

## FY2013 Approved LDRD Projects

<b>LDRD Proj. No.</b>	<b>DSR*</b>	<b>Project Title</b>	<b>P.I.</b>	<b>Dept.</b>	<b>Directorate</b>
10-040		Development of a Laser System for Driving the Photocathode of the Polarized Electron Source for the EIC	Rao, T.	IO	NPP
10-041		Simulation, Design, and Prototyping of an FEL, for Proof-of-Principle of Coherent Electron Cooling	Litvinenko, V.	AD	NPP
11-001		Cloud and Precipitation 4D Radar Science	Giangrande, S.	EE	ELS
11-002		A Novel Approach to Parameterized Sub-Grid Processes in Climate Models	Huang, D.	EE	ELS
11-008		Touchless Micro-Crystallography	Soares, A. S.	BO	ELS
11-025		Protein Microcrystal Dynamics by Coherent X-Ray Scattering	Fluerasu, A.	PS	PS
11-027		High-Resolution Biological Imaging by X-Ray Diffraction Microscopy	Lima, E.	PS	PS
11-030		Sub-10 nm Resolution Soft X-Ray Microscopy of Organic Nano-Materials by Novel Diffraction Methods	Kaznatcheev, K.	PS	PS
11-032		2D Membrane Solution Scattering for Probing the Structures of Membrane Proteins	Yang, L.	PS	PS
11-033		Exploring the Role of Glue in Hadron Structure by an Electron Ion Collider	Qiu, J.	PO	NPP
11-036		CMOS-Pixel Vertex Detector for EIC	Aschenauer, E.-C.	PO	NPP
11-040		Study of FEL Options for eRHIC	Litvinenko, V.	AD	NPP
11-050		Overcoming Electromagnetic Interference in Simultaneous PET and MRI for Biological and Clinical Imaging	Vaska, P.	MO	ELS
12-007		Complex Modeling: Leveraging Advanced Scattering Data with Computation to Push Back the Materials Complexity Frontier	Billinge, S.J.L.	PM	BES
12-008		Early Deployment of Flagship Applications on BG-Q	McGuigan, M.	CC	ELS
12-012		Inter-Individual Variation in Radiation-Induced Epigenetic Modifications and their Potential Impact on Carcinogenesis	Wilson, P.	BO	ELS
12-015		Developing an Integrated Atmosphere-Ecosystem Model for Investigating Interactions Between Atmospheric System and Ecosystem under a Warming Climate	Wu, W.	EE	ELS
12-018		Conical Slit for Probing Buried Micron or Sub-Micron Volumes for Dynamic Measurements of Heterogeneous	Margulies, L.	PS	PS
12-021		In-Situ Transmission X-Ray Microscopy Studies of Structure and Function in Energy Storage	Wang, J.	PS	PS
12-022		MeV-UED for Ultrafast Science	Wang, X.-J.	PS	PS
12-023		Femto-Second X-ray Pulse Generation by Electron Beam Slicing	Yu, Li Hua	PS	PS
12-024		Thermochemical Conversion of Biomass to Fuels and Chemicals	Babu, S. P.	ST	GARS
12-025		Flow-Based Battery Architectures for Large-Scale Electrical Energy Storage	Erdonmez, C.	ST	GARS
12-029		Demonstration of a Grid-Wide Measurement and Control Platform for Micro-Grids	Villaran, M.	ST	GARS
12-032		Laser-Driven Proton Accelerator	Pogorelsky, I.	PO	NPP
12-033		Water-based Liquid Scintillator Detector for Neutrino and Proton Decay Experiments	Jaffe, D.	PO	NPP

12-034		Quantum Electrodynamics for QCD Precision Studies at the EIC	Stratmann, M.	PO	NPP
13-005		Permanent magnet solution of the eRHIC with the NON-SCALING FFAG	Trbojevic, D.	AD	NPP
13-013		Electrochemical reduction of carbon dioxide on surface-modified metal electrodes	Polyanskiy, D.	CO	BES
13-017		A NSLS-II Workflow Prototype System for Supporting Data Intensive Beamline Experiments	Yu, D.	CC	ELS
13-020		Synthetic Control of Lipid Biosynthesis in Plant Vegetative Tissue	Shanklin, J.	BO	ELS
13-022		Tracking lithium electrochemical reaction in individual nanoparticles at NSLS-II	Wang, F.	ST	GARS
13-025		A Probabilistic Approach to Sizing Battery Energy Storage Systems for Improved Grid Inertial Response	Wang, X.	ST	GARS
13-027		In-situ Studies of Interfaces Under Extreme Environments	Gill, S.	NE	GARS
13-031		Modulation Enhanced Diffraction: a new tool for powder diffraction and total scattering studies	Dooryhee, E.	PS	PS
		New LDRDs with Delayed Starts			
13-003		Investigating eRHIC beam-beam effects with CeC linear accelerator	Litvinenko, V.	AD	NPP
13-006		Time resolved imaging of X-rays and charged particles	Nomerotski, A.	PO	NPP
13-024		Elucidating the Role of Nanostructured Domains in CIGS PV Device Performance	Eisemann, M.	ST	GARS
13-032		Development of At-Wavelength Metrology Tools	Idir, M.	PS	PS
13-033		Multidimensional imaging data analysis: from images to science	Lee, W.	PS	PS
13-034		Atomic resolution elemental mapping using x-ray assisted STM	Nazaretski, E.	PS	PS
13-036		Segmented Adaptive-Gap Undulator with different period lengths in segments for production of high flux and brightness Hard x-rays at NSLS-II	Tchoubar, O.	PS	PS