Laboratory Directed Research and Development Program FY 2011

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Adams	Direct Determination of Electrostatic Interactions Through Advanced Analysis of High Resolution Macromolecular Crystal Data	193
Agarwal	Enabling High Performance Computing (HPC) Workflows on Clouds	179
*Ager	Induced Bucket Brigade Photovoltaic Effect	174
Anders	Plasma-assisted High Rate Deposition Concept for Energy Applications	163
Arbelaez et al	Investigation of Image Current and Magnetic Field Tolerance Effects on High-Temperature Superconductor Undulators for Soft X-Ray FELs	203
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Brodie	Uncovering the Mechanistic Basis for Soil Microbial Community Response to Altered Precipitation Patterns	102
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Byrd	Development of Attosecond Synchronization for Future Light Sources	91
Canon	Defining an Ecosystem to Support Data-Intensive Science	300
*Commer et al	Enhanced Subsurface Fluid Characterization Using Joint Hydrological and Geophysical Data Inversion	179
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Davis	Effect of Secondary Mineral Coatings on Biogeochemical Processes	264
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Gregorich	Heavy Element Mass Analyzer and Detector Capability	152
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Hillson	Advances in Standardized, Scar-less, Sequence-Independent Cloning Methods.	167
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Joseph	Real-Time Data Compression for High Speed Imaging X-Ray Detectors for the Next Generation Light Source	204
*Kaindl	Ultrafast 2D Fourier-Transform Spectroscopy of Electronic Dynamics in Photovoltaic Nanomaterials	159

Kaindl et al	Attosecond XUV Condensed-Matter Science: Electronic Wavefunction Coherence and Correlated Dynamics	211
*Karpen	Identification and Analysis of Proteins That Regulate the Dynamic Response of Heterochromatin to Radiation	171
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*Kilcoyne et al	Search for a Permanent Electron Electric Dipole Moment (EDM)	142
Kunz	Structure Solution of Inorganic Materials Using Energy Resolved Laue Microdiffraction.	179
LaBarge	Determination of Impact of the Micro-Environment and Tissue-Level Self-Organization on Cell Fate Decisions and Homeostasis …	194
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Li (Xiaoye)	Next Generation Computing for X-Ray Science	214
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Visel	Transcriptome Analysis of Agave, a Candidate Biofuel Feedstock for Semi-Arid Climates	134
Voigt	Engineering Yeast to Produce Methyl Formate for Conversion to Fuels and Chemicals	92
Von der Lippe	High voltage Up- and Down-converters for Low Power Low Density Detector Instrumentation	168
*Wang (Daojing)	Multinozzle Arrays for Single Cell Metabolomics	171
Wang (Feng)	Integrated Optoelectronic Devices Based on Graphene	138
Warwick	Test Monochromator-Spectrometer Systems with Prototype High Density Gratings for High Resolution X-Ray Scattering	214
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Yang (Wanli)	Soft X-ray Spectroscopy of Lithium and Conductive Polymers for Li-Ion Batteries	169
Yashchuk, Goldberg	X-Ray Optical Metrology for Coherence-Preserving Adaptive Optics	207
*Zhang (Yuegang)	Surface-Selective Synthesis of Graphene Nanoribbons on Nanowire Templates	172
Zheng (Haimei)	Imaging Through Liquids using a TEM	488
Zhou (Quanlin)	Collaboration with China on Geologic Carbon Sequestration: Novel Field Tests to Characterize Heterogeneity for China's First Pilot Test	175
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	Total	19,007

*Track 2 Discovery Review projects