

Winter 2007

CNS Connections, Winter 2007-08

University of Northern Iowa. College of Natural Sciences.

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CNS Connections, Winter 2007-08

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CNS Connections

University of Northern Iowa



UNI leads Regents mathematics and science education initiative

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Cover: Patricia Higby, CEEE energy educator, helps Carmen Finn build a model solar car during “Energy Fun in the Sun” at the CEEE last summer. UNI, known for its leadership in mathematics and science education, is leading the Regents universities’ collaborative mathematics and science education initiative.

Message from the Dean

Last year was a very encouraging year for the College of Natural Sciences at UNI. Our students learned a great deal, and our faculty were successful in both teaching and scholarship. You will read much about our achievements in the rest of this magazine. I would like to spend some time in this column discussing a few of our college-wide activities.

One focus of the College this past year was student recruitment. This fall, UNI enrolled 308 more undergraduate students than last year, and 93 of this number are majoring in programs in CNS. As UNI has five undergraduate colleges, CNS has more than a proportional share of the additional students. Our graduate programs were even more successful. UNI enrolled 65 more graduate students than last year, and 44 of those are within CNS! We think that our increased efforts in student recruitment were partly responsible. Of course, most of the increase in the graduate student number is the result of the professional science master's (PSM) programs now being available for enrollment.

Another focus of the College was development efforts, that is, finding support outside the general state appropriation or the tuition paid by students and families. We are reconciled to the proportion of UNI's support from the state remaining low compared with past history. But we are also sensitive to the difficulties faced by students and families in light of high tuition increases. Hence, we must seek support from other sources, typically from private foundations, private donors and federal sources. The PSM program in industrial mathematics benefited tremendously from a grant from the John Deere Foundation. The Carver Trust provided support to begin the PSM program in ecosystem management. We are very grateful for this! Private donors contributed significantly to student and program support through scholarship endowments, annual gifts and the Dean's Fund for Excellence. This enabled us to offer more students research support than in the past and provide badly needed funding for the purchase of equipment. Martin Chin, in our Department of Chemistry and Biochemistry, received an NSF grant for his research. In addition, federal dollars helped support the Center for Education in Nanoscience and Nanotechnology, the Center for Advanced Bio-Based Binders and Pollution Reduction Technologies, the Tallgrass Prairie Center, the Science Center for Teaching, Outreach, and Research

on Meteorology, and the professional development projects carried out by the Department of Mathematics for the U.S. Department of Defense. Surely I have omitted some projects, but the point is that we are actively engaged in seeking funds to help support our students' education here at UNI.

Many of you played a major role in our success this past year, by encouraging students to attend UNI, providing suggestions for us on ways to improve what we do, supporting us by talking up UNI with friends, neighbors, and politicians, and providing financial contributions to support our work. Thank you so much for that! In return, we will continue to educate our students as well as we can, thereby continuing to make your degree from UNI a mark of distinction.

This year, UNI has been asked to take the lead, in collaboration with the University of Iowa and Iowa State University, in activities to improve mathematics and science education in the state of Iowa. We hope, working together, to increase the number of mathematics and science teachers in the state, improve student learning in grades preK-12, and smooth the transition for students from high school to college in mathematics and science. It is an almost overwhelming, but incredibly important, task. We believe that the future of Iowa depends on the education of its children and youth, especially in mathematics and science. You may expect to read more about this throughout the year.

So, we are beginning another exciting year at UNI! If you have the opportunity to stop by campus, please do say hello. If you care to share news of how you are doing with us, please do. Finally, if some professor here has made a significant difference in your life, drop her or him an e-mail to say that. E-mail addresses are available through the directory feature of www.uni.edu. While visiting the UNI Web site, please also check on your College at www.cns.uni.edu.

Joel K Haack

Joel K. Haack



Joel Haack

UNI leads math and science

In response to the growing need for math and science teachers in Iowa, the University of Northern Iowa, at the request of the State Board of Regents, is spearheading a collaborative mathematics and science education initiative with the University of Iowa and Iowa State University.

To kick off this effort, UNI hosted a summit in July that focused on the initiative's three basic goals: improving math and science

performance of Iowa students, preparing more high quality math

and science teachers for Iowa's schools, and promoting collaboration and cooperation.

"It's important for Iowa's universities to address these challenges in math and science education and seek innovative and aggressive ways to find solutions to these problems," said Benjamin Allen, UNI president. "The reality is that 15 of the 20 fastest growing occupations of the 21st century will require substantial math and science preparation. It's our responsibility as educators to ensure that all students are well prepared to live in an ever-changing competitive global economy."

Over 130 stakeholders from across the state--educators, students, representatives of government, business and the media--attended the summit. They identified challenges and recommended actions associated with improving math and science education.

The Collaborative Initiative Steering Committee, comprised of faculty and administrators from the three Regents universities, was charged with navigating the initiative once the summit was completed. The initiative leader is Jeff Weld, UNI associate professor of biology and science education.

Meeting later in July, the Steering Committee reviewed the summit's outcomes and identified proposed projects targeting those challenges, which were subsequently approved by President Allen. On September 18, 2007, the



Michael Walter, associate professor of biology, and Lisa Johnson, a junior high science teacher, conduct an experiment on bacteria-killing phages as part of the RAISE project.



More than 60 elementary students and their families from the Cedar Valley area attended a Mathematics Fair on campus in February 2007. Members of TEAM staffed booths featuring interactive math activities.

Iowa Board of Regents approved the initiative proposal and included its funding in their fiscal year 2009 legislative request. The math and science education collaborative initiative, which

is chronicled on the website www.uni.edu/pres/math-science, proposes the following projects:

- **Star Math and Science Majors to Teaching:** To ramp up the recruitment of quality math and science teachers, all STEM (science, technology, engineering, mathematics) related majors will be invited to explore teaching as learning assistants in undergraduate or community school classes. The learning assistants will be paid a stipend and meet weekly with math and science teaching mentors.
- **Science and Math Teacher Real World Interns:** To better retain and update our current educators, math and science teachers will be placed in summer internships at businesses, industries and universities at urban and rural locales, where they will be exposed to real-world math and science
- **Project Lead the Way®:** To provide challenging, relevant curriculum to students of math and science, this national pre-engineering program brings career and technical education into secondary school math and science classes to better prepare learners for technical trades and engineering fields. The number and frequency of teacher training institutes offered by ISU and UI in partnership with UNI would be expanded so that these trained teachers could introduce students to pre-engineering middle school modules or high school courses
- **Community College STEM Instructor Preparation and Updates:** To address the need for stronger STEM education at community colleges, new collaborative--

education initiative



President Allen welcomed participants to the Iowa Mathematics and Science Education summit on the UNI campus in July 2007.

the community college-Regents university link has become a priority.

A permanent capacity-building project was proposed to establish a Regents Mathematics and Science

Education Institute, which will be headquartered at UNI. The institute would be a hub for research, outreach, communication, information, coordination and dissemination related to the collaborative initiative.

The Steering Committee is also working on a comprehensive inventory of math and science activities at the three Regents universities. "Then we will be able to move to standardize our efforts in math and science education--not in terms of process, but in terms of outcome," Weld explained. The committee is also considering other long-term initiatives and identifying funding sources for both near-term and long-term projects.

and potentially joint degree--programs in STEM faculty preparation will be implemented at Regents universities. With an increasing number of Iowa students beginning their STEM majors at community colleges or gaining dual credit for math or science while in high school, bolstering

UNI's track record in the area of mathematics and science education is long and distinguished. A few highlights:

- UNI is the only university in the state to offer a mathematics minor for elementary education majors.
- The middle school mathematics master's program has produced nearly 120 master teachers in the last 13 years.
- PRISMS (Physics Resources and Instructional Strategies for Motivating Students) is a high school physics curriculum and professional development program that uses a learning cycle pedagogy. Originated at UNI in 1982, the program was recently enhanced to make it more consistent with the recommendations of the National Science Education Standards. Approximately 3000 teachers in all 50 states and several foreign countries have received some type of PRISMS training.
- Since the mid-1990s, UNI has provided professional development to mathematics teachers from U.S. Department of Defense (DoD) Dependent Schools through its DoD Education Activity. The program has served secondary, middle and elementary school teachers, providing professional development for more than 1,000 teachers just during the past two years.
- RAISE (Research Avenues for Iowa Science Educators), funded for a three-year period by Title II funds (No Child Left Behind Act of 2001) through the State Board of

Regents, brings secondary science teachers to the UNI campus to conduct research with faculty scientists. The teachers deepen their knowledge of science and learn how to teach scientific inquiry.

- PRISST (Physics Resources and Instruction for Secondary Science Teachers), also funded by Title II, is a professional development program for high school physics teachers whose primary training is in a different science field. The program helps teachers complete course requirements for Iowa's grade 7-12 physics teaching endorsement.
- The College of Natural Sciences began a series of informal lectures for the public during the spring 2007 semester to make science and technology more accessible. This year's Saturday Science Showcase featured talks on global warming and energy use, issues related to a proposed coal-fueled generating station in Waterloo, domesticating wild grapes in Iowa, and microfossils and the end-Permian extinction.
- Students in the Mathematics Department club TEAM (Teaching Educators about Mathematics) held a Mathematics Fair in February 2007 for fifth and sixth graders and their families from the Cedar Valley area. The fair, to become an annual event, featured 30 booths where students can take part in interactive mathematics activities.

CNS News in Short

■ MetaCommunications, a leading software developer of cross-platform process management and productivity solutions for the graphic arts industry, donated 25 software licenses for Job Manager, one of the components of its Workgroups 2007 process and productivity suite, to the Industrial Technology Department's graphic communications program.

■ The annual ATEEC (Advanced Technology Environmental Education Center) Fellows Institute for high school and community college science, math and environmental technology teachers, normally held at UNI, was held this year at the University of Alaska in Fairbanks. The 18 Fellows focused on fossil fuels during the institute and were able to take field trips to the Usibelli coal mine, Healy Clean Coal Plant, a geothermal plant producing electricity at Chena Hot Springs, and BP facilities on the North Slope.



Two ATEEC Fellows stand knee-deep in the Arctic Ocean during a visit to a BP drilling facility on Alaska's North Slope. The tour was led by Bill Streever, environmental studies leader for BP Exploration (Alaska).

■ The FINE (First in the Nation in Education) Foundation, which ceased to exist on June 29, created the FINE Foundation Middle Grades Mathematics Teachers Graduate Tuition Scholarship for inservice Iowa educators who



CNS Dean Joel Haack (center right) presents the President's Club premium to (l.-r.) Dean Frerichs, FINE director of research, George Drake, retired president of Grinnell College and outgoing FINE Foundation president, and Joann Vaske, FINE executive director.

are enrolled in UNI's math education master's program. The scholarship will serve to continue FINE's Applying Research Results in Classrooms program.

■ The John Deere Foundation has established three undergraduate scholarships for industrial technology students: \$3,000 to a manufacturing technology student, \$3000 to an electrical and information engineering technology student, and \$4,000 to a minority/underrepresented student majoring in either of these two fields.

■ The Department of Computer Science celebrated its 15th anniversary on September 21, 2007, with a gathering of current and emeritus faculty, students, alumni, and industry partners. Computer Science at UNI began as an emphasis of the mathematics major and became a separate department in fall 1992.

■ In fall 2007, the Mathematics Department held its first Mathematics Day for all Iowa high school seniors with a math score of 27 or higher on the ACT. The students were invited to come to the UNI campus, where they learned about what the department and UNI have to offer and took an examination to help determine winners of the mathematics scholarships for incoming freshmen.

■ LittleFe, a portable computational cluster for education use developed by a team including Paul Gray, associate professor of computer science, received a donation in late 2006 of 40 Power PC-based embedded motherboards from Genesi and Freescale, two private manufacturers of PPC processors. In 2007 VIA Technologies donated eight mini-ITX dual-core motherboards and Cisco Systems donated Infiniband networking components.

■ Mohammad Iqbal of the Department of Earth Science has been awarded a grant of almost \$158,000 by the Roy J. Carver Charitable Trust for a hydrology lab to promote experiential learning opportunities in water sciences. The anticipated date of completion is December 2007.

Transitions

New faculty

Five new faculty members, all assistant professors, joined the College of Natural Sciences in fall 2007.

Chemistry and Biochemistry: Michael S. Elioiff (Ph.D., Boston University)

Earth Science: Chad E. Heinzl (Ph.D., Northern Illinois University)

Mathematics: Theron J. Hitchman (Ph.D., University of Michigan), Bin Liu (Ph.D., Chinese Academy of Sciences), Nikolay Silkin (Ph.D., Vanderbilt University)

Retirements

Lynn Brant, associate professor, 25 years in the Department of Earth Science

Russ Wiley, assistant professor, 40 years in the Department of Chemistry and Biochemistry

Changes in position

Siobahn Morgan, professor of astronomy, was named CNS associate dean in 2006. She replaced Jill Trainer, who became UNI associate vice president for sponsored programs and has since become dean of natural sciences

and mathematics at California State University—Sacramento.

Kavita Dhanwada, associate professor of biology, is interim head of the Department of Biology. She replaced Barbara Hetrick, who is now dean of the college of arts and sciences at the University of North Florida in Jacksonville.

William Stigliani, director of the Center for Energy and Environmental Education since its opening in 1996, steps down at the end of 2007 to become senior policy adviser to the Center.

Applause

Dorothy Brecheisen [Biology] and Thomas Kline [Mathematics] won the CNS Dean's Award for Teaching Excellence in the Liberal Arts Core.

Cliff Chancey [Physics] represents comprehensive colleges and universities in North America as a member of the board of directors of Sigma Xi: The Scientific Research Society, an international society of research scientists and engineers.

Martin Chin [Chemistry and Biochemistry] was awarded a \$198,000 grant from the National Science Foundation for his study "Dinuclear Complexes with an All Carbon Cyclopentadienyl Frame."

Dawn Del Carlo [Chemistry and Biochemistry] was elected a member of the American Chemical Society Committee on Research in Chemistry Education.

Kavita Dhanwada [Biology] was selected as chair of the Iowa Academy of Science section of Environmental Science.

James Demastes [Biology] is chair of the Iowa Academy of Science section of Organismal Biology.

J. Philip East [Computer Science] is a member of the Accreditation and Standards Committee of the International Society for Technology in Education.

Mark Fienup [Computer Science] received the 2007 Veridian Credit Union Community Engagement Award for the College of Natural Sciences for his work with the Cedar Falls High School's FIRST robotics team. He is president of the steering committee of the Midwest Instruction and Computing Symposium.

Jean Gerrath [Biology] is co-guest editor of the symposium volume of the *Canadian Journal of Botany*, scheduled for publication in 2007.

Scott Giese [Industrial Technology] was elected chair of the American Foundry Society 4-F Committee and treasurer of the Northeast Iowa chapter of the American Society of Materials.

Paul Gray [Computer Science] was appointed education committee lead for high-performance computing for Supercomputing 2007 and was elected education chair of Supercomputing 2008.

John Groves [Earth Science] won the CNS Dean's Award for Superior Achievement in Research. He has also been re-appointed for a third 2-year term as technical editor of the *Journal of Paleontology* and is associate editor of the *Journal of Foraminiferal Research*.

Joel Haack [CNS Dean] received the Friend of Mathematics Award from the Iowa Council of Teachers of Mathematics for excellence in and support of mathematics education.

Patricia Higby [CEEE] was appointed by Governor Chet Culver to the Iowa Power Fund board of directors, charged with deciding how to spend the \$100 million Power Fund created by the State Legislature.

Tom Hockey [Earth Science] is vice chair of the Historical Astronomy Division of the American Astronomical Society and a member of the AAS's Education Prize Committee.

Doug Hotek [Industrial Technology] is president-elect of the Iowa Industrial Technology Education Association and was named a Certified Senior Industrial Technologist by the National Association of Industrial Technology.

Mohammad Iqbal [Earth Science] was elected a member of the management board of the North-Central Section of the Geological Society of America. He is also associate editor (for geology/archaeology) of the *Journal of the Iowa Academy of Science*.

Laura Jackson [Biology] is chair of the State Preserves advisory board and a member of the Leopold Center for Sustainable Agriculture advisory board.

Charles Johnson [Industrial Technology] is a member of the Professional Development Committee and program chair of the Association for Career and Technical Education.

Ali Kashef [Industrial Technology] was elected to the Board of Accreditation, Region 2, of the National Association of Industrial Technology and is a member of the editorial panel of the *Journal of Industrial Technology*.

Syed Kirmani [Mathematics] is associate editor of the *Journal of Applied Statistical Science*, the *Journal of the Iranian Statistical Association* and the *Journal of Statistical Theory and Applications*.

Cherin Lee [Biology] is regional director-elect of the North Central Association for Science Teacher Education.

Mary McDade [Biology] was the recipient of the 2007 Beta Beta Beta Excellence in Teaching Award.

Catherine Miller [Mathematics] received the UNI Class of 1943 Faculty Award for Excellence in Teaching, and she is on the planning and presenting teams for Every Student Counts, an Iowa Department of Education professional development program for middle school mathematics teachers.

Wendy Olson [Biology] was the CNS recipient of the University Book and Supply Outstanding Teaching Award.

Ron O'Meara [Industrial Technology] was appointed to the executive board (senior chapter) of the Society of Manufacturing Engineers.

Edward Rathmell [Mathematics] is a member of the editorial panel for the NCTM (National Council of Teachers of Mathematics) Essential Understandings series of books for professional development.

Doug Shaw [Mathematics] won the CNS Dean's Award for Teaching Excellence in Departmental Programs.

Daryl Smith [Biology] received the 2007 Regents Award for Faculty Excellence.

Carl Thurman [Biology] was named UNI Distinguished Scholar for 2007-08.

Shahram Varzavand [Industrial Technology] is a member of the editorial advisory board of the *Journal of Construction Education*.

Jeff Weld [Biology] received the 2007 Four-Year College Biology Teaching Award from the National Association of Biology Teachers.



Recognition

- Industrial technology students in the Graphics Techniques course won a Gold Award for Printing Excellence of a Department Newsletter under the category of Four-Color Process Newsletter in a competition sponsored by the Midwest Printing and Graphics Association/Printers in the Midlands, Inc., held in late fall 2006.
- Thirteen construction management students in the industrial technology program competed in the categories of Commercial and Heavy Highway at the Region IV Associated Schools of Construction competition in Nebraska City in fall 2006.
- At the Foundry Education Foundation 59th annual College Industry Conference in Chicago in November 2006, **Jeff Beuthien** was awarded the \$2,500 Keith D. Millis scholarship. **Kevin Patterson** was awarded a \$1,000 scholarship by the American Foundry Society Twin City Chapter in November. Patterson and **Dustin Avery** were given an all-expense-paid trip to a career fair that was part of the conference.
- **Marjorie Thomas**, all science teaching, **Drue Hadenfeldt**, technology management, **Shane McClintock**, biology, **Gabriel Cox**, electrical information and engineering technology, and **Marissa Emery**, biology, each received a Roy J. Carver Scholarship, valued at \$5,200.
- **Patrick Willoughby**, a biochemistry/biotechnology major, was awarded a prestigious Goldwater Scholarship in April from a field of more than 1,100 mathematics, science and engineering students nationwide. The scholarship covers the cost of tuition, fees, books and room and board up to a maximum of \$7,500 per year. **Justin Bohnet**, a physics major, received an honorable mention.



Patrick Willoughby, winner of the prestigious Goldwater scholarship

- **Jenah Harris**, a senior physics major, was awarded the \$2000 Society of Physics Students Leadership Scholarship.
- **Kayla Boyle**, an incoming freshman mathematics student, received the \$3,000 Waldemar J. Trjitzinsky Scholarship from the American Mathematical Society for the 2007-08 academic year.
- **Kristina Wanous**, senior computer science/biology major, and **Jessica Puls**, a graduate assistant, won first place at the TeraGrid conference in the Advancing Scientific Discovery competition in Madison, Wis., in June. They received a trophy, all expenses paid to the 2007 Supercomputing Conference in Reno, Nev., in November and a \$250 cash prize each.
- TEAM (Teaching Educators About Mathematics), a student organization for elementary and middle-level education majors, became an official NCTM (National Council of Teachers of Mathematics) affiliate when Co-Presidents **Kristin Kanaskie** and **Kayla Davis** received TEAM's charter at the 2007 NCTM annual meeting in Atlanta in March.
- **Robert Cunningham**, a 2007 chemistry/biology graduate who is beginning a chemistry Ph.D. program at the University of Wisconsin-Madison, received a \$1000 R.J. McElroy Fellowship for Graduate Studies in the Liberal Arts.
- **Jenna Cherry**, a chemistry/biochemistry major, won the 2007 CNS Dean's Award for Superior

Achievement by a Student.

- **Matthew Fisher**, who graduated with a master's degree in biology in May 2006, received first place recognition from the UNI Graduate College for his Outstanding Master's Thesis, "Biomonitoring Organochlorine and Cholinesterase Inhibiting Insecticide in Eastern Iowa Streams." His adviser was Kurt Pontasch, associate professor of biology.

Research/projects

- Thirteen chemistry and biochemistry students presented the results of their research at the national meeting of the American Chemical Society in Chicago in March. Three of the four faculty presentations had undergraduate co-authors.
- Eight CNS students presented their research in poster format at "Research in the Capitol," a collaborative effort of the honors programs of the Regents universities.
- **Justin Bohnet**, a physics student whose research is in nanoscience, took part in Undergraduate Research Posters on the Hill, an event sponsored by the Council on Undergraduate Research at the Rayburn Senate Office Building in Washington, D.C., in April. Bohnet's abstract was one of 70 selected from nearly 400 submitted by undergraduate student researchers in the nation in fields from biology to psychology.
- Computer science student **Ben Frein** and **Dustin O'Leary**, a marketing major, started a technology consulting firm, E-Holdings LLC, enlisting the help of UNI's Student Business Incubator to boost their business know-how. The two have also developed software to notify Facebook users when they have received a message on their Facebook account.
- The Department of Industrial

Biology professor boasts world-class collection of fiddler crabs

When it comes to fiddler crabs, Carl Thurman is the go-to guy. The biology professor has been collecting the small, semi-terrestrial crustaceans since he was an undergraduate in the 1970s, and he continues to do so today, most recently in Florida, the U.S. Virgin Islands, San Salvador, the Bahamas and Cape Cod.

Thurman's world-class collection, housed in his lab in McCollum Science Hall, with the exception of a few specimens he has given to the Smithsonian Institution as representative of certain species, is a draw for other researchers. A case in point is Melanie Hopkins, a doctoral student in paleontology at the University of Chicago, who spent several weeks studying Thurman's preserved fiddler crab collection during the 2006-07 academic year.

Hopkins' doctoral research is on trilobites, hard-shelled, segmented creatures that existed more than 500 million

years ago. She wanted to begin by looking at a living organism so that she would have a model when she was examining the fossil record. Because she wanted to measure species variation across a geographic range, she needed

to identify species with well-established distributions and a large number of specimens.

One of her professors suggested using fiddler crabs as a model because their geographic ranges are well established. Not surprisingly, that recommendation led her to Thurman, whose collection is well known in certain science circles.

"The collaboration with Melanie was equally beneficial to UNI," said Thurman. "It enlarged our arena of scholarly activities, and such collaborations will undoubtedly create additional opportunities for our students." Thurman

received the 2006 CNS Dean's Award for Scholarly Achievement and the 2007-08 Distinguished Scholar Award from the UNI Graduate College.



University of Chicago graduate student Melanie Hopkins sorts through fiddler crab specimens in Carl Thurman's collection.

Technology's solar electric boat team placed fourth overall, its highest finish ever, and third in the required qualifier at the 14th World Championship of Intercollegiate Solar Boating hosted by the University of Arkansas. The UNI team's design and engineering visual display, with a prototype Panther boat model, also received third



EIET students led by Recayi Pecan (above) designed and built this solar-powered lawn mower.

highest points in the event.

- Electrical information and engineering technology students, led by Recayi Pecan, associate professor of industrial technology, designed and built a solar-powered lawn mower, UNIMow, as a part of their senior design project. The machine is eco-friendly, noise-free, and completely eliminates the need for oil and gas to mow the lawn.
- A team of computer science students participated in NASA Means Business 2007, a nationwide NASA competition that asks university students to develop ways to promote NASA math and science programs. The

team, the first UNI group to enter the competition, competed against six other teams at the Customer Engagement Conference at the NASA Kennedy Space Center in May.

- Seven undergraduate physics majors presented research papers at the 17th Annual Argonne Symposium for Undergraduates in Science, Engineering and Mathematics at Argonne National Laboratory in Chicago in November 2006.

CNS projects to promote economic development under way

Several research projects, funded as part of a \$20 million appropriation by the State Legislature to the Iowa Board of Regents, are under way in the College of Natural Sciences. The funds were granted to apply the strengths of the Regents universities to boosting economic impact and growth in the state.

UNI's share of the funds also included \$1.3 million for infrastructure, funds that are being used for, among other things, renovations to the greenhouse, McCollum Science Hall and Begeman Hall (formerly the Physics Building) to provide facilities for research in biotechnology, biochemistry, and nanotechnology.

The projects, briefly described below, were selected because of their potential to result in commercialization and to contribute to economic development in the state.

- The Metal Casting Center in the Department of Industrial Technology is researching bio-based substitutes for the current petroleum-based binder systems used to hold sand molds for molten metal.

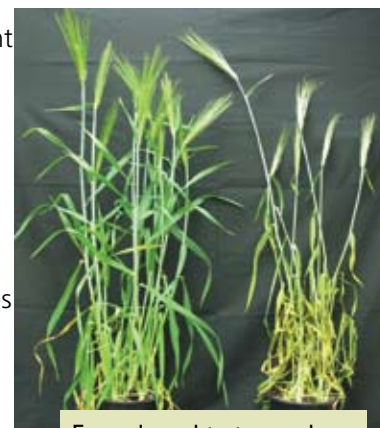
Mitch Patterson and Jeremy Eastman test a new bio-based sand binder developed at the Metal Casting Center.



- Michael Walter, associate professor of biology, is developing a prototype anthrax detection sensor that can be bench-tested with both safe and lethal anthrax strains.
- Aleksandar Poleksic and Mark Fienup, assistant and associate professors, respectively, in the Computer

Science Department, are developing novel and improved methods to determine computational protein structure from the sequence of amino acids and will commercialize a software package based on their innovations.

- Tilahun Abebe, assistant professor of biology, and his colleagues are working to identify drought-tolerant genes in barley flowers. The genes will be used to develop new Iowa crops resistant to drought in the reproductive stage.



From drought-stressed barley plants (right) at the reproductive stage, researchers extract RNA and proteins.

- Paul Gray, associate professor of computer science, is creating a high performance computing grid to provide academia and industry with accessible, secure and scalable computing infrastructure.
- Faculty/student teams are collaborating to discover plant genes that can be used to develop pharmaceuticals and fungus-resistant crops, to develop a novel system for automatically reading utilities meters, to develop nanoscience materials and processes, and to assess the effectiveness of bio-based versus petroleum-based cutting fluids during machining.

The State Legislature selected the areas to be funded--bioscience, information solutions and advanced manufacturing--on the basis of recommendations from the Battelle Memorial Institute's Technology Partnership Practice. Battelle was commissioned by the Iowa Department of Economic Development to outline strategies for enhancing Iowa's biotechnology, advanced manufacturing and information technology sectors.

Physics Building rededicated as Begeman Hall, CENN opens

It's been a big year for the Department of Physics. The newly renovated Physics Building was rededicated as Begeman Hall on October 5, and the Center for Education in Nanoscience and Nanotechnology (CENN) opened officially on the same date.

Classes were offered in the reburbished building for the first time in the fall 2007 semester. New windows (that actually open!) and high ceilings ensure a bright and airy space. "This renovation combines the character and interesting architectural features of the original building with modern electronics, heating and cooling systems," said Cliff Chancey, head of the Physics Department.

Renamed for Louis Begeman, the first head of the Physics Department at what was then the Iowa State Normal School, the building features an electronics and robotics teaching laboratory, the Butterworth Modern Physics Laboratory, a modern optics laboratory, an 88-seat lecture theatre, classrooms, the department office, faculty offices, and a physics majors lounge.

The lecture hall is equipped with an Accordent Capture Station, as is McCollum Science Hall 201. The Web-based delivery system makes it possible for students to watch and listen to a lecture on their computer, in the comfort of their own home, in real time or later. The instructor appears on a portion of the computer screen, and on the remainder of the screen the student sees whatever visuals the instructor is using--a blackboard, a PowerPoint presentation, a whiteboard or whatever. Students can e-mail questions to the instructor via a chat room. In July, Laura Strauss, associate professor in the Department of Chemistry and Biochemistry, used



The Physics Building was rededicated as Begeman Hall on October 5. Left: Louis Begeman

the Accordent system for the first time, when she taught Introduction to Nanoscience and Nanotechnology to 12 Iowa high school science teachers.

Both Accordent systems are part of the CENN, which has received more than \$2.8 million in funding from federal and state appropriations, the National Science Foundation and the Roy J. Carver Charitable Trust. The Accordent system will also be used to offer courses in the professional science master's (PSM) degree program. UNI offers PSM



Students taking Introduction to Nanoscience and Nanotechnology make gold nanoparticles in the laboratory.

degrees in applied physics, industrial mathematics (quality control or modeling), ecosystem management, biotechnology, and applied chemistry and biochemistry.

Nanotechnology is a multidisciplinary field of applied science and technology covering a broad range of topics, with the unifying theme being the control of matter on a scale smaller than 1 micrometre, normally approximately 1 to 100 nanometers, as well as the fabrication of devices of this size. "The nano-world hides far beneath our view, smaller than the microscopic world," explained Chancey.

Much of the promise of nanoscience and nanotechnology lies in the future, Chancey said, but nano-production is already a multibillion-dollar business. Paints, suntan lotions, protective coatings for machinery and cosmetics already use nano-sized particles.

UNI now offers introductory and intermediate courses in nanoscience and nanotechnology. The main laboratory for both courses is located in Lang 383. A second-floor enclosed walkway, part of the renovation, connects Lang and Begeman halls. The lab contains three scanning probe microscopes, capable of seeing individual atoms, and four chemistry hoods, each of which can accommodate four students. (Lang 243 has a teaching lab for General Physics II and Inquiry into Physical Sciences.)

Faculty from Biology, Chemistry and Biochemistry, Industrial Technology and Physics have taught the nano courses. "Nanoscience and nanotechnology is an area of study that crosses disciplines," said Chancey, "and our approach to teaching these courses reflects that."

Update from the Centers

Here's an update on what has been happening over the past year in the College of Natural Sciences' five centers.

Center for Energy and Environmental Education (CEEE)

The CEEE hosted a speakers series, titled "Building for the Future: Energy-Efficient Alternatives," for the general public and building contractors that began in February and continued in the fall. Local and regional experts spoke on energy-efficient building alternatives, passive solar systems and strawbale and whole tree architecture.

Now in its third year, a research project funded by the Iowa Energy Center has found that students in six of the 10 UNI residence halls have increased their environmental sensitivity after participating in activities to develop awareness of their energy use and then engaging in weekly competitions to reduce that use. "These results are statistically significant and show consistency over three years," said Jack Yates, principal investigator and professor of psychology. Carole Yates, CEEE program assistant, is project coordinator.

In addition to the Iowa Electrathon, the Iowa Junior Solar Sprint and the Iowa Energy Poster Contest, the CEEE held "Energy Fun in the Sun," a summer workshop at which youth in grades 4-8 discovered how the sun can cook food, run a radio or power a model solar car. They also explored other renewable energy sources and energy efficiency. In cooperation with ISU E-SET (Extension-Science, Engineering and Technology Youth Initiative), Patricia Higby, CEEE energy educator, helped visitors build model solar cars at the State Fair.

Metal Casting Center (MCC)

Over 15 researchers have been working to develop new polymers based on bio-renewable resources. To date, the MCC and its Center for Advanced Bio-based Binders have developed six new types of industrial sand binders and hope to license the technology to industry partners. These binders can compete favorably with existing products while imposing a smaller impact on the environment, according to Jerry Thiel, director of the Metal Casting Center.

The MCC is also working with the University of Iowa and Penn State University on advanced computer simulation to predict air emissions based on binder components. These tools will help determine the effect of the new binders and optimize their formulations. Another initiative involved research to aid in the computer simulation of heat treat quenching operations.

In a collaborative project for the U.S. Department of Defense, the MCC, the University of Iowa, Iowa State and

the Steel Founders Society of America are determining high-temperature material characteristics such as heat transfer and thermal expansion values. These values are then used to refine computer-based simulations for the solidification simulation of castings.

Recycling and Reuse Technology Transfer Center (RRTTC)

In May 2007 15 UNI students, as part of the Capstone program, traveled to Cluj-Napoca, Romania, to deliver a dental hygiene program to the Roma Gypsy population, who live on an uncontrolled solid waste landfill site outside the city. The students gave instruction to over 100 people on the basics of proper brushing, flossing, plaque, dangers of tooth decay and dietary issues. The outreach program, part of a larger course in environmental health disparities and their impact on minorities and economically marginalized ethnic groups, was led by RRTTC Director Catherine Zeman, associate professor in the Health Division of the College of Education.

Once again, the RRTTC co-sponsored and participated in the planning and execution of the Iowa Children's Water Festival, an interactive learning experience designed to educate children about the importance of water in our daily lives. More than 2000 Iowa fifth graders attended the festival, now in its 11th year, which was held in Des Moines in May. Other RRTTC outreach efforts during the year included the UNI Earth Day Celebration, the fall conference of the Iowa Recycling Association and the John Deere Health Fair.

The Materials Innovation Service (MIS), part of the RRTTC, has been working on projects with Standard Golf, City Carton Recycling and Roof Protection Systems. The MIS managed 13 major corporate projects last year totaling over 600 hours of testing. The grand opening of the Polymer Research and Materials Innovation Service, located in the Industrial Technology Center, was in October of 2006.

Science center for Teaching, Outreach and Research on Meteorology (STORM)

A group of 24 middle school and high school teachers, mostly from Iowa, attended an intensive one-week training course on air quality in July, where they were familiarized with basic information such as how to measure and model air quality and developed a classroom activity related to air quality. During the 2007-08 academic year, the teachers are testing and refining their activities, which will eventually be published and distributed nationwide.

As part of a Title II grant (No Child Left Behind),

Biotech goes on the road

Tour Iowa Biotechnology, a 1-credit seminar on wheels primarily for undergraduates majoring in biotechnology and related fields, was offered for the first time over spring break 2007. "Our intent was to familiarize students with the serious and robust potential for employment in the Iowa biotechnology sector," said Michael Walter, associate professor of biology and instructor of the course.

The nine students visited two to three firms each day over a five-day period, touring the facilities and hearing scientific presentations. They prepared for each visit by familiarizing themselves with the basic scientific principles and market niche behind production at each firm.

"Through this firsthand exposure, students learned about the scientific and market niche of each firm, and they also gained insight into the qualities each firm was looking for in terms of employees," Walter noted. Among the firms visited were Pioneer, Genencor International, Inc., Kemin Industries, Inc., and Trans Ova Genetics.

The Tour Iowa course is one of many new additions to the biotechnology program in the Biology Department. The biotechnology major has grown, within the past two to three years, in terms of faculty, scientific instrumentation



Students enrolled in Tour Iowa Biotechnology visited Garst as part of the one-week course last spring.

and research. In addition to Walter, three other faculty members--Jim Jurgenson, Tilahun Abebe and Axel Schwekendiek--are actively involved in research in the area.

Research projects include using genomics and genetic engineering techniques to develop drought-resistant strains of barley as well as genetically engineering hops plants to produce antioxidants important in fighting cancers. State-of-the-art equipment, such as a real-time PCR machine, DNA sequencing and analysis instrumentation, has also enhanced the program.

"Our students have a great advantage, since they are able to communicate one-on-one with their professors in the lab so that they really get to understand what they are doing," said Kavita Dhanwada, interim head of the Department of Biology. "They have an excellent opportunity to get hands-on experience in a research laboratory as undergraduates."

The recently established professional science master's degree program in biotechnology, which prepares students for managerial career opportunities in the field, includes coursework in biotechnology content and business management, followed by a related internship in the area.

which focuses on helping teachers to use technology in more authentic ways, STORM participated in a two-week institute in June to help eight elementary school teachers learn about weather forecasting. "The teachers learn about forecasting and at the same time about technology," said Alan Czarnetzi, STORM director. STORM personnel are meeting monthly with the teachers throughout the academic year as each teacher develops a unit plan.

Tallgrass Prairie Center (TPC)

The award-winning documentary *America's Lost Landscape: The Tallgrass Prairie*, produced by TPC director Daryl Smith and David O'Shields of New Light Media, aired nationally on the Public Broadcasting System on April 1 and April 21. The film, which traces the prairie's transformation from natural landscape to farmland, received the International Documentary Association's Pare Lorentz Award in 2005 and the CINE Golden Eagle Award

in 2006.

For the 10th consecutive year, the TPC's Integrated Roadside Vegetation Management program, directed by Kirk Henderson, received \$200,000 in Federal Highway Enhancement funding through the Iowa Department of Transportation to purchase and distribute native prairie grass and wildflower seed to 55 Iowa counties, for roadside beautification, wildlife habitat, erosion control and weed control.

The TPC's Prairie Institute was awarded a \$330,000 grant from the Iowa Power Fund to determine the best mixture of prairie species for maximum production of biomass for electrical generation. This provides funding for the first year of a five-year project under the direction of Dave Williams.

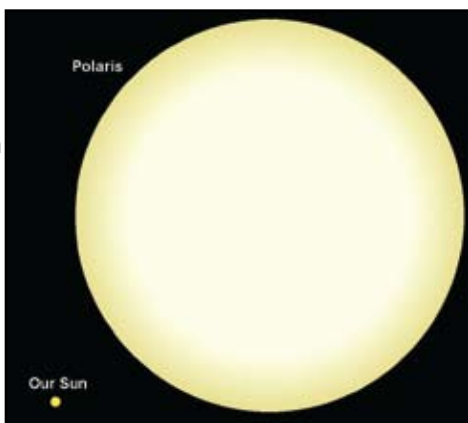
Faculty research

Peter Berendzen, assistant professor of biology, and **John Ophus**, assistant professor of biology and science education, are conducting a cross-cultural research study comparing 400 U.S. and Russian students, ages 14-20, on their understanding of evolution, the nature of science and their need for understanding before accepting evolution. The two want to determine if age is the determining factor in differences between students' understanding or if social/cultural factors are involved.

Kirk Manfredi, professor of in the Department of Chemistry and Biochemistry, is evaluating a commercial preparation of *Echinacea angustifolia* on the immune system and comparing its efficacy to a preparation of *Echinacea pallida*. The goal of the research is to determine if the commercial product (a tea) actually enhances the immune system and has anti-oxidant properties. *E. pallida* is being evaluated as a source of an immune enhancing/anti-oxidant food supplement.

J. Ben Schafer, associate professor of computer science, has been exploring Geographic Information Systems (GIS) and their integration into his work with recommender systems. GIS is a collection of computer hardware, software and geographic data for capturing, analyzing, managing and displaying all forms of geographic information. He is focusing on a recommender system/travel planning system in cooperation with the Silos and Smokestacks National Heritage Area.

Siobahn Morgan, professor of astronomy and associate CNS dean, reported to the American Astronomical Society on the level of agreement on issues surrounding the star Polaris. She compared computer pulsation models for Polaris with both the physical characteristics obtained from various researchers' observations and theoretical stellar evolution models. She found there is still some disagreement concerning the star's mass and its current stage of evolution.



Siobahn Morgan reported to the American Astronomical Society on Polaris, a yellow giant star, which is about 46 times wider than the sun.



Carl Blue displays the screen printing equipment in his lab, along with the colored packets that are the organic dyestuff samples from China.

Carl Blue, assistant professor of industrial

technology, is part of a team developing a new environmentally friendly screen printing ink that is ultraviolet curable, developed from natural soy oil, utilizes organic pigments as colorants, and offers safe clean-up properties. The product is being designed to meet the standards of the Federal Clean Air Act amendments of 1990. Other members of the team are **Jeff Elbert**, assistant professor of chemistry, and staff of the National Ag-Based Lubricants Center at UNI.

Adrienne Stanley, associate professor of mathematics, had a breakthrough on a major problem in combinatorics. After a long-standing problem involving lattice points in two dimensions was solved, she was able to determine a specific value for the three-dimensional case and a bound for the general variant two-dimensional case. Assisting Stanley with writing up the result were **Vera Rayevskaya** and **Suzanne Riehl**, assistant professors of mathematics.

Larry Escalada, associate professor of physics, continues to work on the Physics Resources and Instruction for Secondary Science Teachers (PRISST) program, a professional development program for out-of-field high school physics teachers. Funded by a Title II grant, the program provides the means for a group of 18 Iowa teachers to complete the minimum

requirements for an Iowa grades 7-12 physics teaching endorsement within a two-year period.

UNI provides tools for successful career

After graduating from Newton High School, I entered college in the fall of 1967, the year that the State College of Iowa became the University of Northern Iowa. My adviser, Ron Bro (later to become Dr. Bro), encouraged me to enroll in the new industrial technology degree program. The B.S. degree in Industrial Technology at that time required roughly 130 credit hours of study plus one year of related work experience. I was not keen on spending five years to earn my degree, but I proceeded down the path to this B.S. degree with an emphasis in building design and construction.

During my stay at UNI, many new buildings popped up on campus: the new student union, Bender and Dancer Halls, the first phase of the Physical Ed Complex in the cornfield across the highway. This new construction on campus was a tremendous opportunity for a student working toward a construction-related degree. In May of 1970, when classes were dismissed before finals, due to anti-war protests, I learned that my previously successful habit of “easing off” on studies and then “cramming” for finals was not fail proof. Before my senior year at UNI, I married my high school sweetheart, and my focus on my studies subsequently improved. After my one year of related job experience, I graduated from UNI in the spring of 1972, one of the first graduates with the degree B. S. in Industrial Technology.

My education at UNI supplied me with the tools necessary to compete in my chosen career of construction.

Only later did I realize how lucky I was to have attended UNI and to have experienced such an array of fine instructors: Dr. Reed, Dr. Luck, Dr. LaRue, Dr. Lyon, and others, but most memorably Dr. Bro, my adviser, whom I cannot thank enough for his advice and encouragement.

My business career began in Des Moines with a general contractor. In 1986, we relocated our family to San Diego to open a new office for a Des Moines contractor.

During the past 36 years, I have been in one way or another involved in literally hundreds of construction projects ranging from churches, schools and office buildings to co-generation plants and peaker power plants.

Today, my daily work activities focus mostly on management techniques and people skills. Knowledge of the business, although important, is not enough; people get the job done. How you relate to people and motivate staff is an important (if not the most important) key to success.

Although still active in business, I do dedicate many hours a month to different nonprofit organizations in the community, most of which involve underprivileged children. Many of these activities are shared with my



John Krueger

wife, Kay. Her involvement not only increases my enjoyment, but allows us to accomplish much more than I could ever accomplish on my own. In addition to Kay, my family includes two great daughters and their husbands, and four of the best grandkids you could ever meet (a little bit of prejudice).

I have been a member of the College of Natural Sciences Advisory Board for about 10 years. I enjoy the biannual trips back to UNI, especially the camaraderie of the board members and attending staff.

A big THANK YOU to the University of Northern Iowa!

Sustaining the **UNI** experience

I believe the human urge to acquire is outpaced by our urge to give. Giving is an inherent part of the American sense of community. There almost seems to be an unwritten agreement that those who acquire wealth-- even at a modest level--will share it with those who have the least. We give not only to our own citizens, but to the rest of the world. This spirit of giving has been bred into us by the first immigrants on our shores. When the communities of our young country were being created, building the local school, church, hospital and even the neighbor's barn was a community effort.

Studies show time and again that the tax relief we may enjoy from giving is outstripped by our simple impulse to give. The philanthropic streak ingrained in our national psyche compels us to ask, "Why don't we do something about it?" rather than "Why don't *they* do something about it?" We continue to work in the spirit of community.

You who so generously respond to our needs are a community of alumni and friends who are doing something about it when your gifts help relieve student loan debt or provide vital program support. In the coming year UNI's next campaign will be formally announced, but it will most certainly highlight the creation of scholarship and program endowments. Will you think about how you can provide assistance to our students and faculty?

Endow a scholarship. State support for UNI has declined to less than 50 percent of our budget and our students have experienced significant tuition hikes since 2000. Endowed scholarships create a permanent fund that provides vital financial support for our students and help give UNI an advantage when recruiting students to our campus.

Support the CNS Dean's Fund for Excellence. The Dean's Fund provides direct support to students and faculty in different ways each year. The fund is flexible and allows the College to direct dollars quickly in areas where resources might otherwise be limited.

Give to the UNI annual fund. With an annual fund gift of \$1,000 or more, you will become a member of the Campanile Society and will join others who are committed to the long-term growth and mission of UNI. The annual fund is critical in providing funds to the University that can be used immediately, as they are needed most.

Join UNI's Old Central Associates by creating a legacy for the future with a planned gift. UNI is important to you and played an important role in launching you into life and a career. By including UNI in your estate planning or making a planned gift now, you can help students and programs in a way you never thought possible.

Thank you for your steady financial support and your loyalty to UNI! Please contact me at 800-782-9522 or 319-273-6078 or cassie.luze@uni.edu.



Cassie Benning Luze



Colemans endow Wilson Lectureship

A gift from Mary Sue Coleman, president of the University of Michigan and former president of the University of Iowa, and her husband, Kenneth Coleman, has established the Leland Wilson Chemistry Lectureship.

The Colemans' gift of \$100,000 creates an endowment that will fund an annual lecture in chemistry and honor Wilson, who is Mary Sue's father. Wilson was the first department head of the newly formed Department of Chemistry at UNI in 1968 and served in that capacity until 1975. He retired as professor of chemistry in 1979 and died in 1993 at age 79.

The Leland Wilson Lecture Series was established in 1997 and has continued through annual gifts from family and colleagues. The new endowment ensures perpetual funding for the lectureship. The Leland and Margaret Harvin Wilson Scholarship Endowment also honors Wilson's late wife, who lived in Cedar Falls until her death in 2005.

"My father had genuine affection and admiration for his students and he was an extraordinarily gifted teacher," said Mary Sue Coleman, who is a biochemist and was the inaugural lecturer in the series. "He was very proud that UNI chemistry graduates were and are highly competitive for graduate school and professional school placements."

The lectureship allows the Chemistry and Biochemistry Department to bring nationally recognized scholars and leaders in chemistry and science to campus. "We will have speakers who can talk about their fields in a compelling way that provides a wider public with a better understanding of what makes science exciting and valuable," said Bill Harwood, head of the department.

This past fall's Leland Wilson Chemistry Lecturer was Geri Richmond, who holds the Richard M. and Patricia H. Noyes Professorship in Chemistry at the University of Oregon. She is recognized for her fundamental studies of molecular processes at water surfaces using state-of-the-art laser techniques and is also widely known for her innovative science teaching and outreach efforts.



Mary Sue Coleman

Alumni News

1940s

Milton L. Moon, BA '43, and his wife, Letha Holthaus Moon, Music '46, celebrated their 60th wedding anniversary on June 8. They live in Haymarket, VA.

Margaret (Mitchell) Nordmann, BA '47, retired in 1986 as art and mathematics teacher in the Prairie Valley School District in Gowrie. She was also an art teacher in the Adult Education Program.

1950s

Patricia D. (DeKoster) Echelberger, BA '50, and her husband are retired and have traveled to Scotland, the Caribbean, Alaska, Washington state, Oregon and the East coast. They spend a lot of time with their granddaughters. She

received her master's degree from Southern Methodist University in 1960 and is a longtime Girl Scout leader.

George R. Mach, BA '50, retired in 1991 as professor of mathematics at California Polytechnic State University after 37 years. He and his wife, Mary Ruth (Harder) Mach (BA '50, home economics), take two or three cruises/tours a year and have sailed on all seven seas and toured on all seven continents.

Roger Balsley, BA '58, MA '70, is an adjunct math teacher at Iowa Central Community College in Fort Dodge. He retired from teaching at Webster City Junior-Senior High in 1993, when he began teaching at ICC. He served on the Webster City city council for 11 years, as mayor in '74 and '79 and on the Hamilton County board of supervisors in 2002-04.

1960s

James Paglia, BA '60, and his wife, Betty Lou, recently celebrated their 50th wedding anniversary. They are retired and living in Atascadero, CA.

George C. Coffin, BA '64, was a science instructor at Cardinal Stritch High School in Keokuk until it closed in May of 2006. After 40 years of teaching, he enjoys traveling with his wife. They live in Kahoka, MO.

Ronald D. Shafer, BA '67, MA '76, is a science consultant with the Southern Prairie Area Education Agency 15 in Ottumwa. He previously taught biology at West Marshall High School in State Center and served as the dean of student services at William Penn College in Oskaloosa. He and his wife, Shellee, have four daughters,

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Paige, born 4/97, Brooke, born 1/03, and identical twins, Kate and Molly, born 9/06.

1970s

David Beyer, BA '72, is a manager at Owen's Fuel Center in Warsaw, IN.

Paul John Gorgas, BA '74, is employed by CERN and Fermilab and lives in Ottawa, IL.

Charles Frisk, BA '75, is a biology/environmental science teacher at Luxemburg-Casco High School in Luxemburg, WI. In the past several years, he has received several awards for his work with his students and with various organizations in northeast Wisconsin: the Brown County Environmental Education Award in 2006, the Helfenstein Soup Council Environmental Hero Award in 2005 and the Fox Valley Sierra Club's Environmental Award in 2003.

1980s

Randal Lee Gritzner, BA '83, is a teacher at South Texas Independent School District - Science Academy in Mercedes. An outdoor science lab he implemented in 1999 subsequently became a wildlife refuge, and in 2000 he was named Outstanding Middle School Science Teacher of the Year. He and his wife, Elvia, have three children, Adam, Mario and Taylor, and three grandchildren, Anastasia, 8, Adam Lee, 3, and Landon Jake, 10 months.

Brent Gustason, BA '83, is a sales representative with Midwest Groundcovers, LLC, in St. Charles, IL. A resident of Campbellsport, WI, he is active as part of the Campbellsport Athletic Association board and summer youth activities and in the Wisconsin Nursery Association. His son is active in hockey and baseball.

Jeff Jackson, BA '87, is director of sales for 20th Century Fox/MGM. He has spent 20 years in the entertainment business, most recently selling movies such as *Night at the Museum*, *Borat* and *Eragon*. He and his wife and four children reside in Mt. Juliet, TN.

James Costigan, BA '89, works as a senior executive sales representative for GlaxoSmithKline's respiratory division in Dallas, TX, after 10 years as an Army officer.

1990s

Donald E. Jorgensen, MA '93, is a natural resources planner/biologist at the Cibola National Forest in New Mexico.

Kim Bollinger-Schmitz, BA '94, graduated from Iowa State University College of Veterinary Medicine in 1998 and has been practicing in West Des Moines for the past five years. She and her husband, **Jim Schmitz**, BA '94, have two daughters, Marah, 8/01, and Willow, 11/06.

Sharon (Proffitt) Finch, BA '94, is the chief technologist in the microbiology laboratory of Marshalltown Medical and Surgical Center. She and her husband, Arnie, have a daughter, Haley, 9.

Angela Sofia, BA '97, a clinical technologist with the University of Washington Medical Center since 2000, recently changed her position there to molecular diagnostics for DNA extraction, amplification and sequencing bacteria for identification in human genome in a clinical setting.

Hance Throckmorton, BS '98, has been a project manager for Doors, Inc., in Cedar Rapids since '05.

Suzanne Shontz, BA/BS '99, began a new position as assistant professor of computer science and engineering at The Pennsylvania State University in University Park, PA, in August '06.

2000s

Tiffany A. Bielenberg, BS '01, is a funeral director with Martin Schwartz Funeral Home in Lancaster, WI.

Jeremy and Melissa Beyer, both BA '02, live in Ankeny. Melissa, who graduated in May '06 from ISU College of Veterinary Medicine, is an associate veterinarian at South Des Moines Veterinary Center, and Jeremy, who graduated in May '06 with a master's degree in business administration, is a meter analyst at MidAmerican Energy in Des Moines.

James (Jimmy) Watt, BA '02, graduated from Des Moines University in May '06 with a degree in osteopathic medicine and began an orthopedic surgery residency in Columbus, OH, in July '06.

Michelle Rosel, BA '04, is an actuarial associate with Principal Financial Group.

Krista (Ellyson) Koster, BA '05, is a risk management analyst with Wells Fargo Financial, from which she received a SNAP award for excellence in statistical model building in November '06. She married Robert Koster in May '06.

Ronald Shava, DIT '05, is assistant professor of industrial technology at the University of Nebraska at Kearney, where he teaches all engineering graphics courses in four IT programs offered by the school. He is also involved in rapid prototyping research and designs custom homes.

Amber Moss, BA '06, plans to graduate from Des Moines University with a master's degree in physician assistant studies in May '08. She married Derek Buyck, an '07 graduate of UNI's College of Education, in July '07.

Marriages

Christen Appletoft, BA '95, married Nicholas Goede 7/1/06. They live in Urbandale.

Mary Meyer, BA '00, married **Douglas Lestina**, BA '98. They live in Coralville.

Bradley Ridout, BA '00, married Emily Rust 4/14/07. They live in Cedar Rapids.

Taylor Fountain, BA '01, married Kelli Heland 12/3/06. They live in Muscatine.

Jason deNeui, BS '04, married Sarah Crawford 5/5/07. They live in Des Moines.

Joel Heinz, BA '05, married Mindy Boyle 12/30/06. They live in Mason City.

Joel Peyton, BA '05, married **Kerry Reilly**, BA '05, 12/9/06. They live in Winthrop.

Births

Steve Deering, BA '93, and his wife, Brianna, have twins, Delaney and Molly, born 1/07. They live in Lake Geneva, WI.

Andrew Bruns, BS '05, and his wife, Megan, have two sons, Austin, born 3/07, and Tyler, born 9/06. They live in Maxwell.

Betsy Wolf, BA '99, an industrial technology teacher in the Burlington Community Schools, gave birth to her second daughter, Caroline Nicole, 10/06.

Deaths

Loel Ferguson, BA '38, of Montezuma, died May 14, '07.

William J. Britton, BA '48, died Nov. 2, '06. He earned a master's degree in guidance and counseling from Colorado State College in Greeley in 1960 and was director of guidance in the Marshalltown Public Schools from 1960 until his retirement in 1990. In that year he was awarded the Hall of Fame Award by the Iowa Association for Counseling and Development. During his career he served as president of the Iowa School Counselors Association, president of the Iowa Association for Counseling and Development, president of the Iowa Association for Counselor Education and Supervision, and senator for the American Association for Counseling and Development. After retiring, he spent time volunteering at the Iowa Veterans home, traveling through the western and southern U.S. with his wife, Hope, and visiting their children and grandchildren.

Dale Gootee, BA '60, of Waterloo, died May 18, '07.

Mary Bobzien, BA '66, died in January '06.

Cynthia Tharp, BA '68, Battle Ground, WA, died Oct. 25, '06.

John Teachout, BA '88, of Fitchburg, WI, died May 8, '07.

Brett Kainz, BA '97, of Arlington, IA, died March 19, '07.



Richard Golz photographing one of Iowa's rarest orchids, *Platanthora hookeri*. Photo by Bill Witt

Richard Golz, BA '64, died Aug. 18, '06. A science teacher at Waterloo East and West High Schools, Golz was an avid botanist, ornithologist, geologist and ecologist. He received master's degrees in botany and geology from Oregon State University. He was twice voted High School Science Teacher of the Year by the Iowa Teachers of Science and was honored as an Iowa Master Teacher. A large collection of botanical books from his estate was donated to the UNI herbarium's reference collection, which was designated the Golz Library.

CNS Advisory Board

The College of Natural Sciences Advisory Board provides advice, guidance, support and advocacy for the College's undergraduate and graduate programs: The Board members help to align the College's curricular offerings with changing educational needs; help to identify outside funding sources for the College and internship and other professional opportunities for students; and serve as advocates for the College by promoting positive relations with the external community.

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Shive Hattery Engineers and
Architects

Dr. David Faber
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Finance
Radio and Television Program
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Joel Haack, Dean
Cheryl Smith, Editor



The University of Northern Iowa is an equal opportunity employer with a comprehensive plan for affirmative action.

Earth Science students (bottom l.-r.) Bree McClenning Tiffany Eggers, Stacey Reisdorph, (top l.-r.) Rodney Hubscher and Adam Wooten pose in Latham Hall with the department's most recent addition, a replica of a Tyrannosaurus rex skull. The original full skeleton is displayed in the American Museum of Natural History in New York City.



College of Natural Sciences

University of Northern Iowa

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