

# CEAS Graduate Programs & Research Newsletter

## Research Development Workshop Series

The Graduate School is hosting a Research Development Workshop Series this semester. The series is intended for UWM faculty, but is also open to UWM graduate students. Space is limited, so registration is required. To register for one of the workshops listed below, go to: <http://www.mydevelopment.uwm.edu>

### Graduate School Research Development Workshop Series

**September 23, 2005, 11:30-1:00, Curtin 175**

Overview of Research Services: Funding Opportunities, Alert Services, Profile Services, Internal Programs  
 Steve Atkinson

**September 30, 2005, 11:30-1:00, Business S191**

Animal Care and Biological/Radiation Safety  
 Beryl Forman and Sharron Daly

**October 14, 2005, 11:30-1:00, Business S191**

Human Subjects in Research Protections  
 Chris Buth-Furness

**October 28, 2005, 11:30-1:00, Business S191**

Proposal Preparation, Proposal Submission, Post-Award Services  
 Peggy Vanco

**November 4, 2005, 11:30-1:00, Business S191**

Industry/University Partnerships  
 K.C. Lerner

**November 11, 2005, 8:30-12:00, Business S191**

Twelve Keys to Successful Grantwriting  
 Dr. Robert Lowman

**November 11, 2005, 1:00-4:30, Business S191**

Ins and Outs of Federal Funding  
 Dr. Robert Lowman

**December 2, 2005, 11:30-1:00, Business S191**

Intellectual Property/Technology Transfer  
 K.C. Lerner

For more information on this workshop series, contact Steve Atkinson in the Graduate School at 229-4062 or [sda@uwm.edu](mailto:sda@uwm.edu).

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## Proposals Funded

### April 1, 2005 through July 31, 2005

Principal Investigator	Proposal	Agency	Amount
Bravo, H.	Climate signals in groundwater and surface water systems: Spectral analysis of hydrologic processes	State of Wisconsin Groundwater Coordinating Council	\$27,174
Buechler, D.	Supplemental Math Instruction to Improve Retention of Minority Engineering Students	Wisconsin Alliance for Minority Participation (WiscAMP)	\$9,277
Christensen, E. (Li, J.)	Expanded Stormwater Monitoring Program Data Analysis 2000-2006	Milwaukee Metropolitan Sewerage District	\$50,000
Gong, S.	Study of Microcellular Injection Molding of Bio-based/Biodegradable Plastics	National Science Foundation	\$279,992
Helwany, S. (Ghorbanpoor, A.)	Construction Vibration Attenuation with Distance and its Effect on the Quality of Early-Stage Concrete	HNTB/WHRP	\$125,903
Jang, J.	Performance Improvement for Maintenance Van Dispatching at Wisconsin Lift Truck	Wisconsin Lift Truck	\$11,387
Jen, T.	A Feasibility Study on Solid Waste Elimination for Environmentally Benign Machining Processes	UW system Solid Waste Research Program	\$22,020
Lee, J.	Rockwell Automation Professorship	Rockwell Automation	\$50,516
Lee, J.	Supplemental Support from Rockwell Automation	Rockwell Automation	\$9,500
Li, J.	Mercury Removal from Coal Combustion Byproducts and Sorbents	UW System Solid Waste Research Program	\$30,000
Li, J.	Mercury Removal from Coal Combustion Byproducts and Sorbents	We Energies	\$10,000
Li, Y.	Strap Breaking Prevention through Flexi-roll Process Monitoring	Milwaukee Journal & Sentinel, Inc.	\$5,400
Naik, T.	Center for By-Products Utilization	UWM Foundation	\$35,000
Rohatgi, P.	Advanced Rapid Manufacture of Lightweight Materials and Components for Military Applications	US TACOM Acquisition Center	\$374,803
Yu, D.	New algorithms for PTZ camera based object tracking	JunTech	\$32,321
<b>Total</b>			<b>\$1,073,293</b>

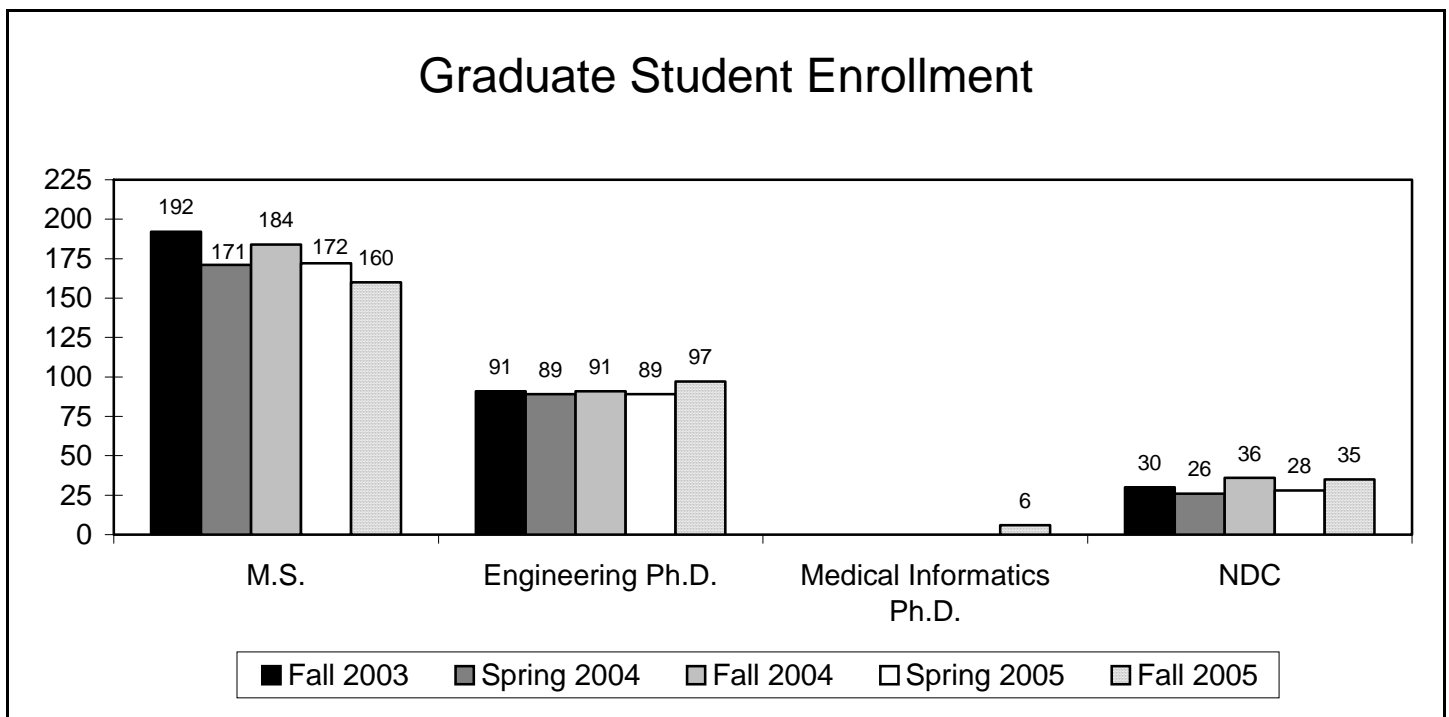
Graduate Applications (As of August 29, 2005)				
	Spring 2004	Fall 2004	Spring 2005	Fall 2005
M. S. Candidates	117	205	80	169
Engineering Ph.D. Candidates	26	82	25	76
Engineering Ph.D. Candidates w/o M.S.	6	18	2	9
Medical Informatics Ph.D.	-	-	-	14
<b>Total</b>	<b>149</b>	<b>305</b>	<b>107</b>	<b>268</b>

## CEAS Offers New Faculty Orientation Workshop on September 30

CEAS will offer a New Faculty Workshop on Friday, September 30, 2005 from 1:30 PM to 3:00 PM in EMS E 225. The workshop is an introduction to CEAS and UWM's procedures and policies in the areas of research, graduate programs, and

academics. It will include an overview of CEAS and UWM's research resources and proposal submittal process; graduate programs of study, qualifying exam, grading, and independent studies; syllabus standards, academic misconduct, special

accommodations, and more. All faculty are welcome to attend. For more information please contact Melody Clair at 229-2954 or [mclair@uwm.edu](mailto:mclair@uwm.edu) or Betty Warras at 229-6169 or [bwarras@uwm.edu](mailto:bwarras@uwm.edu).



## Proposals Submitted

### April 14, 2005 through August 31, 2005

Principal Investigator	Title	Amount
Amano, R.	Part 1: Experimental Study of Flows Under a Single-Blade Mower Deck	\$38,220
Amano, R.	Part 2: CFD Study of Flows Under a Single-Blade Mower Deck	\$12,495
Armstrong, B.	RGR-based motion tracking for real-time adaptive MR imaging and spectroscopy	\$1,562,983
Beimborn, E. (Horowitz, A.)	UWM participation in Midwest Regional Transportation Center - Year 7	\$17,000
Bravo, H. (McLellan, S.)	Development and application of molecular based methods for identifying sources of fecal pollution at Lake Michigan beaches	\$374,000
Bravo, H. (McLellan, S.)	OHHI 2005: Predicting Pathogen Fate in Great Lakes Environment	\$694,105
Buechler, D.	Supplemental Math Instruction to Improve Retention of Minority Engineering Students	\$9,277
Christensen, E. (Li, J.)	Expanded Stormwater Monitoring Program Data Analysis 2000-2006	\$276,834
Christensen, E. (Cuhel, R.)	Interception of Contaminant-Laden Sediment By Filter Feeding Mussels	\$257,373
Christensen, E.	Modeling Fate and Transport of Polybrominated Diphenyl Ethers (PBDEs) in the Great Lakes	\$566,902
Christensen, E. (Klaper, R.)	The relationship between biological diversity and population survival after exposure to single and multiple stressors	\$453,512
Gong, S.	Study of Microcellular Injection Molding of Bio-Based/Biodegradable Plastics	\$279,992
Gong, S.	Novel High Temperature Sensors for VHTR	\$100,500
Jang, J.	Development of Compressor Bearing On-line Monitoring System using National Instrument PXI System	\$4,995
Jang, J.	Performance Improvement for Maintenance Van Dispatching at Wisconsin Lift Truck	\$11,387
Jang, J.	Simulation for Maintenance/Material Handling Workforce Dispatch	\$11,998
Klemer, D. (Yakovlev, V.)	A Collaborative University of Wisconsin-Milwaukee / Medical College of Wisconsin Interdisciplinary PhD Program in Bioengineering and Molecular Biophysics	\$994,269
Kouklin, N.	CAREER: Frontier ZnO Nanorod Array Technology: En route towards Advanced and Hybrid Electro-Mechanical-Chemical-Optical Devices and Systems	\$683,262
Lee, J.	Supplemental Support from Rockwell Automation	\$9,500
Li, J.	Mercury Removal From Coal Combustion Byproducts and Sorbents	\$10,000
Li, Y.	Strap Breaking Prevention through Flexi-roll Process Monitoring	\$5,400

## Proposals Submitted April 14, 2005 through August 31, 2005

Principal Investigator	Title	Amount
Mali, A.	Efficient Multiagent Planning & Execution in a Dynamic Environment	\$268,477
McRoy, S.	Adaptive Learning Support on Heterogeneous Devices	\$427,710
Naik, T. (Kraus, R.)	Demonstration of Manufacturing Technology for Concrete and CLSM Utilizing Paper Mill Residual Solid	\$55,080
Naik, T.	Recycling Opportunities For Coal Combustion Products Through Educational Workshops	\$39,976
Papadopoulos, C.	CAREER: Extending and Improving the Uses and Methods of Computation in Structural Analysis and Mechanics Education	\$406,451
Pillai, K.	CAREER: Modeling the Unsaturated Flow During Fiber Wetting in the Manufacture of Composite Materials - Supplement 1	\$6,250
Pillai, K.	CAREER: Modeling the Unsaturated Flow During Fiber Wetting in the Manufacture of Composite Materials - Supplement 2	\$5,000
Titi, H.	The 13th Annual Great Lakes Geotechnical and Geoenvironmental Engineering Conference	\$5,000
Vairavan, K.	A Presentation System for Just-in-Time Learning in Radiology	\$11,776
Wang, W.	CAREER: An integrated digital retina based on novel silicon negative differential resistance devices	\$400,010
Zhao, T.	CAREER: Programming abstractions for reasoning about large software systems.	\$500,000
<b>Total</b>		<b>\$8,499,734</b>

## CEAS Welcomes Five New Faculty Members in CE, CS, EE, & ME

### Sarah Gong

Assistant Professor, Mechanical Engineering

Ph. D. in Materials Science and Engineering, University of Michigan-Ann Arbor

#### Research Interests:

- Polymer nanocomposites
- Biobased plastics
- Polymer processing

- Electronic packaging materials
- Polymer thin films
- Flat panel displays
- Polymer light emitting diodes

#### Teaching Interests:

- Thermodynamics
- Fundamentals of Materials Science and Engineering
- Polymeric Materials
- Composites Materials

#### Contact Information:

sgong@uwm.edu

### Qian Liao

Assistant Professor, Civil Engineering and Mechanics

Ph.D. in Civil and Environmental Engineering, Cornell University

*Continued on page 7*

## Graduate Student Reception

A graduate student reception was held on Wednesday, September 21, 2005. This annual event offers graduate students the opportunity to meet CEAS faculty and staff.

The brief program included a welcome from Interim Dean Ghorbanpoor and an introduction of faculty and staff.

Questions regarding graduate programs or for copies of the handouts from the reception, contact Betty Warras in EMS E379 at 229-6169 or [bwarras@uwm.edu](mailto:bwarras@uwm.edu).

## Order of the Engineer and Outstanding Student Awards Ceremony

Faculty are asked to join members of the College of Engineering and Applied Science's December 2005 graduating class for the bi-annual Order of the Engineer Ceremony and Outstanding Student Awards on Saturday, December 17, 2005 in UWM's Union Wisconsin Room at 3:00 PM. All faculty are welcome to nominate students for Outstanding Student Awards. A nomination form can be obtained in EMS e387 or by emailing [ceasca-reers@uwm.edu](mailto:ceasca-reers@uwm.edu)

## 2006 Fall National SBIR/STTR Conference

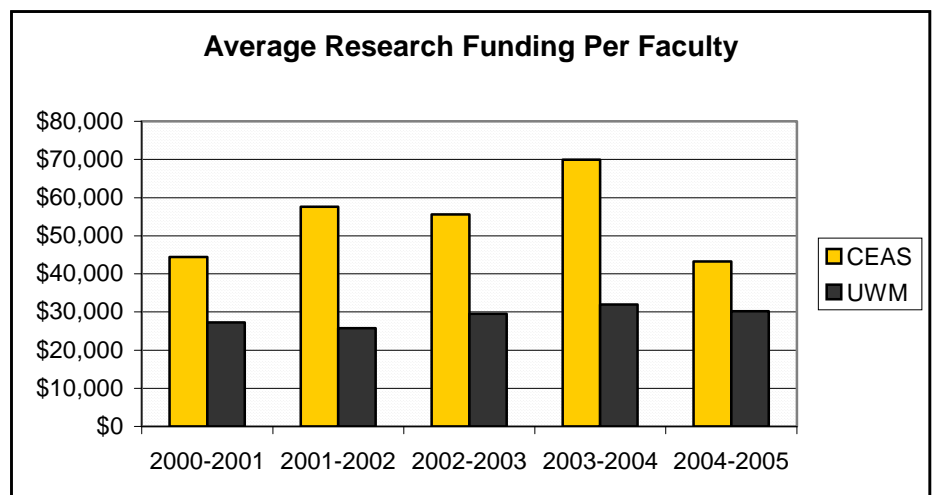
The 2006 Fall National SBIR/STTR Conference will be held in Milwaukee on November 6—9, 2006. The venue will be the Hilton Milwaukee City Center. CEAS/UWM is one of the primary organizers of the conference. The National Science Foundation, the Small Business Administration and all 11 SBIR/STTR federal agencies sponsor and attend the conference. Annually, the SBIR and STTR programs provide over \$2 billion to small businesses through federal programs to help entrepreneurs take their ideas from

conception to reality. This conference provides an excellent opportunity for CEAS faculty to meet and network with potential industry partners and SBIR and STTR Program Managers, as well as SBIR/STTR award winners, to transfer research outcomes into the marketplace. Please plan to attend this conference. For additional information, contact Interim Dean Al Ghorbanpoor, a member of the conference organizing committee at [algh@uwm.edu](mailto:algh@uwm.edu).

## CEAS Experiences Drop in Research Funding

After four years of steady growth in funded research projects, CEAS has experienced a reduction in research funding in the last fiscal year. Apparent reasons for this are faculty leaves and an overall drop in the number and volume of research proposals submitted to various funding agencies. Major efforts will need to be made within the College to reverse this. CEAS is currently recruiting for a Senior Technical Grant Writer and technical support

staff to aid the faculty in increasing research proposal activities. Also, major efforts are underway to enhance our current research laboratories to create new capabilities and make CEAS research proposals more competitive. A faculty research advisory committee will be formed soon to work with the Interim Dean to address this and other research relevant issues within the College.



## CEAS New Faculty, *Continued from page 5*

### Research Interests:

- Environmental Fluid Mechanics
- Quantitative Imaging Based Flow Measurement Techniques
- Turbulent Dispersion and Mixing
- Lake Circulation and Dynamics
- Sediment Transport
- Numerical Simulation of Environmental Flows

### Teaching Interests:

- Environmental fluid mechanics
- Water resources engineering
- Wave mechanics and coastal engineering
- Mixing, transport and transformation processes in the environment

### Contact Information:

EMS 819  
414-229-4228  
liao@uwm.edu

### Adel Nasiri

Assistant Professor, Electrical Engineering

Ph.D. in Electrical Engineering,  
Illinois Institute of Technology

### Research & Teaching Interests:

- Modeling, analysis, and control of power electronics converters
- Active filters and uninterruptible power supplies
- Brushless DC and switched reluctance motor drives
- Application of power electronics in medical devices
- More electric vehicles, ships, and aircrafts

- Integrated power electronics converters
- Electromagnetic compatibility
- Fuel cell technology and 42V power electronics converters
- Multi-converter power electronics systems

### Contact Information:

EMS 1219  
414-229-4955  
nasiri@uwm.edu

### Guangwu Xu

Assistant Professor, Computer Science

Ph.D. in Computer Science,  
University at Buffalo, SUNY

### Research & Teaching Interests:

- Computer security
- Cryptography
- Algorithms
- Rewriting systems
- Computational number theory and algebra

### Contact Information:

EMS 1239  
414-229-5731  
gxu4uwm@uwm.edu

### Jian Zhao

Assistant Professor, Civil Engineering and Mechanics

Ph.D. in Civil Engineering,  
University of Minnesota,  
Minneapolis

### Research & Teaching Interests:

- Earthquake Engineering
- Behavior and Seismic Design of Concrete Structures
- Structural Modeling, Real-time Dynamic Testing
- Advanced Energy-Dissipation Materials and Applications

### Contact Information:

EMS E309  
414-229-2330  
jzhao@uwm.edu

## Important Dates

### September 30, 2005

New Faculty Orientation  
Workshop

### October 12, 2005

Chancellors Awards Fall Payment

### November 17 & 18, 2005

Qualifying Exam

### December 5, 2005

Defense Deadline

### December 12, 2005

Thesis Submission Deadline

### December 17, 2005

Order of the Engineer &  
Outstanding Student Awards  
Ceremony

### December 18, 2005

Commencement

## CEAS Faculty Member Receives Distinguished Teaching Award

Associate Professor John Reisel of the Department of Mechanical Engineering has been selected to receive the Distinguished Undergraduate Teaching Award. Dr. Reisel has been a member of the CEAS faculty since 1994. He has taught several undergraduate courses including Basic Engineering Thermodynamics, Applied Engineering Thermodynamics, Basic Heat Transfer, Design Projects, Internal-Combustion Engines, Powerplant Theory and Design, Applied Optics in Engineering, and Aerodynamics.

Only three outstanding undergraduate teachers are selected each year. The award is based on university peer and student nominations. An award ceremony recognizing all out-

standing faculty and award winners will be held on Tuesday, October 11, 2005 in the Union's Wisconsin Room at 3:15 PM. There will be a reception following the ceremony.

### Faculty Promotions

Congratulations to Dr. Hani Titi of the Department of Civil Engineering and Mechanics and Dr. Krishna Pillai of the Department of Mechanical Engineering. Both faculty members have been promoted from Assistant Professors to Associate Professors.

### CEAS Graduate Programs & Research Newsletter

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