

FY 2008 MULTIDISCIPLINARY UNIVERSITY RESEARCH INITIATIVE (MURI) – SELECTED PROJECTS

Agency	MURI Title	Lead Institution Team Member Institutions ¹	Principal Investigator	State
MURI Topic: A 21st Century Approach to Electronic Device Reliability				
ONR	DRIFT: Design-for-Reliability Initiative for Future Technologies	University of California, Santa Barbara Carnegie Mellon University Massachusetts Institute of Technology Ohio State University University of Michigan Vanderbilt University North Carolina State University University of Bristol, UK ²	Umesh Mishra	CA PA MA OH MI TN NC
AFOSR	A 21st Century Approach to Electronic Device Reliability	University of Florida	Mark Law	FL
MURI Topic: Real-Time Methods for the Analysis of Networks				
ONR	Scalable Methods for the Analysis of Network-Based Data	University of California, Irvine University of Washington Pennsylvania State University University of Maryland	Padhraic Smyth	CA WA PA MD
ONR	Next Generation Network Science	University of Pennsylvania California Institute of Technology Naval Postgraduate School University of California, San Diego University of California, Santa Barbara	Michael Kearns	PA CA CA CA CA
MURI Topic: Biologically-Inspired Autonomous Sea Vehicles				
ONR	Towards a Mission Configurable Stealth Underwater Batoid	University of Virginia Princeton University West Chester University of Pennsylvania	Hilary Bart-Smith	VA NJ PA
ONR	Jelly Fish Autonomous Node and Colonies: Modeling Biological Structure and Behavior, System Architecture Design and Implementation	Virginia Polytechnic Institute and State University University of Texas at Dallas Stanford University University of California, Los Angeles Providence College Naval Undersea Warfare Center, Newport RI ³	Shashank Priya	VA TX CA CA RI

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2. A non-US team member institution is identified in the lead institution's proposal. No MURI funding will be provided to the non-US institution.
3. A Department of Defense (DoD) laboratory is identified in the lead institution's proposal. No MURI funding will be provided to the DoD laboratory.

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MURI Topic: Socio-cultural Modeling for Understanding Asymmetric Threat Environments				
ONR	A Structural Approach to the Incorporation of Cultural Knowledge in Adaptive Adversary Models	Carnegie Mellon University Rhode Island College East Carolina University	Kathleen Carley	PA RI NC
ONR	Multi-Disciplinary Agent-Based Modeling of Conflict Region Using Socio-Cultural and Evolutionary Dynamics	George Mason University Yale University	Claudio Cioffi-Revilla	VA CT
MURI Topic: Biometrics in the Maritime Domain				
ONR	Remote Multi-modal Biometrics for Maritime Domain	University of Maryland Columbia University University of California, San Diego University of Colorado at Colorado Springs University of Southampton, UK ² University of Queensland, Australia ²	Rama Chellappa	MD NY CA CO
MURI Topic: Biologically-Inspired Approaches for Team and Coalition Adaptation of Heterogeneous Unmanned Systems for Surveillance over Large and Complex Areas				
ONR	HUNT: Heterogeneous Unmanned Networked Teams	University of Pennsylvania Georgia Institute of Technology University of California, Berkeley Arizona State University University of Washington Michigan Technological University Yale University Massachusetts Institute of Technology	George Pappas	PA GA CA AZ WA MI CT MA
ONR	Modular Social Intelligence for Teaming and Coalition Adaptation of Heterogeneous Autonomous Cooperative Agents (ACAs)	Dartmouth College Massachusetts Institute of Technology University of Southern California	Richard Granger	NH MA CA

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MURI Topic: Harnessing Complexity in Human-Machine Systems				
AFOSR	Modeling Synergies in Large Human-Machine Networked Systems	Carnegie Mellon University Massachusetts Institute of Technology Cornell University George Mason University University of Pittsburgh	Katia Sycara	PA MA NY VA PA
MURI Topic: Assured Information Sharing				
AFOSR	A Framework for Managing the Assured Information Sharing Lifecycle	University of Maryland, Baltimore County Purdue University University of Illinois at Urbana-Champaign University of Michigan University of Texas at Dallas University of Texas at San Antonio	Timothy Finin	MD IN IL MI TX TX
AFOSR	Collaborative Policies and Assured Information Sharing	Stanford University Carnegie Mellon University University of California, Berkeley New York University University of Pennsylvania University of California, San Diego University of Texas at Austin	John Mitchell	CA PA CA NY PA CA TX
MURI Topic: Semiconductor Nanomembranes				
AFOSR	Adaptive Intelligent Photonic/Electronic Systems Based on Silicon Nanomembranes	University of Wisconsin-Madison University of Illinois at Urbana-Champaign University of Texas at Arlington	Max Lagally	WI IL TX
AFOSR	Three Dimensionally Interconnected Silicon Nanomembranes for Optical Phased Array (OPA) and Optical True Time Delay (TTD) Applications	University of Texas at Austin Stanford University Rutgers University University of Illinois at Urbana-Champaign	Ray Chen	TX CA NJ IL
AFOSR	Membrane Technology and 3D Photonic-Crystal Devices	Massachusetts Institute of Technology Purdue University	Henry Smith	MA IN

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MURI Topic: Exploring the Interface: Mechanics of Nano-Scale Thermal Transport between Dissimilar Materials				
AFOSR	Dynamics of Thermal Transport at Interfaces between Dissimilar Materials	University of Michigan University of California, Santa Cruz Brown University	Kevin Pipe	MI CA RI
AFOSR	Passive and Active Control of Heat Transfer at Interfaces	University of Illinois at Urbana-Champaign Massachusetts Institute of Technology Stanford University Rensselaer Polytechnic Institute University of California, Berkeley	David Cahill	IL MA CA NY CA
MURI Topic: Nanocatalysis for Propulsion Applications				
AFOSR	Nanocatalysts in Propulsion: Mechanisms and Optimization	University of Utah University of Southern California Pennsylvania State University Virginia Commonwealth University Princeton University	Scott Anderson	UT CA PA VA NJ
AFOSR	Size and Composition Optimized Nanocatalysts for Propulsion Applications	Yale University University of Virginia Tufts University University of Pennsylvania	Lisa Pfefferle	CT VA MA PA
AFOSR	Atomic-Scale Principles of Combustion Nanocatalysis	Georgia Institute of Technology	Uzi Landman	GA
MURI Topic: Vortex-Particle Dynamics, Interaction and Control for Brownout Mitigation				
AFOSR	Rotorcraft Brownout: Advanced Understanding, Control, and Mitigation	University of Maryland Arizona State University Iowa State University Dartmouth College	John Leishman	MD AZ IA NH

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MURI Topic: Human, Social, Cultural, and Behavioral Modeling: Dynamic Models of the Effect of Culture on Collaboration and Negotiations				
ARO	Dynamic Models of the Effect of Culture on Collaboration and Negotiation	University of Maryland Columbia University George Mason University Harvard University Naval Postgraduate School University of Central Florida	Michele Gelfand	MD NY VA MA CA FL
ARO	Modeling Cultural Factors in Collaboration and Negotiation	Carnegie Mellon University University of Michigan Georgetown University University of Pittsburgh University of Southern California	Katia Sycara	PA MI DC PA CA
MURI Topic: Brain Network Analysis and Modeling for Communication and Orientation				
ARO	Silent Spatialized Communication Among Dispersed Forces	University of California, Irvine Carnegie Mellon University University of Maryland	Thomas D’Zmura	CA PA MD
ARO	A Brain-Based Communication and Orientation System	Albany Medical College Washington University in St. Louis	Gerwin Schalk	NY MO
MURI Topic: Reasoning by Abductive Inference				
ARO	A Unified Approach to Abductive Inference	University of Washington Oregon State University Carnegie Mellon University University of Southern California University of Rochester University of Texas at Austin Massachusetts Institute of Technology	Pedro Domingos	WA OR PA CA NY TX MA

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MURI Topic: Spin-Mediated Magnetic Behavior In Hybrid Metal-Semiconductor Systems				
ARO	Electrical Control of Magnetic Dynamics in Hybrid Metal-Semiconductor Systems	Cornell University University of California, Berkeley Pennsylvania State University University of California, San Diego University of California, Santa Barbara University of Virginia	Daniel Ralph	NY CA PA CA CA VA
ARO	Room Temperature Spin-Mediated Coupling in Hybrid Magnetic, Organic and Oxide Structures and Devices	University of Iowa University of Pittsburgh University of Missouri, Columbia University of California, Berkeley New York University	Michael Flatte	IA PA MO CA NY
MURI Topic: Modeling, Analysis, and Control of Complex Multi-Scale Data Networks				
ARO	Tools for the Analysis and Design of Complex Multi-scale Networks	University of California, Berkeley University of Illinois at Urbana-Champaign University of Massachusetts Amherst California Institute of Technology	Jean Walrand	CA IL MA CA
ARO	Stochastic Control of Multi-scale Networks: Modeling, Analysis and Algorithms	Ohio State University Georgia Institute of Technology University of Maryland Purdue University University of Illinois at Urbana-Champaign Massachusetts Institute of Technology Cornell University	Ness Shroff	OH GA MD IN IL MA NY
MURI Topic: Spray & Combustion of Gelled Hypergolic Propellants for Future Rocket and Missile Engines				
ARO	Spray and Combustion of Gelled Hypergolic Propellants for Future Rocket and Missile Engines	Pennsylvania State University California Institute of Technology Princeton University University of California, San Diego Stanford University	Vigor Yang	PA CA NJ CA CA
ARO	Spray and Combustion of Gelled Hypergolic Propellants	Purdue University University of Massachusetts Amherst Iowa State University	Stephen Heister	IN MA IA

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