

# CEAS Graduate Programs & Research Newsletter

## Faculty Discusses Research Funding and Industry Partnerships

by Laura Ricci

Seeing your research put to use is exciting. But the path to find an industrial partner includes obstacles, so some great ideas never bridge the gap between research laboratory and application.

We are fortunate to have a variety of industries in our city, and are working to match faculty interests with industry needs whenever possible.

Federal funding for Small Business Innovation Research (SBIR) and Small Business Technology

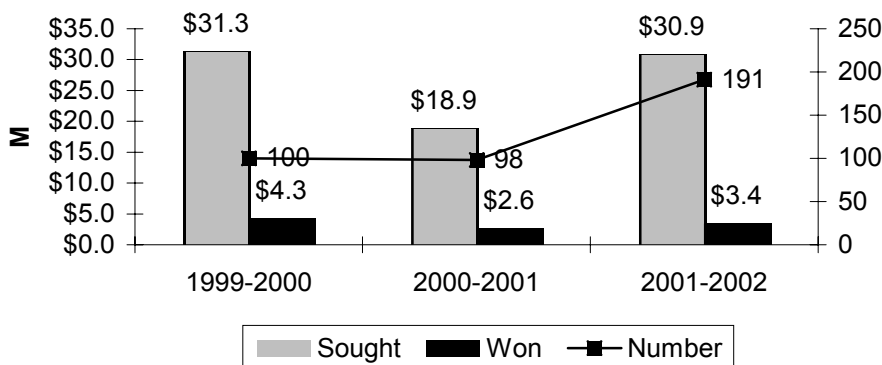
Transfer Programs (STTR) support applied research and can be a tool to bridge the gap between the laboratory and commercial application.

Associate Dean Ghorbanpoor was impressed by the industry interest at a recent SBIR workshop at Medical College of Wisconsin, and decided to expand the plans for our own major SBIR workshop. The workshop will be preceded by a series of faculty workshops.

In October, an early morning

*please see SBIR Workshops, page 7*

## Proposals Submitted and Won 1999 - 2002



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## CEAS Welcomes New Faculty

**Jang, Jaejin**, Associate Professor,  
Department of Industrial and  
Manufacturing Engineering.

Ph.D. in Production, Purdue  
University, August 1993.

### Research Interests:

Production Systems Control,  
E-manufacturing, and Logistics.

### Teaching Interests:

Production Systems Control,  
CIM, E-manufacturing, Logistics,  
Statistics, Simulation, and  
Operations Research.

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## Corrections and Changes

▶ Dr. Christine Cheng's office is  
EMS 1045.

▶ Dr. Weizhong Wang's office is  
EMS 1285. His e-mail address is  
wwang@uwm.edu.

▶ Dr. Xiaoling He's e-mail  
address is xiaoling@uwm.edu.

▶ Dr. Tian Zhao earned a Ph.D.  
from Purdue University.

## Graduate Interns Work Out

Graduate interns began work with several local companies in January 2002, and several other firms are now clearing off desks to accommodate UWM's Graduate Interns. Harley Davidson and Briggs and Stratton signed on early, with ReGENco, A.O. Smith and Graff Anhalt and Schloemer, Inc. joining them.

The graduate internship program provides students with work experience and applied research in their area of concentration. The firms enjoy professional attention on a problem they may have had on the

back burner without enough manpower to pursue a solution. Other firms considering when and how to participate are:

GE Medical Systems  
Medical College of Wisconsin  
Xilinx  
Cooper Power Systems

For more information, contact Al Ghorbanpoor (algh@uwm.edu; ext. 4962) or Juli Levar (jlevar@uwm.edu; ext. 3208). Joan Smothers is on maternity leave until February 20.

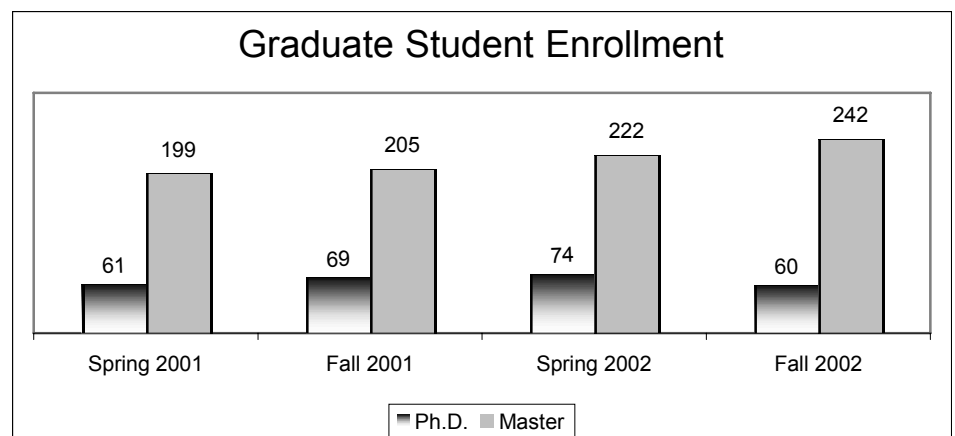
## Industry Expo Slated for Spring

Career Services announces its 7th annual Industry Expo to be held February 5 and 6, 2003, from 10 a.m. to 3 p.m. on the lobby level of the Engineering and Mathematical Sciences (EMS) Building.

The Expo is a career day with a focus on technology. Attending companies promote their company, gain exposure within the campus

community, and recruit interns, co-ops and full-time employees. Faculty are invited to attend lunch with company representatives from 11:30 a.m. to 1 p.m. in EMS W230.

For information about exhibit space or for general information, please contact Career Services at ceascareers@uwm.edu or (414) 229-6960.



## CEAS Prepares for Review of its Graduate Programs

by Al Ghorbanpoor

The Engineering Ph.D. and Masters programs within CEAS will undergo an external review during the Spring of 2003. The review is conducted every ten years for every UWM graduate program. The last graduate program review for CEAS was conducted in 1992. A panel of external reviewers will work with our college's Graduate Program

SubCommittee (GPSC) and the Graduate School to evaluate the quality of our graduate programs.

Significant items in the review include scholarly accomplishments of faculty and students, student placement after graduation, research and instructional facilities, staffing and support, and future direction.

The office of CEAS Associate Dean for Graduate Programs and Research has prepared a self-study report for our graduate programs that will be used by the external reviewers and the Graduate School as a part of the review documentation. The report includes extensive data and information on the CEAS graduate programs over the 1991 to 2001 period.

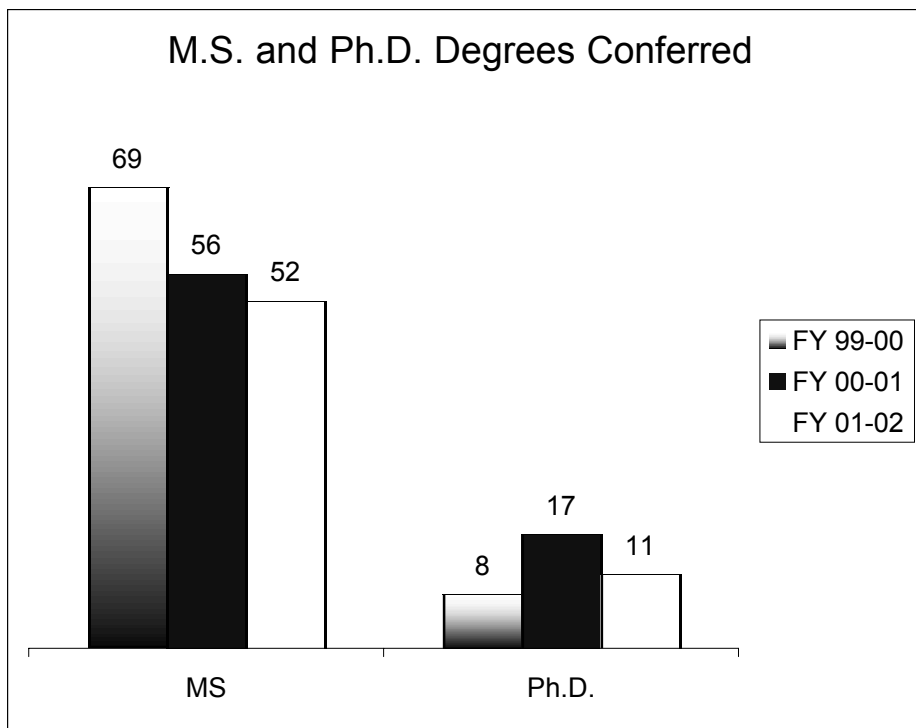
## Marquette, UWM Offer Cooperative Exchange Program

This exchange program enables graduate students to take courses that are not offered at their home institution without transferring and without any increase in tuition. Both institutions seek to help

degree-seeking graduate students obtain appropriate coursework and to minimize time to graduation.

Approval must be granted by both institutions before you may partici-

pate in this program. For more information about the procedures for participation, contact Patricia Hayes in Graduate Student Services at 229-6263 or hayes@uwm.edu.



### Students Qualify and Graduate

On November 14 and 15, 2002 ten students took Qualifying Exams.

The Spring Qualifying Exams will be held April 10 and 11, 2003.

In addition, as of December 10, 2002, four Ph.D. students had completed their degree requirements. Fourteen M.S. candidates had also finished their work as of the same date with 16 scheduled to graduate in December. Completion deadline was December 16.

## Proposals Funded

### September 23 through December 4, 2002

<b>Principal Investigator</b>	<b>Proposal</b>	<b>Agency</b>	<b>Amount</b>
Beimborn, E.	UWM Participation in University Transportation Center	University Transportation Center, U.S. DOT Region V	\$25,000
Garg, A.	Upper Limb Musculoskeletal Disorders: Quantifying Risk	CSR NIH	\$1,997,930
Horowitz, A.	Smart Work Zone	University of Nebraska - Lincoln	\$24,934
Lee, J.	BSU VA Project - Failure Analysis, Monitoring, Prediction	U.S. Postal Service	\$42,233
Lee, J.	Software Support and Training	Eagle Technologies	\$40,723
Lee, J.	Software Support and Training	SRM, Inc.	\$16,525
McRoy, S.	REU Supplement to Subcontract to Wright State for NSF Grant BCS-9980054	Wright State University	\$10,000
Naik, T. ( Kraus, R.)	Use of Residual Solids from Pulp and Paper Products	Idaho Department of Energy	\$41,605
Naik, T. (Kraus, R.)	Implementation of Flowable Slurry Technology in Illinois	Illinois Clean Coal Institute	\$106,142
Neusen, K.	Study and Assessment of Alternative Fuel Fleet Operations in the State of Wisconsin	State of Wisconsin Department of Administration - Division of State Agency Services	\$40,000
Rohatgi, P.	Development of New Industrial Ashalloy Material Using Flyash Cenospheres	Electric Power Research Institute	\$15,000
Rohatgi, P.	US-Egypt Cooperative Research: Manufacture of Aluminium and Magnesium Matrix Composites Under Industrial Conditions	NSF	\$25,000
Saxena, U.	Industrial Assessment Center	U.S. Department of Energy	\$189,000

**Proposals Submitted**  
September 23 through December 3, 2003

<b>Principal Investigator</b>		<b>Amount</b>
Abu-Zahra, N.	Real-Time Viscosity and Density Measurements of PVC Melts Using Dielectric and Ultrasound Sensors Fusion	\$178,653
Armstrong, B.	Optical Bench	\$13,460
Bravo, H.	Study of Streamflow Generation by Simulation and Fequency Domain Analysis of Flow and Heat Transport Beneath Streams	\$63,159
Bravo, H. (Wrzeski, S.)	Incorporation of Storm Water Best Management Practices into Construction of the Milwaukee Idea Home	\$14,858
Chee, W.	Cancer Pain Management-Decision Support Computer Program	\$701,227
Chee, W.	Decision Support Computer Program for Pain Management - Breast Cancer (DSCP-B)	\$249,986
Chee, W.	Decision Support Computer Program for Pain Management of Breast Cancer Patients	\$308,754
Dumitrescu, A.	Algorithms for Geometric Network Optimization Problems	\$223,045
Ezenwa, B.	Improved Instrumentation and Procedure for CMAP Measurement	\$204,077
Ezenwa, B.	Linear-Rotational Staging System for Neuromuscular Performance Evaluation	\$302,420
Hanson, G.	Collaborative Research: Investigation of High-Frequency Effects in Microwave and Millimeter-Wave Circuit Packages	\$150,991
He, X.	NER: Rheological Study of Fluids with Nanostructure Quantum Dots and Wauntum Wires	\$99,998
Helwany, S.	Evaluation of Seismic Design Methods for GRS Segmental Walls	\$233,387
Helwany, S.	Exterior Wall Retrofit with "Trampoline System" for Blast Mitigation	\$108,827
Hosseini, H. (Vairavan, K.)	CCLI: A&I A Laboratory for Computer Networks and Operating Systems	\$160,341
Jen, T.C.	Experimental Studies in Drill Temperatures with Heat Pipe Cooling	\$12,240
Jen, T.C.	Optimizing Bonding Behavior of Single Crystal Ni-Based Superalloys Using Predictive Modeling of Crystal Growth During Transient Liquid Phase Technology	\$597,239
Kim, K.	Development of a Human Surrogate System for Fall-related Injury Prevention Research	\$14,998
Kojasoy, G.	Interfacial Area Transport	\$49,988
Lee, J.	BSU VA Project - Failure Analysis, Monitoring, Prediction	\$42,233
Lee, J.	Hai Qiu's Research Work from 6/15/02-7/14/02	\$6,000
Lee, J.	Rockwell Automation Professor Fund Optical Bench	\$64,000
Lee, J.	Single Business Proposal on the Development of a Fast, Wide-Band Accuracy Measurement Technology	\$180,000
Lee, J.	Software Support and Training	\$40,723
Lee, J.	Software Support and Training	\$16,525

## Proposals Submitted, continued

Principal Investigator		Amount
Lee, J.	Weihu Zhou's Research Work from 8/1/02-10/31/02	\$15,750
Li, Jin	Liberation and Capture of Mercury from Activated Carbon	\$3,000
Lopez, H.	Collaborative Research on the Processing and Characterization of Ni-Free Nanostructured Austenitic	\$216,246
Mali, A.	Integrating Action-Based Planning and Robot Motion Planning	\$204,077
Naik, T. (Kraus, R)	Use of Limestone Quarry By-Products for Developing Economical Self-Compacting Concrete Experimental Studies in Drill Temperatures with Heat Pipe Cooling	\$14,989
Neusen, K.	Local Government Alternative Fuels Grant Program Year 2002	\$10,738
Neusen, K.	Study and Assessment of Alternative Fuel Fleet Operations in the State of Wisconsin	\$40,000
Neusen, K.	Wisconsin E85 Infrastructure Corridor	\$29,000
Pillai, K.	Unified Theory for Unsaturated Flow During Fiber Wetting in the Manufacture of Composite Materials	\$510,511
Reisel, J. (Renken, K.)	Vertical Integration of a Refrigerator Experiment Between Two Primary Thermal Science Courses	\$5,000
Renken, K	High Speed Video Services	\$655
Rohatgi, P.	Development of New Industrial Ashalloy Material Using Flyash Cenospheres	\$15,000
Rohatgi, P.	Innovative Use of Fine Fly Ash Particles in Advanced Composites	\$70,000
Rohatgi, P.	NER: Synthesis of Metal Matrix-Nanoparticle Composite by Stir Mixing	\$99,956
Titi, H.	Collaborative Research: Experimental and Theoretical/Numerical Study of Pile Setup in NC Clays and Pile Relaxation in OC Clays	\$154,703
Titi, H.	Determination of Interaction Between Bridge Concrete Approach Slab and Embankment Settlement	\$14,018

## CEAS Celebrates Order of the Engineer with Ceremony

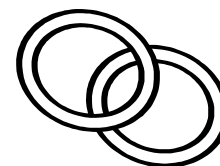
Faculty, staff and alumni joined members of the College of Engineering and Applied Science's Fall 2002 graduating class for the bi-annual Order of the Engineer Ceremony and Graduating Student Reception on Saturday, December 21, 2002. David Angst, a CEAS 1990 Material Engineering alumnus, delivered keynote comments.

The Order of the Engineer was established in the United States in

1970 to foster a spirit of pride and responsibility in the engineering profession, to bridge the gap between education and practice, and to present to the public a visible symbol of the engineer.

Patterned after the Canadian "Ritual of the Call of an Engineer" founded in 1926, the induction ceremony is brief, dignified and impressive. It includes the placing of a stainless steel ring on the little

finger of the working hand and the acceptance of the Obligation of an Engineer: "to turn to practical use the principles of science and the means of technology to serve humanity by making the best use of earth's precious wealth."



## SBIR Workshops, *from page 1*

crowd of 26 CEAS faculty gathered to hear "Tips from Seasoned Researchers." (Notes of the session are available on-line at: <http://www.uwm.edu/~lricci> Click on "Tips to Win from CEAS Faculty").

In February 2003, two workshops are scheduled. On February 5 at 3:30 p.m. in EMS W230 Dean Rayburn of the Graduate School will preside at a workshop on UWM Graduate School Policy. Important details about how to navigate between academic research and the private sector will help faculty avoid problems when negotiating with industry.

Following is the agenda for the first workshop:

Graduate School Infrastructure

Research Support: staff support, pre-award, post-award

Faculty Workload Policy: research, consulting, other outside interests

Political Relations: representation for UWM in Madison and in Washington, D.C.

On February 19, a workshop on Intellectual Property will be held, and in March a workshop on partnering with industry is planned. University of Wisconsin faculty enjoy greater freedoms in managing their intellectual property than most states, so all faculty should make a point of attending this workshop.

All of this activity leads up to an SBIR workshop at UWM on Friday, April 11. "At recent SBIR workshops, quite a few local businesses have attended, most looking for help in making an idea reality. We have the kinds of folks here who can help them, so I'm looking forward to seeing a lot happen at this workshop," said Al Ghorbanpoor.

More information is available from Laura Ricci (LRicci@uwm.edu; ext. 5716).

## CEAS Sends Rep to Open House

CEAS Graduate Programs & Research participated in the 2002 UWM Open House that was held Friday October 26 and Saturday October 27, 2002 in the UWM Union. A Graduate Programs & Research representative was present both days to greet and answer questions for potential program candidates.

## National Engineer's Week Attracts Attention

Mark your calendars for National Engineer's Week, February 16-22, 2003. The College will host programming and events for the campus community aimed at promoting engineering as a career.

## Prominent Surveys Recognize CEAS Graduate Programs

CEAS Graduate Programs & Research recently participated in two important national surveys. The results of the first, the U.S. News & World Report 2003 Engineering School Statistical Survey, will be published in the late summer of 2003 for the 2004 edition of U.S. News & World Report's Best Graduate Schools.

Our college will be listed along with over 185 other engineering programs in the U.S. Some of the information to be published will include admissions, financial aid, tuition, student body demographics, and more.

To be eligible to participate in the second survey, the American

Society for Engineering Education (ASEE) 2002 Survey of Engineering & Engineering Technology Colleges and Research, a school must have at least one ABET accredited program. The ASEE survey content is similar to that of U.S. News & World Report.

## UWM Named Among Leading Civil Engineering Research Schools

Engineering News Record named UW-Milwaukee seventeenth among U.S. universities in Civil Engineering Research. UWM was noted with 37 percent of the Civil Engineering Department expenditures coming from research. The October 21, 2002 issue of Engineering News Record published this ranking.

## First Engineering Management Masters Program Candidates Begin Third Term

by Nichole Winiger

The first cohort of students in the new Engineering Management Masters Program (EMMP) will begin its third and final term on January 17, 2003. By its end on June 6, the students will have completed courses in Legal Issues in Engineering Management, Managing Technological Innovation, and Operations and Supply Chain Management. These students will also have completed their capstone design projects. The second cohort's program will begin on January 10, 2003 and end on June 11, 2004.

The EMMP is a collaborative effort between the College of Engineering and Applied Science (CEAS) and the UWM School of Business Administration. This program's primary goal is to provide to people with an already proven track record of success and a strong technical background the skills necessary to excel in leadership positions.

Tony Diaz, a 1999 graduate of UWM with a Bachelor's degree in Industrial Engineering, is currently enrolled in the program. Tony works at Rockwell as an Account Manager, selling automation and information control equipment; he has been with Rockwell for seven years. When asked, "what have you gained from the program that will help you advance your career," Tony mentioned, "[the program] has helped me relate to my customers and understand their needs better. I've learned what questions to ask customers in order to sell them a product that will fit their needs."

Tony agreed that the program's special features were attractive and convenient. Students attend classes on Friday afternoons and all day Saturday, every other week and can earn a degree in just 17 months.

For more information visit [www.emmp.uwm.edu](http://www.emmp.uwm.edu) or call the program manager, Marc Mayerhoff, at (414) 229-3721.

## Spring 2003 Graduate Applications

	M.S. Candidates	Ph.D. Candidates	TOTALS
Civil Engineering & Mechanics	11	4	15
Computer Science	*	15	15
Electrical Engineering	26	11	37
Industrial & Manufacturing Engineering	6	3	9
Materials Engineering	3	1	4
Mechanical Engineering	16	7	23
Engineering Management	14	--	14
Undesignated	11	4	15
<b>TOTALS</b>	<b>90</b>	<b>45</b>	<b>135</b>

### CEAS Graduate Programs & Research Newsletter

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