

# CEAS Graduate Programs & Research Newsletter

## Grants.gov is Here: What You Need to Know to Use It

**Introduction to grants.gov** The recent implementation of *grants.gov* marks a profound and permanent change in the federal grant system. *Grants.gov*, a secure Internet source, has two distinct operations, announcing funding opportunities and receiving electronic applications. All 26 federal grant-making agencies, including the National Science Foundation, are already using *grants.gov*. By the end of 2007 all federal grant applications must be submitted through *grants.gov*, so NSF no longer will use Fastlane for grant applications. NSF most likely will continue to use Fastlane for other grant functions, including award management and reporting.

Some federal grant agencies, such as NIH and NSF, are phasing in the use of *grants.gov* by program or type of

application. Other agencies already require its use for all grant programs and no longer accept hard copies of proposals.

*Collaborative partners:*

The following agencies now require use of *grants.gov*: U.S. Departments of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, Housing and Urban Development, Interior, Justice, Labor, State, Transportation, Treasury, Veterans Affairs, the Agency for International Development, Corporation for National and Community Service, Institute of Museum and Library Services, National Aeronautics and Space Administration, National Archives and Records Arts and Humanities, National Science Foundation, Small Business

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## Congratulations on Honors and Awards to CEAS Faculty and Graduate Students:

*Junhong Chen* was interviewed on his nanotechnology research for a feature story in *Nanowork Spotlight*.

*Arun Garg* received a new million dollar grant from the Centers for Disease Control and Prevention to continue his ergonomics research work on "Low-Back Pain: Quantifying Risk Factors."

*Sarah Gong* received a grant for research on eco-friendly bio-based polymers in an on-campus

presentation by the Secretary of the Wisconsin Department of Agriculture, Trade and Consumer Protection.

*George Hanson's* article, "Fundamental Transmitting Properties of Carbon Nanotube Antennas," received the S. A. Schelkunoff Transactions Prize Paper Award of the IEEE Antennas and Propagation Society.

Graduate Student *Bo Liu* was commended by the Mequon Police

Department for his services as a translator during their interview with the victim of a serious felony.

*Jun Zhang* was honored at a grant presentation ceremony, from the new Wisconsin Biomedical technology Alliance, a partnership among UW-M, the Medical College of Wisconsin, Marquette University, the Milwaukee School of Engineering, and UW-Parkside.

**Grants.gov, continued from page 1**

Administration, the Social Security Administration and 11 other federal grant-making agencies.

***CEAS Workshop on Orientation to grants.gov***

Although there is no substitute for hands-on experimenting with the system, we will offer a workshop that demonstrates access and use of grants.gov for grant applications. The one-hour workshop will be offered on **October 4** and repeated on **October 12**.

***Demonstration module:*** The grants.gov web site offers a demonstration module that takes applicants through the screens and necessary steps to prepare and submit a grant application. An important point to remember is that, unlike Fastlane, grants.gov entries are made off-line, saved and then uploaded to the system once the forms and files are complete. Also, unlike Fastlane, uploads to grants.gov must be converted first to PDF format.

***Searching for funding:*** Grants.gov also provides search capability for government-wide grant opportunities, making the process faster, more efficient and more comprehensive than searching individual funding agencies or programs. Several search options are available: key words, agency program numbers, announcement dates, or the

Catalog of Federal Domestic Assistance (CFDA) number that is assigned to all federal grant programs. CEAS faculty are encouraged to contact Michelle Schoenecker to request funding searches and downloading of application materials.

***Applying for grants:*** In order to submit a proposal, the applicant first needs to identify the specific grant opportunity, separately download the application instructions and application forms, and complete and save the forms. However, to do these steps, the applicant must use Pure Edge Viewer, a small, free program that must be downloaded and installed on the applicant's computer. For Windows users, information on Pure Edge Viewer is available at <http://grants.gov/DownloadViewer>. Non-Windows users can find Pure Edge support at <http://grants.gov/MacSupport>.

***Preparing the forms:*** Once the forms are opened, the cover page must be completed in sequence or the system will announce "errors." Until the errors are located and corrected, grants.gov will not allow the application to be submitted to the funding agency.

***Hands-on Assistance:*** CEAS faculty who are using grants.gov for the first time can receive guidance from the Research Office (Marjorie Piechowski and Michelle Schoenecker) in preparing forms and uploading proposal components.

## **RGI-2 Update**

The Graduate School has announced the RGI-2 competition, with an **October 16, 2006** deadline. The competition is open to faculty and staff, with the following changes from last year:

- On-line data entry and format for cover page, biographical information, and budget
- Proposal narrative increased to 4 pages, including references and illustrations
- One course buy-out allowed for faculty, at a rate of 12.5%
- Separate signature page provided, with room for up to 10 PI's/Co-PI's
- More focused review panels, with multiple readers for panel discussions
- Opportunity to enter up to three key words to describe research more precisely
- One-year funding except in unusual, justified circumstances
- Applicants are limited to be lead P.I. on two RGI applications
- Applicants can be Co-P.I. on any number of applications
- Current RGI winners have no strategic advantage or automatic extension
- Case Managers are strongly recommended and should be requested by October 2, 2006

## **Associate Technical Grant Writer Michelle Schoenecker Joins CEAS**

Ms. Michelle Schoenecker, who joined CEAS as Associate Technical Grant Writer in July, has quickly demonstrated her technical editing skills on grant proposals and research manuscripts for faculty from all departments. She also has begun to disseminate research funding opportunities tailored to specific faculty interests and to assist faculty with electronic grant submissions.

Other primary responsibilities include obtaining and interpreting application materials, maintaining a grant deadline calendar, upgrading the CEAS grants database, and writing articles and reports on grant activity and faculty research. She holds a bachelor's degree in professional communications from Alverno College and is pursuing a master's degree in English from UW-M, specializing in professional writing.

In her most recent position at Fiserv, Michelle managed and produced the entire proposal process for over 150 sales proposals, averaging 250-300 pages each, with extensive appendices. She wrote executive summaries, developed proposal standards, edited proposals for consistent language and tone, and served as primary proofreader and editor. In earlier positions at Alverno College and the American Lung Association she wrote successful proposals to individuals, businesses and foundations. Michelle also has published articles about proposal best practices, developed and managed an electronic newsletter, formatted large, complex documents, and written news articles and press releases.

### **Important Dates**

#### **Graduate Studies:**

**October 5, 2006**

Fall Engineering Industry Expo

**October 18, 2006**

Thesis/Dissertation Workshop offered by the Graduate School - MIT 361

5:00 – 6:00 p.m.

**November 10, 2006**

Thesis/Dissertation Workshop offered by the Graduate School - MIT 361

4:30 – 5:30 p.m.

**November 16 & 17, 2006**

Fall Qualifying Exam - EMS W220

1:00 - 5:00 p.m.

**December 4, 2006**

Defense Deadline

### **Important Dates**

**December 11, 2006**

Thesis Submission Deadline

**December 16, 2006**

Order of the Engineer & Outstanding Alumni Awards

**December 17, 2006**

Commencement

#### **Research:**

**October 4, 2006**

Grant Workshops: grants.gov  
11:30 a.m. - 1:30 p.m.

**October 12, 2006**

Grant Workshops: grants.gov  
3:00 - 4:00 p.m.

**October 16, 2006**

RGI-2 Deadline  
4:30 p.m.



## Proposals Submitted May 1, 2006 - September 15, 2006

(Data Source: CEAS Database)

Prin. Investigator	Title	Agency	Amount
Chen, J.	NER: Carbon Nanotube Coated with Nanoparticles - An Enabling Structure for Nanomanufacturing and Nanodevices-REU Supplement	National Science Foundation	\$12,000
Chen, J.	GOALI: Fundamental Studies on Nanoscale Corona Discharge	National Science Foundation	\$369,097
Christensen, E.	Collaborative Research: Modeling transformations of polybrominated diphenyl ethers (PBDEs) in the aquatic environment	National Science Foundation	\$307,367
Dhingra, A.	Graduate Internship Program - Morris Cranes	Morris Material Handling	\$32,545
Garg, A.	Chronic Illness Risk Factors and Health Promotion Among Commercial Truck Drivers	Rocky Mountain Center for Occupational and Environmental Health	\$256,662
Garg, A.	Upper-Limb Musculoskeletal Disorders: Identifying Risk	Centers for Disease Control and Prevention	\$1,438,597
Ghorbanpoor, A. Co-PI: Tabatai, H.	Workshops/Specifications for Rehabilitation Techniques for Concrete Bridges	Wisconsin Highway Research Program	\$15,000
Ghorbanpoor, A.	Monitoring and Load Distribution Study for the Land Bridge	Wisconsin Highway Research Program	\$30,000
Gong, S.	Sustainable and Eco-Friendly Biobased/Biodegradable Polymers	National Science Foundation	\$406,841
Hanson, G.	Carbon Nanotube Antennas	RF Nano Corporation	\$12,352
He, X.	Non-Linear Modeling and Development of Lab-on-a-Chip using AC Electro-osmosis for Biotransport and Biodetection	National Science Foundation	\$444,601
Hosseini, H. Co-PI: Ashley, C.	BC-DP: Access to Computing and Technology – University Partnership	National Science Foundation	\$575,804
Klemer, D.	Near-Infrared Phototherapy in Neurodegenerative Disease	Luminary Biosciences, LLC	\$17,543
Kouklin, N. Co-PI: Steeber, D.	Carbon Nanotube- Based Next-generation Cellular and Sub-cellular Probes	National Science Foundation	\$351,500
Kouklin, N.	Probing Photoconduction and Transport Phenomena in Carbon Nanotubes and their polymer nanocomposites	The Petroleum Research Fund	\$90,000
Li, Y.	Confidential Disclosure Agreement with Brady Worldwide, Inc.	Brady Worldwide, Inc.	\$0

## Proposals Submitted May 1, 2006 - September 15, 2006

<b>Prin. Investigator</b>	<b>Title</b>	<b>Agency</b>	<b>Amount</b>
Liao, Q.	Numerical simulation of 2D surfing wave generated by a water drop structure	Pacific Advanced Civil Engineering, Inc.	\$11,666
Mali, A.	Automated Planning for Pain Management	National Institutes of Health	\$147,000
McRoy, S. <i>Co-PI: Lang, N.</i>	Collaborative Intelligent Health Information Systems Initiative	National Science Foundation	\$0
Munson, E.	Software Versioning and Variants	GE Healthcare Technologies	\$59,939
Naik, T. <i>Co-PI: Kraus, R.</i>	Recycling Opportunities for Coal-Combustion Products and Other By-Products Through Educational Seminars	U.S. Environmental Protection Agency	\$74,846
Naik, T. <i>Co-PI: Kraus, R.</i>	Demonstration of Manufacturing Technology for Concrete and CLSM Using Residuals and Reject Fibers from Pulp and Paper Mills	Wisconsin Department of Natural Resources	\$55,150
Naik, T.	Use of Class C Fly Ash in Binary Blends for Mitigation of Alkali-Silica Reactions	Electric Power Research Institute	\$29,896
Nasiri, A. <i>Co-PI: Yu, D.</i>	A State-of-the-Art Approach in Improving Power Electronics and Electric Drives Courses, Curriculum, and Laboratories	National Science Foundation	\$134,734
Rohatgi, P. <i>Co-PI: Chen, J.</i>	NUE: Manufacture of Bulk Nanostructured Composite Systems	National Science Foundation	\$199,142
Wang, W.	Micro-Magnetic Modeling on Vertical Ferromagnetic Ring	Office of Naval Research	\$57,553
Wang, W. <i>Co-PI: Steeber, D.</i>	Ultra-sensitive Magneto-electronic Immunosensor	National Institutes of Health	\$544,390
Wang, W. <i>Co-PI: Steeber, D.</i>	Thermally Programmed Curie Point Magneto-electronic Biosensor	National Science Foundation	\$552,394
Ying, L.	Parallel Generalized Series Imaging: Algorithm and Applications to Contrast-Enhanced Breast Cancer Imaging	University of Pittsburgh	\$54,684
Yu, D.	New Algorithms for PTZ Camera-Based Object Tracking	Jun Tech	\$22,255
Zhao Tian	CAREER: Programming Abstractions for Reasoning About Large Software Systems	National Science Foundation	\$460,150
		<b>TOTAL</b>	<b>\$6,763,708</b>

**Proposals Funded May 1, 2006 - September 15, 2006**

*(Data Source: Graduate School Reports)*

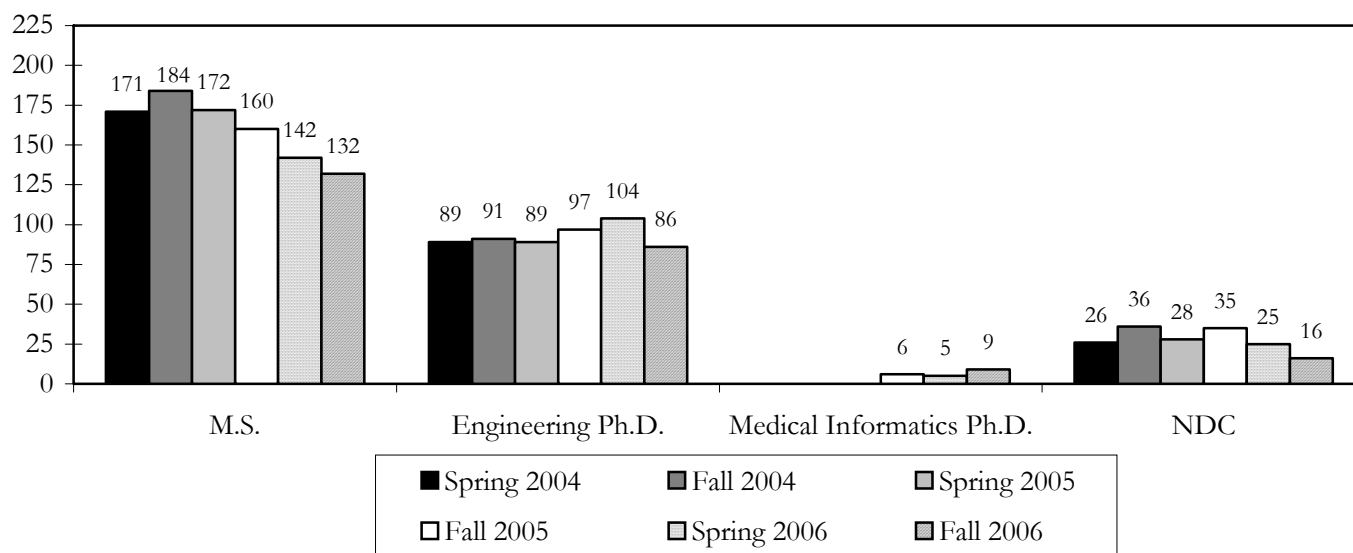
<b>P.I.</b>	<b>Proposal</b>	<b>Agency</b>	<b>Amount</b>
Amano, R.	Heat Transfer Studies of Heated Soil Vapor Extraction	Jay Jaktar, Inc.	\$16,119
Chen, J.	SGER: Coating Carbon Nanotubes with Aerosol Nanoparticles Produced from a Mini-arc Plasma Source	National Science Foundation	\$31,481
Chen, J.	NER: Carbon Nanotube Coated with Nanoparticles - An Enabling Structure for Nanomanufacturing and Nanodevices	National Science Foundation	\$129,998
Dhingra, A.	Graduate Internship Program 1	Harley-Davidson Motor Company	\$32,427
Ghorbanpoor, A.	Graduate Internship Program - ReGenco - Bouche	ReGenco, LLC	\$35,327
Gong, S.	Sustainable and Eco-friendly Biobased Polymer Composites	WI Dept. of Agric., Trade, and Consumer Protection	\$148,541
He, X.	Non-Linear Modeling and Characterization of ZnO-based Sensors	National Science Foundation	\$54,619
Horowitz, A.	A Wisconsin Evaluation of a Tool to Estimate the Economic Development Benefits of Highway Projects	Midwest Regional University - University Transportation Center	\$47,669
Jen, T.C. <i>Co-PI: Chen, J.</i>	Electrostatic-Force-Assisted Cold Gas Dynamic Spray of Nanoparticles IV - A New Low-Temperature Process for Producing Nanostructured Coatings and Bulk Materials	UW System Applied Research Grant Program	\$50,000
Law, C.T. <i>Co-PI: Yu, D.</i>	Fiber Optics-Based Fault Detection in Power Distribution Systems	UW System Applied Research Grant Program	\$49,999
Li, Y.	Data-Driven Surge Modeling and Inlet Guide Vane Control for Centrifugal Air Compressors	Toyota Motor Corporation	\$22,944
Liao, Q.	Exposure Assessment Modeling for Munition Compounds in Coastal Areas	Georgia Institute of Technology	\$25,183
Naik, T. <i>Co-PI: Chun, Y.</i>	Recycling Opportunity for Gypsum Wallboard in Concrete	UW System Solid Waste Research Program	\$29,196
Pillai, K.	Understanding and Modeling the Phenomenon of Wiping a Surface	S.C. Johnson & Son, Inc.	\$29,566
Reisel, J.	Analysis of the Factors Affecting the Deterioration of Catalysts in Small Utility Engines	Wisconsin Small Engine Consortium	\$60,000
Rohatgi, P	NER: Synthesis of Metal Matrix-Nanoparticle Composites by Stir-Mixing	National Science Foundation	\$10,000
Yu, D.	New Algorithms for PTZ Camera-Based Object Tracking	Jun Tech	\$22,255
Zhang, J.	New Techniques for Real-Time Tumor Tracking in Radiation Therapy for Lung Cancer	Biomedical Technology Alliance	\$50,000
<b>TOTAL</b>			<b>\$845,324</b>

## Graduate Applications

(As of September 18, 2006)

	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2006	Spring 2007
M.S. Candidates	205	81	140	86	129	43
Engineering Ph.D. Candidates	82	25	73	35	68	21
Engineering Ph.D. Candidates w/o M.S.	18	2	11	3	15	1
Medical Informatics Ph.D.	-	-	11	3	10	1
Medical Informatics Ph.D. w/o M.S.	-	-	-	-	2	0
Total	305	107	268	127	224	66

## Graduate Student Enrollment



8  
Faculty Publications and Presentations  
2005-2006 Academic Year

Data Source: Faculty Submissions

Aita, Carolyn

**Publications**

“Crystallization and segregation in vitreous rutile films annealed at high temperature.” M.A. Omari, R.S. Sorbello, and C.R. Aita, J. Vac. Sci. Technol. A **23**, 1568-1574 (2005).

“Crystallization and (Al,Ti)-oxide growth in annealed TiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> multilayers.” M.A. Omari, R.S. Sorbello, and C.R. Aita, J. Vac. Sci. Technol. A **24**, 317-323 (2006).

“Near-ultraviolet optical absorption behavior of TiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub> multilayer films.” M.A. Omari, R.S. Sorbello, and C.R. Aita, J. Appl. Phys. **99**, art. 123508 (1-7) (2006).

“The mosaic structure of TiO<sub>2</sub> with rutile short-range atomic order.” C.R. Aita, J. Vac. Sci. Technol. A **24** in press (2006).

**Patent**

“Self-repairing nanostructured ceramic coatings for protection of blood-interfacing implants.” C.R. Aita, V. Yakovlev, M. Cayton, M. Mirhoseini, and M. Aita, US Patent No. 6,869,701 (assigned solely to C.R. Aita).

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Amano, Ryo S.

**Publications**

Amano, R.S. and Song, B., “Chapter 9—Simulation of Turbulent Flow in a Duct With and Without Rotation – Cooling Passage of Gas Turbine Blades,” *Modeling and Simulation of Turbulent Heat Transfer*, 2005, pp. 315-348, Invited Contribution, WIT Press, UK.

Sun, D. and Amano, R.S., “An Interaction with a Sonic Injection Jet with a Supersonic Turbulent Flow Approaching a Re-entry Vehicle to Atmosphere,” *Advances in Heat Transfer*, Invited Contribution, WIT Press, UK (accepted, to be published in July 2006).

Xiao, Y. and Amano, R.S., “Aluminized Composite Solid Propellant Particle Path In Combustion Chamber Of Solid Rocket Motor,” *Advances in Fluid Mechanics*, 2006, pp. 153-164, WIT Press, UK.

Xiao, Y., Amano, R.S., Cai, T., and Li, J., “A New Method to Determine the Velocities of Particles on a Solid-Propellant Surface,” *ASME Journal of Heat Transfer*, Vol. 127, 2005, pp. 1057-1061.

Chon, W.C. and Amano, R.S., “Investigation of Flow Behavior around Co-Rotating Blades in a Double-Spindle Lawn Mower Deck,” *International Journal of Rotating Machinery*, Vol. 1, pp. 77-89.

Chen, Q., Amano, R.S., and Xin, M., “Experimental Study of R134A Condensation Heat Transfer inside the Micro-Fin Tubes,” *International Journal of Heat and Mass Transfer*, Vol. 41, 2005, pp. 785-791.

MohanDas, P.M., Amano, R.S., Roy, T., and Jatkar, J., “Unsteady State Analysis Of Heated Soil Vapor Extraction Process With Air Sparging,” ASME 2005 International Mechanical Engineering Congress Exposition, November 17-22, 2005, Orlando, FL.

Lu, X. and Amano, R.S., “Experimental Study on Utilization of CFB Desulfuration Bottom Ash for Construction Applications,” 2005 International Conference on Coal Science, October, 2005, Toba, Japan.

## **Faculty Publications and Presentations**

Song, B. and Amano, R.S., "A New Simulation Method for Separating and Recirculating Flows," International Conference On Jets, Wakes And Separated Flows, October, 2005, Toba, Japan.

Amano, R.S., "Study of the Flow Field in Afterburner of Propulsion Rocket using Ceramic Stabilizer," International Symposium on Non-Equilibrium Process, Combustion and Atmospheric Phenomena, Sochi, October, 2005.

Zheng, Y.H. and Amano, R.S., "Thermal Design and Characteristics of Thermal Distribution in Process Chamber," ASME 2005 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.

Xiao, Y.M. and Amano, R.S., "A New Development of Multi-to-One Cell-Matching Method and Its Application in VOF Interface Tracking," ASME 2005 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.

Lee, S. and Amano, R.S., "Design of Brewery Pasteurization Method by High Pressure Carbon Dioxide," ASME 2005 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.

Xu, C. and Amano, R.S., "Design of Swept Blade for Turbomachinery," ASME 2005 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.

MohanDas, P.M., Amano, R.S., Roy, T., and Jatkar, J., "Heated Soil Vapor Extraction Process With Air Sparging," Nagoya, Japan, August, 2005.

Xie, J., Amano, R.S., Singh, S., and Peck, R., "Reduction of Gaseous Emission From Power Turbine Combustor," ASME 2005 Summer Heat Transfer Conference, San Francisco, CA, July, 2005.

Xie, J., R.S. Amano and P.M. Mohan Das, and P.K. Rohatgi, "Transit simulation analysis for the pressure infiltration of aluminum melts into metal matrix composites," ASME 2005 Summer Heat Transfer Conference, San Francisco, CA, July, 2005.

MohanDas, P.M., Amano, R.S., Roy, T., and Jatkar, J., "Steady State Analysis Of Heated Soil Vapor Extraction Process With Air Sparging," ASME 2005 Summer Heat Transfer Conference, San Francisco, CA, July, 2005.

Xiao, Y.M. and Amano, R.S., "A Simulation Study of Flow Field In An Afterburner Of Propulsion Rocket With Ceramic Stabilizer," Proceedings of 5<sup>th</sup> International Symposium on Multi-phase Flow, Heat Mass Transfer and Energy Conversion, No. 297, July 3-6, 2005, Xi'an, China.

Song, P., Schoenbrun, S., Ray, R. and Amano, R.S., "Study on the Performance of Pump using CFD Tool," Proceedings of ASME Fluids Engineering Summer Meeting, June, 2005, Houston, TX.

Xie, J. and Amano, R.S., "Numerical Study on Evaporative Heat Transfer Of Air-Water Bubbly Flow," Proceedings of ASME International Conference on Microchannels & Minichannels, June, 2005, Toronto, Canada.

Xu, C. and Amano, R.S., "Development of A Low Flow Coefficient Single Stage Centrifugal Compressor," Proceedings of ASME Turbo & Expo June, 2005, Reno-Tahoe, Nevada, GT2005-68006.

Amano, R.S., Song, B., and Md. S. Reza, "A Study on Flow And Heat Transfer In Strongly Curved U-Bend," Proceedings of ASME Turbo & Expo June 6-9, 2005, Reno-Tahoe, Nevada, GT2005-68005.

Lu, X., and Amano, R.S. "Consideration and construction of 300 MW CFB boilers in China," 18<sup>th</sup> ASME International Conference on Fluidized Bed Combustion, May, 2005, Toronto, Canada.

## Faculty Publications and Presentations

- Amano, R.S. and Xiao, Y.M., "Aluminized Composite Solid Propellant Particle Path In Combustion Chamber Of Solid Rocket Motor," 2<sup>nd</sup> International Conference on Computational Ballistics, Cordoba, Spain, May, 2005.
- Amano, R.S. and Lu, X., "Water Spray Cooling Of High-Temperature Steam Flow Through a Steam Turbine Bypass Valve Line," 13<sup>th</sup> International Conference on Nuclear Engineering, Beijing, China, May, 2005, ICONE13-50596.
- Xu, C. and Amano, R.S., "Study Of Blade Sweep Effects Of Compressor," Proceedings of ASME Power, McCormick Place Convention Center, Chicago, Illinois, April, 2005, PWR2005-50191.
- Amano, R.S., "High-Temperature And High-Pressure Steam Flow Through A Steam Turbine Bypass Valve Line," Proceedings of ASME Power, McCormick Place Convention Center, Chicago, Illinois, April, 2005, PWR2005-50194.
- Xie, J., Amano, R.S. and Singh, S., "Simulation Of Gas Turbine Reacting Flows With Porous Inserts," Proceedings of ASME Power, McCormick Place Convention Center, Chicago, Illinois, April, 2005, PWR2005-50198.
- Sun, D. and Amano, R.S., "Parameters Affecting Supersonic Flowfield with Secondary Injection," AIAA-2005-24182, 43<sup>th</sup> AIAA Aerospace Sciences Meeting and Exhibit, 2005, Reno, NV.
- Sun, D. and Amano, R.S., "Cooling Gas Injection in Supersonic Turbulent Flowfiled With a Transverse Sonic Injection Jet," AIAA-2005-24309, 43<sup>th</sup> AIAA Aerospace Sciences Meeting and Exhibit, 2005, Reno, NV.
- Xu, C. and Amano, R.S., "Blade Sweep Effects Of Turbomachinery," AIAA-2005-24460, 43<sup>th</sup> AIAA Aerospace Sciences Meeting and Exhibit, 2005, Reno, NV.
- Lee, E.K., Amano, R.S., Xie, J.H. and Rohatgi, P.K., "CFD Simulation and Experimental Validation of MMC Solidification in the Presence of Cooled Fibers," DMII, NSF Grantee's Conference, January 2005, Phoenix, Arizona.
- Amano, R.S. and Rohatgi, P.K., "Synthesis of Metal Matrix-Nanoparticle Composites by Stir Mixing," DMII, NSF Grantee's Conference, January 2005, Phoenix, Arizona.
- Roy, T., Amano, R.S., Jatkar, and J. MohanDas, P., "Soil and Water Remediation Processes by Use of a Heated Vapor Extraction System and Air Sparging Technology," Proceedings of Sustainable Energy and Environment, Vol. 1, pp. 543-547, 1-3 January 2005, Hua Hin, Thailand.
- Amano, R.S. and Caulfield, S., "Condensation Heat Transfer of Flow Pattern in Mini-Channel," *International Conference on Nanochannels, Microchannels and Minichannels*, ICNMM2006-96103, University of Limerick, Ireland, June, 2006.
- Amano, R.S., Caulfield, S., "Numerical Study of Annular and Stratified Flows in Horizontal Micro-fin Tubes," *International Conference on Nanochannels, Microchannels and Minichannels*, ICNMM2006-96104, University of Limerick, Ireland, June, 2006.
- Xu, Z. Amano, R.S., and Caulfield, S., "Numerical Simulation of Thermo-Electro-Magnetic Performances in Supersonic Channel Flow," *International Conference on Nanochannels, Microchannels and Minichannels*, ICNMM2006-96105, University of Limerick, Ireland, June, 2006.
- Amano, R.S. and Caulfield, S., "A Study of Flows Over Microgrooves for Different Flow Pattern," *International Conference on Nanochannels, Microchannels and Minichannels*, ICNMM2006-96226, University of Limerick, Ireland, June, 2006.
- Ristic, D., Amano, R.S., and Rohatgi, P.K., "Numerical Modeling in LENS<sup>tm</sup> Process," 9<sup>th</sup> AIAA-ASME Joint Thermophysics Conference, San Francisco, June, 2006.
- Zhenyu Xu, Chun-Hian Lee, Amano, R.S., "Numerical Simulation of Supersonic MHD Channel Flows," 9<sup>th</sup> AIAA-ASME Joint Thermophysics Conference, San Francisco, June, 2006.

## Faculty Publications and Presentations

MohanDas, P.M., Amano, R.S., and Jatkar, J., "Heated Soil Vapor Extraction With Air Sparging technology for Soil/Water Remediation," 9<sup>th</sup> AIAA-ASME Joint Thermophysics Conference, San Francisco, 5-8 June 2006.

Guo, T., Lu, Hanzhou Liu, X., Chen, J., and Amano, R.S., "Cold Model Experiments and Numerical Simulation on a Selective Fluidized Bed Bottom Ash Cooler in a 410t/h CFB Boiler," 19th FBC Conference, 1st Call, May 21 – 24, 2006, Vienna, Austria.

Huang, Y., Lu, X., Liu, H., and Amano, R.S., "Investigation On The Structure And Arrangement of a Large-Scale Circulating Fluidized Bed Boiler," 19th FBC Conference, 1st Call, May, 2006, Vienna, Austria.

Xu, C. and Amano, R.S., "Static Pressure Distortion of a Large Cut Back Tongue Volute," ASME Turbo & Expo, GT2006-90001, 8-11 May 2006, Barcelona Spain.

Lu, X., Liu, H., and R.S. Amano, "Industrial Demonstration on NO<sub>x</sub> Removal by Gas burning in a Tangential Pulverizing Coal-fired Boiler in China," ASME Electric Power Conference, PWR2006-88100, 2-4 May 2006, Georgia World Congress Center, Atlanta, GA.

Xu, C. and Amano, R.S., "A Study of a Single Stage Centrifugal Compressor," ASME Electric Power Conference, PWR2006-88023, 2-4 May 2006, Georgia World Congress Center, Atlanta, GA.

Xu, C. and Amano, R.S., "Swept Blade Aerodynamic Effects of Compressor Airfoil," ASME Electric Power Conference, PWR2006-88007, 2-4 May 2006, Georgia World Congress Center, Atlanta, GA.

Amano, R.S., "Flow in Duct Downstream of a Steam Turbine Bypass Valve," ASME Electric Power Conference, PWR2006-88021, 2-4 May 2006, Georgia World Congress Center, Atlanta, GA.

Chen, Q. and Amano, R.S., "Experimental Study of Condensation in Horizontal Micro-Fin Tubes," AIAA Annual Space Meeting, Reno, 2006.

Xu, C. and Amano, R.S., "Development Of The Efficient Single Centrifugal Compressor For Aircraft Engines," AIAA Annual Space Meeting, Reno, 2006.

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### **Armstrong, Brian S. R.**

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### Beimborn, Edward

#### Publications

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“An Examination of the Process of Innovation at Transit Agencies,” Transportation Research Board Record.

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### Boyland, John

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#### Presentations

“Checking Data and Code Movement Using Permissions.” Schloss Dagstuhl (Germany) Seminar: Types for Tools, June 2005. Also presented at Nanjing University, July 2005.

“Why we Should Not Add Read-Only to Java (yet)” ECOOP 2005 Workshop on Formal Techniques for Java-Like Programs.” Glasgow, July 2005.

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### Chang, Tsong-how

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### Chen, Junhong

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University of Wisconsin-Madison, “Synthesis and Assembly of Nanoparticles for Functional Nanodevices,” April 2006

#### Other Presentations/Posters

J. H. Chen, P. X. Wang, W. C. Conant, T. A. Rissman, R. C. Flagan, and J. H. Seinfeld, “3-D Modeling on the Performance of an Airborne Counterflow Virtual Impactor,” Presented at *24<sup>th</sup> AAAR Conference*, Austin, TX, Oct. 18- 21, 2005 (Poster).

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### Hosseini, Hossein

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### Jen, Tien-Chien

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Li, L., Cui, W., Chen, Q., Jen, T.C., and Liao, Q., 2006, "Numerical Simulation of Gas-Liquid Phase Flow in the Annular Gap Scrubber," to be presented in the 2006 International Mechanical Engineering Congress and Exposition, November, 2006, Chicago, Illinois.

### Editorships

Appointed as Associate Editor for the *International Journal of Transport Phenomena* for three-year term (2007-2010).

Appointed as Regional Editor for the *Far East Journal of Applied Mathematics*.

Appointed as Editor for the *JP Journal of Heat and Mass Transfer* for three-year term (2006-2009).

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### Li, Jin

#### Publications

Li, J., McLellan, S. and Ogawa, S., (2006) "Accumulation and fate of green fluorescent labeled Escherichia coli in laboratory-scale drinking water biofilters," *Water Research*. (In press)

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### Mali, Amol

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Amol D. Mali, On Quantified Weighted MAX-SAT, *Decision Support Systems*, Vol. 40, No. 2, 2005, pp. 257-268.

Amol D. Mali and Minh Tang, State-space planning with variants of A\*, *International Journal on Artificial Intelligence Tools*, Vol. 15, No. 3, 2006, pp. 433-464.

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### Munson, Ethan

#### Publications

C. H. O. Jardim, R. de F. B. Neto, R. P. Godoy, H. M. B. Ribas, E. V. Munson and M. da G. C. Pimentel. "Web Services Enabling Ubiquitous Computing Applications: Lessons Learned by Integrating Ubiquitous e-Learning Applications," *International Journal of Web Services Practices*, 1(2), 142-152, December 2005.

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## **Faculty Publications and Presentations**

### **Nasiri, Adel**

#### **Publications**

Nasiri, Z. Nie, S. Bekiarov, A. Emadi, "An On-Line UPS System with Power Factor Correction and Electric Isolation Using BIFRED Converter," to be published in IEEE Transactions on Industrial Electronics, 2006.

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Nasiri, "Digital Control of PM Synchronous Motors for Automotive Traction," invited paper: International Journal of Electric and Hybrid Vehicles (IJEHV), 2006.

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YounHee Lee and Adel Nasiri, "Active Anti-Roll Control System for Passenger Cars" accepted for presentation in the SAE World Congress & Exhibition, April 2007, Detroit, MI, USA.

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### **Perez, Ronald**

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### Rahman, Adeeb

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**CEAS Graduate Programs & Research Newsletter Staff*****Marjorie Piechowski****piechow4@uwm.edu*  
414-229-3721***Michelle Schoenecker****schoene7@uwm.edu*  
414-229-4421***Nicole Sparks****sparks@uwm.edu*  
414-229-2954**College of Engineering and Applied Science***Graduate Programs and Research**Office of the Dean*

PO Box 784

Milwaukee, WI 53201-0784