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Research Institute Honors Esteemed Faculty and Alumnus

Ruckenstein and Greatbatch Honored by HWI

Western New York has always been a center for great scientific achievement and, not coincidentally, great scientists and inventors. Now as Buffalo enters a new era of scientific growth and discovery, the Hauptman-Woodward Medical Research Institute has created the Western New York Pioneers of Science Educational Conference and Awards Banquet to focus attention on local individuals who have made outstanding contributions to science and achieved national and international prominence through their discoveries.

The inaugural awards banquet, devoted to not only honoring scientific leaders but to educating area high school and college students, presented awards to nine individuals, two posthumously, who have made internationally significant contributions to science. Two such individuals were SEAS luminaries Distinguished Professor of Chemical Engineering Eli Ruckenstein and alumnus Wilson Greatbatch.



Originally from Romania, Dr. Eli Ruckenstein is known as one of the world's leading scientists in the field of chemical engineering. He was the recipient of the United States' highest honor for scientific achievement, the

National Medal of Science for his pioneering theories and experimental achievements in colloidal and surface phenomena, catalysis, and advanced materials. He is also a member of the National Academy of Engineering. Dr. Ruckenstein came to the United States 33 years ago and has been a faculty member at the University at Buffalo since 1973.



One of America's greatest inventors, Wilson Greatbatch MS EE, 1957, is known for inventing the implantable cardiac pacemaker. The pacemaker has been used in over three

million heart patients helping them live longer and better. Mr. Greatbatch has a lifelong commitment to improving and refining his invention. He currently holds more than 240 patents and is member of the National Inventors Hall of Fame and the National Academy of Engineering. Wilson was born in Western New York and currently lives near a dairy farm outside of Buffalo.

Cartwright and Madnia Honored for Teaching Excellence

Alexander Cartwright, associate professor of electrical engineering, and Cyrus Madnia, associate professor of mechanical and aerospace engineering have received SUNY Chancellor's Awards for Excellence in Teaching from Chancellor Robert L. King. The award honors those who consistently have demonstrated superb teaching at the undergraduate, graduate or professional level.



Alexander Cartwright, a faculty member since 1995, has won numerous prestigious awards, among them are the 2000 Department of Defense, Office of Naval Research Young Investigator Award and

the National Science Foundation (NSF) CAREER award in 1998, as well as UB's Reifler Award.

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Cyrus Madnia, who joined the UB faculty in 1992, is affiliated with the Computational Fluid Dynamics Laboratory. His research interests lie in the areas of direct numerical simulation

(DNS) and large eddy simulation (LES) of turbulent reactive flows, flame-vortex interaction, turbulent mixing, chemical kinetics,

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Initiative Helps Students Succeed

Engineering students tend to be driven and tenacious people, according to William Wild, director of the Student Excellence Initiative. And they need to be—the demands of the curriculum are daunting, to say the least.

While SEAS students are slaving away four or more hours a night over homework, they often wonder why everyone else in the residence hall has a weekend that begins on Thursday night, says Wild. "They don't get what's happening to them. There's this 'what is happening to me effect,'" Wild says of the intense transitional changes required of engineering students. "Our freshman is trying to understand physics or chemistry, and everyone is looking at him or her like they have a problem."

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SEAS Closes in on Campaign Goal

SEAS is in the final push of its comprehensive campaign (Campaign for UB, Generation to Generation), and is rapidly moving closer to its stated goal of \$18 million. With seven months remaining, the current total stands at \$17.2 million, approximately 95% of the goal. Jim McLernon, BS IE 1950, Campaign General Chairman believes the time to consider participation is now. "As we stand so close to reaching our stated target, we need to join together to ensure that we meet and exceed our campaign goal."

SEAS currently ranks among the top 15% of the over 300 engineering schools in the United States. According to Dean Mark H. Karwan, "the level of participation of Alumni directly impacts the school's ranking. We are

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ALUMNI NEWS

A 2003 membership application form is available on page 19. For more information go to www.eng.buffalo.edu/Alumni.



Dear SEAS Alumni,

I am pleased to continue into 2003 as your UB Engineering Alumni Association (EAA) president.

The Engineering Alumni Association has been active this past semester with both students and alumni in many fun-filled events. We began this fall by co-sponsoring the student picnic in September as the new school year kicked off—there were lots of good times, music, hotdogs and pop. And we continued our tradition of the annual UB Bulls Football pre-game tailgate this fall for SEAS alumni, students, faculty, staff, and friends to support their UB Bulls. On October 5th we had the largest attendance in our recent history and, once again, hot dogs, pop and EAA promotional items (and of course the football game) were enjoyed by all.

Events we are lining up for Spring 2003 semester include

SEAS Night at UB Basketball (Saturday, February 22)

Co-sponsoring the SEAS Scholarship Reception, awards presentation and performance by a UB jazz ensemble (Friday, March 21)

Order of the Engineer (April-May 2003 timeframe)

Co-sponsoring the 2003 spring student picnic (TBA)

Alumni time and financial resources make our programs go. Please help us make the remainder of this school year a success. I ask you to:

Join us as a paying member of your EAA for 2003 – your dues will go toward sponsoring events and assisting SEAS student clubs.

Help us help current students by contributing to our special scholarship fund.

Come to our events.

Your Board of Directors continues to extend an invitation to UBEEA members to join us in accomplishing our programs. We also invite you to review the minutes of our recent board meetings, posted on our website. www.eng.buffalo.edu/Alumni

If you are interested in joining the Board, please contact us at ub-eea@eng.buffalo.edu with a short resume addressing your engineering field and interest in joining the Board. Current UB EAA Board members will review all applications submitted, and new members will receive an invitation to join us as soon as they are able. Our Board requires diversity and this invitation is open to all—please consider donating your time in implementing our programs and re-formulating partnerships with other university groups to make our UB and EAA stronger and more effective.

Together, we can make a positive contribution to our School and enjoy our UB.

Yours truly,

Stephen J. Golyski, P.E., CIE BS '73, MS '81
UBEAA President

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2003 50th Reunions

A cluster reunion will be held June 19 and 20 for the classes of '52, '53, and '54.

A 50th reunion weekend and UB Homecoming will take place October 17 and 18.

The Engineering Alumni Association will celebrate Engineer's Week 2003 by hosting its annual Engineers' Night at UB Basketball at Alumni Arena to watch the UB Bulls take on Miami Ohio, 7p.m., Saturday, February 22, 2003.

Call (716) 645-2768 x1110 or email ub-seas@eng.buffalo.edu.

Alumni Adventurer, There and Back Again



In what was possibly a record-setting time for the "Great Circle Route" around the Eastern half of the United States, Alumnus Larry Peckham (BS IE, 1969) and fellow boater Bruce Malboeuf spent thirty days on the "Chelsea Marie II" on what Peckham describes as their "voyage of discovery."

Beginning on May 30th, 2002, the two adventurers departed from Sodus Bay on Lake Ontario and made their way through Lake Huron, Lake Michigan, numerous rivers and canals, the Gulf of Mexico, the Atlantic Ocean and a six

inch stack of nautical charts to come back up through the Hudson River and the Erie Canal to return to Lake Ontario with 4905 miles behind them.

Even with more than 40 years of boating experience between the two men, the trip necessitated more than five years of planning and a daunting amount of work along the way. But all this paid off as the trip came off without a hitch (excepting a minor mishap with the bottom of an Intercoastal waterway in North Carolina—fortunately nothing and no one were damaged). Peckham remarked: "we saw so much beautiful and varied country, that one gets a sense of awe at what the USA and Canada have to offer. At a time when travel by interstate can seem very commercial and homogenous, travel by water can be exactly the opposite. I now have a grand store of memories I will never forget."

Alumnus Retrieves Long-Lost Trophy



It seems that at some point in the late 1940's, Raymond Schneider BS EE, 1953 misplaced his bowling trophy. During his freshman year at UB, Schneider was part of a bowling league affiliated with the Engineering Society. While Schneider admits, the bowling league tended to occasionally "put their studies on the back burner," he did

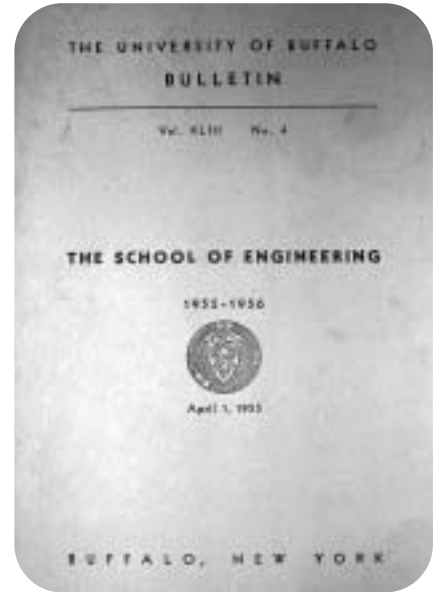
well to go on to a long and successful career with DuPont and Buffalo Electric while still being a good enough bowler to win this trophy. But sadly, the proof of his bowling prowess got lost along the way... That is, until it resurfaced fifty years later in the offices in Bonner Hall and returned by Mike Madonia of SEAS Development. Schneider was pleased at recovering this reminder of his days at UB and, who knows, he might just start bowling again.

Alumni Honored

Larry Mohl, BS EE, 1979, has been named Vice President, Senior Centers for Excellence, for the American Express Company based in the World Financial Center in New York (located in Tower 3 of the World Trade Center). Larry is a 1975 graduate of Williamsville North High School and, after attending UB, received a master's degree in electrical engineering from the University of Michigan in 1981. Until recently, Larry has been Director, Leadership, Learning and Performance Excellence for the Motorola Corporation at its International Headquarters in Schaumburg, Illinois. He and his wife Carly, along with their daughters Lawson and Erden, plan to reside in northern New Jersey.

Frank Notaro BS ME, 1957, MS ME, 1967, of Amherst has been named a fellow of the National Society of Professional Engineers. He has worked at Praxair Inc. for many years and is past president of both the New York State Society of Professional Engineers and the Erie/Niagara Chapter. In addition, Notaro is a loyal alumnus and past board member and president of the Engineering Alumni Association. His involvement with UB includes being the first chair of the school's Industry/University Day and member of the 50th anniversary planning committee.

Flashback



CSE Associate Professor William Rapaport recently came across a copy of the 1955 UB School of Engineering bulletin and sent it to us here at SEAS News. Like Rapaport, we were amazed at the dramatic differences (and similarities) in the school when viewed across the span of nearly half-a-century.

Of course, the names are familiar, but then they applied to people and not to buildings or awards: Clifford Furnas was the Chancellor of UB, Samuel P. Capen was the Chancellor Emeritus, Wilson Greatbatch was an assistant professor. But one can observe a number of notable differences in some very basic aspects of SEAS: at the time, tuition for a semester at UB was \$300 (plus \$36 in fees which included the enticingly vague "Breakage Deposit"); the School was located in Parker Hall on South Campus, and had only three departments: Mechanical, Industrial, and Electrical.

Rapaport points out that the descriptions of electrical engineering itself is, for him, of particular interest in hindsight. The bulletin reads: "The field of Electrical Engineering is sometimes divided into two main areas: (1) generation, transmission and utilization of large amounts of electrical energy for power purposes and, (2) conversion, transmission and reception of intelligence or information wholly or in part by electrical and electronic means." While still important aspects of EE, the field has grown significantly since the publication of the bulletin, as has SEAS itself.

50th Anniversary Lunch for SEAS Alumni

Amidst the many alumni events this fall came the very memorable reunion for the class of '52 hosted by the University Alumni Association. Activities included university tours, a dinner and exquisite luncheon at the Marriot Hotel in Amherst. Engineering alumni from '52 were joined for lunch by Dean Karwan who presented them with commemorative gifts from the school. The luncheon was overseen by UB President William Greiner. For the class of '53, next year's honorees, the reunion is planned for June and alumni from the class of '52 and '54 are also invited to attend. See page 2 for more details.



From left to right: Harry and Marie Guildford, Doris DeVantier, Dean Karwan, Roger DeVantier, William and Evelyn Ames, Dikk Ratajczak, and Carole and Doug Hall.

Pre-Game Festivities



This fall, alumni were given not one, but two chances to come out and support the UB Bulls football team. The first event was a tailgate party hosted by the Engineering Alumni Association and gifts, hotdogs and fun were had by all in this most successful of alumni gatherings.

And if that weren't enough, just two weeks later record numbers again turned out for a pre-game tent party hosted by the UB Alumni Association. Sadly, the Bulls didn't pull off a victory in either game, but this certainly was not for lack of support.



Spring 2003 EngiNet™ Offerings

- CIE 343 Hydraulic Engineering
 - CIE 525 Concrete Structures
 - CIE 529 Pavement Design
 - CIE 534 Earthquake Eng. and Foundation Dynamics
 - CIE 564 Chemical Principles in Environmental Engineering
 - CIE 597 Construction Safety and Health Management
 - CIE 619 Structural Dynamics of Earthquake Engineering II
 - CSE 542 Software Engineering Concepts
 - EE 519 Industrial Control Systems
 - EE 529 Intro to Electromagnetic Compatibility
 - EE 540 Energy Conservation in Motor Drive Systems
 - IE 504 Facilities Design
 - IE 508 Quality Assurance
 - IE 541 Human Factors in Safety
 - MAE 500 System Identification
 - MAE 541 Topics in Finite Element Analysis
 - MAE 542 Engineering Applications of Computational Fluid Dynamics
 - MAE 543 Continuous Control Systems
 - MAE 576 Mechatronics
 - EAS 522 Principles of Eng. Management II
 - EAS 580 Technical Communications for Engineers
 - EAS 590 Case Studies in Eng. Management
- EngiNet™ is principally a graduate-level distance learning program. Please contact **Marge Hewlett** at (716) 645-2768 ext. 1106, email enginnet@eng.buffalo.edu, or visit www.eng.buffalo.edu/enginnet.

“Old Bull” Moves On



When George H. Norton, BS ME, 1948, was spending time in Mexico a few years ago, he came across an ironwood statue of a Buffalo that made him exclaim: “That’s the same old bull on UB’s emblem!” Needless to say, the statue returned to the U.S. with a new (and quite proud) owner. After enlivening Norton’s Utah home with memories of school spirit and snowstorms, the “old bull” returns to Buffalo to grace Dean Karwan’s office and conjure up similarly fond remembrances.

Obituary

Charles (Chic) Chalk, who received his BS from the University of Cincinnati in 1949 and went on to work for Calspan (now Veridian) from 1955 to 1993. He received his MS in Aeronautical Engineering from UB in 1965. Widely published and honored in the Aeronautical Hall of Fame in Niagara Wheatfield, Chalk was a successful engineer and valued employee. He will be greatly missed by his wife, three children, six grandchildren, and two great grandchildren.

Cartwright Award continued from pg. 1

Cartwright holds several administrative posts in addition to his faculty position, serving as deputy director of the Institute for Lasers, Photonics and Biophotonics; principal investigator of the NSF-sponsored Integrative Graduate Education Research and Training grant (IGERT) in biophotonics materials and applications; director of the Laboratory for Advanced Spectroscopic Evaluation, and co-director for the Electronics Packaging Laboratory.

STUDENT NEWS

Students Float Away with NASA

An accepted proposal to conduct research on the effect of a micro-gravity environment on blood flow landed members of UB's chapter of the American Institute of Aeronautics and Astronautics at the Johnson Space Center in Houston, Texas, at NASA's mission control last summer, where the team hopes to return. The four-member team was one of about fifty accepted into NASA's Reduced Gravity Student Flight Opportunities Program for the Summer of 2002, based on a proposal submitted the previous fall.

"Seeing the building, seeing mission control—it was really exciting" said team member Nicole Kulpit, a sophomore aerospace engineering major. "The experience was (a) once-in-a-lifetime ordeal, except for the fact that we are probably going back again next year, hopefully." Team member Nick Leone, a senior aerospace engineering major added that, "it was a great experience to have, in terms of what kind of research is done in the professional field."

According to Lindsay Volaski, a junior aerospace engineering major and Project Coordinator of AIAA, the club decided to research a biomedical proposal and, under the guidance of club advisor Cyrus Madnia, associate professor of mechanical and aerospace engineering, the team researched and produced their proposal. "It mostly relates to astronauts living in international space stations," said Volaski. "It gives us a better understanding of how the body responds to a micro-gravity environment."

The proposal states that "the results of this experiment are of great consequence to the space program, as well as to the field of science in general, because this type of research is new to the world of micro-gravity." The team monitored blood flow and pulse rate using a Laser Doppler Flowmeter, which uses light waves to monitor capillary levels, and a portable wrist monitor to measure blood pressure.

The research showed that blood flow decreased in a zero gravity environment and increased as the plane ascended because of the increased pressure. The team members conducted the research as they traveled to an altitude of about 30,000 feet in a KC 135, or a revised Boeing 707 airplane. The plane climbs at a 45-degree angle before it falls for 10,000 feet, suspending gravity and causing the craft to float for about 25 seconds.

Computer Course gives Students Competitive Edge in Job Market

While computer-chip makers race against the competition to turn out ever-more powerful micro-processors, professors educating the chip designers of tomorrow face a different struggle, searching for a microprocessor that is appropriate for teaching undergraduates and used in enough consumer products to give students a competitive edge when they enter the job market.

"We looked at a number of processors, trying to decide what was best for the students," said Ramalingam Sridhar, associate professor of computer science and engineering who has taught introductory microprocessor courses at UB since 1979. Sridhar said faculty were "in the right place at the right time" when two years ago UB became one of the first universities in the U.S. to select the ARM Ltd. microprocessor for his introductory microprocessor course that is required for junior computer-engineering majors.

Since then, the ARM microprocessor has popped up in increasing numbers in portable devices, including cell phones, personal digital assistants, handheld games and digital cameras. It's estimated that ARM microprocessors are used in more than two-thirds of the products in the portable device market.

"That makes a difference to our students," Sridhar said. "They tell us that their friends at other schools are envious of their advantage in having learned the ARM microprocessor at this level."

"ARM is pleased to have the opportunity to work with professor Sridhar and the University at Buffalo faculty," said Andrew Sloss, ARM's strategic support manager.

"This group of professionals has truly taken the lead among the academic community in developing students' computer-science and electrical-engineering skills, enhancing their marketability in today's competitive job environment. We're proud to support the UB program by providing the tools needed to prepare graduates to work with today's most widely used computing applications, as well as drive future technological advances and progress."

NSPE Chapter Re-Forms

The only collegiate chapter of the National Society of Professional Engineers (NSPE) in Western New York has been reorganized at UB.

The group held its re-inaugural meeting, during which the president of the Erie-Niagara Chapter of NSPE presented an official "Member of Chapter" Certificate to the new organization, which received the alpha-level award, the highest level possible for a student chapter.

"This represents what the school of engineering is all about," said Dean C. Millar, SEAS assistant dean for corporate relations. "That is, a partnership between industry and, of course, developing students who are able to create value for you in industry."

Kannan Nagarajan, president and initiator of the UB chapter, said he began planning for the chapter in 2001; the group now has nearly 30 members, including both graduate and undergraduate engineering students.

Nagarajan noted that students affiliated with the NSPE chapter are encouraged to work toward a professional engineering license, which allows engineers to sign contracts or run a private practice, and often leads to better job opportunities and higher pay.

The license gives those who hold it a better safeguard against losing their jobs in the event of company layoffs, restructuring or consolidation, he said. His efforts to support students who take the licensing exam have resulted in a dramatic increase in the number of students enrolled in this year's NSPE chapter-sponsored coaching class.

Being affiliated with the organization will help produce qualified technical students with better business skills and the NSPE will serve as a point of contact between industry employers and students. According to professional NSPE members, students who are affiliated with the group will be at a great advantage once they enter the work force.



Kannan Nagarajan, President of UB's chapter of the National Society of Professional Engineers, John Frandina, President of NSPE local chapter, Dean Millar, Assistant Dean of Engineering receiving official inception Certificate.

Graduate Students Win NSA Scholarships to Fight Cyberterrorism

Two graduate students have received coveted scholarships from the federal government that are designed to train specialists in the task of rooting out hackers, cyberterrorists and insider threats to the nation's information superhighway—a task that has taken on an increasing urgency since 9/11.

Alexander Eisen of Williamsville and Melissa Thomas of Buffalo, both students in the department of computer science and engineering, were awarded the Information Assurance Scholarships by the National Security Agency (NSA).

The scholarships were awarded to the students because of UB's designation this spring as a Center of Excellence in Information Systems Assurance Research and Education (CEISARE). UB is one of 13 universities to receive the designation this year and among only 36 that have been named to date by the NSA. Work in information assurance encompasses the scientific, technical and management disciplines required to ensure computer and network security.

The year-long competitive scholarship covers the cost of tuition, fees, books, lab expenses, supplies and equipment, as well as providing a stipend for graduate students and for undergraduates. The goal of the scholarship is to support the development of information assurance specialists within the Department of Defense. Eisen and Thomas will be required to serve internships with DOD agencies.

Shambhu Upadhyaya, associate professor of computer science and engineering and director of CEISARE, said companies and government research labs have taken extra steps to ensure information security and critical infrastructure protection.

"New initiatives such as Trusted Computing (National Science Foundation), Trustworthy Computing (Microsoft) and the Homeland Security Act were formed to address security in the post-9/11 era. Our students will contribute to some of these initiatives through their research," said Upadhyaya.

Eisen will serve his internship with the Defense Information Systems Agency (DISA) in Arlington, Va. DISA is involved in information assurance, global combat-support systems and electronic commerce. At UB, he will be involved in various research activities with CEISARE, including working on electronic banking security.

Thomas will serve her internship with the Naval Air Systems Command (NAVAIR) in Patuxent River, Md. NAVAIR is involved in testing and evaluation, electronic warfare and survivability/vulnerability analysis, as well as other projects.

Study Abroad Program Easy and Accessible for Students

It certainly takes a lot to be a successful engineer in today's competitive market, but according to Joseph Mook, professor of mechanical and aerospace engineering and director of SEAS' International Education program, the majority of engineering students in the U.S. are missing out on a vital component of their preparation for employment: travel and work abroad. Employers look for applicants with a three-part skill base: technical knowledge, office savvy, and international experience, says Mook. Additionally, a study abroad experience can add an entirely new dimension to a student's resumé, and aid in obtaining admission to higher degree programs or in securing employment.

Despite this and the many opportunities for study abroad presented by Mook and his colleagues, many students seem in the dark. Despite the fact that UB's engineers more than double the national average at a 5% participation rate in study abroad programs, they still fall far short of Europe's 50% participation rate and, more importantly, many miss out the wealth of programs offered here at UB. But this is where Mook and the UB study abroad program comes in. With programs in every corner of the world, the international education program offers a unique experience for engineers of every stripe. And, contrary to popular belief, many study abroad programs do not require any previous knowledge of a foreign language for admission. Some programs are designed to teach a foreign language while others offer courses taught in English, regardless of the country's native language.

Student Employment Programs Continue to Score Big Successes

Our Engineering Career Institute (ECI) and Co-op Programs continue to aid both students and employers alike. Students are available for full-time assignments in duration from one to three semesters, with flexible start dates in May, August, and January.

Exclusive pre-employment classes in leadership, communication, teamwork, total quality management, and other pertinent subjects complement sound technical preparation so that students create optimum value to employers by taking on a variety of engineering projects.

STUDENTS AVAILABLE

SEAS is continually looking for placement opportunities for its students in summer, co-op, and internship employment, as well as career positions.

We invite you and your company to benefit from having excellent students doing first-rate work.

Please contact Dean Millar at (716) 645-2768, ext. 1112 or via email, dcmillar@eng.buffalo.edu

Students Honored

Jason Buneo, an Electrical Engineering student was awarded the NSF Computer Science, Engineering and Mathematics Scholarship. This is not the first such recognition for Buneo who received the Richard E. Dollinger Energy Systems Institute Scholarship in 2000—a scholarship presented to undergraduates with outstanding research skills and high academic standing.

Tomasz G. Drozda BS ME/AE 1999, MS ME 2002, received second prize at the Graduate Technical Paper Competition of the American Institute of Aeronautics and Astronautics Northeast Regional Student Conference, hosted by Rensselaer Polytechnic Institute. His paper, "A Hybrid Stochastic-Deterministic Methodology for Large Eddy Simulation of Scalar Mixing and Reaction in Turbulent Flows," earned Drozda a monetary award.

Solar-Powered Boats Appear in Buffalo

Solar Splash, the World Championship of Solar/Electric boating, is an international inter-collegiate competition that takes place over five days. Over the years, SOLAR SPLASH has taken place in Milwaukee, New Orleans, and now has settled in Buffalo's Delaware Park.



The SUNY team began competing in 2001 when they received the 'Outstanding Rookie Award' and placed 8th overall. This year, the team was awarded 'Outstanding Drive Train Design' and placed 14th overall and included mechanical and aerospace engineering students Charles Nasca, Jeremiah Rauch, Peter Kovachi, Jeremy Malik, John Fritz, Matt Bernfeld, Carolyn Zielinski, Laura Rovner, and Ray Koch.

Students Win National Award for Project to Improve Letchworth State Park

A team of environmental engineering students won first place at a student-design competition held by the Water Environment Federation at its annual meeting in Chicago.

Jean Balent of Sanborn, Samuela Franceschini of Vincenza, Italy, and Howard Kellick of Amherst—2002 graduates of UB's undergraduate environmental engineering program—won the award for their work on a senior project that focused on improving the water supply system at Letchworth State Park in Castile, NY. They were chosen from among teams from the University of Arkansas, University of Florida, and University of Wisconsin-Platteville.

UB's winning project was supported and partially funded by the New York State Department of Parks, Recreation and Historic Preservation, according to Alan J. Rabideau, associate professor of civil, structural and environmental engineering.

In addition to Balent and Franceschini, environmental and civil engineering students Chris Angier, Erika Bleyle, Dan Brown, Jeff Carpenter, Valarie Ellis, Heather Humphrey, Erik Magboo, Meaghan Partelow, Natalie Sauer and Brian Szalda contributed to the project.

"An innovative component of the project was the use of automated data loggers to provide continuous readings of water quality in several of the park's remotely located spring water systems," said Rabideau, who served as the project's faculty advisor. "The installation of a custom-designed, solar-powered telemetry system, funded by UB's Environment and Society Institute, enabled some of the water-quality sensors to communicate daily with computers located at UB."

Letchworth State Park—often referred to as "the Grand Canyon of the East"—is implementing some of the students' recommendations to improve the design and maintenance of its water system. UB researchers will continue to monitor water quality in the park using the system of automated data loggers.

UB's winning team was from the program's first class of graduates. Their participation in the contest was sponsored by local representatives of the New York State Water Environment Association.

Established in 2000, the undergraduate environmental engineering program is the only one of its kind in the SUNY system. It prepares students to apply engineering principles to the protection of human health and ecosystems.

UB Students Finish Fourth in National HPV Competitions



SEAS students placed fourth in the first-ever East Coast Human Powered Vehicle (HPV) Challenge sponsored by the American Society of Mechanical Engineers (ASME) in Blacksburg, Virginia. The event is an extension of the veteran competition held every year in Reno, Nevada and was created to make the event more accessible to East Coast schools—but, ever vigilant, UB's team was the only team to compete in both competitions.

Vehicles are traditionally awarded prizes in three categories: single-rider, tandem, and utility vehicles. Entrants in those categories were judged in design, sprint, and endurance contests. The University of Missouri-Rolla finished first over all; the University of North Carolina, Charlotte, second; and Virginia Tech, third.

Students participating in the competitions were: Charles Nasca, David Howe, Stephanie Raymond, Carolyn Zielinski, Jeremiah Rauch, Jeremy Malik, Charles Becker, David Wood, David Reynolds, and John Fritz.

Building a Better Catapult

Every year in MAE 412, an upper-level course for mechanical and aerospace engineers, students are all given a common task for their final project and, at the end of the semester, the results of their hard work are entered into a competition. This year, students were asked to build a catapult system based on a four-bar mechanism to be judged on its accuracy and shooting distance. After hurling a squash ball 60 feet with a good deal of accuracy, the winning team took home a monetary prize and a better conception of medieval warfare to boot...



FACULTY AND STAFF NEWS

Ruckenstein Receives Highest Award from American Institute of Chemical Engineers

Eli Ruckenstein, SUNY Distinguished Professor in the Department of Chemical Engineering has received the Founder's Award for outstanding contributions to the field of chemical engineering from the American Institute of Chemical Engineers (AIChE).

The Founder's Award is presented each year to an engineer who has had a profound impact on the way that chemical engineering is practiced, and whose achievements have advanced the profession in any of its aspects. Ruckenstein's citation read, "We present this award to Dr. Eli Ruckenstein for his pioneering and continuing contributions in many areas of chemical engineering and inspiring education spanning over 50 years, and significant contributions to industry."

Further award luncheon text states, "There is virtually no aspect of modern chemical engineering that has not been profoundly influenced by Eli Ruckenstein. Dr. Ruckenstein has made a major impact -- both fundamental and practical -- on nearly all important chemical engineering fields by introducing modern ideas and integrating many branches of chemistry, physics, materials science and biology into them. With more than 800 publications, his prodigious contributions to chemical engineering literature have helped define the state of the art in catalysis, transport phenomena, and colloid and interface science. And his unique ability to innovate in a seeming boundless scientific arena sets him apart from the rest of the scientific community." (Also see Ruckenstein's HWI award on pg. 1.)

Aidong Zhang receives SUNY Research Recognition Award



Aidong Zhang, professor of computer science and engineering and adjunct professor of electrical engineering has received the Chancellor's Research Recognition Award for 2002 for being among leading State University of New York researchers.

Zhang leads the CSE Database and Multimedia group that is pursuing active research in the areas of bioinformatics, data mining, client server multimedia presentation system, and content based image retrieval systems. One such project involves a multidisciplinary team of UB pharmaceuticals and computer-science researchers that has developed a method for interpreting the massive amount of information that results from the use of DNA microarray technology in studies of multiple sclerosis.

Three professors honored by SUNY as "Outstanding Inventors"

George C. Lee, whose research focuses on civil engineering, earthquake engineering and engineering education, has four U.S. patents and four pending international applications. One of his patents is licensed to Enidine, Inc., a global manufacturer of energy absorption products.

Sargur N. Srihari, has submitted fifteen new technology disclosures, from which six patents have been issued, including handwriting recognition software developed at the Center of Excellence for Document Analysis and Recognition used at all U.S. Postal processing centers.

Harsh Deep Chopra, an associate professor of mechanical and aerospace engineering, Susan Zonglu Hua, a research associate professor of mechanical and aerospace engineering, and Frederick Sachs, Distinguished Professor of Physiology and Biophysics, were honored for a new scheme for microfluidic systems.

Service Recognition Ceremony Honors Faculty

This year, a ceremony was held in Bonner Hall honoring those employees who have served the university for 10, 20, or 40 years as of calendar year 2001. This year's honorees were:



George C. Lee, Samuel Capen Professor, Dean Emeritus and Director of MCEER, 40 years of service (pictured with Dean Karwan).

Vladimir Hlavacek, Clifford C. Furnas Eminent Professor in the Department of Chemical Engineering, 20 years of service.

W. James Sarjeant, James Clerk Maxwell Primex Professor of Power Technology, Department of Electrical Engineering, 20 years of service.

Christina Bloebaum, Director of NYSCEDII and Professor in the Department of Mechanical and Aerospace Engineering, 10 years of service.

Nicholas Dipirro, Instructor in the Department of Mechanical and Aerospace Engineering, 10 years of service.

Promotions

Gary Dargush, to professor in Civil, Structural, and Environmental Engineering.

Venu Govindaraju, to professor in Computer Science and Engineering.

Xin He, to professor in Computer Science and Engineering.

Aidong Zhang, to professor in Computer Science and Engineering.

Dimitrios Pados, to associate professor in Electrical Engineering.

Li Lin, to professor in Industrial Engineering.

John Crassidis, to associate professor in Mechanical and Aerospace Engineering.

Thenkurussi Kesavadas, to associate professor in Mechanical and Aerospace Engineering.

Robert Wetherhold, to professor in Mechanical and Aerospace Engineering.

Greetings & Farewells

SEAS would like to welcome:

CEDAR: **Maria Coppola**

Chemical Engineering: **Sharon Fritts, Mattheos Koffas, Dawn Townsend**

Civil, Structural and Environmental Engineering: **Joseph Mannarino**

Computer Science and Engineering: **Adrienne Decker, Charles Dement, Jian Pei, Maryann Petrillo**

Career Planning and Placement: **John (Jerry) Donahue**

Mechanical and Aerospace Engineering: **Paul DesJardin**

MCEER: **Jerome O'Connor**

SEAS: **Michael Madonia, Nancy Recupero**

SEAS wishes the best to:

Melissa Ruggiero, Career Planning and Placement, senior advisor.

Bruce Specht, CEDAR staff.

Diane McMaster, CSEE staff.

Jin Yi Cai, CSE professor.

Deborah Walters, CSE, associate professor.

Marie Huber, EE staff.

Baruch Lieber, MAE professor.

William Rae, MAE SUNY distinguished teaching professor, retired. Known for his outstanding work with students, Rae came to SEAS after a distinguished career at Calspan (now Veridian Engineering).

Michelle Chan, SENS staff.

William "Will" Willereth retired from the Electronic Services Shop after 39 years of dedicated service to UB and its students.

Faculty Awards and Honors

Christina L. Bloebaum, UB Chair for Competitive Product and Process Design, professor of mechanical and aerospace engineering and director of the New York State Center for Engineering Design and Industrial Innovation (NYSCEDII), gave the keynote address at the 2002 Engineering Design Conference held at King's College in London. The topic of her address was "Visual Design Steering as a New Paradigm for Engineering Design."



Deborah Chung professor of mechanical and aerospace engineering and Niagara Mohawk Chair, gave an unprecedented set of lecture-concerts titled "Science, Music and Life" in various Chinese universities this September. With nearly 2,000 people in attendance, Chung's lectures reached and inspired a great number of students and continued to enhance UB's visibility abroad. The lectures took place at Southeast University, Nanjing; Beijing Polytechnic University (formally related to SEAS); Beijing Technology and Business University; and Tsinghua University, Beijing.

Helen Domske, Extension Specialist for the New York Sea Grant and Associate Director of UB's Great Lakes Program received the 2002 Paul MacClennan Environmental Citizen of the Year Award. The award was bestowed by the Erie County Environmental Education Institute and the center for Great Lakes Environmental Education in appreciation for Domske's "commitment to serve as a voice for local and global environmental causes" and for "dedication to the betterment of the environment and community."

Professor Emeritus **Charles M. Fogel**, Past District Governor and Past Rotary International Director, has been selected by the Board of Directors of Rotary International for his exemplary humanitarian service during his 48 years as a Rotarian with Rotary International's "Service Above Self" Award. This prestigious award is presented annually to only 150 Rotarians worldwide and was instituted in 1992 to draw attention to personal volunteer efforts and active involvement in helping others through Rotary.



Venu Govindaraju, professor of computer science and engineering was awarded the 40 under Forty award hosted by Business First Buffalo. The 40 winners are under the age of forty and are being recognized for their records of professional success and community involvement. The honorees received their awards at the 11th annual luncheon in Buffalo.

Chumming Qiao, professor of computer science and engineering was the Program Co-Chair of the Eleventh Annual IEEE High-Speed Networking Workshop (formerly the Gigabit Networking Workshop) at IEEE INFOCOM in New York City. In addition, Professor Qiao was also the General Co-chair of the Third Annual Opticomm Conference in Boston, MA and recently awarded a sizeable NSF grant to develop a survivability framework called PROMISE, which includes procedures for earthquake recovery preparedness.

William J. Rapaport, associate professor of computer science and engineering; adjunct professor of philosophy and a member of the Center for Cognitive Science, gave a presentation at the 6th World Multiconference on Systemics, Cybernetics and Informatics (SCI-2002), held in Orlando. Rapaport also served as chair of the first session held at the conference on "Educational Support Systems, Computer Assisted Instruction and Computer Assisted Training."

Andrei Reinhorn, professor of civil, structural and environmental engineering has been named a Clifford C. Furnas Eminent Professor. Reinhorn joins Chemical Engineering Professor Vladimir Hlavecek as a recipient of this distinguished title.

Sargur Srihari, SUNY Distinguished Professor in the Department of Computer Science and Engineering and director of CEDAR, has been appointed to serve a five-year term on the Board of Scientific Counselors of the National Library of Medicine.

Madnia Award

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free-surface flows and mathematical modeling of chemically reacting turbulent flows.

Madnia has received a NSF CAREER Award, a Boeing Fellowship and the Ralph R. Teeter Education Award from the Society of Automotive Engineers. He serves as deputy director of education for the American Institute of Aeronautics and Astronautics (AIAA) and is the group's faculty advisor at UB.

Grant Recipients Honored

Faculty members representing a wide range of fields were recognized by the university for their efforts to obtain highly competitive federal funding for their research and eight SEAS professors were represented. They were **Michael Bruneau, Alexander N. Cartwright, George C. Lee, Russ Miller, Abani K. Patra, David T. Shaw, Sargur N. Srihari**, and **Aidong Zhang**.

"Only the very best investigators compete successfully for federal funding," Provost Elizabeth Capaldi said. "With the aid of its excellent faculty, UB's federal support has grown steadily. This improves the university's national reputation and produces economic impact in Western New York. The federal government estimates 29 jobs are generated by every \$1 million of grant dollars."

Faculty members were chosen based on a "snapshot" of total active federal awards for reporting year 2002, including multi-year awards.

Student Excellence Initiative Helps Students

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The overall goal of the initiative according to Wild, who developed the program under the supervision of Michael Ryan, associate dean for undergraduate education, is to ensure success for every student enrolled in the program. And while that's the goal of many student success programs, the SEAS approach is to begin at the beginning—before admission—to better identify students who are likely to be successful in the engineering program. The students then are paired with mentors and provided linkages to career guidance and counseling, counseled in time management and study skills, and encouraged to enroll in small study groups.

The Student Excellence Initiative is gaining notice—this past June a paper on the initiative authored by Wild and Ryan won second place at the annual American Society for Engineering Education (ASEE) conference in the Freshman Programs Division. A similar presentation earlier in the spring garnered first place as the "Best Presentation by a University Center" at the New York State Faculty Senate Student Retention Symposium. None of this would have been possible, say Wild and Ryan, without the enthusiastic support of SEAS Dean Mark Karwan.

Both Wild and Ryan want to make sure students come away with the feeling that someone was there for them, that someone cared about what they were going through, and that they built satisfying and mutually beneficial relationships with peers and SEAS faculty. While tightening admission standards has enabled SEAS to give those who enter the school more personalized attention, Wild adds that the point of the initiative is that "everybody who comes in has a fair chance of success."

UB Named "Center for Information Assurance"

The National Security Agency (NSA) has named the University at Buffalo a Center of Excellence in Information Systems Assurance Research and Education to develop new programs to conduct research and train students to protect the nation's information technology systems from cyberterrorism and security breaches on the Internet.

UB is one of 13 universities to receive the designation this year and among only 36 who have been named to date by the NSA. The designation as a Center of Excellence in Information Systems Assurance Research and Education is awarded competitively to universities that have proven they meet rigorous NSA requirements in both curriculum and research. Shambhu Upadhyaya, UB associate professor of computer science and engineering, will direct of the UB center.

The goals of the multidisciplinary center are to contribute to the SUNY Homeland Defense initiative at UB by collaborating with state and federal agencies, including the New York State Office of Science, Technology and Academic Research (NYSTAR), to implement educational programs in information assurance—first at the graduate level and eventually at the undergraduate level—and to collaborate with and help train employees of local companies involved in computer security research.

"The center provides an excellent opportunity to partner with local companies and others across New York State to obtain joint federal funding, as well as to provide potential employees to those firms by graduating well-trained students," said SEAS Dean Mark Karwan.

The center brings together individual researchers in SEAS, the College of Arts and Sciences, the Law School and the School of Management who have been working independently on various aspects of information-technology assurance.

UB's application to the NSA for center designation developed out of collaborative research Upadhyaya conducts for the Air Force Research Laboratories Information Institute in Rome, NY which includes an early version of an exciting new software system that detects cyberattacks while they are in progress by drawing highly personalized profiles of users has proven successful 94 percent of the time in simulated attacks.

Early Detection of Bioterrorist Threat or Epidemic Is Goal of Software System for Medical Emergencies

Computer scientists at the University at Buffalo who developed handwriting recognition software systems for the U.S. Postal Service and the U.S. Census Bureau are developing a system to flag suspicious patterns in emergency medical reports and make them available to public-health authorities within days, if not hours.

"By automating the collection of data on all patients who enter the emergency medical system, patterns of public-health emergencies that might be related to a terrorist attack or an epidemic would be revealed right away," said Venu Govindaraju, UB professor of computer science and engineering and associate director of UB's Center of Excellence for Document Analysis and Recognition (CEDAR.)

Features of the system, Govindaraju said, would have application to other sectors where prompt data processing and analysis also are critical, such as in the processing of application forms filled out for the U.S. Immigration and Naturalization Service by travelers at ports-of-entry.

Govindaraju, principal investigator on the project, said valuable information could be gleaned from an automated analysis of patient data. Whether it's West Nile virus or a bioterrorism threat, he stressed that the sooner medical personnel receive information about patterns of medical emergencies, the more likely they are to respond effectively. While time is the critical factor, it can be months before data are keyed in manually at a regional processing center and years before completed analyses are available.

When the first few cases of anthrax surfaced in the Washington, D.C., area last fall, some postal workers may not have received the proper diagnoses because health-care workers had not yet been notified to be on the alert for anthrax cases, particularly among postal workers. The consequences of those delays may have been tragic.

"If an automated analysis of pre-hospital care reports shows that many patients from the same geographic area are reporting the same symptoms in a short period of time, this critical information—which may not be obvious to the ER staff, given the volume of patients that go through the system each day—could be disseminated easily and quickly to the appropriate authorities and to health-care workers," said Govindaraju. "The sooner public health officials know that a pattern is emerging, the sooner they can act to contain it."

Automated tools that gather and analyze patient data also allow policymakers to track such cases once treatment has been administered, improving the accuracy of post-crisis assessments. "The database itself would then become a valuable resource for enabling data mining and knowledge discovery for the entire medical community," said Govindaraju.

The system he envisions features a software program that can turn into digital data the handwriting, check marks and circled responses used to describe a patient's presenting problem, vital signs and other symptoms. The UB researchers will use a lexicon, or vocabulary, of medical terms and keywords that they will construct using sources from the National Institutes of Health.

The program will feature data-mining tools designed to automatically analyze data on the form once it has been processed.

UB researchers at CEDAR are working on the project in consultation with New York State Department of Health officials and with Western Regional Emergency Medical Systems, Inc. of Buffalo.

DID YOU KNOW?

According to NSF figures, in 2001, SEAS ranked sixth in the nation among engineering schools for receiving NSF Engineering Directorate funding. With a total of \$11M in total grant money, SEAS ranked the highest for funding for major research equipment.

New Software System Profiles 'Normal' Computer Habits

An early version of a new software system developed by UB researchers that detects cyberattacks while they are in progress by drawing highly personalized profiles of users has proven successful 94 percent of the time in simulated attacks. The "user-level anomaly detection system" was described at the military communications conference known as MILCOM 2002.

"We have developed a new paradigm, proactively encapsulating user intent where you basically generate a profile for every single user in the system where security is a major concern," said Shambhu Upadhyaya, associate professor of computer science and engineering and co-author of the paper.

Upadhyaya directs UB's new Center of Excellence in Information Systems Assurance Research and Education, one of 36 in the U.S. chosen by the National Security Agency to develop new programs to conduct research and train students to protect the nation's information technology systems from cyberterrorism.

He remarks that "our methodology is a marriage of two known techniques: misuse and anomaly detection. We use an assertion/rule-based approach to precisely capture the initial bracket of activity and then fine-tune this profile to reflect ongoing activity, making highly personalized and accurate profiles possible. Also, since users are being constantly monitored, this system can detect intrusions or attacks on-the-fly."

The system generates a user profile according to data about standard operations and commands that each user follows to carry out specific tasks. It is designed to detect significant deviations from procedures followed by normal users. While some commercially available computer security packages already feature user-profiling, Upadhyaya noted that they are based on "low-level" methods—meaning they seek out deviations on the basis of huge amounts of data, so they end up creating many false alarms.

By contrast, the system he developed with co-authors Rankumar Chinchani, a doctoral candidate in CSE, and Kevin Kwiat of the Air Force Research Laboratory in Rome, N.Y., is based on the idea that the computation habits of normal users generally are well-defined and that he or she will work within those bounds.

"The normal behavior of computer users has been very well characterized," said Upadhyaya. "Normal users stick within well-defined parameters. Intruders or hackers, on the other hand, will not be able to carry out their intended operations within such well-defined parameters, and so will make the scope of his or her activities

overly permissive," said Upadhyaya. "Our system is based on detecting that kind of behavior." "Our system is looking for a sequence of operations that falls within certain 'normal' parameters," he explained.

The key to the UB system's success and its "scalable" feature is that its monitoring system operates at a high level, examining commands that users execute to perform certain operations. This is in contrast to the low-level monitoring that many existing packages perform, which examine commands as basic as the ones and zeroes of which email messages are composed. "For example, if you want to make a document, you do certain things in a certain order, you create the document, you use a word processing program, you may run Spellcheck. Our system knows what to look for in the normal sequence that is necessary to accomplish this job. Any deviations from that are assumed to be potential cyberattacks."

NYSCEDII and CCR Host Volcanic Simulation Workshop



Volcanologists and computational scientists from around the globe gathered at the University at Buffalo to discuss how integrating fundamental physical models with sophisticated technologies, such as supercomputing, can help produce more accurate simulations of volcanic mass flows and mitigate the dangers related to real ones.

The workshop was hosted by one of the largest and most diverse teams of scientists in the world investigating how the integration of technologies ranging from mathematical modeling and geological simulation to supercomputing and virtual reality can be harnessed to simulate active volcanoes. Their research is supported by a \$1.9 million grant from the National Science Foundation.

Workshop demonstrations of new technologies were held at the Center for Computational Research (CCR) and the New York State Center for Engineering Design and Industrial Innovation (NYSCEDII), both at UB.

According to one of the organizers, a group that included associate professor of mechanical and aerospace engineering Abani Patra, sophisticated methods of visualization like those available at NYSCEDII eventually will provide civil protection authorities with an important tool for communicating to people how such a disaster would affect specific features in their communities, including roads, bridges and residential areas.

SPIR Saving Jobs and Increasing Revenue in Western New York

The Strategic Partnership for Industrial Insurgence (SPIR), an SEAS sponsored economic stimulus program designed to help create and retain manufacturing jobs at small and medium-sized companies in New York State, provided an estimated \$160,000 in project support to Western New York companies during its 2001-2002 fiscal year. Participating companies have credited SPIR support during the period with helping to retain more than 900 jobs, create 96 new jobs and increase revenues by more than \$24 million.

The SPIR grants, funded by New York State, cover up to 50 percent of a project's cost for hiring faculty members, students and other technically trained personnel and fees for using sophisticated research facilities, such as those available at UB. Qualifying projects, organized through SEAS' Center for Industrial Effectiveness, include those focusing on new product development, product redesign and/or enhancement, and process improvement activities. In order to qualify, SPIR projects must include engineering school faculty and/or graduate students and embrace one or more of the following objectives: job retention, job creation, or revenue increase.

The 2002 awards ranged from a few thousand dollars for operational assessments to up to about \$20,000 for product development support.

Professor Calls Them as He Sees Them

Christopher Rump, assistant professor of industrial engineering, made the news in a rather odd way. The probability expert was quoted in publications all over the country—ranging from the New York Times to the Seattle Times—predicting the likelihood that Tiger Woods would win a Grand Slam at some point in his career.

Rump had predicted that there was a 13 percent chance Woods would win a slam this year, but Woods didn't beat the odds. If it's any consolation, Rump states that "there is a 30 percent chance he'll eventually achieve a Grand Slam over the next 20 years, based on his success rate in past major championships."

Rump—a sports fan whose serious research involves creation of operational systems for traffic, telecommunications and computers—notes that Tiger Woods has won 36 percent of major tournaments he's entered in his career.

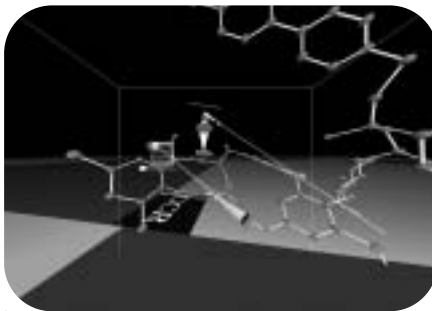
"If Tiger continues to win at that rate, his chances in any given year of achieving the Grand Slam are 1.75 percent or 56 to 1 odds," Rump explains. Using a Markov Chain, a statistical model invented by a Russian mathematician to

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CCR Receives \$2M NSF Grant to Launch a "Transparent" Virtual Community

The concept of a virtual community, where like-minded individuals share their knowledge for the benefit of all who participate, might appear out-of-step with the culture of research scientists, who traditionally have guarded jealously their data from rival groups until publication.

But UB scientists working in the field of protein-structure determination, lead by Russ Miller, Distinguished Professor in the department of computer science and engineering and CCR's director, have been awarded a highly competitive, \$2 million National Science Foundation Information Technology Research grant to do just that and more over the next four years.



The funding provides support to develop software that will allow crystallographers to tap into new sources of computational and scientific power to automatically enhance SnB, the protein-structure determination software package now used throughout the world, which was developed by scientists at UB and Hauptman-Woodward Medical Research Institute (HWI) in Buffalo.

When it first became available publicly in 1995, SnB itself represented a quantum leap in structure determination, allowing researchers to solve structures with virtually no input from the user. The formula on which it was based, developed by Nobel Laureate Herbert Hauptman, president of HWI, was designated one of "The Top Ten Algorithms of the 20th Century" by *Computing in Science & Engineering Magazine*.

"SnB has had an enormous impact on the crystallographic community," said Russ Miller. "But its ultimate potential is unknown. This grant will allow us to make advances in structure determination by exploiting new computational paradigms." One of those new paradigms, Miller explained, is the computational grid, a state-of-the-art platform in which hundreds, even thousands, of computers from across the nation and the world can be tapped to solve a single problem. The grid, he explained, harnesses not just the machines' computing power, but storage, device, and personnel resources so they behave as a single environment.

Once the software has been written that creates the appropriate collaborative and data-mining environments, the UB and HWI developers will begin work to create a virtual community.

How to Store Your Entire Movie Collection on a Credit Card...

Harsh Deep Chopra, associate professor of mechanical and aerospace engineering, and Susan Hua, director of UB's Bio-Micro-Electro-Mechanical-Systems Facility and adjunct professor of mechanical and aerospace have developed an extremely sensitive nanoscale device that could shrink ultra-high-density storage devices to record sizes.

Their research, supported by the NSF and U.S. Department of Energy, showed that a magnetic sensor, made of nickel and measuring only a few atoms in diameter, could increase data storage capacity by a factor of a 1,000 or more and ultimately could lead to supercomputing devices as small as a wristwatch.

As stored "bits" of data get smaller, their magnetic field gets weaker, making the bits harder to detect and "read." Reliable reading of the data depends on producing a large enough magnetically induced change in the electrical resistance of the sensor. Producing a detectable change at room temperature is another challenge.

In an experiment at UB, Chopra and Hua demonstrated that their tiny sensor produces an unusually large change in resistance in an ultra-small magnetic field at room temperature. The magnitude of the magnetic effect they created surpasses all previous records. The results were published earlier this month in *Physical Review B*.

The effect created with the new nickel device is called "ballistic" magnetoresistance (BMR) and employs an electrical conductor that is only a few atoms wide and long. The BMR experiment exhibited a record change in sensor resistance of more than 3,000 percent. Chopra predicts the ultimate capacity will be about a terabit per square inch. This could enable the storage of 50 or more DVDs on a hard drive the size of a credit card.

UB receives \$2.5 million grant to improve post-disaster response

Minutes after the first hijacked plane hit the World Trade Center's north tower on Sept. 11, information began to flow from the site to police, firefighters and other emergency personnel. The situation and information flow became more complex when a second plane flew into the WTC's south tower, and even more complicated when both towers subsequently collapsed.

The science of efficiently organizing and interpreting massive amounts of such information—a relatively new field called information fusion that originated from military applications—is for the first time being applied to artificial and natural disasters by researchers at SEAS.

The ultimate goal of the work being led by James Llinas, research professor of industrial engineering and director of UB's Center for Multisource Information, is new software tools to make the emergency response more effective by "fusing" the many channels of information that begin flowing following a major disaster. The integrated, automated fusion and decision-making software would be embedded in the urban emergency-management and crisis-management systems.

The work is funded by a five-year, \$2.5 million grant awarded earlier this year by the Air Force Office of Scientific Research to the Calspan-UB Research Center (CUBRC). Under the grant, a new and elaborate software program for route optimization—the fastest and best way for vehicles to get from point A to point B—that was developed by UB postdoctoral associate William Frank, now will be adapted to "dynamic route optimization," that is, to routes that have been disturbed by an earthquake, a terrorist attack or some other natural or manmade disturbance.

Professor's Odds

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predict outcomes, Rump also figured that Tiger has a 60 percent chance of completing another "Tiger Slam"—four consecutive major tournaments across two years—if he continues at his current pace over the next 80 majors.

"Jack Nicklaus won the Master's when he was 46, so it's not inconceivable that Tiger's still winning majors 20 years from now," Rump says.

Though he's not a betting man, Rump has drawn up statistical models to predict outcomes of the Stanley Cup, World Series, NBA Finals and the New York State Lottery.

Amherst Company Helps Change the Face of Security

Amherst-based Ultra-Scan Corporation, a pioneer in the development of high-accuracy ultrasonic fingerprint matching technology and a business partner with SEAS, demonstrated the world's first personal ID system to combine both a smart card reader and high-performance ultrasonic fingerprint scanner at a conference in New Orleans.

Ultra-Scan Corporation is a pioneer in the use of ultrasonics to capture fingerprint images. In 1996, the company demonstrated the first ultrasonic fingerprint scanner, a major breakthrough, which that year received the prestigious R&D Top 100 Award as one of the world's most technologically innovative products.

The Ultra-Scan system is a distributed, biometric ID terminal that uses Ultra-Scan's award-winning and patented technology for reading and matching fingerprints. It is designed to accommodate virtually any smart card reader to create a combined system that can read, match, and authenticate the card holder by comparing the fingerprint to the biometric data embedded on the card.

Ultrasonic technology is widely recognized as the most accurate method for true identity fingerprint scans. Ultrasonic waves are unaffected by dirt, grease, ink, even newsprint and other substances commonly found in real-world unattended applications. The Ultra-Scan system can match individuals against a database at accuracy levels that statistically approach 100 percent.

Ultra-Scan Corporation develops and licenses its ultrasonic fingerprint matching technology for use by the leading makers of biometric hardware and integrated identification systems. In addition to applications with biometric smart cards, Ultra-Scan's technology is used for airport security, by hospitals and healthcare organizations for patient privacy and access control, by companies for time and attendance monitoring systems, and by commercial enterprises and government agencies.

Interest in the company has increased significantly since 9/11. In early April, the company's technology was tested at the John F. Kennedy and LaGuardia airport terminals as part of a package of security measures introduced by Gov. Pataki and New Jersey Gov. James McGreevey.

CEDAR Gaining Recognition for Focus on Forensic Uses, Anti-Terrorism Tools

The subject of many recent articles found in publications such as The New York Times and La Monde, UB's Center of Excellence in Document Analysis and Recognition (CEDAR) is the largest research center in the world devoted to developing new technologies that can recognize and read handwriting. In the U.S., it is the only university center where researchers in artificial intelligence apply pattern-recognition techniques to the problem of reading handwriting.

Interest in the use of computer processing of handwriting has been on the increase for several reasons, said Sargur Srihari, SUNY Distinguished Professor in the UB Department of Computer Science and Engineering and director of CEDAR.

"In addition to continued expansion in the market for handheld computing devices, such as personal digital assistants, and improvements in offline recognition of handwriting for postal and financial applications, forensic uses for the computer processing of handwriting, especially in the wake of 9/11, are stimulating new areas of research," Srihari said.

Srihari and his colleagues at CEDAR recently published a paper in the Journal of Forensic Sciences providing the first scientific proof that handwriting is unique to individuals. In addition, this was among the topics discussed at the Eighth International Workshop on Frontiers in Handwriting Recognition, sponsored UB. Panelists included Srihari and representatives from the U.S. Secret Service and the FBI.

"In law enforcement in general that work still is being done by human analysts, but we now are beginning to use computers to do it. Teams at CEDAR and at other institutions represented at the workshop are beginning to prove that automated analysis techniques can be quite successful," said Srihari.

Other work presented at the workshop by CEDAR scientists included preliminary reports on new techniques for recognizing medical words so that handwritten forms filled out by paramedics could immediately be fed into a database, revealing potential patterns of public health emergencies that could be related to a terrorist attack or an epidemic. This system would help flag suspicious patterns in emergency medical reports and make them available to public-health authorities within days, if not hours. Venu Govindaraju, professor of computer science and engineering and CEDAR's associate director remarked that whether it's West Nile virus or a bioterrorism threat, the sooner medical personnel receive information about patterns of medical emergencies, the more likely they are to respond effectively. While time is the critical factor, it can be months before data are keyed in manually at a regional processing center and years before completed analyses are available.

Virtual Surgery in the Right Hands



The procedures used in brain surgery are some of the most complex in medicine, with the margin for error minimal. Yet neurosurgeons have no way to effectively practice for an operation before they actually begin. Thenkurussi Kesavadas hopes to change that. An associate professor of mechanical and aerospace engineering, Kesavadas has built a virtual-reality tool for brain surgeons. The system, which runs on a personal computer, allows physicians to examine three-dimensional images of what surgery is like.

More radical still, neurosurgeons wearing a special glove wired to software Kesavadas designed receive tactile feedback that replicates what their fingers and hands would experience in the operating room. "When surgeons virtually cut the skull, they actually feel the tool vibrating in their hands. They can feel smoothness and roughness. And they say, 'Wow, this seems real!'" says Kesavadas, who's developing the brain-surgery simulator with help from neurosurgeons at the University of Miami and should go into service sometime next year.

Ultimately, Kesavadas believes this technology could help eliminate the use of cadavers and allow physicians to get up to speed on new procedures faster than working with live surgical cases. Down the road, he sees a day when "there will be something that digitally defines the physical properties head to toe of human beings of different ages..." to give doctors a tactile reference library for the entire human life-span. No doubt, Kesavadas' work which is garnering a good deal of notice-- some of his research was recently cited in the Whitaker Foundation Annual Report--will have a lot to do with making such an ambitious task a reality.

Generation to Generation

Alumnus Donates to Undergrad Labs

University at Buffalo alumnus and retired computer software executive Larry Peckham BS IE, 1969, and his wife, Nancy, have donated \$250,000 to the School of Engineering and Applied Sciences for the continuing development of undergraduate laboratories.

Mark Karwan, dean of the School of Engineering and Applied Sciences, said the flexibility of the Peckham's gift is of "paramount importance to our school," because "maintaining up-to-date laboratories is key to the development of our students."

Karwan, who will disperse the money according to the needs of the individual laboratories, added, "With this gift, Larry and Nancy show that they understand and appreciate the integral role technology plays in the fields of engineering."

"I hope we can give students the tools they need to accomplish their goals and earn degrees," said Nancy Peckham, adding: "the university needs to keep pace, upgrading and matching today's constantly evolving technology."

Peckham, who earned his bachelor's degree in industrial engineering from UB in 1969, said he worked so hard to obtain the degree that it gave him confidence to "achieve anything I wanted to."

"I learned a lot at UB. It was a very good return on investment," said Peckham.

\$1 Million Given to SEAS and Nursing School

Patricia H. and Richard E. Garman, Western New York community leaders and long-time supporters of the University at Buffalo, are donating \$1 million to UB's School of Nursing and SEAS.

Patricia Garman, MS '79, a psychiatric nurse who is now retired from her private counseling practice, said half of the gift will fund the Patricia H. Garman Behavioral Health Nursing Endowment Fund to promote the advancement of education, research and practice in the area of behavioral health nursing.

Garman, the former president and CEO of Buffalo Crushed Stone, Inc., has designated that half the money be used for scholarships for civil engineering students in the School of Engineering and Applied Sciences.

Garman said he chose to support undergraduate scholarships because, "Probably a lot of the students are like I was, wondering how the heck I was going to pay for the education, but determined to get it, willing to take the chance by enrolling first and worrying about money later."

Mark H. Karwan, dean of the UB School of Engineering and Applied Sciences, said Garman's gift "responds to a very real need and that is improving the odds for those students who might face crushing financial hardships without scholarships to help support them and keep them in school."

Letter from the Dean

Let me begin by offering my most sincere appreciation to all of you who have given so generously to the School of Engineering and Applied Sciences (SEAS) during the past fiscal year. The gifts we have received illustrate the outstanding commitment of all those connected to SEAS on both the private and corporate side. It is important to me that I communicate just how critical your gifts are to our continued mission of providing the highest quality of engineering education at every level. Let me reiterate how your gifts supply a significant amount of the necessary resources to achieve our goal and enhance the value of the degrees already held by our esteemed Alumni.

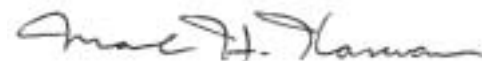
Continued challenges to state budgets coupled with the need to expand our research, physical plant and academic initiatives underscore our mission to generate even more private financial support. The last year has been one filled with incredible experiences in meeting with our alumni and friends. Discovering the wonderful impact our SEAS graduates have had on their particular businesses and communities has been truly gratifying. I encourage all of you related to SEAS to share in the strong sense of pride I feel for the accomplishments of our School and its graduates. The space here does not allow me to recount the many examples of the outstanding achievements of SEAS students, faculty and graduates.

I would however, like to share with you something I think is a profound example of the commitment shown by the school's community. To date our Faculty and Staff Campaign has raised \$2.8 million dollars toward our overall goal of \$18 million. This represents the largest total of any campus unit's internal campaign. It has served as a wonderful inspiration to our colleagues on campus but more importantly to our Alumni. This demonstration of pragmatic involvement has helped us in securing major gifts and the all important annual fund raising effort, which helps us raise necessary flexible funds. Funds that are essential for us to immediately use the resources where they are needed most. I want to make sure I thank all of you who have given; every gift is important and does make a difference.

As we approach the final six months of our campaign, we stand close to meeting and exceeding our goal of \$18 million. The University's comprehensive effort "The Campaign for UB, Generation to Generation" stands at over \$210 million of the targeted goal of \$250 million, the most ambitious campaign of any public university in New York and New England. We appreciate your support in helping to provide the "margin of excellence" so important to SEAS. I look forward with great anticipation to a time in the near future when I can report the successful completion of this campaign.

Thanks again for all those gifts that were given to SEAS from July 1, 2001 to June 30, 2002. Your continued support is deeply appreciated by everyone connected to the school. We have made a concerted effort to ensure that the following listing(s) are complete and accurate; we ask that you contact Tim Siderakis or Mike Madonia at (716)646-2133 with any questions. They can be e-mailed at tsiderak@buffalo.edu; mmadonia@buffalo.edu to offer any assistance necessary. Have a wonderful holiday season and New Year.

With sincere appreciation,



Mark H. Karwan
Professor and Dean

DELTA SOCIETY MEMBERS

\$50,000 +

Nancy and Lawrence L. '74 Peckham, Webster, NY
James W. McLernon '50, Bloomfield Hills, MI

\$10,000–\$49,999

Lydia Benenson, Williamsville, NY
Joe Y. Chuang '72, Palos Verdes Peninsula, CA
Catherine H. and Robert H. '51 Goldsmith, Rancho Santa Fe, CA
Barbara and Hadi '72 Makarechian, Corona Del Mar, CA
Theodore J. '86 and Cynthia '91 Moran, East Amherst, NY
Joan H. and Henry E. '49 Stone, San Jose, CA
John Zahorjan, Seattle, WA

\$5,000–\$9,999

Donna M. and Frank J. '53 McGuire, Getzville, NY
Mary McSwain and Hiroshi Morihara '71, Gresham, OR
William C. Styslinger '69, Fairfield, CT

\$2,500–\$4,999

Christina L. Bloebaum, Getzville, NY
Jeremy Maurice '60 and Peggy L. Jacobs, Buffalo, NY
Sabina L. and Mark H. Karwan, Buffalo, NY
Rebecca S. Landy and Robert Tell, Orchard Park, NY
Walter James Sarjeant, Amherst, NY
James J. Whalen, Clarence, NY

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Karen A. and Patrick F. '75 Abrami, Stratham, NH
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John R. Davis '55, Akron, NY
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Martha M. Harris '90 and Paul Steven Goodman '92, Buffalo, NY
Norman M. Hayes '80, Sunnyvale, CA
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Grace S. and George C. Lee, East Amherst, NY
Maria C. '81 and Carl J. '78 Lehman, Orchard Park, NY
Thomas J. Lynch '85, East Amherst, NY
Michael G. Majdalany '76, San Francisco, CA
Dennis P. Malone '54 and Jane Liebner, Williamsville, NY
Kenneth A. Manning '77, Buffalo, NY
James F. May '49, East Aurora, NY
Walter Romashko '61, Minneapolis, MN

Leroy Hammond Runk '61, Orchard Lake, MI
Michael E. and Joan F. '85 Ryan, Williamsville, NY
Winslow T. Shearman '64, Binghamton, NY
Tsu-Teh and Dorothy Tsai Soong, East Amherst, NY
Anna M. Stave and William Grappone, Oneonta, NY
Howard E. Strauss '54, Williamsville, NY
Maung Thet Tin '96 and Sanda Yu '95, Malden, MA
Subbarao Vanka '83, Portland, OR
Donald E. Yost '51, Los Gatos, CA
Madeline E. Zahorjan, Orchard Park, NY

Delta Society membership based on annual gifts of \$1,000 or more, except for alumni who have graduated within the last ten years, who may give &500 per year.

DEAN'S ASSOCIATES, \$500–\$999

Gary P. LaBelle '81, Harrisburg, PA
James M. Mc Grath '91, Exton, PA
Dennis Menzenski '70, Bridgewater, NJ
Yen N. Nguyen '74, Canyon Country, CA
John V. Pilitsis '75, Westwood, MA
Franklyn W. '49 and Barbara M. '52 Roesch, Warrensville Heights, OH

Barbara Ann '97 and Lawrence J. Sherman '80, Grand Island, NY
Matthew S. Szkotak '83, Boothwyn, PA
Steven J. Aram '78, Dunedin, FL
Jonathan Matthew Bearfield '91, Raymond, NH

Patricia Janice '84 and Thomas F. '82 Bernecki, Grayslake, IL
Gary F. '87 and Andrea S. '75 Dargush, Snyder, NY
George Byron Fisher '50, Clarence Center, NY

SCHOLAR'S SOCIETY, \$250–\$499

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Robert E. '84 and Grace M. '84 Barnes, Amherst, NY
Robert D. Brown '68, Los Alamos, NM
M. Joseph Browne '78, Orchard Park, NY
Michel Bruneau, East Amherst, NY
John L. Burr '78, Kingston, NY
Dileep G. Dhavale '72, Worcester, MA
John Dicky '50, North Tonawanda, NY
Matthew Michael Fay '95, Ann Arbor, MI
Michael Paul Girard '90, Portland, OR
Robert E. Grace '63, Fairport, NY
William E. and Lee M. '86 Grunert, Williamsville, NY
Paul Henning '69, New Hartford, NY

James F. '97 Hewett, Tonawanda, NY
Bijan Moghaddam Izadi '79, Potomac, MD
Tin Che Ko '82, New York, NY
Bronislaus W. Kopra '66, Mission Viejo, CA
Lidia P. Kostyniuk '75, Brighton, MI
Gerald W. LaWall '54, Rohrerstown, MD
Dudley O. '50 and Hazel W. Losee, Redondo Beach, CA
Jiao Ma '02, Buffalo, NY
Ernst K. H. Marburg '72, Abingdon, VA
Todd Mendell '75, Sacramento, CA
Russ Miller, East Amherst, NY
Frank '67 and Rosemarie Notaro, Amherst, NY
Frank J. Notaro '85, Chicago, IL

Robert P. Palatnick '80, Cold Springs Harbor, NY
John Joseph Shea '89, Pittsburgh, PA
Andres and Mary P. '95 Soom, Williamsville, NY
Andrew T. Spilsbury '60, Torrance, CA
James Edward Stevens '76, Bay Village, OH
Chauncey Weisman '49, Culver City, CA
Chung-Yuan Wen '87, Yorba Linda, CA
Chu Ryang Wie, Amherst, NY
Darold C. '66 and Katrina S. '56 Wobschall, Williamsville, NY
Larry R. '52 and Mary Lou A. Zangerle, Dearborn, MI
Jennifer Lynn '97 and Mark J. '90 Zirnheld, Buffalo, NY

Century Club, \$100–\$249

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- Wayne Arthur Anderson '70, Orchard Park, NY
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- Louis Wah Elliott '97, Greenbelt, MD
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- Marilyn F. '64 and Robert G. '69 Helenbrook,
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- Leonard F. Hoffman '60, Circleville, OH
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- John K. Howell '71, Tonawanda, NY
- Hsiun Philip Hsieh '76, San Ramon, CA
- David K. Humphrey '67, Webster, NY
- Martin C. Hutkin '75, Woodside, NY
- Gary L. Innes '66, Livonia, MI
- Robert L. Jacoby '80, Spring, TX
- David Lawrence Jayne '89, Arlington, VA
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- George H. Kam '69, Tonawanda, NY
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- Steven J. Kargatis '68, Hampstead, NH
- James W. Karsten '82, Amherst, NY
- Thomas S. Katra '68, Fayetteville, NY
- Jaime S. Katz '82, New Canaan, CT
- Arnold C. Keller '76, Amherst, NY
- Sung J. Kim '84, Dayton, NJ
- Richard J. Kisloski '69, Haydenville, MA
- Jan A. Klapetzky '70, Williamson, NY
- Artis Klavins '83, New York, NY
- Theresa A. Klubek, Lackawanna, NY
- Lawrence S. Kluger '81, New York, NY
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- Donald J. Koscheka '77, Colts Neck, NJ
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- James '77 and Sarah '92 Llinas, Williamsville, NY
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- Carl R.F. Lund, East Amherst, NY
- Paul Gary Markwardt '78, Wantagh, NY
- Anna and Alton A. '50 Massey, Tonawanda, NY
- Jasdeep Singh Matharu '87, San Jose, CA
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- Roger W. '63 and Rosemary E. Mayne,
Williamsville, NY
- Andrew Mc Bride '84, Austin, TX
- William Michael McKeon '98, Lancaster, CA
- Margaret M. McNamara, Buffalo, NY
- Paul F. McParlane '83, San Diego, CA
- James M. Michalowski '82, Manassas, VA
- Dean C. and Nancy S. '61 Millar,
Williamsville, NY
- Gregory Minnick '81, Toms River, NJ
- Monica S. Moshenko, Williamsville, NY
- Christopher E. Nardecchia '85,
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- John Narog '50, Huntington Beach, CA
- George H. Norton '48, Salt Lake City, UT
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- John M. Pavone '86, Merritt Island, FL
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- John L. Pittas '84, Waltham, MA
- Guru Prasad '00, San Mateo, CA
- Alan J. '86 and Rebecca Rabideau, Buffalo, NY
- G. '83 and Manju '83 Rajeswaran, Fairport, NY
- Paul S. Rataj '83, San Jose, CA
- Stephen R. Rhen '87, Sommerville, MA
- Kathryn J. Rivers '85, Rochester, NY
- Henry L. Sandonato '78, Lewiston, NY
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- Justin Martin Smith '96, Canandaigua, NY
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- Laurie C. Spiegel '77, Florham Park, NJ
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- John P. '94 and Maria E. '93 Stopher,
Rockville, MD
- William P. Sturner '78, Cherry Hill, NJ
- William N. Sullivan '68, Albuquerque, NM
- John S. '86 and Lucinda Leigh '87 Tashman,
Ithaca, NY
- Paul W. Taylor '69, Poughkeepsie, NY
- David T. Theoclitus '88, Gillette, NJ
- Albert H. Titus '91 and Ann M. Bisantz '91,
Batavia, NY
- Vincent Tomassetti '88, West Chester, OH
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- Lungwen Tsai '70, Riverside, CA
- Alexander W. Tzetzio '96, West Palm Beach, FL
- Irene W. Van Dyk Pecenco '76, Ponway, CA
- Eugene Yeou-Geng Wang '74, Sugarland, TX
- Norman J. Warren '59, Hockessin, DE
- William C. Washington '93, Baldwin, NY
- George W. Wehrin '61, Mendham, NJ
- Herbert M. Wendling '49, Buffalo, NY
- Joseph H. Westsik '59, Richland, WA
- Gordon J. Wilson '49, Hamburg, NY
- William J. Wirth '64, East Aurora, NY
- Walter Wolentarski '53, Old Hickory, TN
- Mark B. Wolfe '82, Miami Springs, FL
- Sailai Wong '87, Marlboro, MA
- Ta-Hsiung Wong '83, Indianapolis, IN
- Gary W. Wood '73, Loudonville, NY
- Miintsong M. Yang '86, Taiwan
- Tai-Sung Yoo '75, Seoul, Korea
- Harvy Zapata '01 and Andrea Gonzalez,
Midlothian, VA
- Stephen W. '72 and Beverly Zelazny, Snyder, NY
- X. Kembo Zunzanyika '71, Longmont, CO

CORPORATIONS, FOUNDATIONS, AND ORGANIZATIONS

(includes matching gifts)

\$100,000 AND UP

Sun Microsystems, Incorporated

The Whitaker Foundation

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Ceramics & Materials Processing, Inc.
Cymfony, Inc.
William and Flora Hewlett Foundation
Praxair, Incorporated
United Air Lines, Inc.

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American Heart Association National
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Axon Shock Control Systems, Inc.
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Nokia Networks, Inc.
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R.J. Watson, Inc.
Xerox Foundation

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The Merck Company Foundation
MMC Matching Gifts to Education Program
Ronco Communications & Electronics, Inc.
Square D Foundation
Taylor Devices, Inc.
United Parcel Service of America, Inc.
Washington Group Foundation, Inc.

We have made a concerted effort to ensure that the following listings for July 1, 2001 to June 30, 2002 are complete and accurate; we ask that you contact Tim Siderakis or Mike Madonia at (716)646-2133 or at tsiderak@buffalo.edu; mmadonia@buffalo.edu with any questions.

The Dean's Council Visits UB

This year, for their semi-annual meeting, the Dean's Council spent three days at UB visiting computing facilities, talking with students, and conducting their agenda.

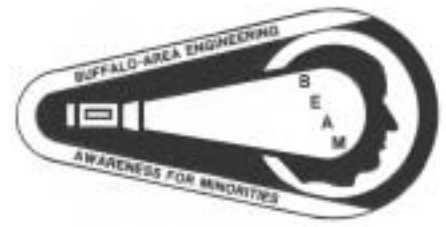
The council visited the CCR labs where Director Russ Miller outlined the university's bioinformatics initiative and took the members on a tour of the computing facilities—including the stunningly powerful Dell supercomputing cluster. UB now ranks no. 1 among academic institutions in computing power.

The council members then listened to student club presentations and later met with freshman and sophomore students to discuss the different roles of engineering in contemporary business and culture.

The final day featured a visit to UB's Center of Excellence in Information Systems Assurance Research and Education where they met with director Shambhu Upadhyaya and discussed the SUNY Cyber Security Initiative.



Clockwise from left: Dean's Council members touring the university's supercomputing facilities at CCR; experiencing first-hand CCR's visualization technologies; speaking with SEAS undergraduates about what it means to be an engineer.



BEAM Sponsors Science Academy

More than fifty minority middle and high school students are registered in the BEAM (Buffalo-Area Engineering Awareness for Minorities) SEAS Saturday Science and Technology Academy. BEAM, headquartered at SEAS, is a cooperative educational enrichment program that prepares inner city, minority, female and other under-represented students for careers in science, engineering, and technology.

This fall all students and their parents attended the BEAM College Day held on the south campus. University at Buffalo students Ashley Billington, (Mechanical Engineering), Sara Forde, (Aerospace Engineering), Morris Green Jr. (Industrial Engineering, Urban Planning) discussed career choices with them.

BEAM Hosts Golf Outing and Awards Banquet

The BEAM sponsored their 5th annual golf outing at Chestnut Hills Country Club on August 7th. The Tony Campagna Memorial Award was presented to an individual who best demonstrated outstanding loyalty and service to BEAM. The third annual recipient was Ted Dougher of Praxair, Inc.. General Motors, Powertrain, Tonawanda, the University at Buffalo School of Engineering, Praxair, EGWAssociates, Bristol-Myers Squibb Inc., URS Corporation, OxyChem, Superior Staffing/Technical Resources, WendelDuchscherer, and Turner sponsored the tournament. The Department of Public Works, County of Erie, at its department picnic held a special event to raise money for the BEAM golf fund-raiser.

Students and Mentors Participate in BEAM Summer Program

Eleven minority junior high school students participated in the BEAM, Buffalo-Area Engineering Awareness for Minorities precollegiate summer program. This five-week program, coordinated by Drexel Gidney, Senior Academic Advisor and Director of Minority Engineering Programs consists of Math Enrichment, Introduction to Engineering, Computing, and Physics. Engineering students instructed the students in math and computers.

In addition, the students who participated in the Research Honors Program and the Professors who volunteered their time to mentor them were:

Julia Johnson—Cemalettin Basaran, associate professor, Civil, Structural and Environmental Engineering, Research Project-"Improving the Durability of Corian"

Ebony McCory—W. James Sarjeant, professor, Electrical Engineering Research Project- "Constructed an Analog Volt-Ohm Meter and a Electronic Security Room Alarm"

JoAnna Rozier—Christina Tsai, assistant professor, Civil Structural and Environmental Engineering, Research Project—" Applications of the Rosenblueth's Probabilistic Point Estimation (PE) Method to Solve River Flow Problems"

The Faculty Advisor Award was awarded to Ahidde Lalor of School #51, Black Rock Academy and the Tony Campagna Memorial Award went to Ted Dougher of Praxair Inc..



Information on the BEAM programs may be obtained through Marilyn Helenbrook, Executive Director, BEAM 206 Fronczak Hall, (716)645-3066.

SEAS Nearing Campaign Goal

continued from pg. 1

very encouraged by the amount of participation we receive from our alumni," Karwan added "every gift is important to the campaign, so if you believe your gift won't make a difference, I need to tell you that it will." With 19,000 alumni, the Dean reiterated the importance of alumni giving, "the full participation of our alumni at any level will help us in our mission of recruiting top students and faculty, obtaining and maintaining state-of-the-art teaching laboratories and allow us to continue to forge strong partnerships with industry."

The success of the campaign extends to much more than just dollars and cents. "Our faculty and staff have contributed more than \$2.8 million to our campaign, by far the largest total of any campus unit," added McLernon. "Imagine having your faculty participate at an over 90% level, it's such a gratifying example to see that the people here at SEAS truly believe and support the school's mission." According to Tim Siderakis, Assistant Dean and Director of Development, "this campaign has given the school a wonderful opportunity to reconnect with our alumni and establish relationships with them that will last long after this campaign concludes. We have identified and contacted so many incredible people, both alumni and friends, that we have greatly enhanced the future of this School. Many of the people identified during this campaign will make a significant impact to this School and University in the future." Another measurable by-product of the campaign has been the exponential growth of the Delta Society, the annual gift club for those who donate \$1000 or more annually to the Dean for use at his discretion. "It's no secret that state funding has decreased in the recent past, having more disposable income can help us with immediate needs like lab rehab and scholarship programs" Karwan said. Although the final tally isn't in, Siderakis sees outstanding growth in the Delta Society; "we went from a total of about 15 members to more than 30 with a goal of 75-100 members prior to the conclusion of this campaign."

The overall campaign for the University at Buffalo was set at \$250 million at the outset with the current total raised at more than \$210 million. The Campaign runs until 6/30/03 and Dean Karwan hopes to make one point very clear, "even though the campaign concludes next June, all pledges made prior to the end of the campaign will count towards the campaign even though those pledges will be paid after its completion." Gifts come to the University in many ways, with the three most prevalent being the annual Alumni solicitation, major gifts which are defined as gifts of \$25,000 or more, (often paid over 3-5 years) and planned giving, which involves donors making bequests on behalf of the University. "The substantially larger gifts we have received have been a great source of inspiration to the entire SEAS community. I sincerely thank those who have given to this campaign and hope that those who haven't will give it their most careful consideration" Karwan added. Jim McLernon summed it up the best when he said that "leading this campaign has been both challenging as well as rewarding as we move towards its successful conclusion. Engineers intrinsically know how to take a plan and make it reality."

UB Engineering Alumni Association 2003 Membership Form

UB Engineering Alumni Association Membership extends from January 1, 2003 to December 31, 2003.

Engineering Alumni Association Dues			\$	25.00
Suggested Scholarship Contribution \$5.00	(additional welcome)	+	\$	_____
	Total Enclosed	=	\$	_____

Method of Payment We would be pleased to accept your check, money order, or credit card.

Check Money Order Master Card Visa (Make checks payable to UB Engineering Alumni Association)

Card Number _____ - _____ - _____ - _____ Card Expiration Date mm/yy ____/____

Signature (credit card only): _____

Name and Mailing Address: _____ E-mail Address (optional): _____

Class Notes for SEAS News: _____

Suggestions for new programs or benefits: _____

Please mail this form with payment to: UB Engineering Alumni Association, 415 Bonner Hall, Buffalo, New York 14260

SEAS Calendar

Engineers Night at UB Basketball, Saturday, February 22, 2003

SEAS Scholarship Reception and Concert, Friday, March 21, 2003

Preview Day—Spring Open House, Saturday, April 12, 2003

Dean's Council Meeting, Thursday and Friday, April 24, 25, 2003

Order of the Engineer, TBA

SEAS Commencement, Saturday, May 10, 2003

Cluster 50th Reunion, Classes of '52, '53, '54, Thursday and Friday, June 19, 20, 2003

UB Homecoming and 50th Reunion Weekend, Friday and Saturday, October 17, 18, 2003



Spring Picnic 2003



Students, alumni, faculty, and staff came out in droves to enjoy hotdogs, music, and good conversation at this year's Spring Picnic, sponsored by the Engineering Alumni Association, the Engineering Student Association, and SEAS.

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