

CEAS Graduate Programs & Research Newsletter

Federal Funding Forum Exceeds Expectations

Fresh ideas and lively discussion filled the UWM Union Ballroom on Friday, May 16, 2003 as 104 researchers, industry leaders and entrepreneurs gathered for the first Federal Funding Forum. Their goal: to share information about securing funding for projects with market potential.

Twelve speakers from varied backgrounds -- including state and federal program managers, business executives, and faculty members -- offered their expertise and experience. Animated question and answer ses-

sions followed each presentation.

The one day Forum focused on the following topics: the SBIR/STTR program and other federal funding priorities, creating successful grant applications, shifting research to an applied setting, and preparing to meet with a patent attorney.

In addition, participants enjoyed ample time to socialize and make contacts with like-minded colleagues. Both faculty researchers and those outside of the university need to work together not only to access funding, but also to bring useful projects to fruition.

Welcome Back!

All faculty, graduate students and staff are invited to the 3rd Annual CEAS Graduate Student and Faculty Welcome Back Event on Wednesday, September 17th from 2 - 4:30 p.m. in EMS E387.

At 2:30 p.m. Associate Dean Ghorbanpoor will introduce new faculty and staff. At the gathering Graduate Student and Faculty Handbooks and I&MT Dial-In Software will be distributed, as well as new 2003-4 Graduate School Bulletins, if available. Refreshments will be provided.

According to the event planners, presenters and participants alike, the Forum was a great success. "It exceeded my expectations," said one during the High Tea that brought the Forum to a close. "It was good to hear about these available resources and the related success stories."

To follow up with Forum participants regarding projects or funding opportunities, review the materials distributed at the Forum or contact Dr. Al Ghorbanpoor at CEAS Graduate Programs and Research.

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CEAS Welcomes New Senior Lecturer

CEAS welcomes John Dudek, a Senior Lecturer in both the EMMP Program and in Engineering. He's no stranger to engineering students or to teaching, however; he's taught many engineering-related and math courses at UWM in the past 25 years.

Mr. Dudek will instruct Operations Research in Engineering Management, Engineering Statistical Analysis and the Capstone Design Course, along with Design of Machines elements and perhaps a few other courses in Mechanical, Civil or Industrial Engineering. His students enjoy his classes. In fact, one commented, "The depth and coverage of the topics is excellent. After each lecture I feel that I fully understand the material."

A doctoral candidate in Applied Mathematics, Mr. Dudek's current research interest is molecular dynamics, specifically, how biological molecules interact with the environment. He holds Master's degrees in Mechanical Engineering, Thermal Sciences and Physics. In addition to teaching at UWM and MSOE, he has worked for several manufacturers, including Magnetek, Zytex and Westinghouse, among others.

Always looking for a new challenge, Mr. Dudek shared one of his current goals: to become the oldest graduate student on the UWM campus. Good luck!

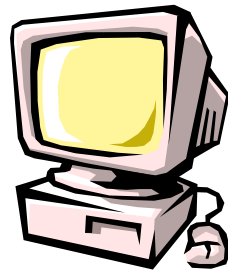
New Faculty Offer Diverse Talent, Expertise

Dr. Junhong Chen,
Assistant Professor, Mechanical Engineering

Ph.D. in Mechanical Engineering, University of Minnesota, August 2002.

Research Interests:
Fundamentals and applications of non-thermal plasmas, reacting flows, synthesis of nanostructured materials, indoor and outdoor air pollution control, heat and mass transfer, energy conservation.

Teaching Interests:
Both undergraduate and graduate level courses in thermal/fluid sciences, nanotechnology, plasma processing, air pollution control, aerosol science and particle engineering.



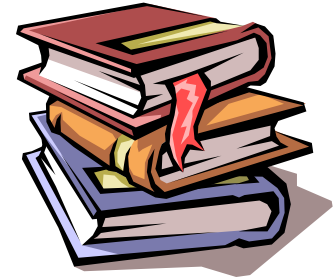
Dr. Lei Ying,
Assistant Professor, Electrical Engineering

Ph.D. in Electrical Engineering, University of Illinois at Urbana, May 2003.

Research Interests:
Medical imaging, statistical signal

processing, and multidimensional signal formation and reconstruction.

Teaching Interests:
Courses related to engineering mathematics, signal and image processing, communication theory, and biomedical imaging. This fall, Dr. Ying will teach Electrical Engineering 234, Analytical Methods in Engineering.



Dr. Subramani Mani,
Assistant Professor, Computer Science

Ph.D. in Medical Informatics, University of Pittsburgh, December 2003.

Research Interests:
Biomedical informatics, discovery of causal influences from medical data, and applications of artificial intelligence to medicine.

Teaching Interests:
Biomedical informatics, data mining with emphasis on machine learning and knowledge discovery, algorithms and data structures.

Federal Funding Opportunities Addressed

by Paula Pape

One major goal of the Federal Funding Forum held May 16, 2003 was to provide information about federal opportunities. M. Connie Jacobs of DARPA, Carol Van Wyk of NAVAIR and Warren DeVries of the NSF presented valuable insider tips for finding funding sources and writing successful applications.

Ms. Jacobs addressed opportunities available through the Department of Defense (DoD). Ten federal agencies are involved, providing approximately \$1.5 billion in funding. Of that amount, \$840 million can be accessed through DoD Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. These programs require that a partnership be formed between a small business (500 or fewer employees) and a research institution. To find out more about these opportunities, visit <http://www.acq.osd.mil/sadbu/sbir>

In his presentation, Dr. DeVries covered more general concerns about federal funding, such as the structure of a partnership between a

faculty researcher and a small business. Dr. DeVries mentioned several possibilities: a researcher can own a small firm, function as a consultant, or act as a Principal Investigator (PI) (if temporary leave is granted from the university). In another scenario, a business can partner with a university lab that provides analytical or other service support.

Dr. DeVries also posed several questions that prospective partners should ask as they plan their project and write their proposal: is there a need for this technology? who will benefit from it? are the proposed tasks and budget reasonable for the project? who will invest in it? And finally, have intellectual property considerations been addressed? Keith Baxter, an attorney with Forum sponsor Quarles & Brady LLP elaborated on this last question in his afternoon presentation.

To learn more about NSF opportunities, especially those in the Division of Design, Manufacture and Industrial Innovation, which Dr. DeVries directs, visit <http://www.eng.nsf.gov/dmii>

DARPA Announces R&D Needs

The 2003 R&D budget for DARPA's core programs is \$2.7 billion. Listed here are several offices and a sampling of their R&D needs. See <http://www.acq.osd.mil/sadbu/sbir> or <http://www.dodsbir.net> for more information.

Advanced Technology Office

(current opportunities close December 31, 2003)

- Computing in mobile environments
- Human machine interface

Defense Sciences Office

(current opportunities close November 7, 2003)

- New materials
- Sensing and adapting materials
- Electromagnetic modeling

Information Processing Technology Office

(current opportunities close June 7, 2004)

- Machines that learn
- Cognitive architecture

Microsystems Technology Office

- Automated design tools
- Acoustic microsensors

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Editing and Production: Paula Pape and Melody Clair



PhD Qualifying Exam

The dates for this fall's Ph.D. Qualifying Exam are tentatively set for Thursday and Friday, November 13 and 14, 2003. As usual the exam is scheduled to run from 1:00-5:00 p.m. in W230. The room will be open at 12 p.m.

Students are encouraged to meet with their advisors or department chairs to obtain the information and criteria necessary to prepare for this exam.

Graduate Bulletins Available Soon

The Graduate School has announced that the new 2003-2004 Graduate School Bulletins and Graduate Student and Faculty Handbooks should be available for distribution before the end of September.



Nasser Kutkut at the Federal Funding Forum

DTIC Provides Proposal Support

In her presentation at the Federal Funding Forum, Wendy Hill discussed the substantial support offered by the Defense Technical Information Center (DTIC) for researchers submitting funding proposals. The SBIR Program at DTIC provides the small business high technology community with defense-related research, technical information and valuable feedback on grant applications.

Through DTIC, researchers and their industry partners can peruse over a million reports to discover what has already been done in their

field, saving time and money by learning about previous failures and successes. In addition, DTIC offers a free information alert service called TRAIL (Technical Report Awareness Internet Links), an electronic mailing list that automatically disseminates citations to DTIC's unclassified and unlimited technical reports. Users value this product for its high content and quality.

To access these services, contact DTIC by email <sbir@dtic.mil> or see their Web site at <<http://www.dtic.mil/dtic/sbir>>

From Research to Market: A CEO Shares His Experiences

by Paula Pape

Nasser Kutkut, CEO of Power Designers LLC in Madison, Wisconsin, received high praise from Federal Funding Forum participants in their post-event surveys. In fact, one noted that "Mr. Kutkut was the best speaker of the day." His presentation, "Lessons Learned from the Front Lines," kicked off the afternoon session on shifting research to an applied setting and offered advice to researchers new to commercialization.

Mr. Kutkut urged researchers and their business partners to consider their potential customers' needs during the development phase. Products should be designed with customers in mind, and contacts

with those customers should be established early in the process. He also suggested that researchers look for niche markets or markets with low entry barriers. In these areas, technologies that have the greatest benefit potential for customers offer the most promise.

Based on his own experience Mr. Kutkut recommended that partners keep their business plan in focus. In addition, budgeting and cost estimates should always be multiplied by three: the process will take three times as long and cost three times as much as originally planned. Still, with focus, patience and timely adjustment of expectations, new products and technologies can be successfully brought to market.

Got Funding? If not, check out these useful Web addresses:

National Institute of Standards and Technology

<http://patapsco.nist.gov/ts_sbir/>

Department of Defense

<<http://www.acq.osd.mil/sadbu/sbir/>>

or <<http://www.dodsbir.net>>

Defense Technical Information Center

<<http://www.dtic.mil/dtic/sbir/>>

Air Force <<http://www.afrl.af.mil/sbir/index.htm>>

Army <<http://www.aro.ncren.net/arowash/rt/>>

Navy <<http://www.navysbir.brtrc.com>>

Defense Advanced Research Projects Agency

<<http://www.darpa.mil/sbir/>>

Ballistic Missile Defense Organization

<<http://www.winbmdo.com>>

Special Operations Acquisition Center (SOAC)

<<http://soal.socom.mil/>>

SBIR Interactive Technical Information System

<<http://dticam.dtic.mil/sbir/>>

Department of Education

<<http://www.ed.gov/offices/IES/SBIR/>>

Department of Energy

<<http://www.science.doe.gov/sbir>>

Department of Transportation

<<http://www.volpe.dot.gov/sbir>>

Environmental Protection Agency

<<http://es.epa.gov/ncerqa/sbir/>>

National Institutes of Health

<<http://grants.nih.gov/grants/funding/sbir.htm>>

Agency for Health Care Policy and Research

<<http://www.ahcpr.gov/>>

National Aeronautics & Space Administration

<<http://sbir.nasa.gov/>>

National Science Foundation

<<http://www.eng.nsf.gov/sbir>>

Handbook for SBIR Proposal Preparation

<<http://www.sbaonline.sba.gov/gopher/Innovation-And-Research/SBIR-Pro-Prep/>>

SBIR/STTR Alert Service

<<http://www.pnl.gov/edo/sbir.stm>>

SBIR/STTR Help Desk

<www.dodsbir.net/helpdesk>

Order of the Engineer Ceremony and Reception: December 20

by Juli Levar

Faculty, staff and alumni are welcome to join members of the College of Engineering and Applied Science's December 2003 graduating class for the bi-annual Order of the Engineer Ceremony and Graduating Student Reception on Saturday, December 20, 2003 in the

UWM Union's Wisconsin Room.

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 a visible symbol identifying 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 acceptance of the Obligation of an Engineer and the placing of a stainless steel ring on the little finger of the working hand.

Volunteer: United Way Week of Caring

by Juli Levar

The 2003 United Way Day of Caring Week is set for September 8-12th. Volunteers from CEAS are needed to participate for one day in a community project, such as a social event with people with disabilities or painting at local shelters.

Last year, UWM provided more volunteers than any other Milwaukee company or organization. Last year's CEAS participants included Jerry Becker, George Hanson, Joe Holbus, Rudy Krause, Juli Levar and Jackie Lichey.

For additional information, please contact Joe Holbus at jholbus@uwm.edu or ext. 5178.

CEAS Contributes to Milwaukee Idea Home

by Melody Clair

The Milwaukee Idea Home (MIH), a prototype house, is being developed by a community partnership. UWM has collaborated with nine public and private partners including the City of Milwaukee, Wells Fargo Bank, Wisconsin Energy Corporation, and Wisconsin Partnership for Housing Development, Inc. The MIH initiative will not only build a high quality home for \$100,000, but also reduce the life-cycle costs of a home by producing a more resilient, adaptive home with lower operating costs.

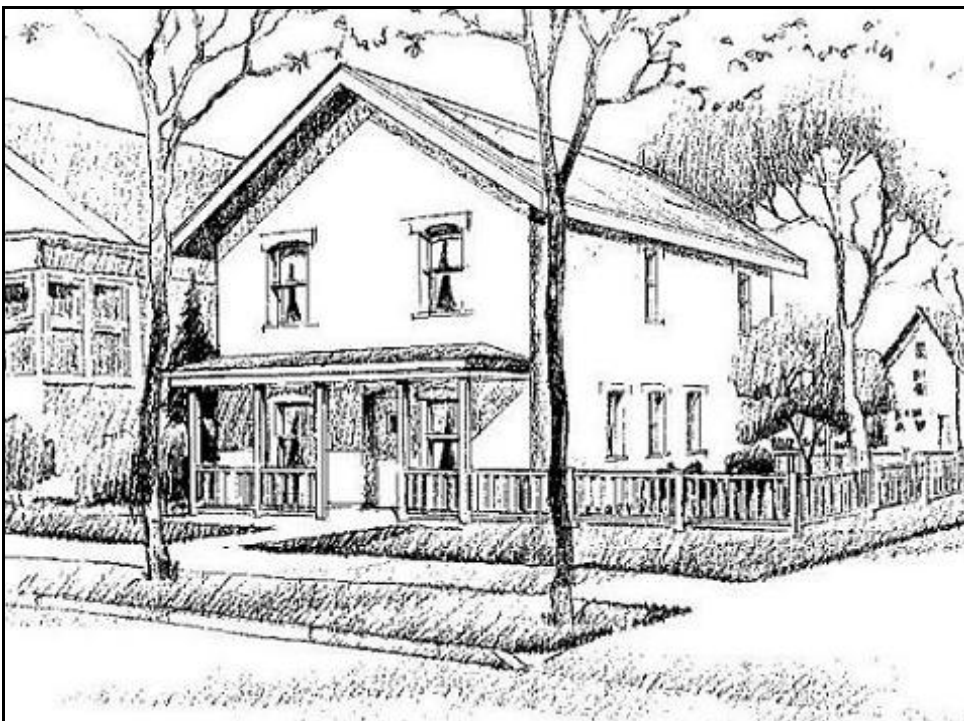
MIH is a test bed for new ideas. These ideas may attract investments to bring innovations to the marketplace. MIH innovations will include autoclaved, aerated concrete walls, in-floor hydronic heating, a slab-on-

grade foundation that does not require footings and reduces excavation costs, vaulted interior spaces with skylights, fuel cells as an alternate energy source, storm water containment features, and a ground-source heat pump.

CEAS' Dr. Hector Bravo and the School of Architecture and Urban Planning's Stan Wrzeski collaborated on a proposal to the Milwaukee Metropolitan Sewerage District (MMSD). MMSD proceeds will support a civil engineering student to monitor the home's storm water design features. Dr. Bravo, who will coordinate and supervise the student, also used the MIH as an opportunity for students to take their work outside of the classroom.

Dr. Hector Bravo and Stan Wrzeski will work with MMSD on designs that will reduce storm water runoff and enhance the performance of sewer and water infrastructure. They will be examining several design features including a rooftop rain garden, use of storm water to improve performance of ground-source heat pump, migration of subterranean storm water, and a simplified collection of storm water from a high-slope rooftop.

Once built, the MIH will serve as an educational resource. For the first six months it will be available for Open House tours and training sessions for students, architects, realtors, builders, engineers, educators and consumers.



Engineering Management Masters Update

by Marc Mayerhoff

The students of the Engineering Management Masters Program Class of 2004 have begun their second term. They are currently taking courses in Management of Quality, Operations Research in Engineering Management, and Project Management. Halfway through this term, they will begin work on their capstone design projects.

On June 8, 2003 the Class of 2003 presented the following capstone projects:

“Outsourcing Road Map”

The project resulted in the creation of a tool to provide mid-level managers or other decision makers with a systematic and structured approach to make informed decisions regarding the outsourcing of a product or service.

“Feasibility Study for Producing a Beer Targeted to Technical Professionals”

The project included a market survey, a test brew, and reviews of le-

gal, environmental, building, equipment, raw materials, and financial matters. The group even produced a test run of “Be²r” in six-packs.

“A New Consulting Practice”

The group evaluated the start up of an engineering consulting business focusing on manufacturing improvements and produced a viable business plan. They developed an innovative continuous improvement and problem-solving methodology that has drawn significant interest from major corporations.

We have begun recruiting for the group that will begin in January 2004. If you know someone who is interested in the program, please refer him or her to program manager Marc Mayerhoff at 229-3721 or mmayerho@uwm.edu. If you prefer, please forward the person’s name and contact information to Marc, and he will contact the potential student. For your reference, please see the copy of the new brochure delivered with this newsletter.

Graduate Internship Program News

by Joan Smothers

CEAS continues to market the graduate internship program to local employers. This program was featured in an article in the August 15th Milwaukee Business Journal. To read the article go to: <http://www.bizjournals.com/milwaukee/stories/2003/08/18/story8.html>

UWM, CEAS and several employers are currently discussing graduate level internships for Fall 2003 or Spring 2004. If you are currently working with someone that would like to sponsor an intern or otherwise support the graduate internship program, please contact Dr. Ghorbanpoor, algh@uwm.edu, or

Who are the EMMP students?

Age:

average 36.4 yrs.; range 25 - 55 yrs.

Industry experience:

average 13.5 yrs.; range 3 - 33 yrs.

Time with employer:

average 8.1 yrs.; range 0.75 - 17 yrs.

Undergraduate Majors:

Civil, Electrical, Industrial or Mechanical Engineering
Biological Sciences
Chemistry
Computer Science
Electrical Technology

Organizations Represented

Bell Aromatics
Buell Motorcycle
De La Rue
GE Medical Systems
Harley-Davidson
Manpower
RMT, Inc.
Rockwell Automation
S&C Electric
Sensient Technologies
SolidWorks
Steamgard LLC
Synergistic Micro Systems
We Energies

Joan Smothers, joans@uwm.edu to discuss the opportunity. Remember that employers benefit from the program as well as the interns.

Watch for updates on our Web site: <http://www.uwm.edu/CEAS/CareerServices/html/ceasCssEmployersGradInternProg.html>

Proposals Submitted

March 15,2003 through August 12, 2003

Principal Investigator	Proposal	Amount
Amano, R.	Development of a Low Cost and Efficient Regenerative Flow Compressor for Natural Gas Compression in Medium and Small Gas Turbines	\$204,000
Boyland, J.	Career: Analysis Techniques for Evolution of Modular Software (Supplement)	\$65,279
Corizine, K.	A New and Improved Induction Heating Power Supply	\$32,369
Corzine, K.	EE Motors & Drives #8567.00	\$21,900
Corzine, K.	Propulsion Drive Development: Engineering Research Support	\$89,033
Ezenwa, B.	Impact of Electrode Pressure and Its Correction in NCS	\$210,902
Ezenwa, B.	Neuromuscular Reserve in Humans and Fall Prevention	\$551,161
Ezenwa, B.	Neuromuscular Reserve for Fall Prevention in the Elderly	\$357,484
Garg, A.	Low Back Pain: Quantifying Risk Factors	\$1,499,833
Garg, A.	Upper Limb Musculoskeletal Disorders: Quantifying Risk	\$499,190
Ghorbanpoor, A.	Graduate Internship Program – Harley Davidson 2	\$30,000
Ghorbanpoor, A.	Graduate Internship Program – Harley Davidson 3	\$35,000
Ghorbanpoor, A.	Graduate Internship Program – ReGENco, LLC	\$30,000
He, X.	Li-ion Battery Research – Battery Modeling	\$126,508
Helwany, S. (Abu-Zahra, N.)	Analysis and Design of Dies for Polymer Extrusion	\$49,300
Jang, J.	SENSORS: Use of Sensor Data on a System's Future State for Resource Management in Production, Maintenance and Service	\$359,294
Kim, K.	Biomechanical Assessment of Impact Force Transmission in Martial Art Falling Techniques for Prevention of Fall-related Injuries	\$100,000
Kim, K.	Development of BioMEMS Devices for Efficient Management of Neurogenic Bladder	\$149,215
Kim, K.	Development of a Human Surrogate System for Fall-related Injury Prevention Research	\$14,998
Kim, K.	Prevention of Fall-related Injuries Using Aikido Ukemi Techniques	\$307,868
Kim, K. (Dhingra, A.)	Proof-of-Concept Instructional Materials for Design of Machine Elements Using Interactive Computational Tools	\$75,000

Proposals Submitted March 15,2003 through August 12, 2003

Principal Investigator	Proposal	Amount
Lee, J.	IMS Membership – Kone, Inc, ITRI, We Energies, Precision Machinery R& D Center, Hitachi, Ltd., and General Motors	\$184,963
Lee, J.	Researcher Agreement—Automated Precision	\$11,083
Lee, J.	Predictive Infotronics Agent for Integrated Product Life Cycle Support	\$107,798
Li, J.	Developing an On-Chip Magnetic Bead Biosensor for Real-Time and Remote Detection of Biological Threat Agents in Drinking Water	\$50,000
Li, J.	Mercury Liberation and Capture Pilot Study	\$19,903
Li, J.	Methyl Tert-Butyl Ether Biodegradation in Laboratory Soil Columns Under Natural and Controlled Toxic Conditions	\$51,388
Li, J.	TiO ₂ Nanostructures for the Treatment of Hazardous Wastes Using Visible Light	\$100,000
Mali, A.	CAREER: Representations and Algorithms for Real-world Planning	\$450,395
Naik, T.	Demonstration of Technology for Economical Self-Consolidating Concrete for the Precast/Prestressed Concrete Industry	\$18,000
Naik, T.	CCP Use Technology Implementation Projects in Illinois	\$106,429
Naik, T.	Technology Transfer for Use of Permeable Concrete Base Course Materials for Pavements Using CCPs	\$70,000
Naik, T. (Kraus, R.)	Use of Pulp Mill Slaker By-Products in Cast-Concrete Construction Materials	\$30,000
Pillai, K.	CAREER: Modeling the Unsaturated Flow During Fiber Wetting in the Manufacture of Composite Materials	\$724,354
Reisel, J.	Reduction of the Deterioration of Small Engine Exhaust Emissions Over the Life Cycle of the Engines	\$37,500
Renken, K.	Development of an Innovative Non-Intrusive System to Improve Indoor Air Quality	\$49,645
Rohatgi, P.	Rapid Semi-Solid Mixing for Improved Monolithic and composite Aluminum Alloy Castings	\$583,892
Rohatgi, P.	Supplementary Support under the REU Program to the Ongoing NSF Project No. DMI-0304262	\$11,980
Rohatgi, P.	Synthesis and Properties of Light Weight Alumina Particle Reinforced Ductile Iron Castings	\$103,542
Titi, H. (Tabatabai, H. Ghorbanpoor, A.)	Effect of Minnesota Aggregates on Rapid Chloride Permeability Tests	\$60,769

Proposals Submitted

March 15, 2003 through August 12, 2003

Principal Investigator	Proposal	Amount
Titi, H.	Guidelines for the Surface Preparation/Rehabilitation of Existing Concrete and Asphaltic Pavements Prior to an Asphaltic Concrete Overlay	\$22,553
Wang, W.	Clock De-Skew Circuits Design for 3D Integrated Circuits	\$294,879
Wang, W.	High Performance Radiation Hardened Flip Flop Design	\$292,309
Zhao, T.	A Flexible Information Management System for Legal and Business Documents	\$50,000
TOTAL		\$8,239,716

Blackboard Switches to Desire2Learn; Register now for "Blowout"

Blackboard, the online teaching and course management tool, will not be available for much longer. The UW System is replacing Blackboard with a new online course management system, Desire2Learn (D2L). It is

yet to be announced when the complete conversion will take place. UWM's Learning Technology Center is now able to successfully convert any Blackboard courses over to D2L. Faculty, teaching academic

staff, and teaching assistants are encouraged to sign up for a D2L "blowout" workshop to orientate themselves with the new system. To register for a workshop, visit <http://www.uwm.edu/Dept/LTC/>

Fall 2003 and 2004 Graduate Applications

(As of Aug. 5, 2003)

	M.S. Candidates		Ph.D. Candidates			
	Fall 2003	Spring 2004	Fall 2004	Fall 2003	Spring 2004	Fall 2004
Civil Engineering and Mechanics	21	2	2	9	1	1
Computer Science	94	18	N/A	17	1	1
Electrical Engineering	47	8	2	35	3	1
Industrial & Manufacturing Engineering	17	1	0	16	1	0
Materials Engineering	6	1	0	13	2	0
Mechanical Engineering	17	3	0	11	2	0
Undesignated	15	11	3	6	7	0
TOTALS	133	26	7	107	17	3

Proposals Funded March 15, 2003 through August 12, 2003

Principal Investigator	Proposal	Agency	Amount
Amano, R.	CFD Research – International Thermal System, LLC	International Thermal System,	\$2,000
Boyland, J.	Career: Analysis Techniques for Evolution of Modular Software (Supplement)	NSF	\$65,279
Chee, W.	Cancer Pain Management Decision Support Computer Program	University of Texas, Austin	\$701,227
Cheng, C.	New Algorithms and Techniques for Location Prediction of Mobile Users of Wireless Communications Systems	DoCoMo Communications Laboratories	\$15,518
Corzine, K.	EE Motors & Drives #8567.00	UWM Foundation	\$21,900
Garg, A.	Upper Limb Musculoskeletal Disorders: Quantifying Risk	Centers for Disease Control and Prevention	\$499,190
Ghorbanpoor, A.	Graduate Internship Program – Harley Davidson 2	Harley Davidson	\$30,000
Ghorbanpoor, A.	Graduate Internship Program – Harley Davidson 3	Harley Davidson	\$35,000
Ghorbanpoor, A.	Graduate Internship Program – ReGENco, LLC	ReGENco, LLC	\$30,000
Gregory, W.	Quality Control Research	UWM Foundation	\$23,000
Gregory, W. (Davida, G.)	Collaborative Research: Wisconsin Collaborating Campuses on Cyber Security	NSF	\$199,639
He, X.	Li-ion Battery Research – Battery Modeling	Toyota Motor Corporation	\$126,508
Lee, J.	IMS Membership	Kone, Inc., ITRI, We Energies, Precision Machinery, General Motors, and Hitachi, Ltd.	\$184,963
Lee, J.	Researcher Agreement	Automated Precision, Inc.	\$11,083
Lee, J.	Industry/University Cooperative Research Center and Intelligent Maintenance Systems	NSF	\$80,000
Li, J.	Mercury Liberation and Capture Pilot Study	We Energies	\$19,903
Reisel, J.	Reduction of the Deterioration of Small Engine Exhaust Emissions over the Life Cycle of the Engines	Wisconsin Small Engine Consortium	\$37,500
Reisel, J. (Renken, K.)	Vertical Integration of a Refrigerator Experiment Between Two Primary Thermal Science Courses	ASHRAE	\$5,000
Renken, K.	Radon Research #8983	UWM Foundation	\$5,000

Proposals Funded

March 15, 2003 through August 12, 2003

Principal Investigator	Proposal	Agency	Amount
Rohatgi, P.	NER: Synthesis of Metal Matrix-Nanoparticle Composite by Stir Mixing	NSF	\$85,947
Rohatgi, P.	Synthesis of cast Aluminum Reinforced with Ultra-Fine Foundry Sands for Industrial Applications	Applied Research Grant – UW System	\$50,000
Saxena, U.	Industrial Assessment Center – Office of Ind. Prod. & Engineering Assessment	Office of Ind. Prod. & Engineering Assessment	\$7,500
Titi, H. (Tabatabai, H. Ghorbanpoor, A.)	Effect of Minnesota Aggregates on Rapid Chloride Permeability Tests	Minnesota DOT	\$60,769
Yu, D.	DV2010 Fault Study for WE Energies – Phase Two	WE Energies	\$57,859
Total			\$2,354,785

UNIVERSITY of WISCONSIN



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Graduate Programs and Research

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