StoutQuest

The Journal of Research at University of Wisconsin-Stout 2010–11

FOCUSED ON RESEARCH

Chancellor's message

Welcome to the fourth annual issue of StoutQuest. Inside you'll find stories about cutting-edge research and other exciting projects undertaken by students, faculty and staff at the University of Wisconsin-Stout, Wisconsin's Polytechnic University.

This publication reflects our campuswide dedication to inspiring innovation through applied research. Our still relatively new Discovery Center already has made impressive progress in bringing the best minds together at UW-Stout to conduct applied research, work with industry to meet challenges and advance technology.

We also are seeing the benefits of our new $43 million Jarvis Hall Science Wing, which will greatly enhance research efforts on campus in the coming years and decades. The home to our STEM disciplines houses state-of-the-art classrooms, laboratories and other facilities.

Our enrollment continues to set records, with more than 9,300 students attending UW-Stout in the fall of 2010.

Our students come from around the state, country and world to learn from our world-class faculty and to take advantage of UW-Stout's educational philosophy that emphasizes applied learning. Students work daily with faculty and staff to solve real-world problems, as you will see in these stories.

I hope you enjoy StoutQuest and share it with friends and colleagues. We are proud of the research that is being done at UW-Stout, and we continue to look for new ways to inspire innovation.

Chancellor Charles W. Sorensen

About research at University of Wisconsin-Stout

Applied research has a long history at UW-Stout. Since the institution's founding in 1891, students, staff and faculty members have benefited from a culture guided by principles of putting theory into practice. Today, real-world projects are regular occurrences in the environment of teaching, learning and discovery at UW-Stout. And, since the university was designated Wisconsin's Polytechnic University by the UW System Board of Regents in the spring of 2007, UW-Stout has placed even greater emphasis on research.

About StoutQuest

StoutQuest is the UW-Stout journal of faculty and staff research. The journal highlights the growing and diverse scholarship and applied research that happens every day among faculty, staff and students of Wisconsin's Polytechnic University.

For more information about UW-Stout Research Services:

Research Services
152 Vocational Rehabilitation Building
University of Wisconsin-Stout
Menomonie, Wisconsin 54751

Phone: 715/232-1126
Fax: 715/232-1749
Online: www.uwstout.edu/rs/

StoutQuest

Number Four · 2010–11

Published annually by the
Provost's Office at
University of Wisconsin-Stout
Julie Furst-Bowe, Provost

Sue Foxwell, Executive Editor
and Research Administrator

Contributing Writers
Doug Mell
Jerry Poling
Claire Couillard
Hannah Flom

715/232-1126

stoutquest@uwstout.edu

Find this publication and additional information about the scholarly activities, publications and presentations of UW-Stout faculty and staff online at **www.uwstout.edu/rs/stoutquest.**

On the cover: Matthew Houdek, a professional communication and emerging media major, has spent much of his senior year at UW-Stout doing research. He has had two papers accepted for presentation by professional organizations and has submitted a third paper. Part of his research involved surveying students on campus in February.

UNIVERSITY OF WISCONSIN
STOUT
WISCONSIN'S POLYTECHNIC UNIVERSITY

Contents


Page 7


Page 12


Page 13

Technical communications major values undergraduate research experiences, faculty support

Matthew Houdek is looking forward to earning his undergraduate degree in May, but he's even more excited about something else during his final months as an undergraduate, something that's becoming more and more common at UW-Stout — student research.

As he wraps up work on his bachelor's degree, Houdek has discovered the joys and challenges of research. His new-found zest for adding to a body of knowledge in his chosen field has changed his outlook on education and caused him to raise the bar for his career goals.

Houdek has submitted three papers to professional organizations, has had two accepted and is looking into other projects.

His paper "Existential Evolution & Enlightenment" was accepted for the Towards a Science of Consciousness conference at Stockholm (Sweden) University in May. His paper "What Did She Say?!? How Context Affects Hearer Perceptions of Offensive Language" was accepted at the I-Mean 2: Meaning & Context conference in April at the University of West England, Bristol, United Kingdom.

He has submitted, "Utopia or Dystopia? The Implications for the Self in the Digital Environment," to the Elie Wiesel Foundation for Ethics.

How did he become so focused and get so busy? Houdek, a professional communication and emerging media major with minors in speech, philosophy and English, admits he's energetic. However, he also admits that faculty and university support have fostered his research efforts and helped them bloom.

"The professors made me think and learn in a whole different way. I wouldn't have been able to do it without them, without their willingness to work with me," said Houdek, who is finishing his college career as a distance learner while taking independent study courses.

His research efforts have been in conjunction with **Tim Shiell**, Ph.D., in philosophy and **Joleen Hanson**, Ph.D., in English. He also cited critical support from **Matthew Livesey**, Ph.D., English, and **Daisy Pignetti**, Ph.D, English, and adviser **Joan Menefee**, Ph.D., English.

Houdek credits several professors, including Tim Shiell in the English and philosophy department, for helping him stretch his limits as a student and researcher. "The professors made me think and learn in a whole different way," Houdek said.

> "The professors made me think and learn in a whole different way. I wouldn't have been able to do it without them, without their willingness to work with me." >> Matthew Houdek

Houdek's goal is to build on his research experiences at UW-Stout by pursuing a doctorate and eventually teaching and doing more research.

"When I get to grad school, I'll hit the ground running. I hope to be on the doorstep of a dissertation topic. I know my limits now. Without pushing my limits, I wouldn't have been able to discover them," he said.

Students like Houdek go through a maturing process when they do research, said Shiell, who was named the 2010 Outstanding Researcher at UW-Stout.

"His ability to construct arguments has improved a lot. He's now able to look at topics in a much more rigorous, detailed, organized way," Shiell said. "Your discover-

ies go to a whole different level with those one-on-one faculty experiences. You're able to analyze and synthesize."

Houdek encourages other students to explore research topics by talking with their professors.

Susan McClelland

The framework is there for students to be successful, said Susan McClelland, UW-Stout student research manager. UW-Stout is "committed to growing the student research enterprise," she said, citing the faculty-led Creative Original Research Experiences Group on campus, an effort to increase and support scholarly activity.

Other efforts and signs of progress regarding the research culture on campus include:

• The Stout Student Association has recently increased by 67 percent Access to Learning funding, which provides research funds for students. The goal: Many more student research opportunities.

• The number of articles submitted to the 2011 Student Research Journal is up 25 percent over 2010.

• In September, a team of four faculty from UW-Stout will attend a Council for Undergraduate Research workshop for all UW System schools at UW-Eau Claire. The UW System was one of three from around the country chosen to participate in a grant program, partially funded by the National Science Foundation, on institutionalizing undergraduate research. The program will focus on developing and sharing best practices and using undergraduate research to serve as an economic engine throughout the state.

Student research with professor support or in collaboration with professors has become increasingly common at UW-Stout. Some 2010 examples include:

• The federally funded McNair Scholars Program, new to UW-Stout in 2009. It provides disadvantaged college students with effective preparation for doctoral study. Three McNair scholars are presenting papers at national conferences this spring.

Matthew Houdek, a professional communication and emerging media major, says his various undergraduate research experiences at UW-Stout have prepared him for doctoral studies. One of his papers, "What Did She Say?!? How Context Affects Hearer Perceptions of Offensive Language," was accepted at the I-Mean 2: Meaning & Context conference in April at the University of West England, Bristol, United Kingdom.

The House of Representatives voted last fall to declare the week of April 11, 2011, as Undergraduate Research Week in the U.S. This will be the first such designation of the week in U.S. history.

• A marketing study conducted by **Raghava Gundala**, Ph.D., a UW-Stout assistant professor in marketing. Gundala and nine of his students surveyed UW-Stout students and other residents about the need for bus service on campus and in Menomonie. The survey was presented to the county, which used the information to help the service begin in January 2011.

• A study by students **Kim Goral** and **Meghan Burkett** with adviser **Chris Moyer**, Ph.D., assistant professor in psychology. They conducted a research project to see if there is a correlation between altering a person's posture and reducing anxiety. They presented their study along with Moyer at the Highlighting Massage Therapy in Complementary and Integrative Medicine research conference in Seattle.

• Applied science students who have had their studies published in peer-reviewed journals with biology Professor **Stephen Nold**, Ph.D. Nold's microbiology classes have studied blue-green algae problems in lakes Tainter and Menomin for two years.

"Things have changed a lot in a short time at UW-Stout and nationally," Shiell said. "Undergraduate research has grown exponentially."

Discovery Center sees growth in applied research, technical projects

Applied research and innovation have long histories at UW-Stout. Since the institution's founding in 1891, students, faculty and staff have benefited from a culture guided by principles of putting theory into practice.

Today, real-world projects are regular occurrences in the environment of teaching, learning and discovery at UW-Stout. Created in 2009, the UW-Stout Discovery Center aligns the applied research and technical assistance assets of the university, facilitates common access to a broad range of stakeholders, and bolsters these vital intellectual and physical resources.

The Discovery Center continues to experience growth in scope and scale of applied research and technical assistance projects. By deploying and managing teams in a variety of internal and external settings, the center is recording activities and impacts that drive innovation in a broad spectrum of cross-disciplinary projects.

Defined technical assistance projects at the center have enhanced company performance. **Brian Finder**, Ph.D., a professor in UW-Stout's risk control program, worked with Discovery Center's manufacturing outreach project managers **Brad Nasset** and **Bill Amsrud** to implement an ergonomic assessment and technical assistance plan in partnership with the management team at Johnson Electric Coil in Antigo.

Initially, the project team assessed potential risk factors associated with work tasks and work stations. During the next phase, Finder provided guidance to the team on observed ergonomic risk factors so the business could proactively address ergonomic issues and reduce potential loss exposure associated with them.

Finally, the team collaborated to construct an action plan to support management of risk factors, reducing the business's exposure associated with them.

Research projects have advanced faculty research interests by targeting collaborative associations and activities.

Jennifer Grant, an assistant professor in biology, works with undergraduate students to conduct research using mass spectrometry. The project's long-term goal is collaborative research with Omic Biosystems, a biotechnology start-up. Projects such as Grant's target collaborative associations with business and industry and activities through the Discovery Center.

Jennifer Grant, Ph.D., UW-Stout assistant professor in biology, and a number of undergraduate students are conducting beta research and proteomic analysis of glycoprotein-enriched fractions from aging rat ventricles.

Leveraging Grant's expertise in cardiovascular and neuroscience studies and mass spectrometry, the long-term goal of the collaborative research with Omic Biosystems, a biotechnology start-up, is to delineate the differences between male and female ventricles with particular emphasis on understanding different expressions of extracellular matrix proteins.

Benefiting students, faculty, the university and industry partners, Grant's work is critical to advancing UW-Stout's intellectual and physical research infrastructure.

Applied research projects have helped solve diverse and specific problems. A collaborative project engaged a Plover company, Warner and Warner, along with **Lamin Kassama**, Ph.D., of UW-Stout's food and nutrition department, and a graduate student in the evaluation of condensation and moisture removal time with three types of potato.

The goal of the project was to figure out which bags provided the best air circulation, improved the shelf life and maintained the quality of potatoes in the grocery store. The study involved taking five-pound bags of potatoes from a packer in Rice Lake and simulating a grocery store environment in an environmental chamber to track the moisture content, water activity, shrinkage and weight of the potatoes.

The results of this study are helping growers and packers make packaging decisions to improve product quality and consumer satisfaction.

Cross-disciplinary projects have multiple impacts. A collaborative project involving the Eau Claire Children's Museum and students and faculty from two of UW-Stout's colleges — Science, Technology, Engineering, and Mathematics (STEM) and Education, Health, and Human Sciences (CEHHS) — is developing innovative exhibits that promote interactive learning for youth in STEM-related fields.

The exhibit designs provide a better understanding and knowledge of leisure activities, history, and production capacity centered in northern Wisconsin. **Sylvia Tiala**, Ph.D., an assistant professor in the School of Education, led students in examining and proposing topics and concepts for museum board members and the executive director to consider in choosing the next generation of museum exhibits.

The students spent the semester examining topics that make Wisconsin special and ways to help children experience and learn more about their environment. They interviewed experts from each topic area

and used multimedia communications technology to facilitate a focus group of middle school students to gain feedback and insight on select topics and activities.

The next phase of development will engage industrial design and engineering technology students and faculty in refining the design and constructing the exhibits.

Medical device innovation

Markets for biotechnology and medical devices are important economic drivers in the regional and global economy. UW-Stout is strategically positioned to engage in medical device research and development in this rapidly expanding market.

Through the Medical Device Initiative, the Discovery Center is developing the leadership and infrastructure to focus on strategic research and development efforts using UW-Stout's polytechnic resources in order to achieve a sustainable research enterprise, advance scholarship and grow the region's economy.

This year UW-Stout welcomes **Bertram Ezenwa**, Ph.D., on campus as Distinguished Scientist and key player in pulling collaborative projects together and building the medical device research infrastructure on campus.

Ezenwa has a joint appointment between the Discovery Center and the STEM college and will work with clinicians, funding agencies, private companies, faculty and staff from across campus and the UW System.

Expertise and previous projects with medical device research and development exist in many areas at UW-Stout, including plastics engineering, mechanical and computer design, manufacturing, food and nutrition, foundry technology, biotechnology, prototype development, and art and design.

The medical device initiative will bring applied research focus to innovative medical device development at UW-Stout.

An employee works on the production floor at Johnson Electric Coil in Antigo. The manufacturing outreach program at UW-Stout's Discovery Center implemented an ergonomic assessment and technical assistance plan in partnership with the management team at Johnson Electric Coil, one of many business and industry collaborations.

Green Bakery gets boost from expertise through Discovery Center

An innovative wholesale bakery in Dunn County opened in 2010 thanks, in no small part, to the Discovery Center and applied learning expertise from UW-Stout.

The Green Bakery is on the 250-acre River Haven Cooperative near Wheeler. The bakery produces gluten-free bread for people with celiac disease, which makes them allergic to wheat. Green Bakery's products also don't include dairy, soy, eggs or nuts, so they can be eaten by people with these allergies.

The cooperative received a small grant through UW-Stout's Discovery Center. The grant provided funds for university specialists, including **Lamin Kassama**, Ph.D., food and nutrition. He provided technical assistance in fine-tuning and developing gluten-free bread recipes, the scale-up process and production process development at the food science laboratory in Heritage Hall.

He also provided assistance in identifying appropriate equipment for their plant. Kassama was assisted by **Phil Rizzo,** a food systems and technology major, and **Alexandra Andersen**, a dietetics majors.

The grant also helped keep the project on track through the Northwest Wisconsin Manufacturing Outreach Center, according to Randy Hulke, Discovery Center director.

Phil Rizzo, a food systems and technology major at UW-Stout, helped the Green Bakery develop its recipes and begin the production process. He also works there as a baker.

McNair Scholars Program students learn to develop, present research

Keila Tirado is happy that she had a chance to become part of the McNair Scholars Program at UW-Stout. "If I was on my own, I don't think I would have been able to achieve everything that I have done," she said.

Tirado, one of the first McNair scholars on campus, conducted research last summer in central Wisconsin, focusing on native Spanish speakers and their understanding of information on hospital discharge papers.


Keila Tirado

Tirado set out to answer, "What is the effectiveness of English to Spanish translation of discharge instructions?" She used a Spanish radio program to recruit participants and interviewed 14 people.

> "If I was on my own, I don't think I would have been able to achieve everything that I have done." >>Keila Tirado

After completing her interviews, her results showed a significant link between patients' educational level and their understanding of discharge instructions. Also, her research found that almost all of the key information on the instructions were being misinterpreted or not understood at all.

Tirado will present her findings at the American Association of Applied Linguistics Conference in March.

Tirado credits her time serving on UW-Stout's Institutional Review Board during the 2009-2010 school year in helping her prepare for her research. She is a senior majoring in professional communication and emerging media with minors in applied science, Spanish and philosophy. She plans to attend the University of St. Thomas in St. Paul in the fall.


Richard Tafalla

Richard Tafalla, Ph.D., McNair director at UW-Stout, said the federal TRIO program "prepares low-income, first-generation and racial-ethnic minority students to enter graduate programs and succeed in doctoral study by providing high quality research and scholarly activities during the junior and senior year."

Review is in: Professor has new perspective on writing grant proposals

Research Services at UW-Stout offers general workshops on grant writing and mini-workshops on speficic programs. General grant writing information also is available. Research Services is in room 152 of the Vocational Rehabilitation Building. Call 715-232-1126.

The knowledge that **Robert Zeidel**, Ph.D., associate professor in the social science department, gained by participating on a grant proposal review team was enlightening and will prove useful to himself as a grant writer and to others he shares his experiences with at UW-Stout, he said.

Zeidel was one of 20 K-12, university and Department of Public Instruction staff recruited to review grant proposals for the Wisconsin ESEA Title II Improving Teacher Quality Program.

The federally funded program is designed for collaboration between institutions of higher learning and K-12 schools.

The team ranked and scored 28 proposals; at least half received partial funding. Zeidel came away with some advice for grant proposal writing.

It is important that writers view their proposals from the reviewer's eyes, he said.

Also, writers sometimes focus more on theory and less on process and implementation. The nuts and bolts need to be clearly stated, including objectives and anticipated outcomes.

"I very much believe that UW-Stout has faculty and staff that are more than capable of creating successful grant applications," said Zeidel, who said the experience broadened his views on grant development.


Robert Zeidel

Rehab specialist, alumnus design versatile work station prototype

A versatile, ergonomically correct work station invented and designed by **Jeff Annis**, a UW-Stout Vocational Rehabilitation Institute rehabilitation specialist, and alumnus **Brad Stafford**, product designer for Spectrum Industries of Chippewa Falls, could change the way people learn, conduct research and perform tests and other tasks.

The prototype tabletop station, 5 feet long and 2-feet-6 inches wide, primarily was designed for people with disabilities.

Mobile and height-adjustable, from 27 inches to 54 inches, it fits work station needs for people with a variety of physical limitations. A unique top with beveled edges prevents spills.

Because of its versatility, the design also breaks new ground as an ergonomically correct work table for the general population, from children to adults, for use in schools, various institutions, industries and many business settings.

Co-designer Jeff Annis, a UW-Stout Vocational Rehabilitation Institute rehabilitation specialist, demonstrates a feature of the work station, a surface lip and beveled edge to prevent spills.

Funding for the design and construction of prototypes was supplied by UW-Stout, Spectrum and WiSys, the Wisconsin System Technology Foundation, which handles marketing, licensing and other issues for all UW System schools except UW-Madison.

UW-Stout provides funding for prototype testing and refinement.

The public-private project also received partial funding through a grant from the National Science Foundation through the Midwest Alliance in Science, Technology, Engineering and Mathematics at UW-Madison. The NSF is concerned about a low percentage of students with disabilities pursuing math and science careers, Annis said.

UW-Stout Chancellor **Charles W. Sorensen** said the work station reflects Annis' wealth of experience with adaptive technology and contributes to the innovative applied research conducted at UW-Stout.

"The intuitive design brings work station technology into the modern age and makes science and research more accessible. It's an exciting leap forward as a tool for many people," Sorensen said.

E-Scholar research paper to be featured in national academic journal

An article on the assessment of UW-Stout's e-Scholar laptop computer program will be published this spring in Academic Exchange Quarterly, a reviewed journal with readers in every state and 48 countries.

The article, "Evaluating Ubiquitous Computing Programs," was written by **Meridith Wentz**, Ph.D., director of the Applied Research Center; **Wendy Marson**, ARC project specialist; and **Jane Henderson,** Learning Technology Services director.

The success of the university's laptop program and digital learning environment as they approach the 10th year is grounded in a proactive approach to assessment. The program founders realized that building assessment into the program from its inception would result in early identification of problems. This approach led to continuous improvement of the e-Scholar environment, which now is a model for other universities.

As more institutions of higher learning integrate computers into their learning environments, be it classrooms or residence halls, evaluation of their impact remains elusive for many institutions.

The article offers guidance on digital learning assessment for campuses either considering implementing an assessment plan or those that are not satisfied with their plan.

The article also describes a methodical approach to assessing process issues common to any start-up program involving technology, including support/service, student satisfaction, software training and students' use of technology.

Surveys on evaluation of ubiquitous computing programs are available through the Applied Research Center at UW-Stout.

The Planning, Assessment, Research and Quality — PARQ — office at UW-Stout is offering open office hours to students in need of assistance with research projects.

Assistance by trained graduate students is available with SPSS, survey critique, data analysis and Qualtrics.

The office is in room 210 of the Administration Building, or call 715-232-4093 for more information.

Students learn about lean, then apply

Three groups of students helped to improve business operations in Wisconsin and Minnesota through a 2010 Lean Enterprise class taught by **Jim Keyes**, Ph.D., associate professor in operations and management.

The first half of the semester students learned about lean — time-saving — production processes, movement and materials; in the second half, they applied their research knowledge in the workplace.

The interaction between students and the businesses benefited both, Keyes said. "This is where responsibility to the institution and the company can have a positive impact. The companies are getting great results. Students are learning things we can't teach in the classroom," he said.

The 24 students in the class were divided up: six students worked with a Plymouth,

UW-Stout Professor Jim Keyes, left, works with student Allan Hakes during a Lean Enterprise class project at Andersen Corp. in Menomonie.

Minn., branch of CareFusion Corp., a worldwide medical products manufacturer; six with Harvest Moon Farms, a produce farm and community-supported agriculture cooperative in Viroqua; and 12 with Andersen Corp., a window and door manufacturer, at its Menomonie factory.

Students visited the businesses to observe, ask questions and suggest changes regarding such issues as human movement on the production floor, inventory and materials flow and workplace organization.

The class was first offered in 2008.

"Most companies are doing lean processes, so we needed to add that to our curriculum. Students just rave about the on-site experience because they see how it works," said Keyes.

Another advantage to the interaction with the businesses is the possibility of future internships and employment. At least one student involved found full-time employment with Andersen after graduation.

Class gets real-world experience with deadline driven printing projects

In a Graphic Communications Practicum class taught by **James Tenorio**, Ph.D., professor in apparel and communications technology, students learn the true meaning of applied research. They have the ink-stained hands to prove it.

In the fall 2010 class, 10 graphic communications management majors had to finalize plans for, set up, print on university presses and present to customers numerous products.

They included a cookbook, a literary and arts book, three brochures, several posters, a membership directory and a number of smaller projects.

Tenorio describes the class as "a valuable capstone course for students in the GCM program. It allows them to integrate the skills and knowledge they have obtained from their other technical and management classes. They must organize and put those skills to use in a real-world setting."

Also, since the projects are real products and the services are for real clients, the students must do it right.

"If something is not done right, it must be corrected or redone until it is," said Tenorio. "Sometimes this means working late into the night to meet a deadline or solve a problem. Issues of quality, accountability, project management, planning and scheduling, costs and customer service come into play with every project the students do."

The students, divided into three teams, with each team assigned between five and seven major projects, learned a lot. "I learned time management. You really have to plan," said **Cassie Pittman**, a senior.

"We used many machines and learned a lot about troubleshooting," said **Jessica Roethle**, a junior.

The graphic communications management major at UW-Stout prepares students for a variety of jobs in the printing industry. It is the only such major offered in the UW System.

From left to right, Felicia Buchko, Professor Jim Tenorio, Nathan Giannunzio and Gina Breitenfeldt check print quality on part of a membership directory they were producing for the Greater Menomonie Area Chamber of Commerce. The directory was one of many projects undertaken by their Graphic Communications Practicum class at UW-Stout.

Nakatani Center research programs take teaching, learning to a new level

The Nakatani Teaching and Learning Center at UW-Stout was created to support student-centered teaching and learning, foster faculty collaboration, provide professional development opportunities, and incorporate technology in education.

Its mission complements the university's values, vision and several of its Focus 2015 priorities.

According to **Renee Howarton**, Ph.D., NTLC director, the center works to create a climate where colleagues experience improved satisfaction in teaching and learning, build confidence in their effectiveness as educators, and share valuable learning practices.

An example of these opportunities include involvement in research-based Communities of Practice, in which interested faculty explore inquiry-based learning and the use of Lesson Study to collaboratively implement reflective teaching techniques designed to close the gap between learner and instructor expectations.

Associate Professor Joy Becker, director of the applied mathematics and computer science program, works with a group of students. One of the focuses of the Nakatani Teaching and Learning Center at UW-Stout is to support student-centered teaching and learning.

The center also offers faculty short-term Sharing Groups, guest speakers, guidance for new instructors, grant and project support, and works to promote the use of the Scholarship of Teaching and Learning (SOTL) model.

This five-step model asks learner-centered questions, builds upon other researchers' work, collects data, analyzes evidence, disseminates findings to desired audiences and seeks meaningful application of research outcomes.

Researchers are prompted to ask, "What is the teaching challenge or research question I am facing in my discipline or individual course? What is it I want to resolve?" said Howarton.

Many UW-Stout faculty have applied this model and have presented their research findings at SOTL conferences and are published in journals that support and celebrate excellence in teaching.

Botany class defies Mother Nature with four-season growing project

Students in a botany class taught by **Kitrina Carlson,** Ph.D., had a real-world growing experience during the fall semester 2010. The class partnered with the student organization Sustainable Agriculture Education Association to develop skills to grow food during all four seasons.

Students in the class were required to devise a plan for growing food for at least six weeks during the fall semester, thus extending the regular growing season. The students constructed hoop house frames made of plastic and wood. The frames fit over the plants, and the greenhouse effect kept produce warm longer and staved off impending frost.

Students were responsible for tending to their plants at a community garden in Menomonie, southeast of campus. The garden was started in the summer of 2010, with considerable help from UW-Stout students and staff.

In addition to growing the food, students were challenged by Carlson, to think of ways the food could benefit the community. Some groups in class donated food to area food pantries, and others went above and beyond the class assignment.

"One group of students worked with a women's mentoring group in Menomonie and provided them with some of the fresh produce such as onions, carrots and radishes," Carlson said.

Carlson was pleased that most of the students' plants survived and was impressed with how they found alternative uses for the food.

Students were responsible for tending to their plants at a community garden in Menomonie, southeast of campus.

Kitrina Carlson

The project comes out of the sustainable movement. It is a simple way to extend the growing season, save money and provide food to those who need it, Carlson said.

Professor using research honor to change teaching practice

Stephen Nold, Ph.D., a professor in the biology department, recently was one of 23 people nationwide named a Biology Scholars Research Resident for 2010-11 by the American Society for Microbiology.

The goal is for college faculty to improve undergraduate biology education based on evidence of student learning.

To integrate research into education, students who sign up for classes taught by Nold participate in original, Institutional Review Board-approved research and generate publishable data.

Nold's project is two-fold. While students are in the field studying real-world problems, like the blue-green algae in Lake Menomin, Nold is studying the students to see what they are learning about science.

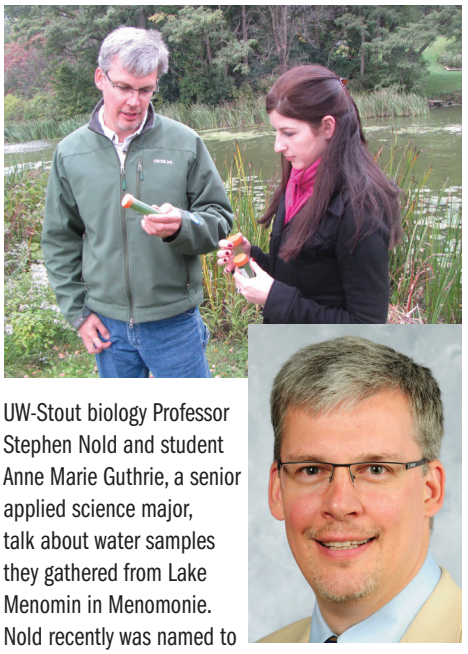
He wants to know if his students are better able to solve problems after his research-intensive course and if this hands-on approach affects their cognitive development.

To assess their learning, Nold is using an online survey given at the beginning and end of the semester to monitor student cognition and development.

Nold also wants to "study how professors at UW-Stout teach using this new approach and, at the same time, study their students to see what they are learning," Nold said.

As part of the Biology Scholars Program, Nold will present the results of his study at the American Society for Microbiology Conference in June.

Nold also was awarded the prestigious Dahlgren Professorship by UW-Stout, and he is using the Dahlgren stipend to fund his research project.



UW-Stout biology Professor Stephen Nold and student Anne Marie Guthrie, a senior applied science major, talk about water samples they gathered from Lake Menomin in Menomonie. Nold recently was named to the prestigious national Biology Scholars Program.

Review board work helps professor strengthen approach to research

Kim Zagorski, Ph.D., assistant professor in the social sciences department, is in her third year of serving on UW-Stout's Institutional Review Board for the Protection of Human Subjects in Research. Faculty, staff and community members on the board review research involving human subjects at UW-Stout.

The experience has given Zagorski insight into the scope and types of research students and faculty are doing at the university.

Seeing the research students are capable of is helpful when planning her own courses and research, she said.

"Sitting on the IRB really makes you think about the process and construction of ideas," Zagorski said. "By looking at content analysis, I consider the actual process, theory and measurement of my research."

> "Sitting on the IRB really makes you think about the process and construction of ideas." >>Kim Zagorski

Research in the social sciences department is growing at UW-Stout. "Often times, demonstrable projects by students win awards and give the students a real sense of pride," Zagorski said.

Michael Tvaruzka, administrative specialist in Research Services, works with the IRB approval process. He notes that the number of IRB protocols Research Services gets each year is on the rise. In 2010, 382 protocols by faculty, staff and students were reviewed.

Tvaruzka attributes the increase to more faculty and instructional staff expecting research from undergraduate and graduate students and considering research an integrated part of the undergraduate experience.

"These are real projects that are very useful and, more often than not, lead students to bigger works in capstone projects or graduate thesis papers," Tvaruzka said. "The intent now is for significant and serious intellectual effort for both faculty and students in research."

Plastics engineering injects state-of-the-art machine into program

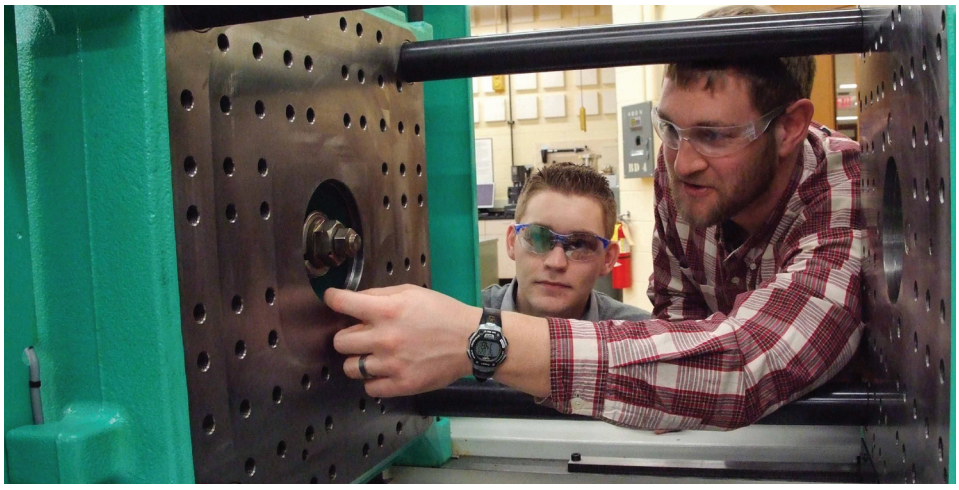
Plastics engineering majors have a new state-of-the-art injection molding press. Arburg, a German-based international company, donated the machine to the program on a consignment basis in 2010.

The electric ALLDRIVE machine, valued at more than $100,000, is configured with the latest technology, according to the company. It will help students undertake more industry-sponsored research projects while at UW-Stout, such as plastics research a student is conducting as part of an independent study for a Twin Cities company.

"It's a top-of-the-line machine, one that students will use in the industry," said **Adam Kramschuster**, Ph.D., an assistant professor in plastics engineering and a UW-Stout alumnus. "Medical manufacturers are using more electric machines because they're generally cleaner and more efficient."

The press is operated by students learning advanced molding applications. It can apply a maximum of 66 tons of clamp force and a maximum injection pressure of 29,000 pounds of pressure per square inch when molten plastic is injected into molds.

"This type of equipment offers a huge advantage for our engineering students, who will gain experience using the latest technology," said **Rich Rothaupt**, associate dean of the College of Science, Technology, Engineering and Mathematics.



Professor Adam Kramschuster, right, and plastics engineering major Jason McNulty talked about the operation of UW-Stout's new injection molding press, a donation from Arburg, a German-based company.

Along with plastics engineering majors, students majoring in manufacturing engineering, engineering technology and packaging use the plastics lab. The lab also has two injection molding presses run by hydraulics.

"Companies want engineers who can go out on the floor, solve problems and trouble-shoot," Kramschuster said, citing the value of the new machine as part of UW-Stout's hands-on approach to learning through lab-based courses.

"This type of equipment offers a huge advantage for our engineering students, who will gain experience using the latest technology." >> Rich Rothaupt

UW-Stout began offering the Bachelor of Science plastics engineering major in fall 2008.

Design flies high in national competition

Is it possible to leap from a tall building and survive? Three students think so.

The Flyer — High-rise Escape Garment took third place in the national 2010 Safety and Technical Products Student Design Challenge. The designers are **Kurt Anderson, Jessica Bjorgum** and **Brooke Burch**.

Their product, which has not been tested because it's still in the prototype stage, has wing-like fabric attachments between the wearer's arms and sides. It comes with a parachute, goggles and a first-aid kit. A pull-cord would deploy the parachute.

The target market for the product would be owners, tenants and employees of high-rise buildings.

The garment was researched and developed in the Functional Clothing Design class taught by **Gindy Neidermyer**, Ph.D., associate professor in apparel and communications technology. The students are apparel design and development majors.

The Flyer – High-rise Escape Garment was designed by three UW-Stout students. It took third place in a 2010 national student design contest.

Stop and Think program brings hope to jail inmates

Three students in the human development and family studies program didn't just see how applying research can change someone's life. They helped make it happen last fall.

Megan Thornwall, **Jessica Grobe** and **Kayce Planert** helped **Susan Wolfgram**, Ph.D., associate professor, administer the Stop and Think program in the Eau Claire County Jail. They went to the jail to work with inmates, who received a certificate upon completion of the 10-week class.

Stop and Think, a counseling program, uses role-playing, videos, one-on-one sessions with Wolfgram and other techniques to help inmates develop better decision-making skills.

Thornwall, Grobe and Planert said they saw actual change in inmates' attitudes by the time the program ended. "The progress and growth I witnessed in these men is beyond anything I could have imagined," Thornwall said. "There was an exceptional yearning to adapt new morals not just for themselves but for their families, as almost all of these men were fathers."

Eau Claire County Jail inmates recently graduated from the Stop and Think program conducted by students in human development and family studies at UW-Stout and Professor Susan Wolfgram. Front row from left are Chris Raney, Aryn Ottenger, Rodney Stenseth, Kenny Chaney and Tim Saunders. Back row from left are Chris Parker, student Megan Thornwall, student Jessica Grobe, Philip Bowe, Wolfgram, jail program director Philip Kuehn and student Kayce Planert.

Wolfgram developed the program with the belief in the power of education to effect behavioral change and break what often is a generational cycle of poor life decisions.

Students get global perspective on leadership class in China

In the spring of 2010, 11 students flew to China and earned three credits toward their major through an Organizational Leadership class. Students visited well-known places, such as the Great Wall, the Forbidden City and Hong Kong, but focused on touring factories and businesses and meeting managers.

"I truly believe all the students returned with a greater appreciation for global opportunities," said trip co-leader **Donna Stewart**, Ph.D., interim dean of the College of Management.

Xuedong "David" Ding, Ph.D., operations and management assistant professor, coordinated trip logistics. Ding, a native of China, is a former supply chain manager for Tropicana in Guangzhou, China. "It's important for students to know how to work in an international setting," said Ding.

The trip was partially funded through a grant from CIBER, the Centers for International Business Education and Outreach, a federal program.

In previous years, the Organizational Leadership class was offered in Finland.

2010 Scholarly Activity

Key: UW-Stout faculty and staff in bold.

College of Arts, Humanities and Social Sciences

PUBLICATIONS

Chung, Wonho; Davies, Phil and Fitzgerald, Terry. Degrees of Job Security. *The Region*, 24(4). December, Minneapolis, Minn.

Fitch, Brian, Drifting, short story in fiction anthology *Rattlesnake Sampler*, Rattlesnake Press, Minn.

Levy, Michael. An Interview with Robin McKinley. *Publishers Weekly* online, Nov. 11; co-editor three issues, *Extrapolation*.

Levy, Michael. Octavia Butler. In Sherryl Vint (Ed.) et al *Fifty Key Figures in Science Fiction*, London: Routledge.

Marshall, **Leni.** Age on Stage: Performances of Age and Aging. Valerie Lipscomb and **Leni Marshall** (Eds.) *Theatre, Dance, Film, and Advertising.* New York: Palgrave Macmillan.

Schumacher, Jada, The Phenomenology of Color [as a working methodology for design practice]. Patricia Trutty-Coohill (Ed.) *Art Inspiring Transmutations of Life Analecta Husserliana: the Yearbook of Phenomenological Research*, Hanover, N.H.: Springer 106, 383-392.

Zhou, Quan, Farkas, D. K., QuikScan: Formatting documents for better comprehension and navigation. *Technical Communication*, 57(2).

Zhou, Quan, Brenda Danet and Susan C. Herring (Eds.) Review of The multilingual Internet: Language, culture, and communication. *Journal of Business and Technical Communication*, 24(2).

PRESENTATIONS

Schumacher, Jada. Interdisciplinary Color. *UW System President's Summit on UW-Madison Excellence in Teaching and Learning.* Madison, Wis.

Zhou, Quan, and Farkas, D. K. Using within-document summaries for selective reading and organized writing. *Presented at the Georgia Conference on Information Literacy, Savannah, Ga.*

CREATIVE WORKS AND PERFORMANCES

Schumacher, Jada. Design Orange goods: rugs. Displayed at *The International Contemporary Furniture Fair*, New York, N.Y.

Schumacher, Jada. Water Matters (juried). *Cascade Meadow,* group exhibition. Rochester, Minn.

Schumacher, Jada. Women and Water Rights. *Katherine E. Nash Gallery Rivers of Regeneration,* group exhibition. University of Minnesota.

College of Education Health and Human Sciences

PUBLICATIONS

Block, Alan. Asking Questions. *Encounter: Education for Meaning and Social Justice*, 23(1).

Block, Alan. For the Sake of Heaven: Locating the Standards. *Language Arts*, 87(5).

Block, Alan. Homecomings and Leavetakings. *JCT: An Interdisciplinary Journal of Curriculum Studies*. http://www.jctonline.org/.

DeLambo, D. A.; Chandras, K. V.; **Homa, Debra** and Chandras, S. V. Spinal cord injuries and substance abuse: Implications for rehabilitation professionals. *American Counseling Association's VISTAS 2010 Annual Electronic Monograph*. Alexandria, Va. American Counseling Association.

Delin, Barry S.; Hartman, Ellie C.; Sell, Christopher W.; and Brown-Reither, Anne E. Testing a SSDI Benefit Offset: An Evaluation of the Wisconsin SSDI Employment Pilot. *Stout Vocational Rehabilitation Institute*, Menomonie, Wis.

Lea, **Virginia**. Empowering Pre-service teachers, Students and Families through Critical Multiculturalism: Interweaving Social Foundations of Education and Community Action Projects. In S. May and C. Sleeter (Eds.), *Critical multiculturalism: From theory to practice.* New York: Routledge.

Lui, John W.; Chan, F., Fried, J.; Lin, C.P.; Anderson, C.; and Peterson, M. Roles and functions of benefits counseling specialists: A multitrait analysis. *Journal of Vocational Rehabilitation*, 32, 163-173.

Mason, Kevin; Carlson, Kitrina; James, Krista; and D'Angelo, J. Invasive Plant Species (IPS) Education Guide: Lessons to Engage Students in Local Citizen Science Project. *The Science Teacher*.

2010 Scholarly Activity

Rombo, Dorothy Owino; Njue, J. R. and Abuya, B. A. Sexual Exploitation of children in Kenya. In Dalla, R.; Baker, L.; DeFrain, J. and Williamson, C. (Eds.) *Global Perspectives on Prostitution and Sex Trafficking: Africa, Asia, Middle East, and Oceania*. Scarecrow Press.
Swanson, Helen; Ebert, Joshua and Seefeldt, Lacey. A comparison of children's and adults' common knowledge, riddle responses and environmental pollution solutions. Poster presented at *Midwestern Psychological Association* annual meeting, April 30.

PRESENTATIONS
Lea, Virginia. Invited Plenary Speaker. Second annual Spain Congress of *The Paulo and Nita Freire International Project for Critical Pedagogy,* November, Granada, Spain.
Lea, Virginia; Ahlquist, R. and Berlak, A. The Unbearable Persistence of the "Achievement Gap": Can multiculturally responsive teachers make a difference? *National Association for Multicultural Education* (*NAME).* November, Las Vegas, Nev.
Lui, John W.; Rosenthal, D.; and Hursh, N. Evidence-based Disability and Absence Management: A Maturational Approach and Guide in Practice. *International Forum on Disability Management (IFDM), GLADNET-IDMRN Symposium*. September, Los Angeles, Calif.
Lui, John W.; Rosenthal, D.; and Hursh, N. Disability Management and the Effects of Workplace Interventions: A Meta-Analysis. *International Forum on Disability Management, Global Applied Disability Research and Information Network GLADNET-IDMRN Symposium.* September, Los Angeles, Calif.
Lui, John W. The Emerging Profession of Benefits Specialists. *Georgia Rehabilitation Association 2010 Annual Training Program.* May, Augusta, Ga.
Lui, John W. The Way Forward: An Alternate Credential for CVEs. *VECAP Conference*. April, Midwest City, Ok.
Peterson, Christine, R., McAdam, D.; Napolitano, D.; and Breidbord, J. Critical appraisal of Social Stories review and considerations for research. Poster presented at the International Meeting for Autism Research. Philadelphia, Pa.

College of Management

PUBLICATIONS
Mark Fenton. A study of selection, training, and host country cultural adaptation experiences of expatriate faculty from United States AASCU universities. Dissertation published by UMI.
Hanft, D. and **Harris, E**. Promoting active learning through the photovoice technique. *Ripples in the Pond: Transforming Higher Education for Today*, Plymouth, Minn.
Keyes, Jim. Lean Implementation at a Low-volume, High-variety Manufacture, *Production and Inventory Management Journal*, 45(2), 23-34.

PRESENTATIONS
Hanft, D. and **Schoonover, K**. Synergizing advisory boards to maximize alliances. *Chair Academy's 19th annual international conference for post secondary leaders*, Minneapolis, Minn.
Hanft, D. and **Schoonover, K**. Muscling advisory boards to achieve multifaceted strategic alliances. *Third Indian Hospitality Congress Conference on Hospitality and Tourism Management*. Manipal, India.
Hanft, D. Generation Z perceptions on interactions in the workplace. *Tenth Conference on Diversity in Organizations, Communities and Nations*. Belfast, Northern Ireland.
Keyes, Jim. Understanding the Need for Lean Training for Students in Technology-Based Undergraduate Programs; *Association of Technology, Management, and Applied Engineering National Convention Proceedings.* October.
Keyes, Jim. Measuring the Effect of Lean Implementation at a Low-Volume, High-Variety Manufacturer: A Case Study. Presented at the *Association of Technology, Management, and Applied Engineering National Convention Proceedings*. October.
Keyes, Jim; Nahm, A. Y.; Lauver, K. J. The Effect of Job Security and Employee Buy-In on Lean Implementation Success. *The 46th Annual MBAA International Conference, MBAA International*, March, Chicago, Ill.

2010 Scholarly Activity

College of Science, Technology, Engineering and Mathematics

PUBLICATIONS

Asthana, Rajiv; Passerone, A.; Zieba, P. (Eds.) *Journal of Materials Science* (issue on high-temperature joining), 45(16).

Asthana, Rajiv; Singh, M.; Sobczak, N. Wetting Behavior and Interfacial Microstructure of Pd and Ag-Based Braze Alloys with Ceramic Composites. *Journal of Materials Science,* 45(16), 4276-4290.

Asthana, Rajiv; Sobczak, N.; Nowak, R.; Purgert, R. Wetting in high-temperature materials processing: the case of Ni/MgO and NiW10/MgO. *Scripta Materialia,* 62(12), 949-954.

Asthana, Rajiv; and Singh, M. Evaluation of Pd-base brazes to join ZrB2-based ultra-high temperature composites to metallic systems. *Journal of Materials Science,* 45(16), 4308-4320.

Asthana, Rajiv; Singh, M.; Varela, F.M.; Martinez-Rodriguez, J. Microstructural and mechanical evaluation of Cu-base active braze alloy Cu-ABA to join Si3N4. *Journal of the European Ceramic Society*.

Bae, Wan D.; Narayanappa, Sada and Alkobaisi, Shayma. Robust TCP Migration Techniques for Server Failure. *Proceedings of the 23rd International Conference on Computer Applications in Industry and Engineering*.

Bae, Wan D.; Narayanappa, Sada and Alkobaisi, Shayma. Convex Onion Peeling: Efficient Data Structure for Point Feature Label Placement. *Proceedings of the 25th ACM Symposium on Applied Computing,* 892–899,

Bae, Wan D.; Alkobaisi, Shayma and Leutenegger, Scott T. IRSJ: Incremental Refining Spatial Joins for Interactive Queries in GIS. *Journal of GeoInformatica*, 14(4) 507–543,

Dharavath, H. N. and **Hahn, K.** Green printing: Colorimetric and densitometric analysis of solvent- and vegetable oil-based inks of multicolor offset printing: Attributes and color characteristics. *Journal of Technology Studies*, 35(2). *Journal of Technology Studies of EPSILON Pi Tau International*. www.epsilonpitau.org

Leach, Mark K. and Rooney, Thomas P. Replacing hay-mowing with prescribed fire restores species diversity and conservation value in a tallgrass prairie sampled thrice: A 59-year study. *American Midland Naturalist* 164:311-321.

Little, Amanda, M.; Guntenspergen, G.R. and Allen, T.F.H. Conceptual hierarchical modeling to describe wetland plant community organization. *Wetlands* 30:55-65.

Patterson, Marlann; Marshall, Ed; Wade, C.G.; Nucci, JA; Dunham, D.J. (Eds.), Materials education. *Materials Research Society Symposium Proceedings*, (1233).

Patterson, Marlann; *Cochran, Aaron;* Zimmerman, Todd; Ferina, J.; Rui, X.; Sun, Z.; Kramer, M.J.; Sellmyer, D.J.; Shield, J.E. Early stages of direct L10 FePt nanocluster formation: The effects of plasma characteristics. *Journal of Vacuum Science and Technology* B, 28(2), 273-376, March.

Shin, Joongmin; Lee, Y.S.; Chung, D.S.; Harte, B. Effect of 1-Methylcycloperopene (1-MCP) treatment on the quality characteristics and pigmentation of tomato fruit (Lycopersicon Esculentum Mill.), *Korean Journal of Horticulture, Science and Technology*, 28(4), 600-608.

Shin, Joongmin; Harte, B.; Ryser, E.; and Selke, S. Active packaging of fresh chicken breast, with allyl isothiocyanate (AITC) in combination with modified atmosphere packaging (MAP) to control the growth of pathogens. *Journal of Food Science*, 75(2), M65-M71.

PRESENTATIONS

Bae, Wan D. Paper presentation, the *23rd International Conference on Computer Applications in Industry and Engineering*. Las Vegas, Nev.

Bae, Wan D. Workshop, *Lilly Conference on College and University Teaching*. September, Traverse City, Mi.

Bae, Wan D. Midwest Instruction and Computing Symposium (MICS), *Advances in Research Presentation*. April, Eau Claire, Wis.

CREATIVE WORKS AND PERFORMANCES

Hahn, K. H. Indigo Cross Hatch. Juried live gallery exhibition presented at the *67th ITAA Annual Conference*. October, Montreal, Canada.

Design using recycled jeans wins award at international conference

Kim Hahn, Ph.D., associate professor in the apparel and communications technology department, went in a new direction with something old.

Kim Hahn

She designed a jacket and skirt combination that won the prestigious Sandra Hutton Award for Fiber Arts during the International Textiles and Apparel Association fall annual meeting in Montreal, Quebec. Her Indigo Cross Hatch creation, inspired by traditional Korean clothing, also was part of a fashion show at the Montreal conference.

Hahn wanted to design "an innovative and contemporary outfit for modern women" but use sustainable practices in the process. She used six pairs of recycled denim jeans, weaving half-inch rectangles to make both pieces of her outfit.

"The woven pattern gives an interesting texture to the whole look while the uneven color of the denim, from various jeans, provides a unique color gradient," Hahn said.

In addition to recycling clothing and making a contemporary outfit, Hahn fulfilled a Korean tradition by making a variation of the woman's garment, a hanbok. A traditional woman's hanbok consists of a blouse or a jacket and a wrap-around skirt, which is usually worn full.

"Every Korean woman at some point in her life must purchase (or have made) a hanbok. With human consumption only increasing and resources decreasing, I addressed this resource issue by offering an alternative and sustainable means of fulfilling a traditional obligation," Hahn said.

Leah Becker, a UW-Stout student, modeled Indigo Cross Hatch, an award-winning skirt and jacket made from recycled jeans. The garment was designed by Kim Hahn, associate professor in the apparel and communications technology department.

Professor Nancy Schofield, engineering and technology, was also honored with the Clothing Textiles Research Journal Reviewer of the Year award for design.

Professor's research examines impact of race on educational experiences

Virginia Lea, Ph.D., associate professor of education, and **Dang Yang**, School of Education multicultural recruiter and retention coordinator, are conducting research on the role that race plays in creating and legitimizing educational inequities at UW Stout and beyond.

Lea defines race as a dynamic, socially constructed system of categories that has established the relative power and privilege of whites at the expense of people of color. Race intersects with other categories of experience, such as socio-economic class, to impact the educational experiences of students in P-12 and higher education.

"Research has, for example, revealed a horrendous school drop-out rate associated with race and a wide educational achievement gap — better described as an opportunity or race gap," she said. Through her research and teaching, Lea hopes to illuminate how dominant or "hegemonic narratives," like race, control populations by getting people to accept them as natural and common sense while obscuring inequities and inequalities.

"Many people do not see that what they consider 'normal' is actually a form of cultural hegemony that contributes to educational inequalities," Lea said.

Virginia Lea

Lea teaches the courses Multiculturalism: Issues and Perspectives, and Cross-Cultural Field Experience. She wants her students and preservice teachers to recognize how groups and individuals can struggle to resist hegemonic forces in themselves and the social system of which they are a part, and bring about positive social change.

"I hope that my work will contribute in some small way to transforming the gross inequities and equalities that still characterize the United States and the world," Lea said.

College of Management professor teaching, researching in Finland as Fulbright scholar

Bryan Beamer, Ph.D., an associate professor in operations, construction and management, has learned that the maxim "When in Rome do as the Romans do" also can apply to Finland.

Beamer won a highly competitive Fulbright scholarship to Finland for 2010-11 at Tampere University of Applied Science — TAMK — in Tampere,south central Finland.

Tampere University is similar to UW-Stout. Both focus on applied learning.

Beamer is teaching and advising business department students and is doing research on occupational safety and engineering safety at the Finnish Institute of Occupational Health.

Beamer hopes the Fulbright experience will strengthen the relationship between the schools and two countries. "It would be awesome if I could spark future collaboration" between UW-Stout, TAMK and other universities in Finland, Beamer said.


Bryan Beamer

Malcolm Baldrige National Quality Award still making an impact on campus a decade later


Julie Furst-Bowe

Ten years after UW-Stout received the Malcolm Baldrige National Quality Award, the university continues to implement and thrive from its process of continuous quality improvement, according to Provost **Julie-Furst Bowe.**

Student retention and graduation rates have improved with the addition of centralized advising, freshman block scheduling, summer bridge programs, learning communities and tutoring centers for math and writing. Graduate job placement at more than 95 percent continues. Expansion of technology and the number of grants and funded projects also has increased.

Administratively, lean processes have streamlined registration and financial aid, providing timely service to students.

A professional development certificate in Quality Management has been developed for staff and professionals in all facets of manufacturing and service organizations.

UW-Stout continues to present programs and offer consulting to universities nationally and internationally on Baldrige principles, Furst-Bowe said.

Three professors lead STEM Summer Academy for 60 Wisconsin high school teachers

Call it a summer research camp for teachers.

Three UW-Stout professors provided advanced education in the summer of 2010 for 60 math and science high school teachers from western Wisconsin.

Chuck Bomar, Ph.D., biology; **Petre Ghenciu**, Ph.D., math; and **Kevin Mason**, Ph.D., School of Education, worked with K-12 teachers from a consortium of nine school districts, led by Sparta.

The Summer Academy included six days of classes at Western Technical College in La Crosse, two days at Fort McCoy near Tomah and one day each at an organic farm and a vineyard.

UW-Stout is the higher education partner with the Western Wisconsin STEM Consortium in a three-year project called SySTEMically Improving Student Achievement in Mathematics and Science. STEM stands for science, technology, engineering and mathematics.

The project is funded by the U.S. Department of Education, through the state Department of Public Instruction.

One of the grant's goals is to increase student achievement scores in the Wisconsin Knowledge Concepts exam. "It's a good opportunity for teachers to see how the activities they do in the classroom are being used in the field, in the profession," said Bomar, who developed the academy's curriculum.


Chuck Bomar

The Summer Academy, again to be led by UW-Stout, will continue in 2011 and 2012.

Second summit at UW-Stout draws officials from 14 polytechnic schools

UW-Stout hosted the second annual Polytechnic Summit last July. The event was the concept of UW-Stout Chancellor, **Charles W. Sorensen**. It drew 65 officials from 14 polytechnic schools around the country. The summit was focused on helping schools share research, develop research collaboration and discuss mutual issues.

The keynote speaker, Steven Webster, vice president of Research and Technology Commercialization for 3M, the Minnesota-based international company, told summit participants that technology has led the United States out of every severe economic downturn in history and that polytechnic universities should play a major role in leading the recovery from the recent recession.

A session moderated by UW-Stout Provost **Julie Furst-Bowe** looked at issues common to polytechnic universities. A common theme was how to better communicate to the public the meaning and value of polytechnic universities.

After two successful years, UW-Stout is passing the event duties on to Southern Polytechnic State University in Marietta, Ga. The third Polytechnic Summit is scheduled June 8-10, 2011.

UW-Stout was designated in 2007 as Wisconsin's Polytechnic University.

Students, faculty benefiting from new milling machines in Fryklund Hall

UW-Stout students in three programs have new, high-tech equipment in the manufacturing technology lab in Fryklund Hall.

During the summer of 2010, the College of Science, Technology, Engineering and Mathematics approved the purchase of three computer numerically controlled milling machines.

Already in the fall, plastics engineering students designed new tooling and worked with manufacturing engineering students to build the prototypes with the new milling technology. This spring, a student began working with UW-Stout's Discovery Center on a research project involving the machines.

Computer numerically controlled (CNC) milling machines extend process capabilities beyond manually controlled equipment and allow students hands-on exposure in industrial applications that touch virtually every manufactured product. The machines are used for applications ranging from machining of metal castings used in cars and trucks to the production of specialized tooling used in the plastics industry.

"One of our primary objectives is to keep the equipment and technology updated to today's industry standards," said **Greg Slupe**, an assistant professor in the engineering and technology department.

New Milltronics milling machines were added to the manufacturing technology lab at UW-Stout. Discussing the machines, from left, are Assistant Professor Greg Slupe, student Nathan Olson and Ted Gaul of David Olson Sales.

The machines are used extensively by all engineering students, freshmen to seniors, and by several other programs at UW-Stout. Faculty use the machines to conduct research for new curriculum.

Mary Hopkins-Best

School of Education at top of the class after NCATE, DPI reviews

UW-Stout's School of Education received a double dose of good news in 2010.

The school underwent a comprehensive review and, as a result, achieved full accreditation from the National Council for the Accreditation of Teacher Education and full approval by the state Department of Public Instruction.

"Achieving national accreditation represents an important milestone in the transformation of professional education at UW-Stout.

"Institutions that have been nationally accredited carry a mark of distinction," said **Mary Hopkins-Best**, Ph.D., dean of the College of Education, Health and Human Sciences.

One aspect of the accreditation process involved UW-Stout identifying research being conducted in the school.

NCATE's Board of Examiners stated, "Instruction and course satisfaction in the School of Education is quite high. Alumni described their preparation as rigorous; they felt ready for the challenges of schools and communities."