Department of Energy Announces $15 Million in Exploratory Research for Extreme-Scale Science

Principal Investigator	Title	Institution	City	State	9-digit zip code
Kim, Kibaek	Privacy-Preserving Federated Learning on Multimodal Data	Argonne National Laboratory (ANL)	Lemont	IL	60439-4801
Laiu, Paul	Physics-aware Acceleration for Federated Learning on Scientific Data	Oak Ridge National Laboratory (ORNL)	Oak Ridge	TN	75205-0240
Lin, Guang	Trustworthy Heterogeneous Data-Aware Bayesian Federated Learning	Purdue University	West Lafayette	IN	47906-1332
Yousefian, Farzad	Randomized Federated Learning for Nonsmooth, Nonconvex, and Hierarchical Optimization	Rutgers, The State University of New Jersey	Piscataway	NJ	08854-3925
Aiken, Alex	Differentiable Programming for Distributed NumPy	SLAC National Accelerator Laboratory	Menlo Park	CA	94025-7015
Allen, Jeffery	Differentiable Programming for Coupled Multi-Physics Problems with Disparate Timescales	National Renewable Energy Laboratory (NREL)	Golden	CO	80401-3111
Kolev, Tzanio	Differentiating Large-Scale Finite Element Applications	Lawrence Livermore National Laboratory (LLNL)	Livermore	CA	94551-0808
Ewetz, Rickard	Robust Explanations using Diverse Adversarially Trained Ensembles, Multi-Modal Contrastive Learning, and Attribution-based Confidence Metrics	The University of Central Florida	Orlando	FL	32826-8005
Rudin, Cynthia	Exploring the Whole Set of Sparse Explanations	Duke University	Durham	NC	27705-4010
Brown, Kevin	Kronos: Enabling Long Timescale PDES Simulations via Multi-Resolution Methods	Argonne National Laboratory (ANL)	Lemont	IL	60439-4801
Yoginath, Srikanth	Massively Parallel Speculative k-Tree Discrete Event Simulations	Oak Ridge National Laboratory (ORNL)	Oak Ridge	TN	75205-0240
Bao, Ning	Novel Quantum Algorithms from Fast Classical Transforms	Brookhaven National Laboratory (BNL)	Upton	NY	11973-5000
Cha, Matthew	Mathematical Methods for Quantum Subspace Diagonalization Algorithms	General Atomics	San Diego	CA	92121-1122
Landahl, Andrew	Fermionic Quantum Computation: Algorithms and Approximations	Sandia National Laboratories (SNL-NM)	Albuquerque	NM	87123-3453
Podder, Supartha	Power of Quantum Witnesses	State University of New York	Stony Brook	NY	11794-3362
Van Beeumen, Roel	A Rational Krylov Approach for Novel Quantum Algorithms	Lawrence Berkeley National Laboratory (LBNL)	Berkeley	CA	94720-8099
Whaley, Birgitta	Quantum Algorithms for Solving Partial Differential Equations in Engineering Sciences	The Regents of University of California	Berkeley	CA	94710-5940
Cincio, Lukasz	Quantum Machine Learning for Quantum Sensing	Los Alamos National Laboratory (LANL)	Los Alamos	NM	87544-0600
Larson, Jeffrey	QFI-Opt: Problem-Aware Optimization in NISQ-Era Hardware for a Metrological Advantage	Argonne National Laboratory (ANL)	Lemont	IL	60439-4081
Pikovski, Igor	Quantum Information Encoding and Decoding for Quantum Sensing	Stevens Institute of Technology	Hoboken	NJ	07030-7030
Sarovar, Mohan	Quantum Computational Sensing and Edge Coherent Data Processing	Sandia National Laboratories (SNL-CA)	Livermore	CA	94551-0969

| Van Dyke, John | Zero Noise Extrapolation for Quantum Sensing | The Johns Hopkins University | Baltimore | MD | 21218-2686 |