

Worcester Polytechnic Institute
Report of Proposals Submitted
July 2007

Department	Principal Investigator	Co-PI	Project Title	WPI Sponsor	Prime Sponsor (if Sub)	Program Type	Requested	Cost Sharing	Proposal #
Biology and Biotechnology	Adams, D.		Peptide Drug Blocks Beta-Amyloid Neurotoxicity	BioTherapeutix, Inc.	NIH	Research	33,272	0	8012
Subtotal							33,272	0	
Biomedical Engineering	Billiar, K.		CAREER: Coupled Mechanical and Biomedical Modulation of Cell Phenotype and Matrix Remodeling	NSF		Research	470,615	108,811	8008
	Gaudette, G.		CAREER: Using Physical Factors to Regenerate Myocytes	NSF		Research	415,334	108,811	8005
Subtotal							885,949	217,622	
Chemical Engineering	Camesano, T.	Billiar, K.	RET Site: Inquiry-based Bioengineering Research and Design Experience for Middle-School Teachers	NSF		Education/ Training	380,048	0	8003
	Ma, Y.		Ultra Thin Pd & Pd/Alloy Membranes for Hydrogen Separation and Reaction Applications	SHELL International Exploring & Production, Inc.		Research	244,900	0	01184c4
	Wilcox, J.		Sulfur Oxide Emission Sensing and Thermochemical Predictions of New High-Energy Density Materials	Air Force		Research	297,881	0	8011
	Zhou, S.		CAREER: Bimetallic Magnetic Nanoparticle and Magnetic Field-Induced Microfluidics for Bioseparation and Biosensing	NSF		Research	446,785	153,317	8009
Subtotal							1,369,614	153,317	
Chemistry and Biochemistry	Arguello, J.		Structure and Function of Copper Transport ATPases	NSF		Research	1,156,495	0	8015
Subtotal							1,156,495	0	
Computer Science	Heffernan, N.	Gobert, J., Beck, J.	Postdoctoral Research Training using Intelligent Tutoring Systems as a Research Platform for Math & Science Education	DED		Education/ Training	797,528	31,656	8020
	Heffernan, N.		REU: CAREER: Learning About Learning	NSF		Education/ Training	13,500	0	05010s1
	Heffernan, N.		RET: CAREER: Learning About Learning	NSF		Other	19,500	0	05010s2
	Heffernan, N.	Gobert, J., Lindeman, R., Rundensteiner, E., Ruiz, C., Pollice, G., Heineman, G., Mani, M.	PIMSE: A GK-12 Partnership Implementing Mathematics & Science Education (PIMSE):Assisting Middle School Use of Tutoring Technology in the Classroom	NSF		Education/ Training	2,090,721	0	8002
Subtotal							2,921,249	31,656	
Electrical and Computer Eng'g.	Huang, X.		CAREER: Networked Reconfigurable Embedded Systems: Theories, Architectures, and Applications	NSF		Research	400,000	163,216	8007
	Lou, W.		CAREER: Opportunistic Routing in Multihop and Multirate Wireless Networks	NSF		Research	301,614	170,905	8014
Subtotal							701,614	334,121	
Fire Protection Eng'g.	Rangwala, A.		CAREER: Homogeneous Dust Cloud Ignition and Flame Propagation Using a Premixed Counter Flow Burner	NSF		Research	479,095	108,811	8016
Subtotal							479,095	108,811	
Mathematical Sciences	Kim, R.	Gobert, J., Beck, J., Heffernan, N.	Assisting and Assessing Statistics with an Intelligent Tutoring Environment	DED		Research	1,405,256	0	8021
	Luo, T		Qualitative Behavior of Solutions for Systems of Conservation Laws with Additional Physical Effects	NSF		Research	71,647	0	8019
Subtotal							1,476,903	0	

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Mechanical Engineering	Hussein, I.		CAREER: Continual Awareness Coverage Control Using Cooperative Multiple Autonomous Vehicles Over Large-Scale Domains	NSF		Research	453,677	170,905	8017	
	Liang, J.		CAREER: Engineer Ordered Nanostructures for Solar Cells	NSF		Research	499,575	217,621	8010	
	Liang, J.		Phase II Nano-Engineered Anode Materials for Rapid Recharge High Energy Density Lithium-Ion Batteries	Lithion, Inc.	NASA	Research	99,986	0	8006	
	Pryputniewicz, R.		Freeform Optical Systems for Defense System Optics, Phase 1	MetroLaser, Inc.	Missile Defense Agency	Research	30,000	0	8018	
	Tryggvason, G.		Petascale Simulations of the Dynamics of Heterogeneous Continuum Systems	NSF		Research	1,007,489	0	8004	
	Tryggvason, G.	Doyle, J., Gennert, M.		Virtual Co-opetition: An Online Robotics Community	NSF		Research	199,461	0	8001
	Tryggvason, G.	Doyle, J., Gennert, M.		Social Networking in the FIRST Robotics Competition Community	NSF		Research	199,461	0	8013
Subtotal							2,489,649	388,526		
Total (24 Proposals)							11,513,840	1,234,053		