lieselle E. Trinidad, who received a BS Mechanical Engineering, delivered the Farewell Address.

Engineering Distinction

David John Adams, CE
 Nicholas Keith Adams, EE
 Brian Patrick Aylward, CE
 Renee Marie Bagwell, ME
 Jonathan Philip Barber, IE
 Scott Paul Barnes, ME
 Jeffrey William Berman, CIE
 Stanley Michael Bileschi, EE
 David Andrew Corson, ME
 Gregory George Decker, EE
 John Patrick Eddy, ME
 Michael Faciszewski, CE
 Jeffrey Michael Farrell, EE
 Eric Leslie Faulring, ME
 Daniel Michael Grasso, EE
 Carrie Marie Harder, EE
 Helena Holeckova, CE
 Keith Jabcuba, EE
 Catherine Teonia Jacob, ME
 Melinda Joy Karwan, CE
 Kathryn Christian Kien, CE
 William David Kirkey, EE
 Robert Todd Koch, CE
 Kevin Michael Kolb, EE
 Anthony John Kurek, Jr. CE
 Brian Michael Mentel, CIE
 Daryl Molino, CE
 Joseph Michael Moritz, CE
 Gregory Gerald Mruk, ASE

Andrew Thomas Olewnik, ME
 Daniel Patrick Palermo, CE
 Karianne Paolo, IE
 Timothy James Reidy, CEN
 Anthony Rigosu, EE
 Stephanie Diane Schinzing, IE
 Chang Hyon Suh, EE
 Kevin David Todtenhagen, CE
 Christopher Ihor Trojan, EE
 Laam A. Tse, ASE/ME
 Anthony Joseph Vaccaro, IE
 Gordon Patrick Warn, CIE
 John William Zerr ME

Tau Beta Pi National Engineering Honors Society Graduates

David John Adams, CE
 Brian Patrick Aylward, CE
 R. Scott Comstock, CE
 Matthew B. Copeland, EE
 Joshua Elijah Davis, EE
 Gregory George Decker, EE
 John Patrick Eddy, ME
 Michael Faciszewski, CE
 Eric Leslie Faulring, ME
 Daniel Michael Grasso, EE
 Carrie Marie Harder, EE
 Helena Holeckova, CE
 Keith Jabcuba, EE
 Catherine Teonia Jacob, ME

Melinda Joy Karwan, CE
 Kathryn Christian Kien, CE
 William David Kirkey, EE
 Robert Todd Koch, CE
 Anthony John Kurek, Jr. CE
 Karin Kit-Wai Mak, EE
 Daniel Edward McMullan, CIE
 Brian Michael Mentel, CIE
 Joseph Michael Moritz, CE
 Gregory Gerald Mruk, ASE
 Matthew Leo Muehlbauer, ME
 Hashim Mwata Muhammad, CIE
 Zhou Shuai Ni, CS
 Nathan Daniel O’Donnell, EE
 Andrew Thomas Olewnik, ME
 Daniel Patrick Palermo, CE
 Yury Arkadii Perzov, EE
 Mangal Prasad, EE
 Joseph Edward Price, CS/CEN
 Anthony Rigosu, EE
 Matthew Reed Sachs, ME
 Stephanie Diane Schinzing, IE
 Urszula Sporysz, ME
 James Michael Steigler, EE
 Martin David Sweeney, ME
 Kevin David Todtenhagen, CE
 Laam A. Tse, ASE/ME
 Jessica AnneTwarek, CE
 Chun Kong Yeung, ME
 John William Zerr, ME

Key-ASE, Aerospace; CE, Chemical; CEN, Computer; CS, Computer Science; CIE, Civil; EE, Electrical; IE, Industrial; ME, Mechanical.

Lasers, Photonics and Biophotonics Institute

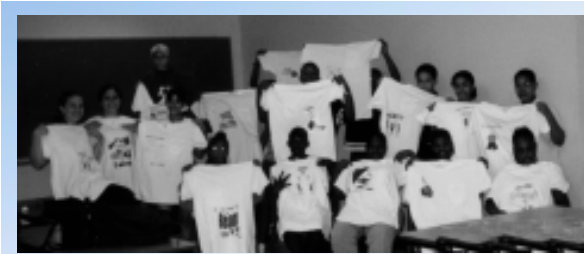
The university has established a multidisciplinary institute to harness the power of light for a broad spectrum of uses, ranging from telecommunications to cancer therapy. Photonics is the information-processing counterpart of electronics, using photons instead of electrons to process information. The School of Engineering is a significant partner in the new institute, contributing materials and circuits research and interactions with the optical communications industry.

Paras Prasad, SUNY Distinguished Professor in the departments of Chemistry and Physics, Samuel P. Capen Chair, and professor of electrical engineering, is executive director of the new institute.

Prasad’s research has resulted in new photonic materials that make new cancer treatments possible, CDs that pack a thousand times more data and extremely sensitive molecular probes. Also active in the institute are electrical engineering faculty Pao-Lo Liu, professor and chair, and Alexander Cartwright, assistant professor.

BEAM Participates in Workshop

At the National Association of Minority Engineering Program Administrators national conference on "Driving Recruitment, Building Retention, Elevating Graduation," Marilyn Helenbrook, executive director of the Buffalo-area Engineering Awareness for Minorities, Inc. (BEAM), conducted a workshop entitled "Curriculum Development of the Buffalo-area Engineering Awareness for Minorities and Liberty Partnership Math and Science Day Camp for Post-seventh Grade Students." Helenbrook conducted the workshop with Patricia Wier, coordinator and instructor of the BEAM Liberty Partnership Math and Science Camp.



BEAM Math and Science Day Camp class from Summer 1999

The purpose of the camp is to enhance the math, science and computer skills of post-seventh grade minority students with a curriculum guided by the New York State Learning Standards for Mathematics, Science and Technology. The camp pairs BEAM students (85% African-American and chosen for their high math and science

grades) with Liberty Partnership students (50% Hispanic and classified as at-risk) in a peer mentoring relationship. The math and science camp activities closely follow the curriculum to be studied in eighth grade. Hands-on projects, outside speakers, and field trips further the students' enthusiasm and understanding.

BEAM Golf Tournament Third Annual Fundraiser

BEAM is sponsoring their Third Annual Golf Tournament to support middle and high school students interested in pursuing a technical or engineering degree. The proceeds from this event will benefit minority, female, inner city and other under-represented students. BEAM is a non-profit organization housed and supported by SEAS. It is designed to encourage students by providing enrichment activities through mentoring, field trips and speakers. This year's golf outing profits will contribute to the expansion of the summer programs held on the University campus. BEAM plays a critical role in the dissemination of information about engineering and technical careers to more than 500 students per year. In addition, the outing will honor BEAM Executive Director, Marilyn Helenbrook, for her work in expanding the number of students served and the growth of the programs.

The tournament will be held Tuesday, August 1, 2000, at Chestnut Hills Country Club, 1330 Broadway, Darien, New York with tee off set to begin at 11:00 AM. The cost per golfer is \$85.00, which includes 18 holes of golf, cart, lunch, dinner, prizes, and a raffle. Dinner only costs \$25.00. Sponsoring a hole will require a \$50.00 donation.

Make checks payable to GO BEAM, University at Buffalo, 412 Bonner Hall, Buffalo, New York 14260. Phone #: BEAM (716) 645-3066 or Karen (716) 856-5636.

UB Supercomputer Gets Super-sized

Demand for the computing facilities by UB researchers has prompted the Center for Computational Research (CCR) to double the capacity of its most powerful machine, thanks to a gift from SGI. Sixty-four additional processors have given CCR a 128-processor Origin2000 supercomputer—fewer than ten universities in the U.S. have an individual machine this powerful.

Said Russ Miller, director and professor of computer science and engineering, "This acquisition helps UB retain its edge as a leading academic supercomputer site in the United States."

"SGI is proud of the partnership that we have forged with the CCR at UB," said Cornelius Economou, district manager, State of New York, SGI. "We couldn't be happier with the way that Russ Miller and his team have deployed our computing systems and are using them to solve some of the world's most complex problems."

"In terms of the demand for high-performance computing, we have been essentially 'standing-room only' since we started up last year," said Miller. "Not only are core computational departments, such as Chemistry, Civil Engineering, Chemical Engineering, Mechanical and Aerospace Engineering, Mathematics and Geology, using CCR's facilities, but so are nontraditional departments, such as Art and Architecture."

CCR also reaches out to local research institutions, including Roswell Park Cancer Institute and Hauptman-Woodward Medical Research Institute, as well as to Occidental Chemical, Praxair, M&T Bank, and IBC Digital.

Gift From Myricom Further Speeds Up UB's Supercomputer

You can never have a computer that's too fast. That's the thinking of University at Buffalo researchers in the Center for Computational Research (CCR), who received a \$139,680 equipment donation that will speed up processor communications nearly 100-fold.

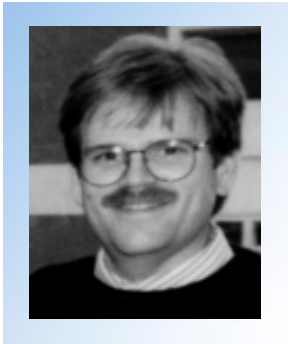
Myricom, Inc. has donated leading-edge Myrinet interfaces and switches that have been integrated into the CCR dual-boot Linux/Solaris Sun Microsystems cluster.

Russ Miller, director of the Center for Computational Research and professor of computer science and engineering, called the cluster "unique in the field of scientific research" and said it will provide "a cost-effective advantage for CCR users."

According to Miller, fewer than 10 universities in the U.S. have the capabilities of providing high-performance computing cycles as powerful as those available in CCR.

UB Electrical Engineer Wins Prestigious Research Award

Alexander N. Cartwright, Ph.D., assistant professor of electrical engineering at the University at Buffalo, is the recipient of a prestigious Department of Defense Office of Naval Research (ONR) Young Investigator Program Award.



Alexander N. Cartwright

Cartwright is one of just 26 engineers and scientists across the United States to be honored with the award this year. He is only the third UB faculty member ever to receive the award.

ONR's Young Investigator Awards recognize exceptional young scientists and engineers. Criteria include prior professional achievement, submission of a meritorious research proposal and evidence of strong support by their respective universities.

Cartwright received the award to continue his research into the complete understanding of how piezoelectric fields, which arise from changes in the crystalline structure of strained layers of nitride-based semiconductors, can be incorporated into design criteria for wide bandgap electronic devices, modulators and blue lasers.

The ONR Young Investigator is Cartwright's second prestigious award. In 1998, he received the National Science Foundation Faculty Early Career Development Award, which recognizes young faculty members who have demonstrated outstanding potential as science and engineering investigators and educators.

Joseph Mook Wins Plesur Teaching Award

D. Joseph Mook of Amherst, professor of mechanical and aerospace engineering, is one of five UB faculty members to receive one of this year's Milton Plesur Excellence in Teaching Awards from the UB Student Association recognizing their teaching excellence and commitment to students. Recipients of the Plesur award are student-nominated and selected.

Mook is director of international education in the Department of Mechanical and Aerospace Engineering in the School of Engineering. Mook's areas of interest include controls, dynamics, system identification, estimation theory, modeling and nonlinear and chaotic dynamic systems.

The former Student Association Excellence in Teaching Awards were renamed to honor Plesur, a nationally regarded author and scholar of popular culture and the American presidency, who died in 1987. Milton Plesur was so highly regarded that in 1984 a group of his former students established a scholarship fund in his name.

Engineering Education Conference

UB Engineering faculty and students were well represented at the annual meeting of the St. Lawrence Section of American Society of Engineering Education. This year's meeting focused on "Changing Engineering Education: Faculty and Curriculum."

Abani Patra, assistant professor of mechanical and aerospace engineering at UB, along with Douglas Daley, of the Environmental Science and Forestry Department at UB, spoke on "Seven Plus One Simple Habits for Successful Use of Group Activity in Teaching Engineering."

Alexander Cartwright, assistant professor of electrical engineering at UB, moderated a session on "Computer and Information Technology in Engineering Education" and delivered a paper titled "The Development of Java Based Engineering Courseware."

Preena Sageev, lecturer in the Center for Technical Communication, and Carol Romanowski, Ph.D student in industrial engineering at UB, titled their talk "A Message from Recent Engineering Graduates in the Workplace."

Mark Karwan, dean of the UB School of Engineering, remarked, "I'm very impressed at how well represented we were at the Engineering Education Conference."

UB Engineers Modernize Istanbul Airport Terminal

The massive, 800 foot-long by 500-foot-wide roof at Istanbul's brand new international airport is the first to feature both the ability to respond to seismic forces as a single, structural unit and the ability to expand and contract in response to exposure to the sun.

The conceptual designs for seismic modernization of the airport were developed by Michael C. Constantinou, Ph.D., professor and chair of the UB Department of Civil, Structural and Environmental Engineering and a researcher with the university's Multidisciplinary Center for Earthquake Engineering Research (MCEER), and colleagues at the University of California at Berkeley and LZA Technology of New York City.

The design by Constantinou and his colleagues involved installing "friction pendulum" devices manufactured by Earthquake Protection Systems of Richmond, Calif. These devices, tested extensively at UB, are designed to allow structures or structural components to swing gently from side to side.

"This has not been done before," said Constantinou. "What we did was to tie together the segments of this 800-foot-long roof together as they sit on top of these isolation devices. This gives the roof the ability to 'swing' as much as 12 inches with respect to the columns during an earthquake, thus protecting the columns."

At the same time, the roof's direct exposure to the sun necessitated the use of expansion joints that could accommodate thermal movement. The solution came in the form of "lock-up devices" manufactured by Taylor Devices, Inc., of Western New York.

Now, instead of having a rigid connection between the roof and the columns, the segments of the building's roof will stay flexible in response to thermal forces, while at the same time featuring an ability to "lock up" as one piece when subjected to earthquake forces.

Business Alliance Marks First Year

In its first year of operation, the UB Business Alliance, which provides a central focus for UB's economic-development and industrial-outreach activities, has:

- Received the Project of the Year award from the National Association of Management and Technical Assistance Centers for the assistance provided to OhmCraft, Inc. Wayne A. Anderson, professor of electrical engineering, provided technical expertise that helped the manufacturer triple its product line and work force.
- Reduced rents for first-year tenants in the UB Technology Incubator through New York Power Authority's "Power for Jobs" program.
- Graduated Snyder Seed Corp. from its incubator, which has developed a squirrel-proof, pepper-coated bird feed.
- Boosted royalty income by 51 percent over the previous year, due in part to new uses IBM found for conducting pastes developed by Eli Ruckenstein, professor of chemical engineering.
- Increased the number of inventions disclosed to the Technology Transfer and Licensing Office by 37 percent.
- Published two editions of its UB Business Alliance Directory of Resources for Business and Industry, a "yellow pages" of resources that can aid business and industry. A Web version is updated continually and is available at www.uballiance.buffalo.edu.

"The UB Business Alliance has built on our original plan to make the university's resources more accessible to Western New York and New York State," said Mark Karwan, dean of the School of Engineering and Applied Sciences and chief executive officer of the UB Business Alliance. "We also have actively enhanced our ties with the economic-development agencies in the state, paving the way for UB and, through our partnerships, for SUNY to play a far more significant role in strengthening the economic climate in this region."



CEO Karwan presents his case.

Obituary

Charles Campbell

Charles Campbell, 78, one of the founding members, in 1982, of the Buffalo-area Engineering Awareness for Minorities, Inc. (BEAM) died March 11 after a long illness. He served as executive director, officer on the Board of Directors, committee chairperson, and



official photographer for BEAM. In January, an outstanding service award was established in his name to recognize his work in developing the BEAM program at UB.

Born in Covington, Ky., he came to Buffalo as a teen and was a 1941 graduate of Fosdick-Masten High School. He served in World War II. After the war, he earned a degree in industrial relations from the UB's Millard Fillmore College.

He held various sales positions, becoming the first African-American salesman at Mernan Chevrolet in 1951 and the first African-American store manager for General Tire, overseeing the main store at Broadway and Michigan Avenue. He also worked for 19 years as a materials control analyst for General Mills. He retired in 1982.

In 1949, he was a founding member of Delta Epsilon chapter of Alpha Phi Alpha fraternity at UB.

Freshman Year For Engineering Students Kinder and Gentler (If Not Easier)

The Student Excellence Initiatives, a program initiated by the University at Buffalo School of Engineering, aims to make freshman year for engineering students easier to manage academically and less emotionally agonizing.

The results of this program, implemented under the supervision of Associate Dean Michael Ryan, and now in its second year, have been remarkable: 90 percent of the students who participated in the initiative's small study groups returned to SEAS for their sophomore year, versus just 63 percent of those who did not. Further, at least half—and sometimes as many as three-quarters—of the students in these groups felt that their participation helped increase their overall grade in the subject by a letter grade or more.

"Many students felt like they were being thrown up against this steep cliff and the idea was whoever hadn't fallen off at the end of four years would be an engineer," recalled William G. Wild, Jr., a 1982 graduate of SEAS. Wild has returned to UB, where he also earned master's degrees in English and engineering, as director of special student programs to launch the Student Excellence Initiatives.

According to Wild, the program goes much further than simply helping to improve grade outcomes in certain courses. It's about effecting a culture change in engineering education, he said, moving away from a "weed-them-out mentality" to a program that strives to help each student reach his or her potential.

"In this scenario," said Wild, "all the fit and willing survive, and not merely a select percentage." The idea was not to make the academics any less rigorous on the students, said Wild. "If you watered down the engineering curriculum, then our buildings would shake and planes would fall from the skies. The climb is necessary, but it should be a much different process; it should be a structured climb." Referring to the "climb" that is the engineering curriculum, Wild noted: "Nobody climbs alone here, unless by choice."



Bill Wild, Director of Student Success Programs

Debra T. Burhans, Ph.D. student in CSE, won first place in the Association for Computing Machinery (ACM) International Graduate Research Competition. **Caren A. Wenner**, Ph.D. student in IE, is the 2000 winner of the HFES and International Ergonomics Association K.U. Smith Student Award. **Jagjit Kaur**, Ph.D. student in Environmental Engineering, was the recipient of the 2000 Great Lakes Research Consortium Don Rennie Memorial student award for excellence in research and presentation. **Joseph Moritz** CE was named a Tau Beta Pi Fellow. **Yan Shtarker** CSE was awarded a Department of Energy Research Laboratory Fellowship.

Bethany Madge, a doctoral student in CSEE, earned first prize in a national competition in the Water Environmental Federation's master's-division student-paper competition. **Mary Saroka** and **Kevin Hulme**, MAE Ph.D. students, were awarded the very prestigious university-wide Graduate Student Excellence in Teaching Awards.

The UB student chapter of the **Society of Automotive Engineers** won the Student

Association Club of the Year for 1999-2000.

At the Dean's Scholarship Reception, Gregory B. Jarvis Scholarships were presented to **Anthony Guetta** CSE, **Xin Hu** EE, **Gloria Lo** CSE and **Jian Yu** CE; Rachel Rosen Trust Scholarships were received by **Iyeesha Cook** IE, **Samuela Franceschini** CSEE, **Donnell Long** MAE, **Abad Valdez** MAE and **Marvin Washington** MAE.

Senior Scholar Awards went to **Jeffrey Berman** CSEE, **Stanley Bileschi** EE, **Jeffrey Farrell** EE, **Eric Faulring** MAE, **Daniel Grasso** EE, **Carrie Harder** EE, **Lawrence Heverly III** CE, **William Kirbey** EE, **Robert Koch** CE, **Michael Lewandowski** MAE, **Karin Kit-Wai Mak** EE, **Daniel McDonald** MAE, **Matthew Muehlbauer** MAE, **Andrew Olewnik** MAE and **Gordon Warn** CSEE.

Lockheed-Martin Undergraduate Scholarship Awards were given to **Gordon M. Clarke II** CE, **Jason L. DeVore** EE, **Andres Eduardo Losada** IE, **Jessica Munch** IE and **Timothy Powell** CSE; and Lockheed-Martin Graduate Fellowships were presented to **Ioannis Psaromiligkos** EE, **Alejandro Rivera Becerra** IE and **Myungsik Yoo** CSE.

The Hiroshi Morihara and Mary McSwain Fellowship went to **Jaclynn Pajak** MAE, and Gustav and Greta Zimmer Research Scholar Awards were bestowed on **Bum Soo Kim** MAE, **Li-Te Liu** MAE, **Yuji Nozaki** MAE and **Angela Laam Tse** MAE.

The Elbridge and Stephana Townsend Award was received by **Manus Michael O'Donnell** MAE; Richard E. Dollinger Energy Systems Institute Scholarships went to **Jason Buneo** EE and **Rachel Kinney** EE; James and Nancy McLernon Student Scholarships were received by **Stephen Kornienko** IE, **Parag Patel** CE and **Andrew Roaldi** EE; and the Michael J. Bauda Scholarship Award went to **Adebimpe Ogunade** CE.

Martin Schaefer CE won the National Electrical Manufacturers Association Award; the Joseph Markle Dinner Memorial #4 Scholarship was presented to **Justin Montgomery** CSEE; and **Kerry Courtright** CSE, **Gillian Julius** CSE, **Timothy Powell** CSE, **Anthony Guetta** CSE, **Hei Gloria Lo** CSE and **Cheng Yuan Yappye** CSE won Electronic Data Systems Book Scholarships.

(For Engineering Alumni Association Scholarships, see page 11.)

Key-CE, Chemical; CSEE, Civil, Structural and Environmental; CSE, Computer Science and Engineering; EE, Electrical; IE, Industrial; MAE, Mechanical and Aerospace.

UB Jumps To 11th In Yahoo! Survey Of Wired Universities

In three years, UB has jumped from nowhere to the top 50 to the top 15 in "most wired schools," according to Yahoo! Internet Life Magazine.

"We are pleased to have created an IT-rich environment for our students," said Hinrich Martens, UB associate vice president for computing and information technology, "and our students should be proud to be at UB, which by this measure—a currently relevant one to be sure—has achieved top status.

"This ranking recognizes UB's farsighted investment of the student technology fee in providing access to computers for all students," he continued.

He noted that UB has paid particular attention to ensuring universal access to e-mail and the Internet; wired residence halls; Web-based access to grades, registration and financial accounts; and the increasing infusion of educational technology in the teaching-and-learning process.

UB's high ranking also was based on the percentage of public computers (50) that were purchased in the past two years, the fact that all of UB's dorms are wired, the availability of UB's electronic application form, online and telephone registration for courses and drop/add, online transcripts and course schedules, and the amount of network file space and web space (11-25 MB each) guaranteed for all students.

Other positive aspects noted in the ranking for UB include library resources that allow students to reserve and check the status of books electronically, the availability of more than one free institution-hosted e-mail account or alias per student, free printing from campus computers, one-on-one tech support, an Internet-orientation requirement and computer equipment designed for the disabled.

"Operation Mother Hen" Web-Based Review Tool Helps Students With Calculus

The Department of Mathematics in the College of Arts and Sciences has teamed up with Science and Engineering Node Services staff to develop "Operation Mother Hen," a

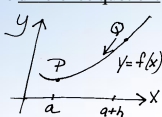
Web-based review tool that has virtually banished the old survival-of-the-fittest mentality for "Introduction to Calculus" at UB. In its place is a system that acts like a nurturing "mother hen," rescuing and supporting students who are struggling with the material.

Initially targeted to at-risk students taking Calculus 141/142, the project's creators have opened it up to all students. And, because the site, <http://motherhen.eng.buffalo.edu>, is free and available to the public, it is being used by calculus classes outside of UB, including some at the high-school level.

In existence only since the fall, Operation Mother Hen already has cleared the biggest hurdle: getting accepted by students. Since its debut in September, the number of hits on the site has grown from a total of 600 in the fall semester to an average of 200 a week so far this spring.

"Our whole philosophy has changed," said Corky Brunskill, director of Science and Engineering Node Services and a co-creator of Operation Mother Hen with Ann Piech, professor of mathematics, and Michelle Chan, UB educational technology specialist. "It's no longer an atmosphere of who can survive and who can't—it's about helping students succeed because you've helped them make the extra effort."

The slope of a secant line is the difference quotient

$$M_{PQ} = \frac{f(a+h) - f(a)}{h}$$


A page from the Mother Hen web site.

YAHOO!



From the EAA President

Greetings Fellow Engineering Alumni:

It's hard to believe that my term as the president of your alumni association is drawing to a close! The year has gone by far too quickly. Ted Myers will shortly be taking over the mantle of leadership. I would ask that you continue to provide Ted with the support you have provided to me over this past year.

As I write this letter, our membership stands at 800. Although this is comparable to our membership last year, it's still a far cry from our goal of 2,000 by the end of the year 2000. With over 15,000 UB engineering graduates, it is frustrating that we cannot attract more than 6 to 7% of you as paid members of the association. Are there things that the Association could do to attract you as a member? If there are, please drop the Board of Directors a line to let us know your suggestions and comments. E-mail: ub-aaa@eng.buffalo.edu.

Again this year, the calendar was filled with activities, starting with the alumni reunion dinner in October, followed by our tailgate party before the Bulls homecoming football game. We held two engineers' nights at Bulls basketball games in December and February. The Dean's reception and awards ceremony was held in April, and thanks to your generous contributions, the Association awarded four \$750 scholarships this year. You should also know that your membership dues were used to support a variety of student activities: fall and spring student picnics, engineers' ball, oozeball tournament, the Engineers' Angle newspaper, SAE entry in a snowmobile competition, to name a few.

Your Board of Directors is always looking for ways to increase the benefits of membership. To that end, we are finalizing a package with the Athletic Department to provide reduced price football tickets to paid members. Details on this package will be forthcoming shortly.

Thank you for the opportunity to serve as president of your association. I would encourage all of you to continue your support of UB and your alumni association.

Yours for UB Engineering,
Peter J. Buechi, P.E., Civil BS '68, MS '70



1999-2000 Engineering Alumni Association Board of Directors

Peter J. Buechi PE, Pres. CIV '68 MS '70

Theodore A. Myers PE, VPres. CIV '81

Louis A. Picciano, Secy. EE '65

Stephen Buechi, Treas. CIV '93 MEng '95

Fred Meli PE, Past Pres. CIV '76

Stephanie Asip ME '01

Mark L. Bajorek EE '94

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John J. Jondle EE MS '69

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Curt R. Krempe PE, CIV '78

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Tony Markut IE '79

William D. Niblock CE '79

Andy Sarantopoulos ME '08

50th Reunion

The reunion for the Engineering Class of 1950 as well as for the classes of 1975, 1990, and the decade of the '80s will be held Friday, October 20, 2000, at the Holiday Inn on Niagara Falls Boulevard (NY 62), near the I-290. The "Engineer of the Year" Award will also be presented. To register, call (716) 645-2768 x1110 or e-mail: ub-aaa@eng.buffalo.edu

Bill Swenson Retires

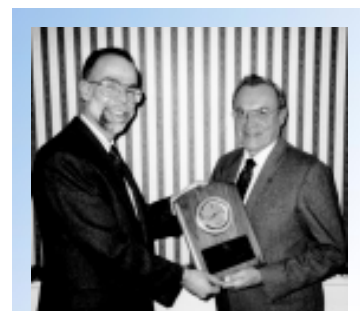
The School of Engineering bids farewell to one of its longest serving staff members in the Dean's Office. William W. Swenson P.E. stepped down as engineering alumni coordinator after fourteen years of service (1985 – 1999). Dean Karwan praised Bill for working diligently with the Engineering Alumni Association to promote EAA membership (exceeding 1,000 members in 1999), establishing annual leadership scholarships for undergraduates, creating social opportunities to celebrate achievements and events including an annual scholarship social to recognize outstanding engineering students, an annual reunion for engineering alumni, the tailgate party at football games, and Engineers' night at UB basketball games.

Bill emphasized professionalism and ethics by mentoring UB Engineering students on PE requirements. He worked closely with the student chapter of the National Society of Professional Engineers—which reached the rank of #5 in the U.S. for size of club during his advisorship. The UB chapter also convened the first-ever New York State-wide assembly of these clubs under his tutelage. Bill also established an annual Order of the Engineer induction ceremony to encourage our engineers to be professional and ethical. (See page 11.)

As part of the Rotary Mentoring Program, Bill mentors to 7th and 8th grade students, serving as reading project coordinator, providing science demonstrations, demonstrating bridge building and testing and showing engineering projects.

In 1999, Bill received, from the Niagara Frontier Industry and Education Council, a *Pathfinders Award* for "dedication to youth in Western New York." He also received the 1999 Contributions to Engineering Award from the New York State Society of Professional Engineers.

He has served as President of the Buffalo Rotary (1977-78), was named a Paul Harris Rotary Fellow, has received the Babinski Professional Engineer Award, and was the director of the New York State Society of Professional Engineers. He is a member of National Society of Professional Engineers, American Society of Mechanical Engineers, the Masons, the Shrine Club and the University of Michigan Club.



Bill Swenson (right) receives a gift of appreciation from Peter Buechi.



Success Story Update: UB Engineering Student Employment Online

UB Engineering alumni have helped insure the success of our work experience programs through generous contributions of their time as mentors and speakers and have been most gracious in hiring our students. In 1994, UB Engineering launched a program known as the

Engineering Career Institute

Engineering Career Institute. We offered post-junior year engineering

students a summer employment experience in industry preceded by classes in subjects crucial to job effectiveness, such as leadership, total quality management, time management, value engineering, teamwork, interpersonal communication, effective writing, and public speaking.

This combination of job experience and soft skills training, on top of UB's sound engineering curriculum, was an immediate hit with both students and employers. The program grew from 47 students in the first year to 80 in the second to over 100 students since.

Based on this success, we have added a co-op program. Our Engineering Student Work Experience Program now includes:

- Engineering Career Institute (ECI): 12 weeks of employment during the summer.
- Cooperative Engineering Education Program (Co-op): 3 work periods over ten months.

Our latest development is an Internet-based placement process, allowing employers to search for students which best match their needs. Meanwhile, students are able to explore positions throughout the USA.

We invite you to view our Engineering Student Employment website at www.eng-intern.buffalo.edu. The website provides

specific information about summer employment, co-op employment, as well as benefits to employers and success stories of our students at participating companies. As a UB Engineering alumnus or friend of the School, you trust in the quality of our engineering curriculum and in the worth of our students. For more information, go to the web-site, or contact Dean C. Millar, assistant dean, by phone: (716) 645-2768 x1112, or e-mail: dcmillar@eng.buffalo.edu.



Alumni Discuss What Engineers Do

The Office of Career Planning and Placement, Engineering Student Services and the Engineering Student Association brought together successful engineering professionals, mostly UB alumni, and current engineering students. "What Engineers Do," which took place during "Engineers' Week," gave students the opportunity to hear day-in-the-life accounts from engineers in a variety of engineering fields. The panelists discussed their companies and their roles as engineers in their companies.

The speakers who helped students facing important career decisions included: Brian Andrzejewski (CIV '89), senior civil engineer, URS Greiner Woodward Clyde; Francesco Chiarella (MAE '93), mechanical engineer, Veridian Engineering; Antonio DePaolo (IE '97 MEng '98), site industrial engineer, Delphi Automotive Systems; Dr. Dexter Johnson (ASE '87, MS ME '89), NASA Glenn Research Center, Visiting Researcher at Veridian Engineering Flight Research Center; Johnathan Kolber (CIV '72, MS '74), civil engineer/geotechnical engineer, US Army Corps of Engineers; Jim Meade (EE '99), senior design engineer, Fisher Price; Richard Smith, manager of E-Business Development, Moore Research Center; Greg Stevenson (CE '96), cost engineer, Praxair, Inc.

Fall 2000 EngiNet™ Offerings

EngiNet, the School of Engineering and Applied Sciences's distance learning program, provides busy engineering professionals with access to graduate-level courses. Dues-paying alumni receive a 10% discount.

- Through EngiNet courses, you can increase your know-how through up-to-the-minute research and innovations taught by University faculty, improve your job skills, and expand your professional options.
- The system offers greater opportunities for students to take courses not available in their geographical area, and offers professional development for engineers whose job or family responsibilities have prevented them from pursuing conventional degree programs.
- Available in a tape format, EngiNet is an educational delivery system, which provides engineering courses for credit, delivered to your home or workplace.
- Communication is facilitated between faculty and students via phone, fax or e-mail communication, and convenient access to assignments and exams.

Fall 2000 EngiNet Courses

Civil, Structural, and Environmental Engineering:
Structural Dynamics and Earthquake Engineering I
GeoEnvironmental Engineering
Chemical Principles in Environmental Engineering

Electrical Engineering:
Energy Conservation in Motor Drive Systems
Introduction to Electromagnetic Compatibility
Industrial Controls Systems

Industrial Engineering:
Design and Analysis of Experiments
Principles of Engineering Management I

Mechanical and Aerospace Engineering:
Engineering Applications of Computational Fluid Dynamics
Optimization in Engineering Design
Heat Exchanger Design
Topics in Finite Element Analysis
Elasticity

For more information, contact Marge Hewlett, EngiNet coordinator at UB's School of Engineering (716) 645-2768 ext. 1106 or mhewlett@eng.buffalo.edu. You may also visit us at <http://www.eng.buffalo.edu/Distance Learning>.



Engineering Alumni Association



The Order of the Engineer

The Order of the Engineer ceremony pledged over fifty graduating senior engineering students to the highest ideals of the profession. They are pictured below. The pledge is also printed. Inset below-right (l-r), Bill Swenson, who coordinated the evening, and three alumni who attended, Scott Myers (IE '92, MEng '93), Ted Myers (CIV '81), Engineering Alumni Association (EAA) vice president, and Tony Markut (IE '79), member EAA board of directors.



Obligation of an Engineer

Each of the engineers pledged to "practice integrity and fair dealing, tolerance and respect; and to uphold devotion to the standards and the dignity of my profession, conscious always that my skill carries with it the obligation to serve humanity by making the best use of Earth's precious wealth"



Submit Your "Engineer of the Year" Nominations

The EAA invites nominations of alumni for the next "Engineer of the Year" award. Nominees should be UB Engineering Alumni who show evidence of distinguished service in community, business and professional activities. Names can be submitted by September 1, 2000, to the EAA in 415 Bonner Hall, (716) 645-2768 x1110, or to ub-eea@eng.buffalo.edu.

EAA Scholarships



At this year's 15th Annual Dean's Scholarship Reception, jointly sponsored by the Engineering Alumni Association (EAA) and by the School of Engineering, four \$750 scholarships were awarded to engineering students who have proven themselves to be "Leaders in Excellence." The awards also encourage students to develop an "Engineering Spirit" and a sense of loyalty to the School. The scholarships were presented by (far right) Ted Myers (BS CIE '81), chair of EAA Scholarship Committee, and (second from right) EAA President Peter Buechi to (l-r) Stephen Federico CSEE, Carrie Harder EE, Nnabbuihe Maduakolam, Jr. CSEE and Lieselle Trinidad MAE. These scholarships are made possible by the generous contributions of the EAA membership.

Alumnus wins CAREER Award

Dr. Richard Miller, a former graduate student in the Mechanical and Aerospace Engineering Department who did his MS and Ph.D. with

Peyman Givi, professor of mechanical and aerospace engineering



(MAE), and Cyrus Madnia, assistant professor of MAE, is a recipient of the 2000 National Science Foundation CAREER award at Clemson University, where he is a assistant professor in the Department of Mechanical Engineering.

Peyman Givi relates, "Rich conveys his thanks and appreciation to our faculty for all your efforts on his behalf, especially

considering that he received the award in his very first attempt!

Congratulations to Rich and also to Cyrus for producing such a magnificent scholar!"

Richard Miller's e-mail is: rm@ces.clemson.edu.





Bottom: students, faculty, alumni and staff line up for hot dogs and pop courtesy of the EAA, UB Engineering, and the Engineering Student Association. Far left at top: Kervin Lajoie, Engineering Student Association president, serves another Sahlen's hot dog. Below (l-r): Brian Mirand, Jason Lasker, Dave Baker, Phil Ganze, and Bryan Mihalick of the ILOVEYOU virus patrol tirelessly seek to eradicate the virus from the hot dog line.

Spring



Picnic

Calendar

2000

Mark your calendars:

Friday, August 25 Engineering Opening Day Orientation

Monday, August 28 Semester starts

Friday, September 8 Fall Picnic

Monday, October 2 Honors Recruitment Dinner

Tuesday, October 3 UB Tech '00 Job Fair

Friday, October 20 Reunion for the Engineering Classes of 1950, 1975, 1990, and the decade of the '80s as well as the presentation of the "Engineer of the Year" Award

Saturday, October 21 Homecoming Football Game vs. Ball State and Tailgate Party

Monday, December 18 Semester ends

For more information, call (716) 645-2768 x1110 or visit www.eng.buffalo.edu/Calendar.