Department of Energy Announces $138 Million for FY2024 Early Career Research

Announcement Number: *DE-FOA-0003176* *List Posted:* *09/10/2024*

Selection for award negotiations is not a commitment by DOE to issue an award or provide funding.

Principal Investigator	Title	Institution	City	State	ZIP Code
Adam, Gina	Energy-efficient Neuromorphic Technologies for Scientific Computing	George Washington University	Washington	DC	20052-0042
Armstrong, Whitney	A High-Luminosity Active Nuclear Target for Recoil Tagging Measurements	Argonne National Laboratory	Lemont	IL	60439-4803
Arratia, Miguel	Towards Quantum Imaging of Nuclei in the JLab 12 GeV Era and Beyond	University of California, Riverside	Riverside	CA	92521-0217
Biswas, Sayan	Deciphering Complex Chemical Reaction Dynamics Induced by Non-Equilibrium Microplasma Discharges at High Pressures	University of Minnesota	Minneapolis	MN	55455-2070
Boer, Marie	Multidimensional structure of the nucleon with Generalized Parton Distributions from novel Hard Exclusive Compton-like measurement at the Jefferson Laboratory Hall C	Virginia Polytechnic Institute and State University	Blacksburg	VA	26061-0001
Cesar, David	Attosecond Metrology for Electron and X-ray Beams	SLAC National Accelerator Laboratory	Menlo Park	CA	94025-7015
Chambers, Matthew	Phosphine-Modified Cationic Co(II) Precatalysts for Hydroformylation at Mild Conditions	Louisiana State University	Baton Rouge	LA	70803-0001
Chen, Xiaoqian	Coherent x-ray detection of quantum correlations in quantum many-body systems	Brookhaven National Laboratory	Upton	NY	11973-5000
Cocker, Tyler	Ultrafast terahertz scanning tunneling microscopy of atomic defects in complex materials	Michigan State University	East Lansing	MI	48824-2601
Copp, Stacy	Broad-spectrum light-harvesting and energy transfer in bioinspired nanocluster assemblies	University of California, Irvine	Irvine	CA	92697-7600
Cornwell, Gavin	Disentangling the factors controlling the emission of bioparticles that act as ice nucleating particles	Pacific Northwest National Laboratory	Richland	WA	99352-1793
Couvillion, Sneha	Microbial Metabolic Controls on Soil Carbon Dynamics through Root-Microbe-Soil Interactions: Connecting Molecular Processes to Ecosystem-level Impacts	Pacific Northwest National Laboratory	Richland	WA	99352-1793
Covey, Jacob	Simulating nuclear physics with nuclear spin qudits	University of Illinois, Urbana-Champaign	Champaign	IL	61820-7406
Damle, Anil	Fine-grained Theory and Robust Algorithms for Randomized Numerical Linear Algebra	Cornell University	Ithaca	NY	14850-2820
Dawson, Scott	Adaptive multiscale modeling using pseudospectral wavepackets	Illinois Institute of Technology	Chicago	IL	60616-3717
Donatelli, Jeffrey	Multi-Tiered Algorithms for Solving Extreme-Scale Inverse Problems Emerging from New Experiments	Lawrence Berkeley National Laboratory	Berkeley	CA	94720-8099
Dzade, Nelson	Multiscale Modeling of Heteroepitaxial Interfaces for Scalable Thin-Film Solar Cell Applications	Pennsylvania State University	University Park	PA	16802-7000
Fernandes Lopes Fabbris, Gilberto	Next generation x-ray magnetic measurements at ultra-high pressures	Argonne National Laboratory	Lemont	IL	60439-4803
Gao, Lan	Advancing Plasma Insights: Innovative X-Ray Diagnostics for Diverse Fusion Environments	Princeton Plasma Physics Laboratory (PPPL)	Princeton	NJ	08542-0451
Geraci, Gianluca	Enabling Scientific Data-Driven Modeling from Heterogeneous, Multi-Model, Massive, and Distributed Datasets	Sandia National Laboratories	Albuquerque	NM	87185-0100
Gonski, Julia	Machine Learning for New Physics and Microelectronics at the Energy Frontier	SLAC National Accelerator Laboratory	Menlo Park	CA	94025-7015
Higino da Silva Neto, Eduardo	Understanding the Role of Itinerant Electrons and Inhomogeneity in Magnetic Van der Waals Materials	Yale University	New Haven	CT	06520-8327

Iliesiu, Luca	Universality in Quantum Gravity and Beyond	University of California, Berkeley	Berkeley	CA	94710-1749
Javadi, Alisa	Color centers in noise-free hosts for quantum sensing and communication applications	University of Oklahoma	Norman	OK	73019-9705
Jin, Dafei	Probing Two-Dimensional Quantum Materials with Flying Electron Qubits	Notre Dame	Notre Dame	IN	46556-5612
Joe-Wong, Carlee	Learning to Adaptively Manage Heterogeneous Scientific Workloads on Heterogeneous Clusters	Carnegie Mellon University	Pittsburgh	PA	15213-3589
Joyce, Austin	Quantum Field Theory in Our Universe	University of Chicago	Chicago	IL	60637-5418
Kamaha, Alvine	Improved Calibration of Xenon Based Dark Matter and Neutrino Experiments By Simultaneously Measuring Different Types of Electron Recoils	University of California, Los Angeles	Los Angeles	CA	90095-1406
Kelly, Keegan	An Innovative (n, xn) Measurement Capability for Fusion Reactors, Fast Reactors, Radiochemical Diagnostics, and Astrophysics	Los Alamos National Laboratory	Los Alamos	NM	87544-0600
Kelly, Shaina	Pore-confinement effects on mineral crystallization behaviors in geologic multiphase flow systems	Columbia University	New York	NY	10027-7922
Kimchi, Itamar	Using crystallographic defects to control emergent behavior in quantum materials	Georgia Institute of Technology	Atlanta	GA	30332-0420
Kisley, Lydia	Wasted space?: Visualizing rare earth element ligand and analyte access within porous materials	Case Western Reserve	Cleveland	OH	44106-1712
Kolmer, Marek	Realizing functionality in graphene-based quantum materials via addressing their atomic-scale properties	Ames National Laboratory	Ames	IA	50011-1015
Kravvaris, Konstantino	Nuclear Reaction Theory With Quantified Uncertainties	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Lam, Stephen	Machine Learning-Enabled Monitoring of Metallic Solutes via X-ray Absorption Spectroscopy in Molten Salt Fusion Blankets	University of Massachusetts, Lowell	Lowell	MA	01854-3643
Lietz, Amanda	Incorporating Kinetic Effects in Fluid Models of Low Temperature Plasmas via Machine Learning	North Carolina State University	Raleigh	NC	27695-7514
Liu, Fang	Reveal the Structure-Dynamics Relationship in Solution-Phase Photoredox Catalysis with Explainable Machine Learning	Emory University	Atlanta	GA	30322-4250
Liu, Shusen	Narrowing the Human-AI Knowledge Gap through Audience-Aware Visualization	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Loo, Whitney	Neutron Scattering Studies of Nanoscopic Structure and Dynamics of Single Ion Conducting Polymer Blend Electrolytes	University of Wisconsin, Madison	Madison	WI	53715-1218
Loyd, Matthew	Development of a Novel High-Count-Rate, High-Resolution Neutron Camera with Advanced Gamma Discrimination Capabilities	Oak Ridge National Laboratory	Oak Ridge	TN	37831-6118
Luo, Yunqiu Kelly	Ultrafast spin torque dynamics in van der Waals magnetic heterostructures	University of Southern California	Los Angeles	CA	90089-4304
Martinez, Caicedo, David Caicedo, David	Towards an Enhanced Photon Detection System for DUNE FD3	South Dakota School of Mines and Technology	Rapid City	SD	57701-3901
Miller, Adam	Late-Time Observations of Type Ia Supernovae To Probe Nucleosynthesis in Thermonuclear Explosions	Northwestern University	Chicago	IL	60611-4579
Moreau, Liane	Exploring actinide nanocrystal growth towards defining 5f surface chemistry	Washington State University	Pullman	WA	99164-1060
Mosquera, Martin	Time-Dependent Electronic Structure Theory of Atomic Qubits: Entanglement, Coherence, and Dynamical Response	Montana State University	Bozeman	MT	59717-2470
Moult, Ian	Advancing the Lorentzian Frontier: From Collider Physics to Novel Structures in QFT	Yale University	New Haven	CT	06520-8327
Muechler, Lukas	Topological classification of chemical reactions: a new tool to understand and manipulate chemical reactivity	Pennsylvania State University	University Park	PA	16802-7000
Nathaniel Chaney	Observing and understanding the role of surface thermal heterogeneity in mesoscale circulations over AMF3 BNF: Implications for land-atmosphere interactions	Duke University	Durham	NC	27705-4010
Nguyen, Andy	Enzyme-like porous catalysts for upgrading biomass feedstocks	University of Illinois, Chicago	Chicago	IL	60612-7205
Novitski, Elise	Precision Cyclotron Radiation Emission Spectroscopy for direct neutrino mass measurements	University of Washington	Seattle	WA	98195-9472
O'Connor, Thomas	Modeling the Molecular Mechanisms of Interfacial Welding in Self-Healing Polymers	Carnegie Mellon University	Pittsburgh	PA	15213-3589
O'Malley, Daniel	Quantum Computing and Machine Learning for Enhanced Understanding of Fracture Flow	Los Alamos National Laboratory	Los Alamos	NM	87544-0600
Pedro, Kevin	Searching for Strongly Coupled Dark Matter at the LHC with Unsupervised and Generative AI	Fermi National Accelerator Laboratory	Batavia	IL	60510-5011

Peng, Bo	Co-designed Quantum Many-Body Suite for Deciphering Quantum Phenomena in Complex Molecular Systems	Pacific Northwest National Laboratory	Richland	WA	99352-1793
Polakovic, Tomas	Exclusive Reactions at the EIC with Far-Forward Superconducting Nanowire Detectors	Argonne National Laboratory	Lemont	IL	60439-4803
Pore, Jennifer	Investigating the Fundamental Properties of the Heaviest Elements	Lawrence Berkeley National Laboratory	Berkeley	CA	94720-8099
Qin, Wei	Investigating the interactive impact of long-term warming and altered precipitation on grassland nitrifying communities	University of Oklahoma	Norman	OK	73019-9705
Quan, Lina	Understanding and Controlling Light and Spin Dynamics in Chiral Hybrid Semiconductors	Virginia Polytechnic Institute and State University	Blacksburg	VA	26061-0001
Rankin, Dylan	Searching for New Physics with Real-time Anomaly Detection	University of Pennsylvania	Philadelphia	PA	19104-6205
Rinehart, Alex	Chemical and loading rate controls on fracture: Toward a universal 'phase-diagram' of factors controlling fracture networks from creep to dynamic failure	New Mexico Institute of Mining and Technology	Socorro	NM	87801-4681
Rouxel, Jeremy	Chiral Dynamics in Asymmetric Catalysts Probed by X-rays	Argonne National Laboratory	Lemont	IL	60439-4803
Saha, Sourabh	Scalable Additive Manufacturing of Spherical Foam Targets for Inertial Fusion Energy	Georgia Institute of Technology	Atlanta	GA	30332-0420
Scaffidi, Thomas	Hydrodynamics as a platform to harness emergent properties of quantum materials	University of California, Irvine	Irvine	CA	92697-7600
Schwalbe-Koda, Daniel	Atomistic Information Theory of Materials Synthesis and Free Energy Landscapes	University of California, Los Angeles	Los Angeles	CA	90095-1406
Scotti, Filippo	Reducing the Core-Edge Integration Gaps in Tokamaks with Novel Divertor Geometries and Plasma Configurations	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Seo, Soyoung	Dynamically Switching Polymer Networks using Transmutable Nanoparticles as Crosslinks	Arizona State University	Tempe	AZ	85287-6011
Seyler, Kyle	Light-Driven Proximity Control of Designer Moiré Nanomaterials	University of Arizona	Tucson	AZ	85721-0158
Shamekh, Sara	UNSHADE: Understanding and Modelling of Shallow to Deep Convection Transition	New York University	New York	NY	10012-2331
Shao, Yu-Tsun	Mind the Gap: Direct Probing Room Temperature Topological Spin Textures with Multi-modal Electron Microscopy	University of Southern California	Los Angeles	CA	90089-4304
Shushkov, Philip	Spin dynamics of molecular qubits	Indiana University, Bloomington	Bloomington	IN	47401-3654
Shusterman, Jennifer	Application of Additive Manufacturing to Target Fabrication	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Simeni Simeni, Marien	Radiation Transport in Laser-produced Extreme Ultraviolet Plasma Light Sources	University of Minnesota	Minneapolis	MN	55455-2070
Snoeyink, Craig	Role of Energy in Continuous Dielectrophoretic Molecular Separations	SUNY University at Buffalo	Amherst	NY	14228-2567
Spanopoulos, Ioannis	Synthesis and Structure-Property Relationships in the New Family of Porous Metal Halide Semiconductors (PMHS)	University of South Florida	Tampa	FL	33620-9951
Squires, Allison	Early Career: Modulation of light-harvesting by endogenous switches and fuses in the phycobilisome	University of Chicago	Chicago	IL	60637-5418
Steven Blazewicz	Who Lives, Who Dies, Who Cares? Using Soil Microbial Demographics to Predict Carbon Transformation	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Su, Xiao	Continuous redox-mediated electrochemical liquid-liquid extraction for critical element recovery	University of Illinois, Urbana-Champaign	Champaign	IL	61820-7406
Sutter-Fella, Carolin	Accelerated Robotic Design of Energy Materials (ACE lab)	Lawrence Berkeley National Laboratory	Berkeley	CA	94720-8099
Terrano, William	Quantum Control for Nuclear EDM Experiment	Arizona State University	Tempe	AZ	85287-6011
Venderbos, Jorn	Advancing the Quantum Magnetism Frontier in the Topology Era	Drexel University	Philadelphia	PA	19104-3735
Vo, Thi	Polymer Origami A Blueprint for Hierarchical Folding of Sequence-Controlled Multiblock Copolymers	Johns Hopkins University	Baltimore	MD	21218-2686
Wendt, Kyle	Hybrid Digital-Analog Quantum Simulations Of Nuclear Reactions In The Noisy Intermediate-Scale Quantum Era	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Westerdale, Shawn	Developing low-threshold liquid argon time projection chambers with photo-ionizing dopants for dark matter and neutrino experiments	University of California, Riverside	Riverside	CA	92521-0217
Winter, Lea	Tuning Electrocatalytic Reduction of Plasma Pre-Activated CO2 Toward Multicarbon Products	Yale University	New Haven	CT	06520-8327
Wood, Mitchell	Mechanisms of Non-Equilibrium Ion Dynamics in Radiation Tolerant Alloys	Sandia National Laboratories	Albuquerque	NM	87185-0100

Wu, W.L. Kimmy	Machine-learning enabled field-level inference for primordial gravitational wave discovery	SLAC National Accelerator Laboratory	Menlo Park	CA	94025-7015
Yan, Su	Randomized Algorithms for Multiscale Electromagnetics and Multiphysics Problems	Howard University	Washington	DC	20059-0001
Yang, Yang	Light Harvesting Photoenzymes for Energy Conversion	University of California, Santa Barbara	Santa Barbara	CA	93106-2050
Zhang, Mingwei	Understanding Elevated-Temperature Plasticity in Refractory Complex Concentrated Alloys	University of California, Davis	Davis	CA	95618-6153
Zhu, Ben	Advancing Edge Physics and Modeling Towards Fusion Pilot Plants	Lawrence Livermore National Laboratory	Livermore	CA	94551-0808
Zuniga, Cristal	Genome-Scale Modeling of Microbial Members in the Rhizosphere under Fluctuating pH and Temperature	San Diego State University	San Diego	CA	92182-1931