

List Of 2015 Reports

ID#	Title, First Author, and Category	Status
120	<p>Title: Strong Correlations Generically Protect d-Wave Superconductivity against Disorder First Author: Tang, S., FSU,NHMFL, tshao@magnet.fsu.edu PI: Dobrosavljevic, V., FSU,NHMFL, vlad@magnet.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Submitted to Phys. Rev. Lett. Sign. Achievement: No Director's Recommendation: Yes, definitely Director's Comments: This paper resolves a long-standing puzzle concerning the surprising resilience of d-wave superconductors to disorder, as a result of strong correlation effects in Mott materials.</p>	Approved
351	<p>Title: Enhanced Magnetic Coupling in Quasi-1D Cu(NO₃)₂(pyz)₃ (pyz = pyrazine) First Author: Manson, J.L., Eastern Washington University, Chemistry and Biochemistry, jmanson@ewu.edu PI: Manson, J.L., Eastern Washington University, Chemistry and Biochemistry, jmanson@ewu.edu Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 35 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: Yes Director's Recommendation: Yes, definitely Director's Comments: Jamie Manson and his group are making significant strides towards using the chemistry of metal-organic materials to design the ideal examples of the various fundamental quantum magnet theories, in this case a 1D Heisenberg chain. Designing, understanding, and testing the theories behind these basic quantum magnets allows us to build up to more complex materials, e.g. high-T_c superconductors, heavy fermions.</p>	Approved
376	<p>Title: Evidence for the Chiral Anomaly in a Dirac Semimetal First Author: Ong, N.P., Princeton University, Physics, npo@princeton.edu PI: Ong, N.P., Princeton University, Physics, npo@princeton.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 35 T UCGP: No VSP: No Published in Science 350, 413 (2015) Sign. Achievement: No Director's Recommendation: Yes, definitely Director's Comments: None</p>	Approved
243	<p>Title: Exciton Diamagnetic Shifts and Valley Zeeman Effects in Monolayer WS₂ & MoS₂ to 65T First Author: Stier, A.V., NHMFL-LANL, crooker@lanl.gov PI: Crooker, S.A., NHMFL-LANL, crooker@lanl.gov Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 90 T UCGP: No VSP: No Submitted to Nature Comm. Sign. Achievement: No Director's Recommendation: Yes, definitely Director's Comments: Demonstrates how high magnetic fields can be used to extract fundamental parameters such as the exciton binding energy, in the currently hot topic of dichalcogenides. Submitted to a Nature journal.</p>	Approved
87	<p>Title: π Berry Phase and Zeeman Splitting of Weyl Semimetal TaP First Author: Hu, J., Tulane University, Department of Physics and Engineering Physics, jhu@tulane.edu PI: Mao, Z.Q., Tulane University, Department of Physics and Engineering Physics, zmao@tulane.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Accepted by Nature Scientific Reports Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved
88	<p>Title: Discovery of a Magnetic Topological Semimetal Sr_{1-y}Mn_{1-z}Sb₂ First Author: Liu, J.Y., Tulane University, Department of Physics and Engineering Physics, jliu14@tulane.edu PI: Mao, Z.Q., Tulane University, Department of Physics and Engineering Physics, zmao@tulane.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Submitted to Nature Materials Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved

260	<p>Title: Quantum Oscillation Signatures of Pressure-Induced Topological Phase Transition in BiTeI First Author: Kim, J.S., POSTECH, Physics, js.kim@postech.ac.kr PI: Kim, J.S., POSTECH, Physics, js.kim@postech.ac.kr Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 18 T UCGP: No VSP: No Published in Scientific Reports 5, 15973 Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Approved
266	<p>Title: Quantum Transport of Two-Species Dirac Fermions in Dual-Gated Three-Dimensional Topological Insulators First Author: Xu, Y.X., Purdue University, Physics and Astronomy, xu319@purdue.edu PI: Chen, Y.P.C., Purdue University, Physics and Astronomy & ECE, yongchen@purdue.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Submitted to Nature Comm. Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved
8	<p>Title: High-Field Magneto-Transport Study of a Metallic Delafossite Oxide First Author: Kikugawa, N., National Institute for Materials Science, KIKUGAWA.Naoki@nims.go.jp PI: Kikugawa, N., National Institute for Materials Science, KIKUGAWA.Naoki@nims.go.jp Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 45 T UCGP: No VSP: No Submitted to Appl. Phys. Lett. Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved
25	<p>Title: Phase Separation in 3He-4He Solid Solutions First Author: Huan, C., University of Florida, Physics, huan@ufl.edu PI: Huan, C., University of Florida, Physics, huan@ufl.edu Category: Condensed Matter - Other Facility: High B/T Facility at UF Highest Measured Field: 2 T UCGP: No VSP: No Submitted to Progress in Nuclear Resonance Spectroscopy Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Approved
41	<p>Title: Magnetotransport Studies on Metallic Bi₂Se_{2.1}Te_{0.9} Topological Insulator First Author: Shrestha, K., University of Houston, Physics and TCSUH, drkeshavshrestha@gmail.com PI: Chu, C.W., University of Houston, Physics and TCSUH, cwchu@uh.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 35 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved
42	<p>Title: Weak Antilocalization due to Surface States in Metallic Bi₂Te₃ Topological Insulator First Author: Shrestha, K., University of Houston, Physics and TCSUH, drkeshavshrestha@gmail.com PI: Chu, C.W., University of Houston, Physics and TCSUH, cwchu@uh.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: Yes Director's Recommendation: No Director's Comments: None</p>	Approved
71	<p>Title: 1D-1D Coulomb Drag in Vertically-Integrated Quantum Wires in the T\rightarrow0 Limit First Author: Laroche, D., McGill University, Physics, dlaroch@sandia.gov PI: Gervais, G., McGill University, Physics, gervais@physics.mcgill.ca Category: Condensed Matter - Other Facility: High B/T Facility at UF Highest Measured Field: 4 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No</p>	Approved

	<p>Director's Recommendation: No Director's Comments: None</p>	
72	<p>Title: Quantum Clusters in Nanotubes: NMR Studies First Author: Huan, C., University of Florida, Physics, neil@phys.ufl.edu PI: Sullivan, N.S., University of Florida, Physics, sullivan@phys.ufl.edu Category: Condensed Matter - Other Facility: High B/T Facility at UF Highest Measured Field: 2 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
85	<p>Title: Characterizing the Magnetic Properties of Low-Dimensional Quantum Magnets First Author: Blackmore, W.J.A, University of Warwick, Physics, W.J.A.Blackmore@warwick.ac.uk PI: Manson, J.L., Eastern Washington University, Chemistry and Biochemistry, jmanson@ewu.edu Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 60 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
9	<p>Title: de Haas-van Alphen Effect in Weyl Semimetal TaP First Author: Jia, S., Peking University, Physics, gwliashuang@pku.edu.cn PI: Jia, S., Peking University, Physics, gwliashuang@pku.edu.cn Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 40 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
15	<p>Title: Magnetotransport in Confined Two-Dimensional Electron Liquids in Oxide Heterostructures First Author: Mikheev, E., University of California, Santa Barbara, Materials Department, emikheev@mrl.ucsb.edu PI: Stemmer, S., University of California, Santa Barbara, Materials Department, stemmer@mrl.ucsb.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 18 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
16	<p>Title: Study of Entanglement in Many-Particle Systems First Author: Yang, K., NHMFL, kunyang@magnet.fsu.edu PI: Yang, K., NHMFL, kunyang@magnet.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Published in Phys. Rev. B Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
127	<p>Title: Unstable Domain-Wall Solution in the Metal-Mott Insulator Coexisting Regime First Author: Lee, T-H, The Florida State University and National High Magnetic Field Laboratory, Physics, CMS, thlee@magnet.fsu.edu PI: Dobrosavljević, V., The Florida State University and National High Magnetic Field Laboratory, Physics, CMS, vlad@magnet.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: Yes Director's Recommendation: No Director's Comments: None</p>	Approved
128	<p>Title: Magneto Transport in Three Dimensional Carbon Nanostructures First Author: Wang, L., University of South Carolina, Department of Physics, wang387@email.sc.edu PI: Datta, T., University of South Carolina, Department of Physics, datta@physics.sc.edu Category: Condensed Matter - Other Facility: DC Field Facility</p>	Approved

	<p>Highest Measured Field: 18 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	
169	<p>Title: Magneto-Raman Spectroscopy on Correlated Electron System α-RuCl₃ First Author: Thirunavukkuarasu, K., NHMFL, komalavalli@magnet.fsu.edu PI: Smirnov, D., NHMFL, smirnov@magnet.fsu.edu Category: Condensed Matter - Other Facility: EMR Facility Highest Measured Field: 17 T UCGP: Yes VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
187	<p>Title: Resistively Detected NMR as a Probe of Topological States of Matter First Author: Mitrovic, V.F., Brown University, Physics, vemi@brown.edu PI: Mitrovic, V.F., Brown University, Physics, vemi@brown.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 18 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
201	<p>Title: Quantum Oscillation Study of Dirac Semimetal Candidate RhSb₃ First Author: Wang, K., CNAM, University of Maryland, wangkf@umd.edu PI: Paglione, J., CNAM, University of Maryland, paglione@umd.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 35 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
202	<p>Title: Complex Oxide Thin Films First Author: Beekman, C., Florida State University, Physics, beekman@maget.fsu.edu PI: Beekman, C., Florida State University, Physics, beekman@maget.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Submitted to Phys. Rev. Lett. Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
241	<p>Title: Revealing giant internal magnetic fields due to spin fluctuations in magnetically doped colloidal nanocrystals First Author: Rice, WD, NHMFL-LANL, crooker@lanl.gov PI: Crooker, SA, NHMFL-LANL, crooker@lanl.gov Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 8 T UCGP: No VSP: No Published in Nature Nanotechnology Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
300	<p>Title: Giant Magneto-Resistance in Epitaxial (La_{0.7}Sr_{0.3}MnO₃)_{0.5}: (ZnO)_{0.5} Nanocomposites First Author: Pan, W., Sandia National Labs, wpan@sandia.gov PI: Pan, W., Sandia National Labs, wpan@sandia.gov Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 18 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
	<p>Title: Quantum Oscillations in Low Carrier Concentration SrTiO₃ FETs First Author: Bangura, A.F., Max Planck Institute for Solid State Research, Stuttgart, Quantum Materials, a.bangura@fkf.mpg.de</p>	

303	<p>PI: Bangura, A.F., Max Planck Institute for Solid State Research, Stuttgart, Quantum Materials, a.bangura@fkf.mpg.de Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 35 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
316	<p>Title: XMnBi₂ under Pressure where X = Ca, Sr and Ba First Author: Graf, D., NHMFL, graf@magnet.fsu.edu PI: Graf, D., NHMFL, graf@magnet.fsu.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 34.5 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
323	<p>Title: Shubnikov–de Haas Quantum Oscillations Measurements in NbAs First Author: Luo, Y., Los Alamos National Lab, ykluo@lanl.gov PI: Ronning, F., Los Alamos National Lab, fronning@lanl.gov Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 18 T UCGP: No VSP: No Published in Phys. Rev. B 92//205134 Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
324	<p>Title: Highly Sensitive Spin Detection Using an On-Chip Superconducting Cavity First Author: Chiorescu, I., FSU and NHMFL, Physics, ic@magnet.fsu.edu PI: Chiorescu, I., FSU and NHMFL, Physics, ic@magnet.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
325	<p>Title: Broadband Spin Detection Setup for Use in a Broad Temperature Range First Author: Chiorescu, I., FSU and NHMFL, Physics, ic@magnet.fsu.edu PI: Chiorescu, I., FSU and NHMFL, Physics, ic@magnet.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
101	<p>Title: Weyl Semimetals TaAs, NbAs, TaP and NbP: Fermi Surface, Anomalous Hall Effect and Magnetotransport First Author: Zhang, Q.R., National High Magnetic Field Lab, qiuzhang@magnet.fsu.edu PI: Balicas, L., National High Magnetic Field Lab, balicas@magnet.fsu.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 45 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
111	<p>Title: Ferroelectricity in the Gapless Quantum Antiferromagnet NH₄CuCl₃ First Author: Kynon, J., Florida State University, Department of Chemistry, sirscribble@gmail.com PI: Dalal, N.S., Florida State University, Department of Chemistry, dalal@chem.fsu.edu Category: Condensed Matter - Other Facility: CMT/E UCGP: No VSP: No Published in Phys. Rev. B 92, 144103 (2015) Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
	<p>Title: Magneto-Optical Study of Topological Crystalline Insulators</p>	

118	<p>First Author: Chen, Z, NHMFL, zchen@magnet.fsu.edu PI: Li, Z, NHMFL, zli@magnet.fsu.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 17.5 T UCGP: Yes VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
353	<p>Title: Attempt to Observe Levitation of Graphite Plates in the Hybrid Outsert Fringe Field First Author: Suslov, A., Florida State University, NHMFL, suslov@magnet.fsu.edu PI: Suslov, A., Florida State University, NHMFL, suslov@magnet.fsu.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 11.5 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
361	<p>Title: Magnetic Torque Anomaly in the Quantum Limit of Cd₃As₂ First Author: Nair, N., UC, Berkeley, nnair@berkeley.edu PI: Analytis, J., UC, Berkeley, analytis@berkeley.edu Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 65 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
362	<p>Title: Magnetic Torque Anomaly in the Quantum Limit of Weyl Semi-Metals First Author: Moll, P., UC, Berkeley, philip.moll@cpfs.mpg.de PI: Analytis, J., UC, Berkeley, analytis@berkeley.edu Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 65 T UCGP: No VSP: No Submitted to Nature Materials Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
363	<p>Title: Investigating the Fermi Surface of the Pd-based Superconductor Ta₄Pd₃Te₁₆ First Author: Helm, T., UC, Berkeley, Toni.Helm@cpfs.mpg.de PI: Analytis, J., UC, Berkeley, analytis@berkeley.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 65 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
365	<p>Title: Cyclotron Resonance Spectroscopy of Topological Insulators in Ultrahigh Magnetic Fields First Author: Stier, A.V., NHMFL-LANL, avstier@lanl.gov PI: Stier, A.V., NHMFL-LANL, avstier@lanl.gov Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 100 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
244	<p>Title: Higher-Order Spin Noise Spectroscopy First Author: Li, F., LANL, crooker@lanl.gov PI: Crooker, S.A., NHMFL-LANL, crooker@lanl.gov Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: .5 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved

430	<p>Title: High Field Magneto-Optical Studies of Liquid Crystals and Complex Fluids First Author: Gleeson, J.T., Kent State University, Physics, jgleeson@kent.edu PI: Gleeson, J.T., Kent State University, Physics, jgleeson@kent.edu Category: Condensed Matter - Other Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
503	<p>Title: Microwave Resonance Measurements of Semi-Metals First Author: Chan, M., Maglab, Los Alamos National Laboratory, mchan053@gmail.com PI: Chan, M., Maglab, Los Alamos National Laboratory, mchan053@gmail.com Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 15 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
504	<p>Title: Magnetotransport in 5d-Electron Iridates First Author: Balakirev, F.F., NHMFL, LANL, fedor@lanl.gov PI: Cao, G., University of Kentucky, Physics and Astronomy, cao@uky.edu Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 65 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
506	<p>Title: New Magnetic Features Unveiled in Double Layered 4d-oxide Ca₃Ru₂O₇ First Author: Chikara, S, Los Alamos National Lab, Pulsed Field Facility, schikara@lanl.gov PI: Chikara, S, Los Alamos National Lab, Pulsed Field Facility, schikara@lanl.gov Category: Condensed Matter - Other Facility: Pulsed Field Facility at LANL Highest Measured Field: 60 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
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