

CEAS Graduate Programs & Research Newsletter

Marjorie Piechowski Named New Grant Writer

In a timely appointment, Dr. Marjorie Piechowski joined CEAS as Senior Technical Grant Writer in late November, 2005, shortly after the Research Growth Initiative was announced. During her first weeks in CEAS she quickly became familiar with RGI guidelines, presented two RGI workshops, and assisted more than 40 CEAS faculty members with RGI drafts and budgets. The WIBHT and Wisconsin Applied Research Grant competitions immediately followed RGI. By the

end of January, Marjorie had become a familiar face to CEAS faculty.

Interviewed in early February by Melody Clair, Marjorie offered the following observations about her first two months in CEAS and some plans to expand and enhance CEAS grant activity:

What are your first impressions of CEAS and its faculty?

They have been creative, friendly and very responsive to suggestions for improving their grant proposals. CEAS faculty also worked hard to meet these multiple internal deadlines. As a result, I became acquainted with their research interests, grant history and writing styles. I look forward to future collaborations on the many external proposals that will follow from RGI.

What other activities can CEAS faculty expect in the next few months?

Soon I will announce a series of grant-related workshops to be held over the spring and summer, for diverse groups of faculty. Later this month David Klemer and I will offer a two-part workshop on the National Institutes of Health, its

Continued on page 2

Continued on page 8

In This Issue

Important Dates	2
Graduate Student Receives Awards	2
WIBHT Awards	2
Research Growth Initiative	3
Graduate Enrollment	3
Proposals Submitted	4-5
Graduate Applications	5
Proposals Funded	6-7
Strategic Planning	7
Dr. Christensen Named as Fellow	8
Beimborn Awarded Engineer of the Year	8
Faculty Promotion	8

CEAS Sweeps WIBHT Awards

CEAS' response to the Wisconsin Institute for Biomedical and Health Technologies call for proposals was impressive. Twenty three proposals were submitted from CEAS with a total of four from Civil Engineering and Mechanics, eight from Computer Science, seventeen from Electrical Engineering, and three from Mechanical Engineering.

Seven proposals were chosen for project seed funding. Six out of the seven were granted to CEAS Faculty collaborations.

Important Dates

February 19-25, 2006
National Engineers Week

April 13 & 14, 2006
Spring Qualifying Exam
(Date Tentative)

May 8, 2006
Defense Deadline

May 15, 2006
Thesis Submission Deadline

May 20, 2006
Order of the Engineer &
Outstanding Alumni Awards
Ceremony

May 21, 2006
Commencement



Materials Grad Student Recipient of Awards

Benjamin Schultz, a Ph.D. student in the Materials Engineering department at CEAS has recently been recognized not only for his excellence in research, but also for distinction in teaching. Schultz recently received the prestigious Ron Ruddle scholarship of \$2,500. This scholarship is awarded to a student who has demonstrated excellence in research that is similar to that of Ron Ruddle's. Ruddle is known for his expertise on the solidification, gating and risering of castings. This scholarship was awarded at the Foundry Education Foundation

Conference meeting in Chicago where over 300 people from universities and organizations attended the three day event.

Schultz was also awarded the Graduate Student Teaching Award at the Order of the Engineer and Outstanding Student Awards Ceremony on December 17, 2005. Recipients of the award are nominated by students and faculty. Schultz is a teaching assistant for Materials Engineering 201 and a guest lecturer for Materials Engineering 150.

WIBHT, *Continued from page 1*

The Wisconsin Institute for Biomedical and Health Technologies was created to promote and support research and development in the areas of biomedical engineering, health care informatics, and clinical research on patient outcomes and

treatment efficacy, areas that will strengthen economic development in Wisconsin.

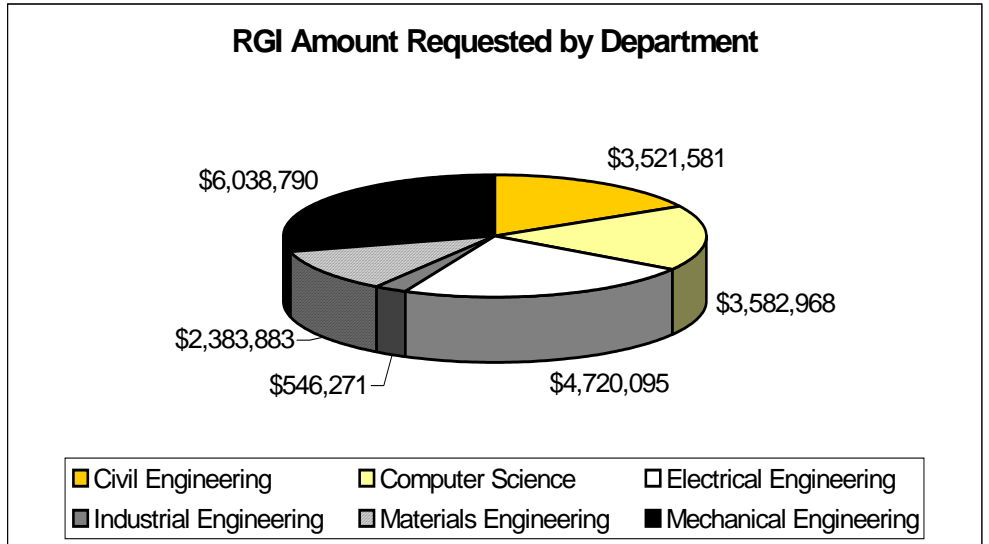
WIBHT is now planning a series of presentations which will feature results of the seven teams' research.

2006-2007 WIBHT Funded Projects

Collaborators (PIs and Co-PIs)	Project Title
Jun Zhang , Electrical Engineering; David Klemer , Electrical Engineering; Chuck Kahn, MCW; Anne Hall, GE Healthcare	New Video Analysis and Visualization Techniques for Contrast Enhanced Ultrasound Imaging
Lei Ying , Electrical Engineering; Shi-Jiang Li, MCW	Development of an MRI Pulse Sequence for Fast Dynamic Imaging
Min Wu, Healthcare Informatics; John Lynch, Healthcare Informatics; Lei Ying , Electrical Engineering	Tele-educational System for Dental Radiology
Norma Lang, Nursing; Tae Youn Kim, Nursing; Susan McRoy , Computer Science; Karen Marek, Nursing; Brian Lang, Nursing; Amy Coenen, Nursing; Lenore Wilkas, Nursing	Building a Nursing Knowledge Management System
David Klemer , Electrical Engineering; Weizhong Wang , Electrical Engineering	Immunosensors for Detection of Infectious Diseases
William Gregory , Electrical Engineering; Valeria Raicu, Physics; James Marx, Aurora Health Care; Wendy Mickelson, Aurora Health Care; Chris Gregory , Electrical Engineering	Comprehensive in vitro and in vivo Study of the Electrical Properties of Breast Tissue
Valeria Raicu, Physics; Dilano Saldin, Physics; Chaoyang Zeng, Biological Sciences	Imaging Protein Interactions in Living Cells

CEAS Requests over 20 Million from Research Growth Initiative

CEAS faculty submitted 54 proposals in response to UWM's new Research Growth Initiative (RGI). A grand total of 285 proposals were submitted. This new initiative aims to increase UWM research funding by reallocating research dollars in exceptional proposals that have a highly anticipated return on investments. This initiative is intended to provide start-up funds for high-potential self-sustaining projects. The RGI is a response to Chancellor Santiago's call for increased research.



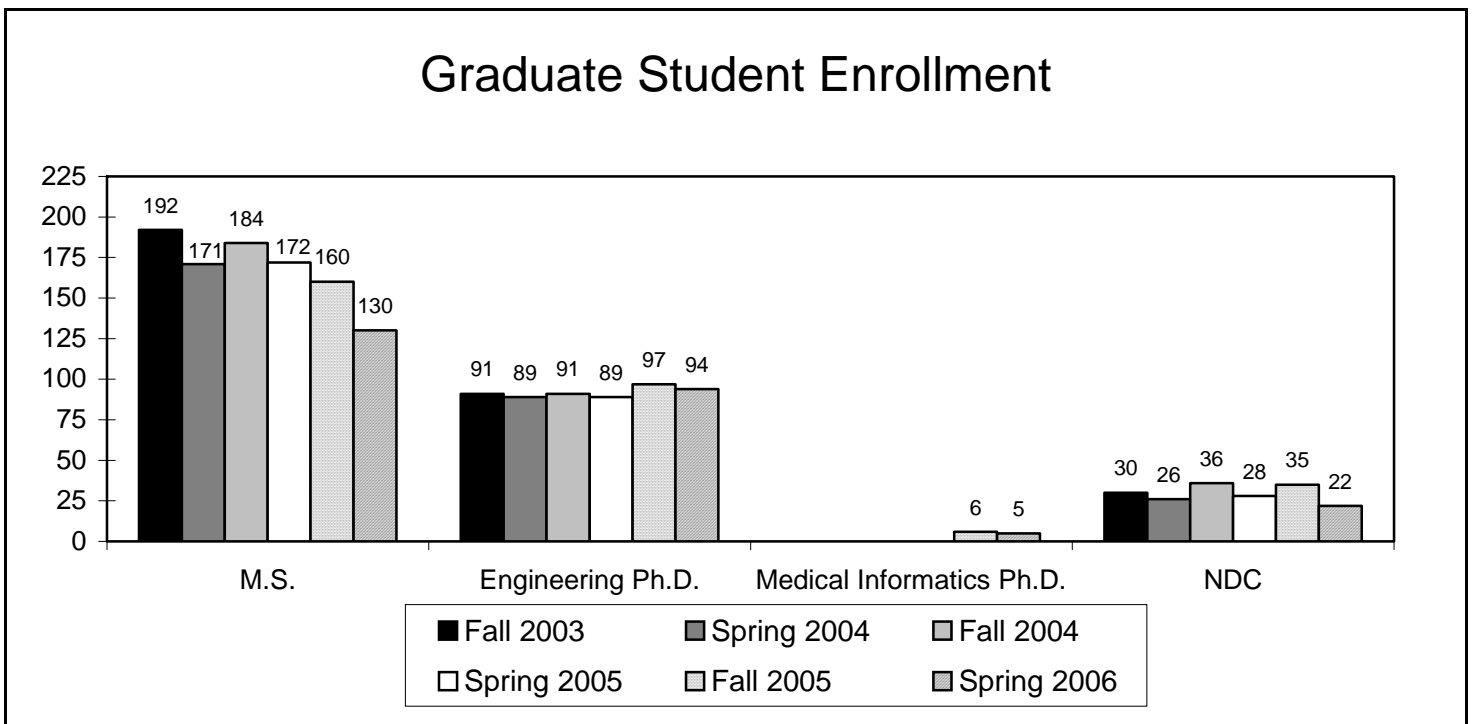
Submissions came from all six of CEAS' departments, some with a single PI and many with multidisciplinary, creative collaborations. Submissions from CEAS requested a total of \$20,793,588. The number of submissions from each department is as follows:

Civil Engineering & Mechanics: 11
 Computer Science: 11
 Electrical Engineering: 14
 Industrial & Manufacturing Engineering: 2
 Materials Engineering: 2
 Mechanical Engineering: 14

nal review boards in five academic areas and a special board for interdisciplinary projects. The reviewers will be appointed by the Chancellor based upon recommendations from the Vice Chancellor of Research, the Provost, Deans, and faculty.

Proposals will be reviewed by exter-

Continued on page 8



Proposals Submitted

September 1, 2005 through January 13, 2006

Principal Investigator	Title	Amount
Armstrong, B.	RGR-Based Motion Tracking for Real-Time Adjustment of MRI and MRS Acquisitions	\$1,629,894
Chen, J.	GOALI: Direct Current Corona Discharge from Nanostructures for Next-generation Ion Source	\$365,641
Chen, J.	NER: Carbon Nanotube Coated with Nanoparticles - An Enabling Structure for Nanomanufacturing and Nanodevices	\$129,998
Chen, J. (Gajdardziska-Josifovska, M.)	NIRT: Fabrication and Characterization of Gas Sensors Based on Tin Oxide Nanoparticles	\$1,418,364
Chen, J.	SGER: Coating Carbon Nanotubes with Aerosol Nanoparticles Produced from a Mini-arc Plasma Source	\$31,481
Christensen, E.	Receptor models for the evaluation of fate and transport of organic pollutants in the aquatic environment	\$3,000
Christensen, E.	Source apportionment and degradation of PCBs, PAHs, and PBDEs entering the Great Lakes through the atmosphere	\$154,206
Dhingra, A.	Graduate Internship Program	\$32,427
Gong, S.	High-Performance Microcellular Components Made of Sustainable Bio-based Composites and Produced via an Environmentally Benign Injection Molding Process	\$338,998
Horowitz, A.	UWM Participation in University Transportation Center Consortium - Supplement	\$8,000
Jen, T. (Chen, J.)	A New Low Temperature Nanoparticle Deposition Process: Electrostatic-force-assisted Cold Gas Dynamic Spray	\$389,412
Jen, T.	Collaborative Research: Environmentally Benign Internal Cooling of End Mills	\$199,983
Klemer, D. (Yakovlev, V.)	Optical Measurements of Serum Albumin as a Molecular Marker for Neoplasia	\$401,533
Kouklin, N. (Yakovlev, V.)	Novel Materials for Photonics based on Nanostructured Semiconductors	\$339,901
Li, Y.	Data-Driven Surge Modeling and Inlet Guide Vane Control for Centrifugal Air Compressors	\$18,554
Li, Y.	GOALI: Asymmetric Support Vector Machine Based Surge Map Modeling for Energy-Efficient Surge Avoidance Control of Compressed Air Systems	\$72,379
Liao, Q.	Exposure Assessment Modeling for Munition Compounds in Coastal Areas	\$25,183
Nasiri, A.	New Configurations for Uninterruptible Power Supply Systems	\$203,619

Proposals Submitted September 1, 2005 through January 13, 2006

Principal Investigator	Title	Amount
Nasiri, A.	New Topologies and Control Method for Uninterruptible Power Supply Systems	\$180,994
Nasiri, A.	Universal Uninterruptible Power Supplies	\$14,346
Pillai, K.	A Novel Method for Repairing and Strengthening Concrete Infrastructures	\$191,288
Pillai, K.	CAREER: Modeling the Unsaturated Flow During Fiber Wetting in the Manufacture of Composite Materials - Supplement	\$6,406
Pillai, K.	Understanding and Modeling the phenomenon of wiping a surface	\$29,566
Rohatgi, P.	Centrifugal Casting for Selective and Functionally Graded Reinforcement of Metal Matrix Nanoparticle Composite Components	\$396,372
Rohatgi, P.	Multifunctional Lightweight Metal Matrix Composites and Syntactic Foams for Army Application	\$2,281,513
Rohatgi, P.	Synthesis and Characterization of Active and Self-Healing Metal Matrix Nanocomposites	\$1,530,102
Tabatabai, H. (Titi, H.)	A New Design Approach for the New Orleans' Levee System	\$37,478
Tabatabai, H. (Zhao, J.; Ghorbanpoor, A.)	Cast-in-Place Reinforced Concrete Connections for Precast Deck Systems	\$649,983
Tabatabai, H.	Fiber Optic Humidity Sensor for Concrete - Experimental Setup	\$10,000
Wang, W.	A Novel Si electroluminescence device based on FinFET structure	\$245,786
Total		\$11,336,407

Graduate Applications (As of December 12, 2005)						
	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2006
M. S. Candidates	117	205	80	169	86	110
Engineering Ph.D. Candidates	26	82	25	76	35	46
Engineering Ph.D. Candidates w/o M.S.	6	18	2	9	3	25
Medical Informatics Ph.D.	-	-	-	14	3	12
Total	149	305	107	268	127	193

Proposals Funded

August 1, 2005 through December 31, 2005

Principal Investigator	Proposal	Agency	Amount
Amano, R.	Discretionary Funds for Advancing Mower Deck Research	John Deere ADV & Soil Labs	\$5,000
Beimborn, E. (Peng, Z.)	Development of Improved Methods for Transit Service Market Analysis and Use of Benchmarking for Transit Services Comparisons in Great Cities	University of Alabama-Birmingham/U.S. Department of Transportation	\$82,579
Beimborn, E. (Horowitz, A.)	UWM participation in Midwest Regional Transportation Center - Year 7	Midwest Regional Universities Transportation Center	\$17,000
Boyland, J.	Analysis for High-Dependability Computing	NASA	\$32,000
Boyland, J.	Static Analysis of Software for Reliable Computing	Carnegie Mellon University/ NASA	\$39,773
Bravo, H. (McLellan, S.)	OHHI 2005: Predicting Pathogen Fate in Great Lakes Environment	Center for Sponsored Coastal Ocean Research	\$694,105
Christensen, E. (Li, J.)	Expanded Stormwater Monitoring Program Data Analysis 2000-2006	Milwaukee Metropolitan Sewerage District	\$226,835
Garg, A.	Low Back Pain: Quantifying Risk Factors	Centers for Disease Control and Prevention	\$499,909
Garg, A.	Openfirst, LLC Production Facility Evaluation & Design	Openfirst, LLC	\$92,439
Garg, A.	Upper Limb Musculoskeletal Disorders: Identifying Risk	Centers for Disease Control and Prevention	\$499,804
Gong, S.	Study of Microcellular Injection Molding of Bio-Based/Biodegradable Plastics	National Science Foundation	\$279,993
Goyal, M. (Hosseini, S.)	NeTS-NBD: Fast Convergence to Topology Changes in Link State Routing Protocols	National Science Foundation	\$130,000
Jang, J.	Improvement of Supply Chain Management (SCM) for Samhwa Nonferrous Metal Co. Delivery Planning and Distribution Center Inventory Policy	SAMHWA NON-FERROUS METAL IND.CO.,LTD	\$14,112
Jang, J.	Simulation for Maintenance/Material Handling Workforce Dispatch	General Motors Corporation	\$11,998
Jen, T.	REU Supplement: Experimental Studies in Drill Temperatures With Heat Pipe Cooling under Wet Drilling condition	National Science Foundation	\$12,000

Proposals Funded August 1, 2005 through December 31, 2005

Principal Investigator	Proposal	Agency	Amount
Li, J.	Molecular Biology for Environmental Engineers	National Science Foundation	\$39,997
Naik, T. (Kraus, R.)	Investigation of Concrete Properties to Support Implementation of the New AASHTO Pavement Design Guide	Wisconsin Highway Research Program	\$60,000
Pillai, K.	CAREER: Modeling the Unsaturated Flow During Fiber Wetting in the Manufacture of Composite Materials - REU Supplement	National Science Foundation	\$6,406
Saxena, U.	Industrial Assessment Center	U.S. DOE	\$40,000
Tabatabai, H (Ghorbanpoor, A.)	Evaluation of Methods of Rebar Protection, Spall Prevention, and Repair Techniques on Concrete Girders	Wisconsin Highway Research Program	\$85,000
Yu, D.	Image Processing Techniques for Digital Video Surveillance	JunTech, Inc.	\$5,700
Total			\$2,874,650

Strategic Planning Committee Drafts New Mission, Vision, & Goals

by Ron Perez

The CEAS Strategic Planning Committee, formed in early February, 2005, is comprised of eighteen CEAS faculty members, one faculty member from the Economics department, six CEAS staff members, two CEAS undergraduate students, one CEAS graduate student, and eight members of the CEAS Industrial Liaison Council/Industrial Advisory Board. The committee meetings were facilitated by Mitch Kohls from the Kohls Group Consulting.

Since the first meeting on March 18, 2005, several additional meetings have been held which culminated

on September 16, 2005 with the approval of a draft of CEAS' new mission, vision and goals.

The draft was submitted to the CEAS Coordinating Committee for placement on the agenda of the October 21, 2005 Faculty meeting as an action item. The CEAS faculty unanimously approved the draft.

The CEAS departments are currently working to submit their individual department plans on how to achieve the strategic goals set forth by the CEAS Strategic Planning document.

According to Interim Dean Al Ghorbanpoor's assessment, all future plans and activities of the College will be in the context of the elements included in the strategic plan. He has stressed that this will be critical for the success and growth of the College.

More information on the CEAS Strategic Planning Committee, the mission, vision, strategic goals and sub-goals can be found on the CEAS website at: <http://www.uwm.edu/CEAS/assets/CEASStrategicPlan.pdf>

RGI, *continued from page 3*

The selection criteria are based upon three categories: (1) Quality, the novelty of the concept and impact of potential outcomes; (2) Risks, the probability of external funding, sustainability and likelihood of achievability; and (3) Rewards, the impact on the discipline, University and Milwaukee, and the potential return on investment.

Based upon the external reviewers' recommendations, the Chancellor, Vice Chancellor for Research, and the Provost will then select a portfolio of research investments. If necessary, selected PIs will be asked to submit additional, more detailed proposals for a second review, particularly for large-scale projects with high budgets.

New Grant Writer, *continued from page 1*

organizational structure, review process, and strategies for a successful proposal. Other workshops will focus on revising and resubmitting unfunded proposals, and how to write effective proposal abstracts and budget narratives. In the fall I plan at least one workshop featuring representatives from federal funding agencies.

What attracted you to this position after your long career in grant development at Marquette and DePaul?

There were two important reasons: First, I always wanted to return to UWM (Marjorie received her Ph.D. in English from UWM in 1978) but there never had been a suitable and

Christensen Elected to the Rank of Fellow

Dr. Erik Christensen, Chair of the Civil Engineering and Mechanics department, has been elected to the rank of Fellow by the American Society of Civil Engineers (ASCE). This is a high-level membership in ASCE, second only to Honorary Member. This honor recognizes professionals with distinction,

achievement, and exceptional engineering experience. The rank of Fellow is awarded to a select group of people who are recognized as leaders in the civil engineering profession, and have made an ongoing commitment to leadership and the profession. Congratulations to Dr. Christensen.

Beimborn Named ESM Engineer of the Year

Dr. Beimborn, who has recently retired from CEAS, has been selected as the recipient of the 2005 Engineers & Scientists of Milwaukee's (ESM) Engineer of the Year Award. The ESM Engineer of the Year award is presented annually to an outstanding contributor

to the engineering profession from the greater Milwaukee area. The award was presented on February 16, 2006 during the 53rd Annual National Engineers' Week Banquet that is sponsored by the Engineers & Scientists of Milwaukee.

timely opening. Second, I had been working as an independent grant writer for the last two years, but I missed the daily contact with people and the activity of a university campus. It is great fun to be back at UWM as an administrator and next fall as a teacher of Technical Communication for Engineers and Scientists. Now I really feel I've become part of CEAS.

Faculty Promotion

Congratulations to Dr. Jang of the Department of Industrial and Manufacturing Engineering on his promotion to Associate Professor with tenure.



College of Engineering and Applied Science
Graduate Programs and Research
Office of the Associate Dean
PO Box 784

CEAS Graduate Programs & Research Newsletter Staff

Marjorie Piechowski,
piechon4@uwm.edu
414-229-3721

Melody Clair,
mclair@uwm.edu,
414-229-2954