$13 million UGS grant aids ergonomics study

UGS Corp., a leading global provider of product lifecycle management (PLM) software and services, has given the Watson School an in-kind software grant that will provide faculty and students with valuable experience using leading ergonomics and human factors applications. The in-kind software grant, with a commercial value of $13.2 million, is the largest in the University’s history.

Faculty in the Department of Systems Science and Industrial Engineering will work with manufacturing simulation software from UGS’s Tecnomatix™ suite of products, which is used by major international companies to improve the ergonomics of product design and create workplace tasks that are safer and more effective.

The grant builds upon earlier UGS support. In 2004 and 2005, UGS provided the school with Solid Edge 3-D computer-aided design software.

“The advances our University can make by bringing together our bright students with inspired faculty and corporate friends such as UGS will strongly enhance the student experience at Binghamton University,” said President Lois B. DeFleur.

Hulas King, director of community relations for UGS Corp., joined President Lois B. DeFleur in announcing an in-kind software grant valued at $13.2 million, the largest in the University’s history.

Walter Lowen, former dean, dies at 84

Walter Lowen, 84, founding dean of the School of Advanced Technology (SAT), the precursor to the Watson School, died May 3 at his home in Louisville, Ky., where he had recently relocated.

A professor of mechanical engineering at Union College when he was recruited to help launch the SAT in 1967, Lowen returned to teaching in 1977 as professor of systems science in SAT and later in the Watson School. He retired in December 1990, then served for two more years as a Bartle professor.

Michael McGoff, vice provost for strategic and fiscal planning, and former associate dean of the Watson School, said, “Walter Lowen was the most forward-thinking, creative, caring teacher and mentor I ever knew. "In creating SAT, Walter had a vision and brought together the leading people in the field to create a wonderful opportunity for students from varying academic backgrounds to earn a master’s degree.

He went from a specialty in nuclear physics, where he was an award-winning teacher, to writing his 1982 book, Dichotomies of the Mind. It dealt with a systems science model he created that used brain scanning devices to identify specific parts of the brain with various personality types. “He was brilliant,” McGoff added.

Lowen is survived by his wife, Sylvia, and two sons. An endowment has been established in his name. Gifts can be made to the Binghamton University Foundation, Walter Lowen Student Endowment, account #2034050. The 2006 Homecoming Reunion will honor his contributions on October 13, 3 to 6 p.m., in the Knoll-MacDonald Commons in the Engineering Building.

Research funding increases sharply, sets school record

The Watson School’s research funding grew sharply in the 2005-06 fiscal year, jumping 79 percent over 2004-05. The school received $13.9 million in new awards.

The Department of Computer Science increased its funding by a factor of six, Electrical and Computer Engineering funding more than doubled and Bioengineering tripled its funding.

In recognition of BU’s national leadership, the Small-Scale Systems Integration and Packaging (SSSIP) Center was named as New York’s sixth Center of Excellence. SSSIP joins the list of centers at Buffalo, Syracuse, Rochester, Albany and Stony Brook.
Great students make great universities

I have often said that the quality of a university can be measured by the quality of its students. Of course the quality of the faculty, staff, campus climate and facilities are important, but ultimately a university must recruit and graduate talented students to advance. The achievements of our students and success of the alumni have greatly enhanced our reputation and visibility.

The Watson School is most fortunate to recruit talented students at both the undergraduate and graduate levels. Binghamton has the best reputation in the SUNY system, and our school is the beneficiary of and the contributor to the excellent reputation of our University. We have completed another year of record enrollments, and we expect to grow again in the year ahead. Our research funding established a new record, and our student and faculty won a number of important awards.

I am delighted that our students are competing in national and international contests, and have done well. Especially notable are the undergraduate competitions in the mini-Baja cars, the computer science team who competed in the international ACM computing contest, the Electrical and Computer Engineering team who won an international competition in watermarking (an information security challenge), and prize paper awards at international proceedings. Many of these achievements came directly from student initiatives and were supported enthusiastically by the faculty.

CAMM receives $1.7 million grant

A state grant of $1.7 million will help the Watson School strengthen its reputation as a national leader in electronics packaging research and leverage its existing partnerships with industry to help drive economic development in the Southern Tier.

The New York State Office of Science, Technology and Academic Research (NYSTAR) presented Binghamton’s Integrated Electronics Engineering Center (IEEC) with the $1.7 million grant in February.

The funds will enable the IEEC to work more closely with the new Center for Advanced Microelectronics Manufacturing (CAMM) on commercializing flexible and low-cost electronics based on roll-to-roll manufacturing. The technology has applications for medical diagnostics and treatment, the military, computers and telecommunications, among other fields.

State Senator Thomas Libous, R-Binghamton, and Assemblywoman Donna Lupardo, D-Endwell, focused on the grant’s potential to boost the local economy.

“This is creating career opportunities — something we have not been able to do in this valley in a long time,” Libous said. He called the University the “best-kept Talent is to be found everywhere in our students. One of the great advantages of a public university is its access to students from all economic, racial, and ethnic populations and the opportunity to foster that talent toward great achievements. One of the Watson School’s primary goals is to help our students achieve success, and judging from the past year, the school has done well.

Charles R. Westgate, Dean

continued on page 8
Landmark victory at programming Olympics

Although the Watson School’s computer science program was one of the first accredited in the U.S., its reputation for quality has been overshadowed by more well-known universities, including Ivy League powerhouses in the East — but that is changing.

Last fall, a squad of Binghamton CS students won a slot to go to the world finals in the annual programming contest organized by the Association for Computing Machinery (ACM), the professional organization for computer science.

To get to “the worlds,” Binghamton beat every team, except MIT, in the Northeast regional finals at the Rochester Institute of Technology (RIT).

“It’s a huge deal,” says Paul Tymann, the RIT professor who supervised the regionals, which are open to any Eastern school south of the Arctic Circle and north of New York City. That includes Harvard and Brown, both of which trailed Binghamton. The Ivy pair, along with MIT, are regularly the top regional finishers.

Binghamton was one of 80 teams out of 6,000, from more than 70 countries, to advance to the Olympics of computer science in San Antonio, Texas, in April. Only two U.S. teams finished in the top 20, said Associate Professor Patrick Madden, team adviser.

Although Binghamton — and U.S. teams generally — were no match for China, Russia, Poland and other former Soviet republics, Madden is proud of his team. “This is only one metric, but it proves they can go head to head with Harvard and MIT.”

The team was led by Andrew Paroski, a graduate student from Buffalo, Natan Zohar, a junior from New Hempstead, and Nick Maliwacki, a senior from Vestal.

Perhaps what is most remarkable is that the ACM contest, sponsored by IBM, has had a very low profile on campus. In fact, the Watson School assembled its two teams for the preliminaries, each with three students, only after “a little bit of arm twisting,” said Madden. The rosters were finalized just about a week before the competition, with little time for preparation beyond discussion of practice problems while being driven to the contest.

This is typical at smaller schools, Madden says. “Our students are very busy. Not many want to volunteer their time to prepare for a contest in which they are very likely to get beat up by the Ivy League teams.”

Unlike medicine and law, where networking is more important in landing a job or achieving professional success, membership in a professional society is less influential in computer science, where talent is much more easily identified, Madden said.

Still, Madden, who is active in ACM, says he has been stressing the benefits of membership, and the Watson School has been fielding competitive teams since he joined the faculty. (He himself went to the world finals in 1987 as a member of a small-school team from New Mexico Tech, which finished in the middle of the pack. “I think I got some notoriety for it.”)

“Smaller schools are lucky if they can get a team together,” says RIT’s Tymann. In contrast, some larger schools offer courses in how to participate in a programming contest and recruit enough teams to hold intramural competitions.

“MIT pretty much lives and breathes the ACM,” says Alyssa Ogawa ’04, the unofficial “president and chaperon” of Binghamton’s chapter. MIT had 26 teams competing intramurally for its two slots at the prelims, said Ogawa, who earned a bachelor’s in computer science at the Watson School.

At the world finals, the dominant teams include foreign universities that “are trying to put themselves on the map,” said Madden. Such teams may train together for years, just as Olympic athletes do, and they don’t have to worry about how to pay their travel expenses.

However, Madden was worried about funding his team’s trip to the finals in San Antonio. Then James Wahlin ’97, a computer science alumnus, heard that the team needed help and secured a $2,000 commitment from his employer, Bloomberg. While details were being worked out, Google announced it would pick up the full travel tab for all 80 teams. Nonetheless, Bloomberg decided to follow through with its gift, which will help prepare for next year’s ACM contest.

“We’re using some of the money for small prizes — an iPod, a memory stick, pizza — at our monthly practice contests,” said Madden. “Rather than four or five participants, we’re getting 25 to 30 students.”

It appears that CS students now realize that playing in the major leagues is well within their reach.
School adds 387 alumni at Commencement

The Watson School gained 387 alumni when it conferred 236 baccalaureate degrees and 151 graduate degrees on members of the Class of 2006.

The school also recognized leading students with awards (listed below).

Binghamton Foundation and School Awards

The Foundation Award for Academic Excellence
  Jordan Peck

Katie C. Root Award for Graduate Students
  Angela Marie Kucera

ASME Student Section Award
  Justin Weisfeline

Floyd H. Lawson Senior Prize
  Fubiao Fu, Andrew Gardner

Department Awards

**BIOENGINEERING**
Outstanding Academic Achievement in Baccalaureate Studies
  Elliot Alyeshmerni

Service to the Department
  Michael Brown

**COMPUTER SCIENCE**
Outstanding Academic Achievement in Baccalaureate Studies
  Peter Longo

Outstanding Academic Achievement in Graduate Studies
  Hai He, Sameer Tilak

Service to the Department
  James McGrath

**ELECTRICAL AND COMPUTER ENGINEERING**
Outstanding Academic Achievement in Baccalaureate Studies
  Fubiao Fu, Adam Fried

Outstanding Academic Achievement in Graduate Studies
  Jan Lukas

Service to the Department
  Christopher DeCruze

**MECHANICAL ENGINEERING**
Outstanding Academic Achievement in Baccalaureate Studies
  Andrew Gardner, David Henann

Outstanding Academic Achievement in Graduate Studies
  Lin Tan

Service to the Department
  Maureen Gundlach

**SYSTEMS SCIENCE AND INDUSTRIAL ENGINEERING**
Outstanding Academic Achievement in Baccalaureate Studies
  Christopher D’Ancoma

Outstanding Academic Achievement in Graduate Studies
  Kaustabh Nagarkar, Andong Xu, Rufus Lander

Service to the Department
  Mridula Gosavi

IBM contest winner in top five among 700

Christopher Moore, a senior computer science major, is one of five winners of IBM’s student mainframe programming contest. More than 700 students from 85 colleges across the U.S. and Canada participated in the event, a series of technical challenges designed to spark interest in large-systems computing.

Moore, 20, grew up in Tioga Center but moved to Virginia after fourth grade. He decided to major in computer science after enjoying a class on the subject in high school. Mainframe computing was a new challenge for Moore, whose primary computer interest is in networking.

Sponsored by IBM’s Academic Initiative program, the contest’s three progressively more difficult tasks helped the students get acquainted with the mainframe interface and basic user commands, develop more in-depth commands and then tackle real-world issues such as integrating databases and transactional processing.

Moore worked on the third section of the contest off and on over the course of a couple of months late last year. He said just 100 of the entrants made it to the third part, and only five students completed it successfully.

This is the second recent strong showing that Binghamton CS students have made in IBM student competitions. In summer 2005, graduate student Pu “Pop” Liu won the lone first prize in the IBM North America Grid Scholars Challenge.

CS student wins Chancellor’s Award

For the second consecutive year, a Binghamton computer science major has won a Chancellor’s Award. Peter Longo received the SUNY Chancellor’s Award for Student Excellence. It honors “SUNY students who have best demonstrated and been recognized for their integration of academic excellence with other aspects of their lives.”
Bioengineering student blends science, business

Guruprasad Madhavan doesn’t just want to be an engineer. He wants to be a “renaissance engineer,” a well-rounded person with multiple intelligences who understands technical information, business and several cultures.

He envisions building a tripod for himself, one founded on science, business and law. To that end, he may study law — that is, after he completes his doctorate in bioengineering and his MBA.

He speaks with passion not only about engineering but also about building students’ competencies and understanding of the field. “People often don’t realize the value of society memberships,” said Madhavan, 26, a gregarious native of India. “It really takes you a lot of places and cultivates your ability to lead.”

That’s why Madhavan helped to start Binghamton Bioengineers, a student chapter of the Engineering in Medicine and Biology Society.

Class of ‘06 team streamlines biodiesel processing

Before they graduated this spring, three mechanical engineering students developed a processor to streamline the production of biodiesel, an alternative fuel that is expected to reduce America’s dependence on gasoline.

The processor, which sharply reduces the production time of current technology, was developed by Aclan Okur, David Henann and Maureen Gundlach as part of their senior design project. They expect their processor can be modified so consumers can convert vegetable oil to biodiesel.

Gundlach says she was inspired to address environmental issues by George Catalano, professor of mechanical engineering and bioengineering.

“My experience with this school is, if you walk into somebody’s office and say, ‘This is what I want to do, I have a plan, let me do this,’ they say, ‘Go ahead,’” said Gundlach. “If you are an individual who wants to set your own path, this school can work for you.”

ME students are off to the races and moving up fast in hand-built vehicles

Members of the student chapter of the Society of Automotive Engineers (SAE) are moving up fast in rankings.

As part of their senior design project, a Watson School team entered the annual Mini-Baja East competition in April and placed 15th overall, up 26 positions from last year.

Their car took seventh place for acceleration, ninth place for water maneuverability (the vehicle had to run in deep water) and 15th place for endurance.

The students expect to compete in the Formula SAE competition next year. They must conceive, design, fabricate and race small formula-style racing cars.

These competitions help increase the visibility of the Watson School, and they help students learn the importance of teamwork and innovation.

Alumni can designate their support for senior design student projects such as SAE contests through the Binghamton Fund at http://giveto.binghamton.edu. Click the “Give Now” button and help the school’s extraordinary students compete with the best.
School adds nine new faculty and research professors

Nine new faculty have joined the Watson School, beginning with the fall 2006 semester.

Joining the Bioengineering Department is Jacques Beaumont. He received his PhD in biomedical engineering from the University of Montreal and joins us as an associate professor. He comes to us from the Department of Radiology at Upstate Medical University of SUNY, in Syracuse. His expertise is in computer science.

The Department of Computer Science welcomes two new faculty:

- Kartik Copalen, associate professor. After receiving his PhD in computer science from Stony Brook University, he joined the Computer Science Department at Florida State University. His research interests are in wide-area/wireless networks, operating systems and distributed systems.
- Ping Yang, assistant professor, received her PhD in computer science from Stony Brook University. Her research interests are in the fields of verification, security and software engineering.

The Department of Electrical and Computer Engineering welcomes a new department chairman, Steven Zahorian, who comes to Binghamton from Old Dominion University, where he served as professor and chair in the Department of Electrical and Computer Engineering. His research interests are in signal processing with applications in speech and audio processing.

The Department of Mechanical Engineering welcomes three new faculty members:

- Colin Selleck, lecturer. After earning his master’s in mechanical engineering from Louisiana State University, he joined Sandia Laboratories as a member of the technical staff. As a lecturer in mechanical engineering, he also has additional responsibilities in the senior projects course and the undergraduate mechanical engineering laboratory.
- Ying Sun, assistant professor, is a graduate of the University of Iowa, where she received her PhD in mechanical engineering. Her research interests include multi-scale modeling of transport phenomena in materials processing and energy systems, numerical methods in moving boundaries, solidification and multiphase flows and micro-scale experiments in materials microstructure.
- Howard Wang, associate professor of materials engineering, received his PhD in materials science and engineering from the University of Pennsylvania, where he was an assistant professor. His research interests include the synthesis, processing and applications of carbon nanotubes, nanowires and nanoparticles to the investigation of novel polymer nanocomposites.

Joining the Systems Science and Industrial Engineering Department as research assistant professors are Pei-Fang (Jennifer) Tsai and Sheng Yong Wang. Tsai received her PhD in industrial and systems engineering from Virginia Polytechnic Institute and State University while Wang received his PhD in industrial engineering from Purdue University. Both will be involved with the Electronics Manufacturing Research and Services program, serving as project managers to industrial projects and mentors to graduate students. Tsai’s research interests are in industrial scheduling problems while Wang’s is in applied operations research of production systems.

Fridrich team links cameras to images

Child pornographers will soon have a harder time escaping prosecution thanks to a developing technology that can reliably link digital images to the camera with which they were taken, in much the same way that scratches are used to link bullets to the gun that fired them.

“The defense in these kinds of cases often claims the images were not taken by this person’s camera or that the images are not of real children,” said Jessica Fridrich, associate professor of electrical and computer engineering.

“But if it can be shown that the original images were taken by the person’s cell phone or camera, it becomes a much stronger case.”

Fridrich and two members of her research team, Jan Lukas and Miroslav Goljan, are coinventors of the new technique, which can also be used to detect forged images.

They have applied for patents related to their technique, which provides the most robust strategy for digital image forgery detection to date, even as it improves significantly on other approaches.

Six earn Chancellor’s awards

Six faculty have received Chancellor’s awards.

Three of the recipients are computer science faculty: Kanad Ghose, Nael Abu-Ghazaleh and Leslie Lander. Ghose was honored for his scholarship and creative activities, Abu-Ghazaleh for teaching and Lander for faculty service.

Victor Skormin, professor of electrical and computer engineering, was honored for faculty service. He has previously received Chancellor’s awards for teaching and research.

Two faculty in the Department of Systems Science and Industrial Engineering also received Chancellor’s awards: Darryl Santos, associate professor, received the award for teaching; George Klier, distinguished professor, received the award for scholarship and creative activities.

Yin receives Young Investigator grant

Lijun Yin, assistant professor of computer science, has received a James D. Watson Investigator award to help support his facial recognition research.

The award, made through New York’s NYSTAR program, is given to faculty who, early in their careers, show great promise in the field of biotechnology. Yin will receive $200,000 from NYSTAR, and another $200,000 “match” from Binghamton’s Research Foundation.

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Dinner honors five founders

Today’s Watson School has a growing student body and is setting new records for research and fundraising, said Dean Charles R. Westgate at the annual Founders’ Dinner in May.

He noted that the school owes its success to the vision and commitment of faculty and staff as well as community leaders. He presented the Founders’ Award to five new members of the school’s “hall of fame:”

Carol L. Gance came to campus in 1972 during the era of typewriters and dictaphones. By the time the Watson School was formed in 1983, much had changed. The formation of a new school and building of an accredited program created a very busy environment. And then computers were introduced to the mix. Still she maintained her calm and flexible attitude.

Over the years she proved her ability to adapt to the working style of two deans, implemented efficient new processes and was the school’s first “social ambassador.” Carol retired in 2002.

Margaret E. Iwobi ’75 has been teaching in the school since it opened its doors. After earning an MS degree at the School of Advanced Technology, Margaret was offered a one-year contract to teach computer science courses.

After 30 one-year contracts, she retired. In 2002, she was awarded the Chancellor’s Award for Excellence in Teaching after receiving outstanding letters of support from colleagues. But none of them compare to the glowing praise from the more than 1,000 students that she has taught and encouraged.

She will be missed in the classroom and on committees for her ability to teach and to solve problems by breaking them down and thinking them through.

James Scanlon retired from his role as president of BAE Systems Platform Solutions after a 40-year career in the aerospace industry.

Our partnership with James and BAE includes a master’s program that allows BAE employees to pursue advanced degrees while working, as well as James’ leadership in forming the Integrated Electronics Engineering Center.

Today, more than 100 of the about 600 engineers at the Westover site have undergraduate or graduate degrees from the Watson School.

An untold number of these alumni as well as friends serve as volunteers and advocates, including Bill Berical, BAE vice president of engineering and chair of the school’s Advisory Committee.

Under his leadership, BAE’s UK-based corporate board approved significant gifts to the school.

George Westby, beginning in 1987, has championed the school at numerous forums all over the world. For more than 17 years, the University has received significant research funding from Universal Instruments, especially through consortia that he has directed.

An excellent mentor, he has made invaluable personal efforts to educate faculty, staff and students in different facets of electronics packaging and manufacturing.

More than 100 graduate students have worked at the SMT Laboratory at Universal, under his leadership.

James Manchisi ’82 began his advanced studies as part of the General Electric Westover program that allowed him to work and go to school at the same time.

Jim was also part of the GE team that developed an improved A10 — one of the first Air Force aircraft designed for close air support of ground forces.

He also took advantage of management training programs and moved through Lockheed Martin, where he landed the first commercial telecommunications satellite contract with China.

In 1999, Jim joined Kodak and eventually led its aerospace division to grow to four times its original size. That attracted interest, and in 2004 the division was sold to ITT, with Jim remaining at the helm of the Space Systems Division.

Jim serves on the school Advisory Committee and has secured charitable gifts from Kodak.

Recently he joined Booz Allen Hamilton, a consulting firm, as a principal. “We have no doubt that he will once again be extraordinarily successful,” Dean Westgate said.

Ahearn gift updates lab

The most recent gift from the Ahearn Foundation upgraded the computing equipment in the J. Donald Ahearn Laboratories. The upgrade allows a computer to communicate among electrical engineering instructional equipment, the circuit board on the table in front of each student, power sources and oscilloscopes, and the schematic that the student views on a monitor.
Coalition launches Linux Center

With the launch of the Linux Technology Center (LTC), the Greater Binghamton area becomes one of the key regions in the nation for cutting-edge research in Linux-based systems and open-source computing.

Linux is the leading open-source operating system and, unlike proprietary operating systems, all underlying code in Linux is available to the public without restrictions on use or royalties.

The LTC draws together key competencies from the University and industry leaders, IBM and Mainline Information Systems, Inc. The center is expected to expand the Linux knowledge base, fostering job creation and economic growth in the Greater Binghamton community and New York state.

“This is a triumph brought about by the networking and cooperation of many,” said Diana Bendz, president of the Southern Tier Opportunity Coalition (STOC), a partner with the University in establishing the LTC. “It is a perfect example of the STOC’s mission to leverage technology in support of business growth.”

Students and faculty from the Watson School and the School of Management will provide basic and applied research expertise while gaining valuable hands-on contract and development experience.

Recognized by the University as an organized research center, it is one of only a few academic research programs in the nation dedicated to Linux and the associated open-source software.

IBM is providing equipment as well as software, personnel and other services.

Merwyn Jones, an IBM computer scientist, directs the LTC. For more information about the LTC or to engage the services of the center, contact Jones at 607-777-6971 or merwyn@binghamton.edu.

Dean’s Office relocated

The Dean’s Office — including the dean, assistant and associate deans, director of development and secretaries — has moved out of the Engineering Building.

This move is necessary to accommodate faculty growth. Space has been renovated on the ground floor of the Bartle Library. The long-term plan is to place the Dean’s Office in a new engineering building.

CAMM nets $1.7 million

hired to support the new initiatives, which provide more opportunities for students.

“It extends the reach of the IEEC and does more to capitalize on the involvement of our partners,” he said. “It’s exciting, wonderful and we’re very grateful for the support.”

Professor Bahgat Sammakia, director of the IEEC and the CAMM, said the grant will allow the CAMM to be fully integrated into the IEEC’s mission.

Bioengineering student blends science, business

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(EMBS), which is part of the Institute of Electrical and Electronics Engineers (IEEE).

Madhavan received a leadership award from the IEEE-USA in March. It honors his leadership in EMBS, particularly at its international conferences, as well as his work as an associate editor for the organization’s student magazine, Potentials.

Madhavan works with Ken McLeod, chair of the Bioengineering Department, on research designed to reverse physiological complications of long-term low blood pressure. McLeod said he approves of Madhavan’s unusual dual-degree approach because it will better prepare him to be an interdisciplinary entrepreneur.

“Engineering and business are really intertwined,” McLeod said, noting that graduate students in his department all work on commercializable projects.

“Scientists study things; engineers build things,” McLeod said. “That’s what engineers do.”

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Watson Review

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