

WINNERS OF THE FY 2010 COMPETITION UNDER THE DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM -- Page 1 of 7

Principal Investigator	Institution	ST	Brief Description of Instrumentation or Research it Supports	Awarding Office
Abt, John	University of Pittsburgh	PA	Research on Injury Prevention and Performance Optimization	ARO
Agrawal, Brij	Naval Postgraduate School	CA	Tactical Platform Simulator for Testing Maritime High-Energy Laser Beam Control	ONR
Akyurtlu, Alkim	University of Massachusetts - Lowell	MA	Tunable Laser Source for Validation of Homogeneous Negative Refractive Index Materials in the Optical Regime	AFOSR
Alford, Matthew	University of Washington	WA	Oceanographic Instrumentation for Experiments on Internal Waves in Straits	ONR
Allen, Todd	University of Wisconsin - Madison	WI	Cold Spray Coating Equipment for Improving Corrosion Performance of Aluminum Alloys	ONR
Armani, Andrea	University of Southern California	CA	Instrumentation to Rapidly Characterize Micro- and Nano-Fabricated Devices for Integrated Photonics and Biodetection	ONR
Au, Whitlow	University of Hawaii	HI	On the Foraging Behavior of Beaked Whales and Other Deep Diving Odontocetes	ONR
Ayorinde, Emmanuel	Wayne State University	MI	Color Three-Dimensional Violet Laser Scanning Confocal Microscope for Research on Durability of Structures under Dynamic Loading	ONR
Babbitt, William	Montana State University	MT	Analog Optical Signal Processing Instrumentation	ONR
Baker, Oliver	Yale University	CT	Particle Physics Using Light Sources	ONR
Banta, Scott	Columbia University	NY	Isothermal Titration Calorimeter	AFOSR
Becker, Kurt	Polytechnic University - Brooklyn	NY	Modeling Equipment for Biostructures	ARO
Bertozzi, Andrea	University of California - Los Angeles	CA	Parallel Computing Architectures	ARO
Bhat, Ishwara	Rensselaer Polytechnic Institute	NY	Metalorganic Vapor Phase Epitaxial Reactor for Deposition of Infrared Detector Materials	ARO
Boltasseva, Alexandra	Indiana University - Purdue University Fort Wayne	IN	Glancing Angle Deposition System for Transformation-Optics Devices	ARO
Bose, Tamal	Virginia Polytechnic Institute & State University	VA	Mobile Cognitive Radio Testbed	ARO
Boss, Emmanuel	University of Maine	ME	Apparatus for Research to Improve Prediction of Ocean Optical Properties.	ONR
Brown, Mary M.	University of North Carolina - Charlotte	NC	System to Analyze Complex Interconnected Networks	ARO
Buongiorno-Nardelli, Marco	North Carolina State University	NC	First Principles Calculations of Electronic and Phononic Transport: a Tool Set for Efficient Design of Novel Materials and Devices for Nanoelectronic Applications	ARO
Butler, Laurie	University of Chicago	IL	Dynamics of Radical Intermediates in Combustion	ARO
Capasso, Federico	Harvard College	MA	Semiconductor-Based, Plasmon-Mediated, Terahertz Sources and Detectors	AFOSR
Cassenaer, Stijn	California Institute of Technology	CA	Neural Coding and Associative Memory Formation in the Olfactory System	ONR
Chen, Hao	University of California - Davis	CA	Network Security Research Toward a Self-Regenerative Architecture for an Incorruptible Enterprise	AFOSR
Chen, Yong	Indiana University - Purdue University Fort Wayne	IN	Instrumentation for Parallel and Localized Coherent Optical Control of Ultracold Polar Molecules	ARO
Chiu, Ching-Sang	Naval Postgraduate School	CA	Portable, High-Efficiency, Wide-Band (500-1,200 Hz), Moored Sound Sources for Shallow-Water, Low-Frequency Acoustic Propagation Studies	ONR

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WINNERS OF THE FY 2010 COMPETITION UNDER THE DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM -- Page 2 of 7

Principal Investigator	Institution	ST	Brief Description of Instrumentation or Research it Supports	Awarding Office
Choi, Chang-Hwan	Stevens Institute of Technology	NJ	Configurable and Multi-Modal Thin Film Deposition System for Multi-Functional Nanostructured Surfaces	ONR
Chong, Fred	University of California - Santa Barbara	CA	Network Security Research Toward a Self-Regenerative Architecture for an Incorruptible Enterprise	AFOSR
Chopra, Inderjit	University of Maryland - College Park	MD	Fabrication and Testing of Mission-Adaptive Actively Morphing Rotor Systems	ONR
Cooke, Nancy	Arizona State University	AZ	Cognitive Engineering Research on Team Tasks	ONR
Cooksy, Andrew	San Diego State University	CA	Computer Cluster for Quantum Chemical Studies of High-Spin Intermediates and Graphite	ARO
Cummings, Russell	US Air Force Academy	CO	Ludwig Tube Wind Tunnel Studies of Supersonic Flow	AFOSR
Dal Negro, Luca	Boston University	MA	Optical Gain at 1.54 Millimeter Wavelength in Si and Ge-based Structures for Electrically Pumped Lasers	AFOSR
Daraio, Chiara	California Institute of Technology	CA	Apparatus to Study Nonlinear Acoustic Lenses and Generation and Propagation of Sound Bullets	ARO
Das, Suman	Georgia Institute of Technology	GA	High-Power Fiber Laser System for Direct Digital Manufacturing	ONR
de Figueiredo, Paul	Texas A&M University	TX	Confocal Microscopy Instrumentation for Biodefense Research	ARO
Dempsey, Brian	Pennsylvania State University	PA	Research on Enhancement of Coagulation/Membrane Filtration	ARO
Dimotakis, Paul	California Institute of Technology	CA	High-Speed Intensified Imaging System to Study Mixing and Combustion in Supersonic Flows and Hydrocarbon Flame Structure at Elevated Pressures	AFOSR
Dlott, Dana	University of Illinois - Urbana-Champaign	IL	Instrumentation for Ultrafast Shock Compression Spectroscopy	ARO
D'Zmura, Thomas	University of California - Irvine	CA	Instrumentation for Research on Mobile Brain-Computer Interface	ARO
Fisichella, David	Woods Hole Oceanographic Institution	MA	Multibeam SONAR for Oceanographic Research	ONR
Foran, David	Michigan State University	MI	Genetic Analysis System for Research on Identification of Manufacturers of Improvised Explosive Devices	ARO
Forrest, Stephanie	University of New Mexico - Albuquerque	NM	Network Security Research Toward a Self-Regenerative Architecture for an Incorruptible Enterprise	AFOSR
Foster, Mark	University of Akron	OH	Scanning Probe Microscope for Study of Plasmonic Structures and Polymer Interfaces	ARO
Fox, Douglas	American University	DC	Polyhedral Oligomeric Silsesquioxane (POSS)-Modified Cellulose for Improved Biopolymer Performance	AFOSR
Gabrielse, Gerald	Harvard College	MA	Production and Study of Antiprotons and Cold Antihydrogen	AFOSR
Garner, Trevor	University of Texas - Austin	TX	Ionospheric Total Electron Content Measurements Using Beacon Cubesat Satellites	AFOSR
Gauthier, Daniel	Duke University	NC	Quantum Optical System to Realize Hybrid Quantum Memories	ARO
Genzer, Jan	North Carolina State University	NC	Infrared Spectroscopic Ellipsometry for Studies of Biofouling and Soft Material Assembly on Surfaces	ONR
Gilgenbach, Ronald	University of Michigan - Ann Arbor	MI	Ultrashort-Pulse Laser for Research on Advanced Cathodes and Windows for High Power Microwave Sources	AFOSR

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WINNERS OF THE FY 2010 COMPETITION UNDER THE DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM -- Page 3 of 7

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Glimm, Jim	State University of New York at Stony Brook	NY	Advanced Parallel Computing	ARO
Goldhaber-Gordon, David	Stanford University	CA	Recondensing Dewar and Vector Magnet for Studies of Electrons in One-Dimensional Systems	AFOSR
Gottlieb, Sigal	University of Massachusetts - Dartmouth	MA	Heterogeneous Terascale Computing Cluster for the Development of Graphics Processing Unit Optimized High Order Numerical Methods	AFOSR
Guo, Chunlei	University of Rochester	NY	Enhanced Characterization Capacity for Studies of Ultrafast, Ultraintense Laser Pulse-Matter Interactions: From Molecule to Metals	AFOSR
Hesthaven, Jan	Brown University	RI	Hybrid Computing for Development of Novel Algorithms for Stochastic Simulations	AFOSR
Hirshfield, Stuart	Hamilton College	NY	Functional near-infrared spectroscopy for real-time measurement of users' mental states in studies of web site usability, denial of service attacks, and network disruption	AFOSR
Huang, Yu	University of California - Los Angeles	CA	Catalytic Property Studies of Well-Defined Nanocatalyst Structures Synthesized Using Biomolecular Specificity	ARO
Huxtable, Scott	Virginia Polytechnic Institute & State University	VA	Ultrafast Optical Apparatus for Thermal Characterization of Nanostructured Materials	AFOSR
Inman, Daniel	Virginia Polytechnic Institute & State University	VA	Multi-Axis Characterization for Energy Harvesting, Sensor Nodes and Multifunctional Composites	AFOSR
Jessup, Andrew	University of Washington	WA	High-Speed Infrared Spectrometer-Based Measurement System for Characterizing Wave Breaking and Sea Foam	ONR
Jonsson, Hafliði	Naval Postgraduate School	CA	Enhanced Measurement Capabilities for Remotely-Piloted Aircraft Studies	ONR
Kang, Shin	University of Michigan - Ann Arbor	MI	Reconfigurable Research Instrumentation for Adaptive, Secure Mobile/Wireless Communications	ARO
Karagozian, Ann	University of California - Los Angeles	CA	Research on Advanced Rocket Propulsion	AFOSR
Kasera, Sneha	University of Utah	UT	Research on Robust Authentication Systems	ARO
Khelif, Djamel	University of California - Irvine	CA	Airborne Scanning Light Detection and Ranging (LiDAR) for Three-Dimensional Ocean Surface Wave Field Measurements in Air-Sea Interaction Studies	ONR
Kippelen, Bernard	Georgia Institute of Technology	GA	Ex-Situ Visible and Near-Infrared, Phase-Modulated Spectroscopic Ellipsometer	ONR
Kisailus, David	University of California - Riverside	CA	Nanoindenter for Structure-Function Analyses of Biologically Inspired High Performance Composite Materials	AFOSR
Klibanov, Michael	University of North Carolina - Charlotte	NC	Computer System for Research on Numerical Methods	ARO
Knight, John	University of Virginia	VA	Network Security Research Toward a Self-Regenerative Architecture for an Incorruptible Enterprise	AFOSR
Kurdila, Andrew	Virginia Polytechnic Institute & State University	VA	Testbed for Distributed Learning	ARO
Kuzmich, Alex	Georgia Institute of Technology	GA	Laser System for Fast Excitation of Atomic Qubits	ONR
Lagoudas, Dimitris	Texas A&M University - Engineering Experiment Station	TX	Mechanically Assisted Spark Plasma Sintering System for Research on Functionally Graded Hybrid Materials	AFOSR

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WINNERS OF THE FY 2010 COMPETITION UNDER THE DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM -- Page 4 of 7

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Leonard, John	Massachusetts Institute of Technology	MA	Autonomous Underwater Vehicle for Research in Navigation, Mapping, and Autonomy	ONR
Levis, Robert	Temple University	PA	Picosecond Laser for Stand-Off Detection of Explosives	ONR
Li, Yifei	University of Massachusetts - Dartmouth	MA	Instrumentation for Radio Frequency/Photonics Testing	ONR
Long, Timothy	Virginia Polytechnic Institute & State University	VA	Instrumentation for Research on Design of Charged Macromolecules for Emerging Technologies	ARO
Lopez, Jose	Saint Peters College	NJ	Instrumentation for Microplasma Research	AFOSR
Lu, Yongfeng	University of Nebraska - Lincoln	NE	Wavelength-Tunable Carbon Dioxide Laser for Resonant Energy Coupling in Multi-Energy Processing	ONR
Lucas, Pierre	University of Arizona - Tucson	AZ	Development of High-Intensity Infrared Fiber Laser Materials	AFOSR
Madhukar, Anupam	University of Southern California	CA	Synthesis and In-Situ Characterization of Highly Heterogeneous Nanostructures	AFOSR
Majda, Andrew	New York University	NY	High-Performance Computing Cluster for Ocean/Atmosphere/Climate Predictability and Parameterization Research	ONR
Manasreh, Omar	University of Arkansas	AR	Optical Profiling System for Patterned Materials and Device Processing	ARO
Mann, Brian	Duke University	NC	Equipment for Research on Broadband Energy Harvesting	ONR
Marshall, Sandra	San Diego State University	CA	Multi-Display Eye Tracking Apparatus for Decision Making in Maritime Operations Centers	ONR
Mays, Jimmy	University of Tennessee - Knoxville	TN	Instrumentation for Temperature Gradient Interaction Chromatography of Complex Polymers	ARO
Mazur, Eric	Harvard College	MA	Characterization and Control of Femtosecond Laser Pulses for Nanofabrication of Three-Dimensional Metamaterials	AFOSR
Meyerhofer, David	University of Rochester	NY	100-Terawatt Laser for High-Energy-Density Physics and Ultrahigh-Intensity Laser Science	AFOSR
Miklosovic, David	US Naval Academy	MD	High-Speed Multichannel Pressure Scanning Instrumentation	ONR
Milam, Valeria	Georgia Institute of Technology	GA	Aptamer Panning and Precipitation System	AFOSR
Miles, Richard	Princeton University	NJ	High-Power Pulsed Microwave Source for Plasma-Enhanced Combustion Research	AFOSR
Miller, James	University of Rhode Island	RI	Seafloor Shear Measurement Using Interface Waves	ONR
Minteer, Shelley	Saint Louis University	MO	High-Throughput Computing	AFOSR
Molnar, Peter	Clark Atlanta University	GA	Graphics Processing Unit (GPU) Computing Cluster for Simulation and Visualization	ARO
Monroe, Chris	University of Maryland - College Park	MD	Trapped-Ion Qubit Manipulation with a Picosecond Optical Comb	ARO
Mortazawi, Amir	University of Michigan - Ann Arbor	MI	Magnetron Sputtering System for Novel Intrinsically Switchable Thin-Film Ferroelectric Resonators and Filters	ARO
Moss, Cynthia	University of Maryland - College Park	MD	Role of Bat Wing Hairs in Flight Control	AFOSR

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Moysey, Stephen	Clemson University	SC	Real-time, Three-Dimensional Monitoring System for Research on Subsurface Detection and Characterization in Complex Environments	ARO
Mukerjee, Sanjeev	Northeastern University	MA	Development of Novel Electrocatalysts for the Next Generation Alkaline Fuel Cells	ARO
Mullins, Charles	University of Texas - Austin	TX	System for Rapid Deposition of Nano-Structured Mixed-Metal Oxide Thin Films	ARO
Murray, Christopher	University of Pennsylvania	PA	Helium Liquefier for Nanoscience Research	ARO
Nash, Jonathan	Oregon State University	OR	Moored System to Obtain High-Resolution Time Series of Velocity and Density in High Current Environments	ONR
Nemat-Nasser, Siavouche	University of California - San Diego	CA	Apparatus for Dynamic Mechanical Analysis of Elastomeric Materials	ONR
Niezrecki, Christopher	University of Massachusetts - Lowell	MA	High Speed Cameras to Enable Non-Contacting Dynamic Measurement of Mechanical Structures	ARO
Ning, Cun-Zheng	Arizona State University	AZ	Cryogenic Optoelectronic Probe Station for Enhanced Nanophotonics Capability	ARO
Oldenburg, Amy	University of North Carolina - Chapel Hill	NC	Magnetomotive Ultrasound System to Monitor and Activate Super-Paramagnetic Iron Oxide (SPIO)-Loaded, Rehydrated-Lyophilized (RL) Platelets	ONR
Onaral, Banu	Drexel University	PA	Optical Brain Imaging System to Monitor Brain Activity	ARO
Palmstrom, Christopher	University of California - Santa Barbara	CA	Ultrahigh-Vacuum, Atomic-Resolution, Scanning Probe Microscope for In-Situ Studies of Epitaxial Growth of Mott Materials	ONR
Pardalos, Panagote	University of Florida	FL	Large-scale Data Analysis and Network Optimization	AFOSR
Peng, Ning	North Carolina State University	NC	Virtual Computing Testbed for Information Security Research	ARO
Pinkel, Robert	University of California - San Diego	CA	Six-Element Micro-Wirewalker Array for Air-Sea Coupling Studies	ONR
Pollock, Tresa	University of California - Santa Barbara	CA	Development of a Tri-Beam Platform for Materials Characterization	ONR
Polynkin, Pavel	University of Arizona - Tucson	AZ	Generation of Regular Networks of Dense Plasma Channels in Gases Under Different Pressure Regimes	AFOSR
Qiu, Robert	Tennessee Technological University	TN	Cognitive Radio Network Testbed	ONR
Rainville, Luc	University of Washington	WA	Long-Range Acoustic Doppler Current Profilers for Research on Internal Waves in Straits	ONR
Raithel, Georg	University of Michigan - Ann Arbor	MI	Chip-Based Continuous-Wave Atom Laser	AFOSR
Rajan, Krishna	Iowa State University	IA	In-Situ, Atom-Probe Tomography for High-Temperature Materials Research	AFOSR
Reed, Robert	Vanderbilt University	TN	Instrumentation for Evaluating Radiation Effects on High-Speed Microelectronics	ONR
Regli, William	Drexel University	PA	Network Emulation Environment	ARO
Reifsnider, Kenneth	University of South Carolina	SC	Three-Dimensional Visualization of Material State Changes using X-ray Computed Tomography for Prognosis of Heterogeneous Material Systems	AFOSR
Richardson, Martin	University of Central Florida	FL	Phase-controlled Multi-kiloherz Multi-terawatt Femtosecond Laser and Tunable Fiber Laser System for Laser Ranging	ARO/AFOSR
Rittschof, Daniel	Duke University	NC	Temperature System for Study of Natural Glues and Novel Materials	ONR
Roy-Chowdhury, Amit	University of California - Riverside	CA	Aerial Video Analysis and Communication	ONR

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WINNERS OF THE FY 2010 COMPETITION UNDER THE DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM -- Page 6 of 7

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Sabatier, James	University of Mississippi	MS	Laser Shearography System	ONR
Samimy, Mo	Ohio State University	OH	Instrumentation for Research on Jet Noise Mitigation in Tactical Aircraft Using Plasma Actuators	ONR
Santos, Janine	University of Medicine & Dentistry of New Jersey	NJ	Molecular Mechanism of Human Telomerase Reverse Transcriptase (hTERT) Function in Mitochondria	ARO
Sastry, Shankar	University of California - Berkeley	CA	Research on Mobile Heterogeneous Sensor Webs	ARO
Scheutz, Matthias	Indiana University	IN	Mobile Robots with Manipulators and Natural Language Capabilities for Joint Human-Robot Search and Rescue Missions in Urban Environments	ONR
Sheckler, Linda	Pennsylvania State University	PA	Enhanced Undersea Warfare Simulation Capability	ONR
Sheik-Bahae, Mansoor	University of New Mexico - Albuquerque	NM	All-Solid-State Optical Cryocooler Research	AFOSR
Shivakumar, Kunigal	North Carolina Agricultural and Technical State University	NC	Digital Image Correlation (DIC) System	ONR
Singh, Jogender	Pennsylvania State University	PA	Industrial Scale Prototyping Spark Plasma Sinter (SPS) Research	ONR
Skowronski, Marek	Carnegie Mellon University	PA	High-Voltage Probe Station and Imaging System	ONR
Srinivasan, Sessa	Tuskegee University	AL	Synthesis and Characterization of Hydrogen Storage and Photocatalytic Materials for Clean Energy and Environmental Research	ONR
Stauffer, David	Pennsylvania State University	PA	Measurement Network for Examining Transport and Dispersion in the Atmosphere	ARO
Stern, Frederick	University of Iowa	IA	Local Flow Measurement System for Wave Basin Free Running Model Motions and Maneuvering in Waves and Capsize Experiments	ONR
Strausfeld, Nicholas	University of Arizona - Tucson	AZ	Motorized Microscope and Software for Image Analysis to do Multiple-Feature Reconstruction of Neural Circuitry	AFOSR
Suzuki, Carolyn	University of Medicine & Dentistry of New Jersey	NJ	Non-Invasive Profiling of Cellular Metabolism and Mitochondrial Energetics	ARO
Taha, Mahmoud	University of New Mexico - Albuquerque	NM	High-Velocity Impact Instrument for Testing Blast Tolerable Composites	ARO
Takeuchi, Ichiro	University of Maryland - College Park	MD	Instrumentation for Research on Nanostructured Devices Based on Transforming Materials	ARO
Tang, Dajun (DJ)	University of Washington	WA	Instrumentation for Enhanced Measurement of Sediment Acoustic Speed	ONR
Tang, William	University of California - Irvine	CA	System for Packaging and Characterizing Micro-Electro-Mechanical Systems (MEMS) Gyroscopes	ONR
Thomas, Flint	University of Notre Dame	IN	Time-Resolved Particle Image Velocimetry for Unsteady Flow and Flow Control Research	ARO
Thomas, John	Duke University	NC	Fermi Gases with Optically-Controlled Interactions	ARO
Thurow, Brian	Auburn University	AL	High-Speed and Three-Dimensional Flow Measurements	ARO
Thynell, Stefan	Pennsylvania State University	PA	High-Speed Camera for Visualization of Ignition and Combustion of Solid and Liquid Propellants	ARO
Torrione, Peter	Duke University	NC	Terrestrial Remote Sensing Equipment	ARO
Traykovski, Peter	Woods Hole Oceanographic Institution	MA	Instrument for Measuring Nearshore Morphologic Change and Hydrodynamic Forcing	ONR

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Verma, Pramode	University of Oklahoma	OK	Research on Advanced End-to-End Networking	AFOSR
Vorontsov, Mikhail	University of Dayton	OH	Complex Optical Multi-Path Atmospheric Sensing Suite (COMPASS) for Deep Turbulence Understanding, Characterization and Mitigation	AFOSR
Waller, David	Miami University	OH	Equipment for Large-Scale Multi-User Immersive Virtual Reality Simulations	ARO
Wang, Evelyn	Massachusetts Institute of Technology	MA	Confocal Imaging System for Ultra-Fast Three-Dimensional Transport Studies in Thermal Management Applications	ONR
Wang, Fred	University of Tennessee - Knoxville	TN	Testing System for High-Temperature, High-Density Silicon Carbide Power Electronics Converters	ONR
Wang, Haiyan	Texas A&M University - Engineering Experiment Station	TX	In-Situ Holder for Scanning Tunneling Microscopy/Transmission Electron Microscopy (STM/TEM) Used in Nanomaterials Research	ONR
Wang, Pingshan	Clemson University	SC	High-Frequency Characterization of Pulsed Power On-Chip and Microfabricated Vacuum Devices	AFOSR
Weiss, Sharon	Vanderbilt University	TN	Portable Measurement System for Optical Coupling and High-Resolution Detection of Silicon-based Photonic Structures	ARO
Wilson, Preston	University of Texas - Austin	TX	Combustive Sound Source as Environmentally Friendly Alternative to Explosives for Use in Ocean Acoustics Experiments	ONR
Wind, Shalom	Columbia University	NY	High-throughput Electron Beam Lithography System	ONR/AFOSR
Wolfson, Marla	Temple University	PA	Integrated Apparatus for Analysis of Small Animal Pulmonary Function and Environmental Exposure	ONR
Wu, Yue	University of North Carolina - Chapel Hill	NC	Nuclear Magnetic Resonance Apparatus for Metallic Glass Research	ARO
Xi, Ning	Michigan State University	MI	All-Terrain Mobile Manipulator	ARO
Xi, Xiaoxing	Temple University	PA	Fabrication of Magnesium Diboride (MgB ₂) Josephson Junctions and Circuits	ONR
Xue, Yuen	Vanderbilt University	TN	Computing Capability for Development and Evaluation of Large-Scale Networked Systems	ARO
Yang, Zhiyong	Medical College Of Georgia	GA	Equipment for Research on Vision Machines Based on Natural Vision	ARO
Yu, Luping	University of Chicago	IL	Polymer Solar Cell Preparation and Solar Simulator System	AFOSR
Yu, Shui-Qing (Fisher)	University of Arkansas	AR	Development of a Plasma-Enhanced, Ultrahigh-Vacuum Chemical Vapor Deposition System for Novel Sn-Based Group-IV Optoelectronic Devices	ARO
Zewail, Ahmed	California Institute of Technology	CA	Imaging Surface Nanostructures and Reactivity by Scanning Ultrafast Microscopy	AFOSR
Zhang, Yong-Hang	Arizona State University	AZ	Molecular Beam Epitaxy System Upgrade for Lattice-Matched 6.1 Angstrom II-VI and III-V Semiconductors	AFOSR

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