

FY16 Approved LDRD Proposals

| LDRD Proj. # | LDRD Project Title | PI | Directorate |
|--------------|--|--------------------------------|-------------|
| LDRD13-006 | Time-Resolved Imaging of X-Rays and Charged Particles | Nomerotski,Andrei | NPP |
| LDRD13-020 | Synthetic Control of Lipid Biosynthesis in Plant Vegetative Tissue | Shanklin,John | EBNN |
| LDRD13-022 | Tracking Lithium Electrochemical Reaction in Individual Nanoparticles at NSLS-II | Wang,Feng | ES |
| LDRD13-031 | Modulation Enhanced Diffraction: a new tool for powder diffraction and total scattering studies | Dooryhee,Eric | ES |
| LDRD13-032 | Development of a wavelength metrology tool for beamline | Idir,Mourad | ES |
| LDRD13-033 | Multidimensional Imaging Data Analysis: from images to science | Lee,Wah-Keat | ES |
| LDRD13-034 | Atomic resolution elemental mapping using x-ray assisted STM | Nazaretski,Evgeny | ES |
| LDRD14-005 | 1st Light: Elucidating Solid-Solid Interfaces in Energy Storage Systems | Takeuchi,Esther | ES |
| LDRD14-021 | In-Situ Investigation of the Strain Distribution in Next-Generation 3D Transistors Using X-Ray Nanodiffraction | Yan,Hanfei | ES |
| LDRD14-024 | Enable Early Sciences in NSLS-with Experiment-Driven Big Data Stream System | Harrison,Robert | Computing |
| LDRD14-028 | Tissue-specific Metabolic Models in Plants | Schwender,Jorg | EBNN |
| LDRD14-035 | Operando Studies of C1 Catalytic Reactions: Probing Model and Technical Catalysts at High Pressures using Soft X-Rays | Rodriguez,Jose | ES |
| LDRD14-036 | Correlative Microscopy, Spectroscopy and Diffraction with a Micro-Reactor | Stach,Eric | ES |
| LDRD14-037 | Imaging Electronic Texture in High-Temperature Superconductors | Wilkins,Stuart | ES |
| LDRD15-003 | Bunch-by-Bunch Beam Position Monitor for eRHIC | Minty,Michiko | NPP |
| LDRD15-005 | Advanced Coherent Electron Cooling | Litvinenko,Vladimir | NPP |
| LDRD15-006 | Design, Fabrication and test of SRF cavity prototype for eRHIC ERL | Xu,Wencan | NPP |
| LDRD15-009 | Nanoconfined Polymer Electrolytes for Rechargeable Lithium-Metal Batteries | Black,Chuck | ES |
| LDRD15-010 | Hydrocarbon chemistry on zeolite model systems: towards a detailed understanding of energy-relevant chemical transformations using in-situ techniques at NSLS-II, CFN and Chemistry Department | Boscoboinik,Anibal | ES |
| LDRD15-011 | Revealing the structure and dynamics of discrete meso-architectures | Gang,Oleg | ES |
| LDRD15-020 | A new frontier for improving processes for regional and global climate modeling | Lin,Wuyin | EBNN |
| LDRD15-025 | Growth of Self-activated scintillators for dual gamma and neutron detection | Roy,Utpal / Carmarda,Giuseppe | EBNN |
| LDRD15-031 | Inelastic X-Ray Scattering determination of the inter- and intra-particle dynamics of nanoparticle superlattices: key to the development of THz phononic crystals | Cunsolo,Alessandro | ES |
| LDRD15-034 | Searching and sorting haystacks | McSweeney,Sean | ES |
| LDRD15-037 | In-situ microscopy investigation of complex manganese oxides for energy storage | Chu,Yong | ES |
| LDRD15-038 | Segmented Adaptive-Gap Undulator with Different Period Lengths in Segments for Production of High Flux and Brightness Hard X-rays at NSLS-II | Tchoubar,Oleg / Kitegi,Charles | ES |

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|--------------|--|------------------------------------|-----------------|
| LDRD16-004 | Chiral magnetic effect: from quark-gluon plasma at RHIC to Dirac semimetals at NSLS-II | Qiang Li | CMPMSD |
| LDRD16-005 | Electronic Structure of Artificial Hetero-structures from the Atomic to Macroscopic Scale: Interfacing OASIS and ESM | T. Valla/E. Vescovo | CMPMSD/N SLS II |
| LDRD16-006 | Serial Micro Crystallography at Full Flux | Martin Fuchs | PS |
| LDRD16-007 | 3D ptchography imaging without rotation using highly convergent X-ray beam | Xiaojing Huang | PS |
| LDRD16-010 | 100fs single-shot electron beam slicing technology towards ultra-fast imaging | L. Yu/Y. Zhu/T. Shaftan/F. Willeke | PS/AD |
| LDRD16-017 | Develop the MAIA Detector for Scanning X-ray Fluorescence of Low-Z Elements at the TES Beamline | Mohamed Elbakhshwan | NST |
| LDRD16-019 | In situ synchrotron studies of subsurface material interfaces using X-ray fluorescence mapping and X-ray tomography at NSLS-II | Simerjeet Gill | NST |
| LDRD16-021 | Characterization of photo-cathodes and photoelectrons in liquid noble gases | Triveni Rao | IO |
| LDRD16-022 | Investigation of SIPMs for use in Nuclear and Particle Detectors | T. Tsang/C. Woody | IO |
| LDRD16-023 | ADC and Gbit/s link in CMOS for large data generation and in operando analysis | Gianluigi De Geronimo | IO |
| LDRD16-024 | Improved X-ray Spectroscopy Detectors | G. Giacomini/D. Elliott | IO |
| LDRD16-026 | Microwave Kinetic Inductance Detectors: from Cosmology to NSLS2 | Paul O'Connor | IO |
| LDRD16-027 | Detector Calibration and Material Analysis - Expanding the Capabilities at NSLS II | John Smedley | IO |
| LDRD16-029 | Higher-Order-Mode (HOM) damping for full luminosity of eRHIC | Wenca Xu | CAD |
| LDRD16-032 | Demonstration of a Proof-of-Principle Nb ₃ Sn Common Coil Dipole for Future High Energy pp Colliders | Ramesh Gupta | Magnet |
| LDRD16-034 | Advanced Silicon Detectors R&D | Francesco Lanni | PO |
| LDRD16-035 | Resolving Technological Issues of a Compact Time Projection Chamber for Use at Both RHIC and a Future Electron Ion Collider | Edward O'Brien | PO |
| LDRD16-037 | Exploring hadron structure with ab initio lattice QCD calculations and making predictions for eRHIC | Jianwei Qiu | PO |
| LDRD16-038 | Preconceptual Design Study for Large Scale Structure Experiment post LSST/DESI | Anze Slosar | PO |
| LDRD16-039 | Machine Learning Assisted Material Discovery | Shinjae Yoo | CSC |
| LDRD16-041 | Dynamic Visualization and Visual Analytics for Scientific Data at NSLS-II | Wei Xu | CSC |
| LDRD16-043 | Deep Structured Analysis for Image Datasets from CFN and NSLS-II | Kevin Yager | CFN |
| LDRD16-045 | Catalysis Program in CO ₂ Activation | Jingguang Chen | CO |