Fiscal Year 2022 DEPSCoR Research Collaboration Winners			
Institution of Higher Education (IHE)	**IHE Location**	**Principal Investigator**	**Project Title**
Purdue University	IN	Alaeian, Hadiseh	Rydberg Photonics: Quantum Many-Body Simulator with Photons
University of South Carolina	SC	Chandrashekhar, MVS	Vertical Laser Lifted Off Ultrawide Bandgap AlxGa1-xN Power Electronic Devices Transferred from Bulk AlN for Resilient Adaptable Power Electronics
University of Nebraska-Lincoln	NE	Cui, Bai	Nanoscale Energy Coupling and Material Behaviors in Selective Laser Sintering of Ultra-High Temperature Ceramics
University of Connecticut	CT	Deymier, Alix	Multi-physics Multi-scale Fundamental Understanding of Pathological Mineralization of Soft Tissues: Stress Effects on Calcific Tendinopathy
University of Oklahoma	OK	Foudazi, Reza	Transport of Multivalent Ions in Thermoresponsive Ionogel Electrolytes from Lyotropic Liquid Crystals
University of Wisconsin-Madison	WI	Franck, Jennifer	Mitigation of Vortex-foil Interactions through Passive Shape Control
University of Nebraska-Lincoln	NE	Grover, Piyush	Foundations of Defect Engineering for Dynamic Manipulation of Nonlinear Large-amplitude Waves in Metamaterials
University of Wisconsin-Madison	WI	Gupta, Chirag	Understanding High Field Electron Transport and Trapping in UWBG AlGaN Heterostructures
Clemson University	SC	Hu, Hao	Facial Reduction for Semidefinite Relaxations of Combinatorial Problems
Purdue University	IN	Hunter, Susan	Theory and Algorithms for Two-Stage Decision Making Under Conflict and Uncertainty
Auburn University	AL	Jin, Wencan	Studying Magnetoelectric Coupling in van der Waals/Oxide Thin Film Heterostructures
University of Tennessee, Knoxville	TN	Lass, Eric	Concurrent Ordering and Phase Separation in Multicomponent Alloys Involving Higher-order Phase Transitions
Brown University	RI	Li, Jia	Probing Electron Nematicity in Multilayer Graphene Heterostructures
Purdue University	IN	Ma, Ruichao	Tailoring Quantum Entanglement in Driven-Dissipative Superconducting Circuits
West Virginia University	WV	Mandal, Subhasish	High-Temperature Topological Superconductivity in Correlated Two-Dimensional Heterostructures
University of Wisconsin-Madison	WI	Michini, Carla	A Polyhedral Approach for Multi-Parametric Linear Programming
University of Nevada Reno	NV	Nair, Aditya	Cluster-based Estimation and Control of Turbulent Aeroelastic Flows
University of Arkansas	AR	Nakamura, Hiroyuki	2D Ferroelectrics for Nonlinear Flat Optics
Arizona State University	AZ	Pathikonda, Gokul	Understanding Vortex-Turbulent Boundary Layer Interactions to Mitigate Separation Using Textured Surfaces
University of Delaware	DE	Peng, Xi	Advancing Trustworthy Machine Learning for Seabed Morphodynamics Analysis
Brown University	RI	Rodriguez, Mauro	Theoretical Modeling of Non-spherical Inertial Cavitation for Anisotropic Soft Matter Rheometry
Purdue University	IN	Seetharaman, Sivaranjani	Operational Resilience to Extreme Events in Networked Dynamical Systems through Real-time Adaptation
University of South Carolina	SC	Sutton, Christopher	Unraveling the Role of Cation Solvation in Aqueous Zn-Ion Batteries: A Combined Theoretical and Experimental Approach
Boise State University	ID	Xiong, Hui (Claire)	Understanding Unusual Amorphous-to-Crystalline Phase Transformations and Mechanical Resilience of Structural Ceramics Under Irradiation
University of Tennessee, Knoxville	TN	Zhou, Haidong	Elasto X-ray Scattering for Probing Novel Magnetic Switching