

Primary PI Name	Institution	State	Project Title	Research Discipline Area
WEISENSEE, PATRICIA	WASHINGTON UNIVERSITY IN ST. LOUIS	MO	Laser-based additive manufacturing of compositionally graded polyether ether ketone (PEEK) nano-composites	AEROSPACE COMPOSITE MATERIALS
LUBNER, SEAN	TRUSTEES OF BOSTON UNIVERSITY	MA	Investigating Coupled Thermal, Mechanical, and Electrical Phenomena in High-Temperature Materials using Thermal Wave Sensors	AGILE SCIENCE OF TEST & EVALUATION
ZHU, HANYU	WILLIAM MARSH RICE UNIVERSITY	TX	Probing and Controlling Energetic Materials with Quantum Light and Vibration	DYNAMIC MATERIALS & INTERACTIONS
BALDINI, EDOARDO	UNIVERSITY OF TEXAS AT AUSTIN	TX	Terahertz-Speed Manipulation of Two-Dimensional Ferroelectricity	GHZ-THz ELECTRONICS
LEE, ANDREW	NORTH CAROLINA STATE UNIVERSITY	NC	Active Deployment Control of Ultra-thin Composite Structures	MULTI-SCALE STRUCTURAL MECHANICS & PROGNOSIS
BRAUN, JAMES	NORTH CAROLINA STATE UNIVERSITY	NC	Bladeless turbines for power and thrust in compact supersonic propulsion	PROPULSION & POWER
SUN, YIYANG	SYRACUSE UNIVERSITY	NY	Multi-Modal Interactions in Three-Dimensional Unsteady Flows	UNSTEADY AERODYNAMICS & TURBULENT FLOWS
YANG, SUO	REGENTS OF THE UNIVERSITY OF MINNESOTA	MN	Micro-Jetting in Detonations: Origin and Dependence on Confinement, Chemistry, and Dimensionality	ENERGY, COMBUSTION & NON-EQUILIBRIUM THERMODYNAMICS
PARISE, FRANCESCA	CORNELL UNIVERSITY	NY	Targeted interventions and higher-order interactions in complex networks	COMPLEX NETWORKS
ZHU, WEI	UNIVERSITY OF MASSACHUSETTS	MA	Structure-Preserving and Discovery in Scientific Machine Learning	COMPUTATIONAL MATHEMATICS
BRINTON, CHRISTOPHER	PURDUE UNIVERSITY	IN	FogML: Intelligence Orchestration over Heterogeneous, Dynamic, and Contested Fog Learning Environments	DYNAMIC DATA & INFORMATION PROCESSING
MATNI, NIKOLAI	TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA, THE	PA	Towards a Statistical Learning Theory of Nonlinear Control	DYNAMICAL SYSTEMS & CONTROL THEORY
BOULAND, ADAM	LELAND STANFORD JUNIOR UNIVERSITY, THE	CA	Quantum Computing - Theoretical Foundations of Low-Mode BosonSampling Experiments	INFORMATION ASSURANCE & CYBERSECURITY
GOMEZ ESCOBAR, ANDRES	UNIVERSITY OF SOUTHERN CALIFORNIA	CA	Mixed-integer nonlinear programming: Unleashing the full potential of relaxations	MATHEMATICAL OPTIMIZATION
GILPIN, LEILANI	UNIVERSITY OF CALIFORNIA, SANTA CRUZ	CA	Frame-Based Monitoring to Detect and Explain Multimodal Autonomous System Errors	SCIENCE OF INFORMATION, COMPUTATION, LEARNING, & FUSION
IQBAL, TARIQ	RECTOR & VISITORS OF THE UNIVERSITY OF VIRGINIA	VA	A Psychophysiological and Behavioral Measure-based Multimodal Trust Model for Generating Real-time Intervention to Facilitate Human-Robot Teaming	TRUST & INFLUENCE
SMIDT, TESS	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	MA	Understanding, Mapping, and Generating Microstructures with Higher-Order Statistic Euclidean Neural Networks	AEROSPACE MATERIALS FOR EXTREME ENVIRONMENTS
BOSANAC, NATASHA	REGENTS OF THE UNIVERSITY OF COLORADO, THE	CO	Data-Driven Identification of Spacecraft Transport Pathways in CisLunar Space	ASTRODYNAMICS
CHEUK, LAWRENCE	THE TRUSTEES OF PRINCETON UNIVERSITY	NJ	Exploring Quantum Many-Body Entanglement and Dynamics in Synthetic Molecular Matter	ATOMIC & MOLECULAR PHYSICS
MA, QIONG	TRUSTEES OF BOSTON COLLEGE	MA	Realizing quantum spin Hall insulators and correlated topology in ternary transition metal chalcogenides	CONDENSED MATTER PHYSICS
OVERVIG, ADAM	STEVENS INSTITUTE OF TECHNOLOGY (INC)	NJ	Nonlocal metasurfaces for spectro-spatial control of light	ELECTROMAGNETICS
PIGEON, JEREMY	UNIVERSITY OF ROCHESTER	NY	Efficient mid-IR to THz pulse generation using a TW-class Cr:ZnS/ZnSe laser	HIGH ENERGY RADIATION MATTER SYSTEMS
YOUNGBLOOD, NATHAN	UNIVERSITY OF PITTSBURGH, THE	PA	Photonic in-memory accelerators for low-latency and efficient computing	OPTOELECTRONICS & PHOTONICS
GHASEMOUR, YASAMAN	TRUSTEES OF PRINCETON UNIVERSITY, THE	NJ	Understanding Structured Terahertz Beams Containing Orbital Angular Momentum for Agile Aerial Sensing	PHYSICS OF SENSING
LUCAS, ANDREW	REGENTS OF THE UNIVERSITY OF COLORADO, THE	CO	Quantum computing: Active quantum matter	QUANTUM INFORMATION SCIENCES
SOUS, JOHN	UNIVERSITY OF CALIFORNIA, SAN DIEGO	CA	Light-induced dynamics of optically pumped electronic materials	ULTRASHORT PULSE LASER-MATTER INTERACTIONS
DIDYCHUK, ALLISON	YALE UNIVERSITY	CT	New strategies for visualizing a powerful molecular motor	BIOPHYSICS
LI, CHENGYU	VILLANOVA UNIVERSITY IN THE STATE OF PENNSYLVANIA	PA	Deciphering the Influence of Unsteady Aerodynamics on Mechanosensation and Olfaction in Insect Flight	HUMAN PERFORMANCE & BIOSYSTEMS
PENA-FRANCESCH, ABDON	REGENTS OF THE UNIVERSITY OF MICHIGAN	MI	Dynamic Polymer Networks for Resilient and Adaptive Soft Machines	MECHANICS OF MULTIFUNCTIONAL MATERIALS & MICROSYSTEMS
ZHU, TIANYU	YALE UNIVERSITY	CT	Many-Body Quantum Chemistry Framework for Catalysis on Metallic Surfaces	MOLECULAR DYNAMICS & THEORETICAL CHEMISTRY
VO, THI	JOHNS HOPKINS UNIVERSITY, THE	MD	Synthetic-Biological LEGOs – Designing Versatile Nanoscale Synthons for Self-Assembly	NATURAL MATERIALS & SYSTEMS
ZHONG, YU	CORNELL UNIVERSITY	NY	Precision Synthesis and Assembly of Chiral 2D Polymers for Spintronics	ORGANIC MATERIALS CHEMISTRY
DOAN, THINH	VIRGINIA POLYTECHNIC INSTITUTE & STATE UNIVERSITY	VA	Foundations of Resilient Distributed Resource Allocation in Open Networks	COMPLEX NETWORKS
JOHNSON, PERRY	UNIVERSITY OF CALIFORNIA, IRVINE	CA	New Integral Approaches for Analyzing and Predicting Turbulent Boundary Layers	UNSTEADY AERODYNAMICS & TURBULENT FLOWS
JAVAD, MOHAMMADI	UNIVERSITY OF TEXAS AT AUSTIN	TX	Enhancing Decision Speed and Resilience of Multi-Agent Situational Awareness and Inference through Physics-Informed AI	DYNAMIC DATA & INFORMATION PROCESSING
SONG, XUAN	UNIVERSITY OF IOWA, THE	IA	Shock Behaviors of Plastic-Bonded Explosives with Interconnected Meso-Scale Networks of Various-Sized Energetic Crystals	DYNAMIC MATERIALS & INTERACTIONS
QIAN, ELIZABETH	GEORGIA TECH RESEARCH CORPORATION	GA	Inference-oriented model reduction: A new paradigm	COMPUTATIONAL MATHEMATICS
DIAKONIKOLAS, JELENA	UNIVERSITY OF WISCONSIN SYSTEM	WI	Towards Fine-Grained Complexity of Nonsmooth Optimization	MATHEMATICAL OPTIMIZATION
VAZQUEZ, MARYNEL	YALE UNIVERSITY	CT	Towards Robots that Reason About Fairness: Effects on Trust	TRUST & INFLUENCE
WOOLLANDS, ROBYN	UNIVERSITY OF ILLINOIS	IL	Picard-Chebyshev Methods for Long Duration Propagation in Chaotic Dynamical Systems	ASTRODYNAMICS
BROWN, CHARLES	YALE UNIVERSITY	CT	Exploring Exotic Transport Properties of Quasicrystals Using Ultracold Atoms in an Optical Decagonal Quasicrystal Lattice	ATOMIC & MOLECULAR PHYSICS
HE, YU	YALE UNIVERSITY	CT	Understanding and tuning magnetism in correlated metals	CONDENSED MATTER PHYSICS
LABUN, OU	UNIVERSITY OF TEXAS AT AUSTIN	TX	Sensitivity Study of compact laser-plasma accelerators	ULTRASHORT PULSE LASER-MATTER INTERACTIONS
PARTRIDGE, BENJAMIN	UNIVERSITY OF ROCHESTER	NY	Impact-Resistant Soft Materials Engineered by Hierarchical Noncovalent Energy Dissipation	NATURAL MATERIALS & SYSTEMS
ZHU, BIHUI	UNIVERSITY OF OKLAHOMA	OK	Harnessing quantum many-body phenomena with long-range interacting AMO platforms	ATOMIC & MOLECULAR PHYSICS
DOBRIAN, EDGAR	TRUSTEES OF THE UNIVERSITY OF PENNSYLVANIA, THE	PA	Ambiguity-aware Artificial Intelligence via Statistical Inference	COMPUTATIONAL MATHEMATICS
O'BRIEN, KEVIN	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	MA	Quantum Computing – Robust Quantum Limited Isolation and Amplification with Traveling Wave Parametric Devices	QUANTUM INFORMATION SCIENCES
MOURADIAN, SARA	UNIVERSITY OF WASHINGTON	WA	Quantum Computing - Optical Forces for High-Fidelity Control of Long Ion Chains	QUANTUM INFORMATION SCIENCES