List Of 2015 Reports

ID#	Title, First Author, and Category	Status
107	**Title:** Normal Properties and Superconductivity of Strontium Titanate (Bulk and Surface) **First Author:** Gor'kov, L.P., FSU, NHMFL, gorkov@magnet.fsu.edu **PI:** Gor'kov, L.P., FSU, NHMFL, gorkov@magnet.fsu.edu **Category:** Superconductivity - Basic **Facility:** CMT/E **UCGP:** No **VSP:** No **Published in** J. Phys.-Condens. Mat. 27 252001 **Sign. Achievement:** No **Director's Recommendation:** Yes, definitely **Director's Comments:** Significant advance in understanding long-time puzzling superconducting behavior. Quality work with significant potential for far-reaching impact.	Approved
95	**Title:** Theoretical Visualization of STM Images in Inhomogeneous Superconductors **First Author:** Hirschfeld, P.J., U. Florida, Physics, pjh@phys.ufl.edu **PI:** Hirschfeld, P.J., U. Florida, Physics, pjh@phys.ufl.edu **Category:** Superconductivity - Basic **Facility:** UF Physics **UCGP:** No **VSP:** No **Published in** Phys. Rev. Lett. 114, 217002 (2015) **Sign. Achievement:** Yes **Director's Recommendation:** Yes, definitely **Director's Comments:** None	Approved
163	**Title:** Seebeck Coefficient of Underdoped La2−xSrxCuO4 in High Magnetic Fields: Fermi-Surface Reconstruction by Charge-Density-Wave Order **First Author:** Badoux, S. **PI:** Taillefer, L., Université de Sherbrooke, Physics, Louis.Taillefer@USherbrooke.ca **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 45 T **UCGP:** No **VSP:** No **Submitted to** Physical Review X **Sign. Achievement:** Yes **Director's Recommendation:** Yes, definitely **Director's Comments:** None	Approved
394	**Title:** Quantum Oscillations in the Cuprate Superconductor Pr2CuO4+- **First Author:** Breznay, N.P., UC Berkeley, Physics, nbreznay@berkeley.edu **PI:** Analytis, J.G., UC Berkeley, Physics, analytis@berkeley.edu **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 92 T **UCGP:** No **VSP:** No **Submitted to** Nature Comm. **Sign. Achievement:** No **Director's Recommendation:** Yes, definitely **Director's Comments:** Studying quantum criticality in MBE films of cuprates is an important new step. Precise chemical control of doping and oxygen stoichiometry can be achieved, along with future strain and interface studies.	Approved
440	**Title:** Contactless Measurements of Quantum Oscillations in the Cuprate Superconductor HgBa2CuO4+δ **First Author:** Chan, M.K., Maglab, Los Alamos National Laboratory, mchan053@gmail.com **PI:** Chan, M.K., Maglab, Los Alamos National Laboratory, mchan053@gmail.com **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** No **VSP:** No **Submitted to** Nature Comm. **Sign. Achievement:** No **Director's Recommendation:** Yes, definitely **Director's Comments:** Most quantum oscillation work to date in the cuprates has been on YBCO. YBCO presents many complications due to the double-layer structure and competing orders. The outstanding challenge is to unravel which are the most important features of the Fermi surface for creating high-Tc superconductivity. This Hg-based superconductor overcomes many of the above problems - it has only a single layer and presents a simple reconstructed Fermi surface, that could be considered an archetypical feature of cuprate superconductors. The PI is characteristically self-effacing and lets others put his results forward.	Approved
466	**Title:** Reversal of the Upper Critical Field Anisotropy and Spin-Locked Superconductivity in K2Cr3As3 **First Author:** Balakirev, F.F., NHMFL, LANL, fedor@lanl.gov **PI:** Bud'ko, S., Ames Laboratory, budko@ameslab.gov **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** No **VSP:** No **Published in** Phys. Rev. B Rapid Commun. 91, 220505(R) (2015) **Sign. Achievement:** Yes	Approved

	Director's Recommendation: Yes, definitely **Director's Comments:** None	
273	**Title:** The Effect of Chemical Pressure on the Electronic Nematic Structure of FeSe **First Author:** Coldea, A., Oxford University, Physics, amalia.coldea@physics.ox.ac.uk **PI:** Coldea, A., Oxford University, Physics, amalia.coldea@physics.ox.ac.uk **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 45 T **UCGP:** No **VSP:** No **Publication Status:** Manuscript in preparation **Sign. Achievement:** Yes **Director's Recommendation:** Yes **Director's Comments:** None	Approved
318	**Title:** High-Entropy, Paramagnetic FFLO Superconducting State in K-(BEDT-TTF)2Cu(NCS)2 **First Author:** Fortune, N.A.F., Smith College, Physics, nfortune@smith.edu **PI:** Fortune, N.A.F., Smith College, Physics, nfortune@smith.edu **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 35 T **UCGP:** No **VSP:** Yes **Publication Status:** Manuscript in preparation **Sign. Achievement:** Yes **Director's Recommendation:** Yes **Director's Comments:** None	Approved
103	**Title:** Spin Fluctuation Pairing, Nematicity, and Orbital Order in FeSe **First Author:** Hirschfeld, P.J., U. Florida, Physics, pjh@phys.ufl.edu **PI:** Hirschfeld, P.J., U. Florida, Physics, pjh@phys.ufl.edu **Category:** Superconductivity - Basic **Facility:** UF Physics **UCGP:** No **VSP:** No **Published in** Phys. Rev. Lett. 115,026402 **Sign. Achievement:** No **Director's Recommendation:** Yes **Director's Comments:** None	Approved
171	**Title:** Magnetic Field Induced Vortex Lattice Reconstruction from17O NMR of an Under-doped Single Crystal of the High Temperature Superconducting Compound Hg1201 **First Author:** Halperin, W.P., Northwestern University, Physics, w-halperin@northwestern.edu **PI:** Halperin, W.P., Northwestern University, Physics, w-halperin@northwestern.edu **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 30 T **UCGP:** No **VSP:** No **Publication Status:** Manuscript in preparation **Sign. Achievement:** Yes **Director's Recommendation:** Yes **Director's Comments:** None	Approved
35	**Title:** Shubnikov-De Haas Oscillation Measurements on FeSe under High Pressure **First Author:** Terashima, T., National Institute for Materials Science, TERASHIMA.Taichi@nims.go.jp **PI:** Terashima, T., National Institute for Materials Science, TERASHIMA.Taichi@nims.go.jp **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 45 T **UCGP:** No **VSP:** No **Submitted to** Phys. Rev. Lett. **Sign. Achievement:** Yes **Director's Recommendation:** Yes **Director's Comments:** None	Approved
36	**Title:** Strong Correlations Elucidate the Electronic Structure and the Phase Diagram of the LaAlO3/SrTiO3 Interface **First Author:** Dagan, Y., Tel Aviv University, School of Physics and Astronomy, yoram.dagan@gmail.com **PI:** Dagan, Y., Tel Aviv University, School of Physics and Astronomy, yoram.dagan@gmail.com **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 34.5 T **UCGP:** No **VSP:** No **Published in** Nature Comm. DOI: 10.1038/ncomms9239 **Sign. Achievement:** Yes **Director's Recommendation:** Yes **Director's Comments:** None	Approved
56	**Title:** NMR Search for Hidden Order in the Paseudogap Phase of the Cuprate High-Tc Superconductors **First Author:** Kawasaki, K., Okayama University, Physics, kawasaki@psun.phys.okayama-u.ac.jp **PI:** Zheng, G.Q., Okayama University, Physics, zheng@psun.phys.okayama-u.ac.jp **Category:** Superconductivity - Basic **Facility:** DC Field Facility	Approved

	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	
58	**Title:** High Field Transport Properties of Ni-doped BaFe2As2 Thin Film **First Author:** Iida, K., Nagoya University, Crystalline Materials Science , Graduate School of Science, iida@nuap.nagoya-u.ac.jp **PI:** Iida, K., Nagoya University, Crystalline Materials Science , Graduate School of Science, iida@nuap.nagoya-u.ac.jp **Category:** Superconductivity - Basic **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	Approved
126	**Title:** Upper critical fields in iron-based pnictide superconductors **First Author:** Nikolo, M, Saint Louis University, Physics, nikolom@slu.edu **PI:** Nikolo, M, Saint Louis University, Physics, nikolom@slu.edu **Category:** Superconductivity - Basic **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	Approved
132	**Title:** Determination of the Upper Critical Field of Cuprates by Electrical Transport under High Magnetic Field **First Author:** Wu, J., Brookhaven National Laboratory, jwu@bnl.gov **PI:** Bozovic, I., Brookhaven National Laboratory, bozovic@bnl.gov **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 61 T **UCGP:** No **VSP:** No **Publication Status:** Manuscript in preparation **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
142	**Title:** Anomalous High-Field-Induced Phase in Underdoped La1.7Eu0.2Sr0.1CuO4 **First Author:** Shi, Z., NHMFL, zshi@magnet.fsu.edu **PI:** Popovic, D., NHMFL, dragana@magnet.fsu.edu **Category:** Superconductivity - Basic **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	Approved
158	**Title:** Normal-State Specific Heat Measurements in BaFe2(As1-xPx)2 **First Author:** Moir, C.M.M., Magnet Lab / FSU, Physics, moir@magnet.fsu.edu **PI:** Riggs, S.C.R., Magnet Lab / FSU, scr@magnet.fsu.edu **Category:** Superconductivity - Basic **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	Approved
172	**Title:** Kohler's Rule in Nearly Optimal-Doped Cuprate Superconductor HgBa2Cu4+δ **First Author:** Tang, Y., University of Minnesota, Physics and Astronomy, tangx345@umn.edu **PI:** Greven, M., University of Minnesota, Physics and Astronomy, greven@physics.umn.edu **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 31.4 T **UCGP:** No **VSP:** No **Publication Status:** Manuscript in preparation **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
	Title: Search for the Rapid Oscillations and Field-Induced Spin-Density-Waves in (TMTTF)2Br	

183	**First Author:** Kang, W., Ewha Womans University, Physics, wkang@ewha.ac.kr **PI:** Kang, W., Ewha Womans University, Physics, wkang@ewha.ac.kr **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 34 T **UCGP:** No **VSP:** No **Publication Status:** Not at this time **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
230	**Title:** Torque Magnetometry of High Temperature Superconductors in Pulsed Magnetic Fields **First Author:** Yu, F.., University of Michigan, fanyuchn@umich.edu **PI:** Li, L,. University of Michigan, luli@umich.edu **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** No **VSP:** No **Submitted to** Nature Physics **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
167	**Title:** Magnetoresistivity of the Cuprate Superconductor Nd2-xCexCuO4-δ **First Author:** Li, Y., University of Minnesota, Physics, yl@physics.umn.edu **PI:** Greven, M., University of Minnesota, Physics, greven@physics.umn.edu **Category:** Superconductivity - Basic **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	Approved
327	**Title:** 17O NMR Investigation of Charge Order in Underdoped YBa2Cu3Oy **First Author:** Julien, M.H., LNCMI, marc-henri.julien@lncmi.cnrs.fr **PI:** Julien, M.H., LNCMI, marc-henri.julien@lncmi.cnrs.fr **Category:** Superconductivity - Basic **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	Approved
345	**Title:** Majorana Bands, Berry Curvature, and Thermal Hall Conductivity in a Chiral P-Wave Superconductor **First Author:** Murray, J.M., NHMFL, james.murray1@gmail.com **PI:** Vafek, O., FSU/NHMFL, vafek@magnet.fsu.edu **Category:** Superconductivity - Basic **Facility:** CMT/E **UCGP:** No **VSP:** No **Published in** Phys. Rev. B vol 92 page 134520 **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
357	**Title:** High Field Studies of Electron-Doped Cuprate Thin Films **First Author:** Higgins, J.S., University of Maryland, College Park, Physics, joshua.s.higgins@gmail.com **PI:** Butch, N.P., NIST/University of Maryland, nicholas.butch@nist.gov **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** No **VSP:** No **Publication Status:** Not at this time **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
360	**Title:** Quantum Critical Points and Non-Fermi Liquid Behavior in CaRuO3 and Sr2RuO4 **First Author:** Wartenbe, M.W., FSU, maglab, mrw03h@fsu.edu **PI:** Wartenbe, M.W., FSU, maglab, mrw03h@fsu.edu **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** No **VSP:** No **Publication Status:** Not at this time **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved

381	**Title:** ρ(H,T) Phase Diagram and Bc2(T) Determination for Epitaxial Fe(SexTe1-x) **First Author:** Salamon, M.B., Univ. Texas at Dallas, salamon@utdallas.edu **PI:** Salamon, M.B., Univ. Texas at Dallas, salamon@utdallas.edu **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** No **VSP:** No **Accepted by** Scientific Reports **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
395	**Title:** High Magnetic Field Measurements of High Temperature Superconductors **First Author:** Hsu, Y. -T., University of Cambridge, Physics, yth21@cam.ac.uk **PI:** Sebastian, S. E., University of Cambridge, Physics, ses59@cam.ac.uk **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL **Highest Measured Field:** 65 T **UCGP:** Yes **VSP:** No **Publication Status:** Manuscript in preparation **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
426	**Title:** High Magnetic Field and High-Frequency Cyclotron Resonance Studies of the Underdoped Cuprate YBa2Cu3O6+y (YBCO) and Related Materials **First Author:** Beedle, C.C., NHMFL Los Alamos National Laboratory, beedle@lanl.gov **PI:** Beedle, C.C., NHMFL Los Alamos National Laboratory, beedle@lanl.gov **Category:** Superconductivity - Basic **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	Approved
439	**Title:** Low-Temperature High-Magnetic Field Hall Effect near a Putative Quantum Critical Point in the High-Tc Superconductor HgBa2CuO4+δ **First Author:** Chan, M.K., Maglab, Los Alamos National Laboratory, mkchan@lanl.gov **PI:** Chan, M.K., Maglab, Los Alamos National Laboratory, mkchan@lanl.gov **Category:** Superconductivity - Basic **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	Approved
295	**Title:** Superconductivity and Quantum Transport in Asymmetric and Symmetric SrTiO3 Structures **First Author:** Merz, T., Stanford University, Department of Applied Physics, tmerz@stanford.edu **PI:** Hwang, H. Y., Stanford University & SLAC National Accelerator Laboratory, Department of Applied Physics & SIMES, hyhwang@stanford.edu **Category:** Superconductivity - Basic **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	Approved
441	**Title:** Low Temperature Normal State Magnetoresistance and Hall Effect in the High-Tc Superconductor HgBa2CuO4+δ **First Author:** Chan, M.K., Maglab, Los Alamos National Laboratory, mchan053@gmail.com **PI:** Chan, M.K., Maglab, Los Alamos National Laboratory, mchan053@gmail.com **Category:** Superconductivity - Basic **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	Approved
	Title: Upper Critical Field for the High-Tc Cuprate HgBa2CuO4+δ **First Author:** Chan, M.K., Maglab, Los Alamos National Laboratory, mchan053@gmail.com **PI:** Chan, M.K., Maglab, Los Alamos National Laboratory, mchan053@gmail.com **Category:** Superconductivity - Basic **Facility:** Pulsed Field Facility at LANL	

443	**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	Approved
30	**Title:** High Magnetic Field Phase in Two Dimensional Organic Superconductor ''-(BEDT-TTF)4[(H3O)Ga(C2O4)3]C6H5NO2 **First Author:** UJI, S.U., National Institute for Materials Science, Superconducting Properties Unit, uji.shinya@nims.go.jp **PI:** UJI, S.U., National Institute for Materials Science, Superconducting Properties Unit, uji.shinya@nims.go.jp **Category:** Superconductivity - Basic **Facility:** DC Field Facility **Highest Measured Field:** 30 T **UCGP:** No **VSP:** No **Publication Status:** Manuscript in preparation **Sign. Achievement:** No **Director's Recommendation: No** **Director's Comments:** None	Approved
Total Reports: 34		