LDRD FY2019 Continuing Proposal Requests

Investment #	Project Title	Principal Investigator	Dept	Directorate
LDRD16-034	Advanced Silicon Detectors R&D	Lanni,Francesco	PO	NPP
LDRD16-037	Exploring hadron structure with ab initio lattice QCD calculations and making predictions for eRHIC	Izubuchi, Taku	PO	NPP
LDRD16-038	Preconceptual Design Study for Large Scale Structure Experiment post LSST/DESI	Slosar,Anze	PO	NPP
LDRD16-010	100fs single-shot electron beam slicing technology towards ultra-fast imaging	Hu, L./Zhu, Y/Shaftan, T/ Willeke, F.	PS	EPS
LDRD17-002	High-Powered Er-Doped Fiber Laser for 50 mA Highly Polarized Electron Beam	Zhao, Zhi	AD	NPP
LDRD17-003	Integrated Low-Noise and Low Drop-Out Voltage Regulator for Front-End ASIC	Li,Shaorui	IO	NPP
LDRD17-004	Next Generation Pad Readout for Neutron Detectors	Yu, Bo/Schaknowki, Neil	IO	NPP
LDRD17-011	Engineered Protein Arrays for Structural and In-Operando Studies	Gang, Oleg	NC	EPS
LDRD17-015	NSLS-II High Brightness Upgrade Design Studies	Blum, Eric	PS	EPS
LDRD17-016	Diffractíon-límíted and wavefront preserving reflective optics development	Idir, Mourad	PS	EPS
LDRD17-017	Development of Compact, High Efficiency Nanofocusing Optics for Hard X-Ray Nano-Imaging	Nazaretski, Evgeny	PS	EPS
LDRD17-018	Genomes to Predictive Biology: Machine Learning for the Integration of Inter-Species Functional Genomics Data	Blaby, Ian	BI	EBNN
LDRD17-023	Molecular Mechanisms of Alkane Hydroxylation	Liu, Qun	BI	EBNN
LDRD17-024	Development of a New Approach to Remotely Measure Limitations on Plant Growth	Rogers, Alistair	EE	EBNN
LDRD17-029	High Performance X-ray Diffraction Simulation Toolkit Using GPU and CPU Clusters	Xu, Wei / Lin, Meifeng	CC	CSI
LDRD18-002	Analysis on the Wire (AoW)	Katramatos, Dimitrios	CC	CSI
LDRD18-005	Provenance-enabled sample measurements and tracking for multi-modal analysis and predictive synthesis	Pouchard,Line	CC	CSI
LDRD18-009	Visualization toward White-Box Machine Learning for Image Registration in Multi-modal imaging and Analysis	Lin,Yuewei/Xu,Wei	CC	CSI
LDRD18-015	Operando Studies of 3D Printing with Nanostructured Inks	Wiegart, Lutz	PS	EPS
LDRD18-017	Electrolyte Flow Battery for Smart Grid Application	Gan, Hong/Takeuchi, Ester	DC	EPS
LDRD18-020	Novel Development of Deep Learning and Radar Data Assimilation for Energy Resilience and Grid Reliability	Jensen,Michael	EE	EBNN
LDRD18-022	Interdisciplinary Cyber-Security Framework	DePhillips,Michael	NN	EBNN
LDRD18-026	Electron Beam Formation via Ionization Injection for Next Generation Accelerator R&D	Swinson,Christina	AD	NPP

LDRD18-028	Tunable High Power FPC for Storage SRF Cavity	Wencan Xu	AD	NPP
LDRD18-030	Investigation of Surface Charge Limit of GaAs	Rao,Triveni/Tsang, Thomas/Wang,Erdong	IO	NPP
LDRD18-036	Finding a Lifshitz Point with the Beam Energy Scan II	Pisarski,Robert	PO	NPP
LDRD18-038	Ultra-fast High-Granularity Silicon Sensor Technology for Photon Science	Tricoli,Alexander	PO	NPP
LDRD18-046	Enabling Sustainable Ammonia Synthesis through Ambient and High Pressure Synchrotron Techniques	Rodriguez, Jose/Stavitski, E.	CO	EPS
S-LDRD18-033	Micro-pattern gas detectors	Kiselev,Alexander; Woody,Craig	PO	NPP
S-LDRD18-037	Forward and Backward Tracking at the EIC using small strip thin gap chamber detector	Ruan,Lijuan	PO	NPP
S-LDRD18-039	Studying Confirment and Nuclear Structure through Correlations and Quantum Entanglement at an EIC	Ulrich,Thomas	PO	NPP
S-LDRD18-044	Interplay of the many body dynamics of parton spins with gluon saturation at EIC	Venugopalan,Raju	PO	NPP
S-LDRD18-045	Jets at the EIC	Venugopalan,Raju	PO	NPP
S-LDRD18-047	Functional Descriptors of Single Atom Catalysts	Frenkel,Anatoly	CO	EPS
LDRD19-001	Physics-Informed Autonomous Synthesis of Self-Assembling Materials	Yager, Kevin	CSI	CSI
LDRD19-002	Physics-Guided Optimization of Quantum Gate Operations	Lin, Meifeng	CSI	CSI
LDRD19-003	Building an Integrative Forecast System to Address Challenges Facing Renewable Energy Forecast	Liu, Yangang	EE	EBNN
LDRD19-008	Integrating Multimodal Experiments using Advanced Data Analytics Developed with Microscopic Theories for Quantum Materials	Attenkofer, Klaus	PS	EPS
LDRD19-010	X-Ray Vision of Topological Bosons in Condensed Matter	Dean, Mark	PM	EPS
LDRD19-013	In operando imaging and dynamics of 2D high temperature superconductor based, dense Q-bit arrays	Mazzoli, Claudio	PS	EPS
LDRD19-014	Linking Experiments to Algorithms For Solving Single-Particle Cryo-EM Challenges.	McSweeney, Sean	PS	EPS
LDRD19-015	Triplet-Driven Solar Energy Capture	Miller, John	CO	EPS
LDRD19-016	Demonstration of feasibility of sub-nm, picosecond electron microscope for the life sciences	Shaftan, Timur	PS	EPS
LDRD19-017	Beam Pipe Higher Order Mode (HOM) Absorber	Xu, Wencan	CAD	NPP
LDRD19-019	Varying Cross-Section Direct Wind Double Helix Coils	Witte, Holger	CAD	NPP
LDRD19-020	Cryo-CMOS: enabling technology for scalable quantum processors	Carini, Gabriella	IO	NPP
LDRD19-021	Silicon Drift Detector with internal gain and ultra-low noise charge preamplifier for single photon detection	Giacomini, Gabriele	IO	NPP

LDRD19-022	Experimental Cosmology with 21cm Hydrogen Intensity Mapping	O'Connor, Paul	IO	NPP
LDRD19-023	Development of Low Background Interconnections	Raguzin, Eric	IO	NPP
LDRD19-024	Quantum UV Sensors based on Superconducting Nanowire Single Photon Detector	Rescia, Sergio	IO	NPP
LDRD19-026	Cathode development and deployment for EIC	Smedley, John	IO	NPP
LDRD19-027	Real-time Particle tracking with Deep Learning on FPGAs	Cavaliere, Viviana	PO	NPP
LDRD19-028	High-Throughput Advanced Data Acquisition for eRHIC, Particle Physics and Cosmology Experiments	Chen, Kai / Huang, Jin	PO	NPP
LDRD19-029	Single Atom Ba-ID for nEXO using Electron Microscopy	Chiu, Mickey/Warren, J.	PO/IO	NPP
LDRD19-030	Towards SBU-BNL scalable quantum processing and network enabled by fast imaging of single photons	Nomerotski, Andrei	PO	NPP
S-LDRD19-035	Novel Approaches for self-assembly of bionanomaterials and enabling their new functions	Gang, Oleg	CFN	EPS