

CEAS Graduate Programs & Research Newsletter

CEAS Hosts Federal Funding Forum in May

by Paula Pape

Faculty researchers from UWM and other Universities will meet industry colleagues at the Federal Funding Forum, to be held Friday, May 16, 2003. Government grants and contracts designed to commercialize new technology can replace start-up funding provided by venture capitalists and angel investors.

For example, programs such as Small Business Innovation Research (SBIR) and its sister program, Small Business Technology Transfer (STTR), offer support to academic researchers and innovative businesses working together to move new discoveries from lab to market. In fact, \$1.2 billion is now available to develop next-generation products and services, according to the Wisconsin SBIR Web site <http://www.wisconsinsbir.org>.

Contacts made at the Forum create the potential for faculty to win more research funding. Awards of up to \$1 million and more are common, especially in areas in which UWM already excels, including information-based technologies, materials synthesis and processing, pollution

minimization and remediation, transportation and small engine development, among others.

At the Forum, specific funding opportunities will be discussed, along with information about how best to take advantage of these grants, how to connect with federal program managers, how to write compelling proposals and how to manage awards. A patent attorney will provide tips on saving time and money when preparing patent applications.

Local businesses have already taken advantage of these new funding opportunities. Professor Jun Zhang with his firm JunTech was awarded SBIR funding in 2001 and is now working with Phase II funding.

The Federal Funding Forum is hosted by CEAS Graduate Programs and Research, with sponsorship from The Milwaukee Idea and Quarles & Brady LLC. Registration for faculty is \$20, for members of the public, \$40. For more information, visit <http://www.uwm.edu/CEAS/forum>

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Chancellor's Auction

This year the annual Chancellor's Auction will take place on Wednesday, April 30, in the UWM Union following the Length of Service Awards. The silent auction will take place from 3:00pm to 6:30pm with a live auction beginning at 4:30pm.

Proceeds from the Chancellor's Auction, including the raffle, fund scholarships for children, stepchildren and grandchildren of UWM employees, and for transfer students from select two-year UW colleges. For additional information on how to donate items to the auction or for scholarship application information, visit: <http://www.uwm.edu/Org/AUC/index.html>

Commencement

This is the first time that there will be separate ceremonies for Graduate Students and Baccalaureate Students.

When: Sunday, May 11, 2003

Where: U.S. Cellular Arena
500 W. Kilbourn Ave.
Milwaukee, WI

Time: 9:00a.m. Graduate School
Ceremony for
Masters,
Specialists and
PhD Candidates

1:00p.m. Baccalaureate
Ceremony

Contact the Secretary of the University's Office with questions: 229-4163 or mheller@uwm.edu

Research Proposal Support Makes Strides

by *Laura Ricci*

What exactly does Research Proposal Support mean? It is more than editing proposals, though that is probably the first service most faculty seek when they begin working with Laura Ricci of Graduate Programs and Research.

New faculty members seek help in navigating new systems, both the internal systems at UWM and the habits and practices of funding sources. Some of this help comes from Laura Ricci, who has worked with funding sources, particularly federal agencies, for many years and is becoming familiar with the UWM system.

In addition, Al Ghorbanpoor, Associate Dean, maintains a list of faculty willing to serve as peer reviewers for colleagues' proposals. Last month, Jaejin Jang received counsel from Tien-Chien Jen on an NSF proposal. To volunteer as a peer reviewer, contact Al Ghorbanpoor at algh@uwm.edu. To seek peer review of a proposal, contact

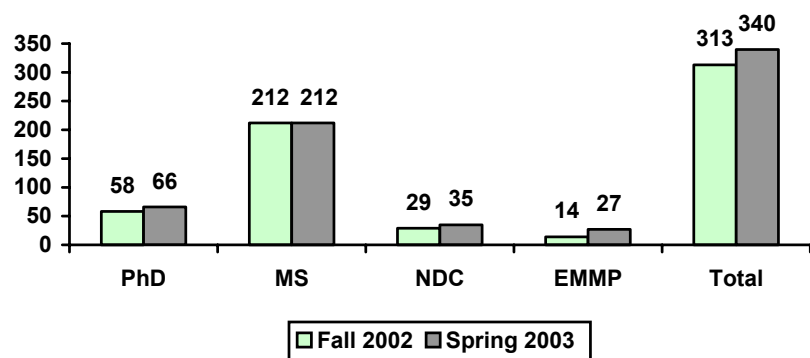
Laura Ricci or Al Ghorbanpoor.

Complex solicitations can be difficult to answer. Bertram Ezenwa has enlisted Laura's assistance in tearing down solicitations so the requirements can be properly addressed in the proposal. Matching the evaluation criteria, proposal outline, and scoring criteria within strict page limitations can be daunting.

Laura Ricci performs strategic review of proposals, while she enlists the help of student interns from the English Department for editing of proposals for grammar. "We ask Laura to provide comments on the strategy we've used in the proposal and value her critique," said Pradeep Rohatgi. "Now, if only she could make the DOE upload system work smoothly for us, we'd be even more happy."

please see Research Support, page 7

Graduate Student Enrollment



Transmittal Form Project Launched on Web

by *Laura Ricci*

CEAS launches a web-based database system for creation of Transmittal Forms and tracking of faculty research proposals this month. Faculty enters data on-line and prints out a copy of the transmittal form for signatures.

The back end of this system allows faculty to track their proposals, updating pending research proposals as funded or not-funded from their desks. Finally, accurate tallies of proposals will be possible for the college. Previously, paper copies circulated after submission were the only way to log progress, costing many labor hours to input and tabulate, with accuracy limited to the reliability of campus mail, and relying on the memory of administrators to check and tally progress.

“By the end of 2003, we should be able to stop maintaining the previous system and rely on instant electronic reports rather than riffling through incomplete paper files hoping to find all the pieces we need,” said Laura Ricci, staff to Associate Dean Al Ghorbanpoor in Graduate Programs and Research. As of April 1, 2003 all transmittal forms must be generated in the new system.

Log on:
<http://ceas-dev.imt.uwm.edu>

Username: **user**
Password: **user**

Written instructions on using the system are available by contacting Laura Ricci at ext. 5716 or LRicci@uwm.edu, or visit <http://www.uwm.edu/~lricci>

Order of the Engineer Ceremony and Graduating Student Reception—Set May 10

by *Juli Levar*

Faculty, staff, and alumni are welcome to join members of the College of Engineering and Applied Science’s May 2003 graduating class for the bi-annual Order of the Engineer Ceremony and Graduating Student Reception on Saturday, May 10, 2003.

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, bridge the gap between

education and practice, and present to the public a visible symbol identifying the engineer.

Patterned after the Canadian “Ritual of the Call of an Engineer,” which was 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.

Intellectual Property Workshop Convenes April 16

Your research is proceeding well, and it is looking like you may have something worthwhile. What should you do first? What are your choices?

Join Associate Dean Al Ghorbanpoor for an Intellectual Property Workshop, Wednesday, April 16 at 3:30 in EMS e230.

Speakers will include K.C. Lerner, Manager of Technology Transfer, introducing the legal requirements of IP protection, and Professors Jun Zhang and Brian Armstrong will discuss the process as they experienced it. Dr. Armstrong has applied for 18 patents including foreign filings, while Dr. Zhang is a first-time patent applicant.

Important Dates

April 10 & 11
Spring Qualifying Exams
EMS W230, 1:00 to 5:00

April 28
Defense Deadline

April 30
Chancellor's Auction
UWM Union, 3:00 to 6:30

May 5
Thesis Submission Deadline

May 11
Commencement
<http://www.uwm.edu/Dept/SecU/commencement/index.html>

Proposals Submitted

December 4, 2002 through March 14, 2003

Principal Investigator	Proposal	Amount
Abu-Zahra, N.	Optimization of Die Design in Polymer Extrusion Processes	\$295,425
Amano, R.	Aerodynamic and Mechanical Studies of Lawn Mower Decks for Efficient Cutting Performance	\$5,000
Beimborn, E.	UWM Participation in Midwest Regional Transportation Center - Year 4	\$25,000
Bravo, H. (Strickler, J. R.)	Collaborative Proposal: Development of a Novel Plankton Sampler	\$588,190
Cheng, C.	New Algorithms and Techniques for Location Prediction of Local Users of Wireless Communications Systems	\$15,518
Christensen, E. (Jen, T. C.)	Real-time Remote Detection of Biological Hazardous Substances in Water Supplies	\$1,577,748
Dhingra, A.	Engine Mount Modeling and Optimization with Frame Flexibility	\$48,378
Ghorbanpoor, A.	Graduate Student Internship: Dynamic Balancing of Complex Rotors	\$30,000
Ghorbanpoor, A.	Rapid Response NDE for Wisconsin Bridges	\$99,962
Gregory, W. (Davida, G.)	Collaborative Research: Wisconsin Collaborating Campuses on Cybersecurity	\$199,639
He, X.	Study and Model Development for Li-ion Battery Performance and Degradation in Electric Vehicle Applications	\$50,000
He, X. (Amano, R.)	Computation Development for Coupled Field Nonlinear Dynamics Analysis	\$217,913
Helwany, S.(Abu-Zahra, N.)	Analysis and Design of Dies for Polymer Extrusion	\$49,300
Helwany, S.	Monitoring and Evaluation of a Fly Ash Stabilized Subgrade Constructed by WIDOT	\$80,487
Jang, J.	Use of Look-Ahead Information for Better Production and Service Management	\$49,991
Jang, J.	SENSORS: Use of Sensor Data on a System's Future State for Resource Management in Production, Maintenance and Service	\$359,294
Jen, T. C.	Experimental and Theoretical Studies on HP DMFC-Hydrogen Peroxide Direct Methanol Fuel Cell	\$372,871
Jen, T. C.	Experimental and Theoretical Studies of Nano-particles Cold Gas Dynamic Spraying on Application of Fuel Cell Manufacturing	\$351,563
Jen, T. C.	Developing Predictive Thermal Optimization Tools: Laser-Assisted Machining Process (SME)	\$15,000
Jen, T. C. (Law, C.)	Developing Predictive Thermal Optimization Tools: Laser-Assisted Machining Process (NSF)	\$430,858
Law, C.	High Order Beam Propagation Method	\$279,580
Lee, J.	IMS Center Membership	\$30,000
Lee, J.	Hai Qiu's Research Work	\$27,750
Lee, J.	Weihu Zhou's Research Work	\$12,000
Lee, J. (Isobe, N.)	GOALI: Predictive Tools for Life Performance Assessment of Hot Section Components of	\$300,000

Proposals Submitted December 4, 2002 through March 14, 2003

Principal Investigator	Proposal	Amount
Li, J.	TiO ₂ Nanostructures for the Treatment of Hazardous Waste Using Visible Light	\$100,000
Li, J.	Shaw Scientist Program	\$200,000
Li, J. (Jen, T. C.)	Developing an On-chip Magnetic Bead Biosensor for Real-time Detection of Biopollution in Environmental Samples	\$50,000
Mali, A.	Planning to Solve Multiple Planning Problems	\$308,755
Mali, A.	Multi-heuristic Search for AI Planning	\$537,353
McRoy, S.	Adaptations of Multi-Modal Content in Dialog Using Heterogeneous Devices	\$622,179
Naik, T.	Reducing Shrinkage Cracking of Structural Concrete through the Use of Admixtures	\$99,971
Naik, T.	Long-term Evaluation of High-Volume Fly Ash Concrete Pavement Containing Illinois-Coal Ash	\$6,000
Naik, T.	Implementation of Flowable Slurry Technology in Illinois-CLSM Implementation with Rockford, Illinois	\$10,000
Pillai, K.	A Quantum Leap in the Current Fiber-wetting Physics for Polymer Composites	\$550,938
Pillai, K.	Developing the Next-generation Physics for Fiber-wetting in Liquid Composite Molding Processes to Manufacture Polymer Composites	\$120,000
Pillai, K. (Naik, T.)	Recycling Fly Ash as Fillers for Plastics to Improve the Competitiveness of Milwaukee's Plastics Industry	\$50,000
Rahman, A.	Simplified Design Procedures for Pre-cast Hybrid Frames	\$18,000
Reisel, J.	Development and Implementation of an Engineering Course Entitled "Air Pollution: Engineering and Policy Issues"	\$21,877
Renken, K.	EPA SIRG (Continuation of "Analysis of Energy Costs Associated with Subslab Depressurization")	\$24,613
Rohatgi, P.	Synthesis of Cast Aluminum Reinforced with Ultra-fine Foundry Sands for Industrial Applications	\$50,000
Rohatgi, P.	Low Cost Ultralight Nanostructured Aluminum Castings Including Nanocomposites	\$1,348,520
Tabatabai, H.	Health Monitoring of Bridge Structures and Components Using Smart-Structure Technology	\$29,940
Titi, H.	Application of Electromagnetic Geophysics (EMG) Technology to Subsurface Investigations	\$27,898
Titi, H. (Helwany, S.)	Determination of Typical Resilient Modulus Values for Selected Soils Representative of the Soils Distribution of Wisconsin	\$103,049
Titi, H. (Helwany, S.)	Investigation of Standard Penetration Torque Testing (SPT-T) to Predict Pile Performance	\$69,276
TOTAL		\$9,859,836

Proposals Funded December 4, 2002 through March 14, 2003

Principal Investigator	Proposal	Agency	Amount
Abu-Zahra, N.	In-Line Viscosity Measurement of Polymer Melt Using Dielectric Measurements	UW System Applied Research Grant Program	\$49,254
Amano, R.	Aerodynamic and Mechanical Studies of Lawn Mower Decks for Efficient Cutting Performance	John Deere	\$5,000
Dhingra, A.	Optimum Experimental Design of a General Purpose Load Transducer	UW System Applied Research Grant Program	\$49,954
Haddawy, P.	Belief Net Inference	UWM Foundation	\$3,456
Lee, J.	IMS Center Membership	Rockwell Automation, G.M, U.S. P.S, CM Partner	\$110,000
Lee, J.	Wei hu Zhou's Research Work	Automated Precision, Inc.	\$31,500
Lee, J.	Hai Qiu's Research Work	United Technology Corporation	\$24,000
Naik, T. (Kraus, R.)	Use of Limestone Quarry By-Products for Developing Economical Self-Compacting Concrete	UW System Solid Waste Research Program	\$14,989
Neusen, K.	Local Government Alternative Fuels Grant Program Year 2002	State of Wisconsin Department of Administration	\$10,738
Neusen, K.	Study and Assessment of Alternative Fuel Fleet Operations in the State of Wisconsin	State of Wisconsin Department of Administration	\$40,000
Neusen, K.	Wisconsin E85 Infrastructure Corridor	State of Wisconsin Department of Administration	\$29,000
TOTAL			\$367,891

Open House Hosted by Milwaukee Industrial Innovation Center

by Nelson Soler

On May 9, the Milwaukee Industrial Innovation Center will host an Open House for industry. This open house will feature UWM research capabilities to the industrial community with the primary purpose of promoting the formation of collaborative applied research partnerships, a crucial element of the Milwaukee Idea. As part of the Open House activities, CEAS labo-

ratories will be featured in the morning and a tour of the Cozzens-Cudahy Research Center will be conducted in the afternoon. In addition, the event will incorporate a research poster exhibition and a UWM Fair of schools engaging in interdisciplinary research.

Faculty, staff, and students are encouraged to participate in this

important event. The College of Engineering and Applied Science, the School of Continuing Education, the Graduate School, and the Milwaukee Idea Office will sponsor this event. If you are interested in participating in the event or wish to receive more information, please email openhouse@uwm.edu or call Nelson Soler at 414-227-3105.

First Engineering Management Masters Program Graduating Class

by Marc Mayerhoff

On May 11, thirteen of the fourteen members of the inaugural class of the Engineering Management Masters Program will go through the UWM Commencement ceremony at the U.S. Cellular Arena. (The one holdout said that given his spouse's sacrifices while he went through this program, he wanted to be sure they celebrated Mother's Day for her). The students will not get their degrees that morning, for they will have one more weekend of their three classes and the capstone project.

On Friday, June 6, they will submit their final reports and make presentations about their capstone projects. Their non-thesis degrees will, in lieu of a comprehensive exam, require the successful completion of the capstone course.

When that is done, they will be deemed to have completed the requirements of the Master of Science in Engineering with an Engineering Management concentration.

Since they began in January 2002, several have earned promotions, one has changed firms, and all have learned much. Recent comments about their final term's courses include the following: "The course reading selections are great. They help to expand my big picture thinking."

"The homework assignments help me to create basic tools which can be adapted and expanded to real business problems."

"The lectures with real world experiences mixed in are great."

The Class of 2004 began on January

10, 2003. An indicator of instructor and curriculum quality has been the positive responses to a midterm survey about their courses. Comments about their statistics instructor were especially glowing. For example:

"This has been a good review on the field of statistics. During various product tests where I needed to determine sample size and then had to evaluate pass vs. failures, I usually went to someone else. I now feel that I could make these determinations myself."

please see EMMP, page 8



Research Proposal Support: *from page 2*

Collaborative proposals are very popular with funding sources. However, managing a collaborative effort requires dedicated effort. The rewards of collaboration are much larger awards. Laura often manages these efforts.

Several NSF proposals have been submitted which required collaboration among multiple partners. STEP STEM, Partnerships for Innovation and Collaborative Research: Wisconsin Collaborating Campuses on Cyber Security were all submitted to NSF in the last six months.

Tool development is another area of interest. The budget spreadsheet (available for download from www.uwm.edu/~lricci) speeds up the process of creating a budget, and eliminates the nuisance of tracking current graduate student salaries, overhead rates, fringe benefit policy, and so on.

The latest tool is the web-based Transmittal Form generator. This streamlines the process of creating your t-form for delivery with your proposal to the Graduate School. It also provides accurate information for tracking proposals,

a tool needed in order to measure the effectiveness of proposal support efforts.

Finally, a research support program is well underway. The first elements are a series of workshops, and the last element in this project is the Federal Funding Forum taking place on May 16, 2003. The workshop series began with the October 10, Breakfast meeting: Harvesting Research Dollars. Dean Rayburn presided at the second workshop on February 5, and the next workshop is scheduled for April 16 on Intellectual Property. For more information, contact Laura Ricci, Lricci@uwm.edu.

EMMP: *from page 7*

“I like the fact that you took the time to help me really understand statistic concept in the beginning. Too often statistic classes rush into plotting probability densities, using only normal distributions. Quality matters. The simple concept of

analyzing the data set to see if it is credible is important, and misunderstood by many.”

The Class of 2004 students from a wide range of organizations: Bell Aromatics, Fox Lane Consulting,

GE Medical, Harley-Davidson, Hydro-Thermal Corp., Manpower Inc., Sensient Technologies (formerly Universal Foods), SolidWorks Corporation, and Steamgard LLC.

Fall 2002 & 2003 Graduate Applications (Year to Date Thru 3/14 Each Year)

	M.S. Candidates		Ph.D. Candidates		TOTALS	
	2002	2003	2002	2003	2002	2003
Civil Engineering and Mechanics	12	18	5	11	17	29
Computer Science	86 ⁽¹⁾	81 ^{(2)*}	3	14	89	95
Electrical Engineering	34	47	10	34	44	81
Industrial & Manufacturing Engineering	9	10	6	10	15	20
Materials Engineering	3	4	4	14	7	18
Mechanical Engineering	16	16	9	10	15	26
Undesignated	32	12	34	22	66	34
TOTALS	191	188	75	115	253	303

* Application data kept exclusively by Computer Science
(¹) As of 3/8/03 (²) Final Data as of 9/28/02

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