

List Of 2015 Reports

ID#	Title, First Author, and Category	Status
4	<p>Title: Dual Top and Bottom Gated Black Phosphorus Field-Effect Transistors First Author: Tayari, V, McGill University, Electrical and Computer Engineering, vahid.tayari@gmail.com PI: Gervais, G, McGill University, Physics, gervais@physics.mcgill.ca Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 35 T UCGP: No VSP: No Published in Nature Comm. Sign. Achievement: Yes Director's Recommendation: Yes, definitely Director's Comments: None</p>	Editing
100	<p>Title: Metal to Insulator Quantum-Phase Transition in Few-Layered ReS₂ First Author: Pradhan, N.R., National High Magnetic Field Lab, pradhan@magnet.fsu.edu PI: Balicas, L., National High Magnetic Field Lab, balicas@magnet.fsu.edu Category: 2D Materials Facility: CMT/E UCGP: Yes VSP: No Published in Nano Letters DOI: 10.1021/acs.nanolett.5b04100 Sign. Achievement: No Director's Recommendation: Yes, definitely Director's Comments: Fundamental discovery in novel 2D materials. Evidence of a quantum phase transition.</p>	Approved
123	<p>Title: Splitting of the Fermi Contour of Quasi-2D Electrons in Strong Parallel Magnetic Fields First Author: Mueed, M.A., Princeton University, Electrical Engineering, mmueed@princeton.edu PI: Shayegan, M., Princeton University, Electrical Engineering, shayegan@princeton.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Published in Phys. Rev. Lett. Sign. Achievement: Yes Director's Recommendation: Yes, definitely Director's Comments: None</p>	Approved
164	<p>Title: Probing Ising Superconductivity in Atomically Thin NbSe₂ under High Magnetic Fields First Author: Xi, X., Penn State University, xzx2@psu.edu PI: Mak, K.F., Penn State University, kzm11@psu.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 31.4 T UCGP: No VSP: No Published in Nature Physics doi:10.1038/nphys3538 Sign. Achievement: Yes Director's Recommendation: Yes, definitely Director's Comments: None</p>	Approved
271	<p>Title: Fractional Quantum Hall Effect in a Fractal System First Author: Wang, L., now at Cornell University, Dept. of Physics, lw2379.columbia@gmail.com PI: Dean, C.R., Columbia University, Physics, cdean@phys.columbia.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 45 T UCGP: No VSP: No Published in Science Sign. Achievement: Yes Director's Recommendation: Yes, definitely Director's Comments: None</p>	Approved
377	<p>Title: Intrinsic and Extrinsic Defects in a Family of Coal-Derived Graphene Quantum Dots First Author: Singamaneni, S.R., North Carolina State University, Materials Science and Engineering, rao.iisc@gmail.com PI: Singamaneni, S.R., North Carolina State University, Materials Science and Engineering, rao.iisc@gmail.com Category: 2D Materials Facility: EMR Facility Highest Measured Field: 11 T UCGP: No VSP: No Published in Appl. Phys. Lett. 107, 212402 (2015) Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved
	<p>Title: Quantum Oscillations in Two-Dimensional MoS₂ First Author: Kim, Y.D., Columbia University, Mechanical Engineering, yk2629@columbia.edu PI: Hone, J., Columbia University, Mechanical Engineering, jh2228@columbia.edu Category: 2D Materials</p>	

390	<p>Facility: DC Field Facility Highest Measured Field: 32 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Approved
1	<p>Title: The Pinning of a Wigner Crystal at the Reentrant Insulating State First Author: Talbot Knighton, T.K., Wayne State University, Physics and Astronomy, talbot.knighton@wayne.edu PI: Jian Huang, J.H., Wayne State University, jianhuang@wayne.edu Category: 2D Materials Facility: High B/T Facility at UF Highest Measured Field: 7 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Editing
166	<p>Title: Shubnikov-de Haas Oscillations of High Mobility Holes in Monolayer and Bilayer WSe₂ First Author: Fallahzad, B., The University of Texas at Austin, Electrical and Computer Engineering, b.fallah@utexas.edu PI: Tutuc, E., The University of Texas at Austin, Electrical and Computer Engineering, etutuc@mer.utexas.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Submitted to Phys. Rev. Lett. Sign. Achievement: Yes Director's Recommendation: Yes Director's Comments: None</p>	Approved
239	<p>Title: Spin Coherence and Dephasing of Localized Electrons in Monolayer MoS₂ First Author: Yang, L., NHMFL-LANL, crooker@lanl.gov PI: Crooker, S.A., NHMFL-LANL, crooker@lanl.gov Category: 2D Materials Facility: Pulsed Field Facility at LANL Highest Measured Field: .5 T UCGP: No VSP: No Published in Nano Letters Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Approved
104	<p>Title: Quantum Hall Effect in Black Phosphorus Two-dimensional Electron System First Author: Li, L., Fudan University, Dept. of Physics, li.likai.1990@gmail.com PI: Zhang, Y., Fudan University, Dept. of Physics, zhyb@fudan.edu.cn Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Submitted to Nature Nanotechnology Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Approved
40	<p>Title: Magneto-transport of Few-layer Passivated Black Phosphorus First Author: Du, Y.C., Purdue University, Electrical Engineering, du41@purdue.edu PI: Ye, P.D., Purdue University, Electrical Engineering, yep@purdue.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 18 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: Yes Director's Comments: None</p>	Approved
64	<p>Title: Observation of the Quantum Hall Effect in Interface-Engineered Bi₂Se₃ Thin Films with Record Low Sheet Carrier Density and High Mobility First Author: Salehi, M.S., Rutgers University, Materials science & engineering, Physics & Astronomy, salehi.maryam67@gmail.com PI: Oh, S.O., Rutgers University, Physics & Astronomy, ohsean@physics.rutgers.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 35 T UCGP: No VSP: No Published in Nano Letters Sign. Achievement: Yes Director's Recommendation: Yes</p>	Approved

	Director's Comments: None	
65	<p>Title: Effect of Gating on the Quantum Hall Effect in Interface-Engineered Bi₂Se₃ Thin Films With Record Low Sheet Carrier Density and High Mobility First Author: Salehi, M.S., Rutgers University, Materials Science & engineering, Physics & Astronomy, salehi.maryam67@gmail.com PI: Oh, S.O., Rutgers University, Physics & Astronomy, ohsean@physics.rutgers.edu Category: 2D Materials 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
75	<p>Title: Magneto-resistance (MR) of Monolayer Molybdenum Disulfide (MoS₂) as Electric Field First Author: Park, M., Seoul National University, mpark@phya.snu.ac.kr PI: Park, Y.W., Seoul National University, ywpark@phya.snu.ac.kr Category: 2D Materials 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
98	<p>Title: Pronounced and Unique Optoelectronic Response of Transition Metal Dichalcogenides First Author: Pradhan, N.R., National High Magnetic Field Lab, pradhan@magnet.fsu.edu PI: Balicas, L., National High Magnetic Field Lab, balicas@magnet.fsu.edu Category: 2D Materials Facility: CMT/E UCGP: Yes VSP: No Published in ACS Applied Materials and Interfaces and in Advanced Electronic Materials ACS Applied Materials & Interfaces, 7, 22, 12080 (2015).; Adv. Electron. Mater. 1, 10, 1500215 (2015). Sign. Achievement: Yes Director's Recommendation: No Director's Comments: None</p>	Approved
117	<p>Title: Giant Photocurrent Generation at van Hove Singularities in Graphene Superlattices First Author: Wu, S., University of Washington, sanfengwu@gmail.com PI: Xu, X., University of Washington, Physics, xuxd@uw.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 17.5 T UCGP: No VSP: No Submitted to Science Advance Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
10	<p>Title: Crossed Andreev Conversion of Quantum Hall Edge States in Graphene First Author: LEE, G.-H., Harvard University, Physics, gilholee@fas.harvard.edu PI: Kim, P., Harvard University, Physics, pkim@physics.harvard.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 31.5 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
240	<p>Title: Long-Lived Nanosecond Spin Relaxation and Spin Coherence of Electrons in Monolayer MoS₂ and WS₂ First Author: Yang, L., NHMFL-LANL, crooker@lanl.gov PI: Crooker, S.A., NHMFL-LANL, crooker@lanl.gov Category: 2D Materials Facility: Pulsed Field Facility at LANL Highest Measured Field: .5 T UCGP: No VSP: No Published in Nature Physics v11, p830 (2015) Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
247	<p>Title: Neutral Current Carriers in Hybrid Graphene First Author: Cadden-Zimansky, P.C.Z., Bard College, paulcz@bard.edu PI: Cadden-Zimansky, P.C.Z., Bard College, paulcz@bard.edu Category: 2D Materials Facility: DC Field Facility</p>	Approved

	<p>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>	
256	<p>Title: Magneto-Plasmons in Graphene in a Periodically Modulated Magnetic Field First Author: Jiang, Y.J., Georgia Institute of Technology, School of Physics, yjiang46@gatech.edu PI: Jiang, Z.J., Georgia Institute of Technology, School of Physics, zhigang.jiang@physics.gatech.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 17.5 T UCGP: No VSP: Yes Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
194	<p>Title: Magneto-Spectroscopy of Excitons in Monolayer MoSe₂ and WSe₂ First Author: Ludwig, J., NHMFL, jludwig@magnet.fsu.edu PI: Smirnov, D., NHMFL, smirnov@magnet.fsu.edu Category: 2D Materials Facility: EMR Facility Highest Measured Field: 31 T UCGP: Yes VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
228	<p>Title: Photoconductive Emitter Based Thz Time Domain Spectroscopy First Author: Tokumoto, T., University of Alabama at Birmingham, physics, tdtokumoto@gmail.com PI: Hilton, D.J., University of Alabama at Birmingham, Physics, dhilton@uab.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 10 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
229	<p>Title: Multiple Fermi Surfaces in Superconducting Nb-doped Bi₂Se₃ First Author: Lawson, B.J., University of Michigan, bjlawson@umich.edu PI: Li, L., University of Michigan, luli@umich.edu Category: 2D Materials 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
235	<p>Title: Exploring Two-Dimensional Electron Systems at Extreme Magnetic Fields with Optical and Terahertz 2DFT Spectroscopy First Author: Karaiskaj, Denis, University of South Florida, Denis, karaiskaj@usf.edu PI: Karaiskaj, Denis, University of South Florida, Denis, karaiskaj@usf.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 20 T UCGP: No VSP: No Submitted to Phys. Rev. Lett. Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
405	<p>Title: Lithium Salt Concentration in Polymer Electrolyte Cells from MRI First Author: Hallinan, D., FSU, Chemical Engineering, dhallinan@fsu.edu PI: Chandrashekar, S., nhmfl/fsu, nmr, chandrikashekar@gmail.com Category: 2D Materials Facility: NMR Facility Highest Measured Field: 21 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: Optical Hanle-Kerr Studies of Spin Polarization in Monolayer MoSe₂ First Author: Yang, L., NHMFL-Los Alamos, crooker@lanl.gov</p>	

415	<p>PI: Crooker, S.A., NHMFL-LANL, crooker@lanl.gov Category: 2D Materials Facility: Pulsed Field Facility at LANL Highest Measured Field: 0.5 T UCGP: No VSP: No Publication Status: Not at this time Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
272	<p>Title: Upper Critical Fields of Two-Dimensional NbSe₂ First Author: Hunt, B., now at Carnegie Mellon, Physics, benjaminmhunt@gmail.com PI: Dean, C.R., Columbia University, Physics, cdean@phys.columbia.edu Category: 2D Materials 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
274	<p>Title: Shubnikov-de Haas Oscillations of 4d Transition Metal Pentatellurides First Author: Kim, J.H., Knungpook National University, Physics, selene4@knu.ac.kr PI: Jo, Y.J., Kyungpook National Univeristy, Physics, joyj121@gmail.com Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 32 T UCGP: No VSP: No Publication Status: Manuscript in preparation Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
301	<p>Title: Energy Gaps and Layer Polarization of Integer and Fractional Quantum Hall States in Bilayer Graphene First Author: Shi, Y., University of California, Riverside, yanmeng.shi@email.ucr.edu PI: Lau, C.N., University of California, Riverside, lau@physics.ucr.edu Category: 2D Materials Facility: DC Field Facility Highest Measured Field: 31 T UCGP: No VSP: No Submitted to Phys. Rev. Lett. Sign. Achievement: No Director's Recommendation: No Director's Comments: None</p>	Approved
311	<p>Title: Universal Conductance Fluctuations in Sb Quantum Wires First Author: Liu, Z., University of Oklahoma, Physics and Astronomy, zhonghe.liu@ou.edu PI: Murphy, S.Q., University of Oklahoma, Physics and Astronomy, smurphy@ou.edu Category: 2D Materials 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
313	<p>Title: Interlayer High Field Magnetotransport of CaMnBi₂ First Author: Wang, A., Brookhaven National Laboratory, afw@bnl.gov PI: Petrovic, C., Brookhaven National Laboratory, petrovic@bnl.gov Category: 2D Materials 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
317	<p>Title: Magneto-optical Absorption and Photoluminescence Spectroscopy of GaAs Quantum Well Arrays with Varying Well Widths First Author: Tokarski, J.T., University of Florida, Chemistry, tokarskijt@chem.ufl.edu PI: Bowers, C.R., University of Florida, Chemistry, bowers@chem.ufl.edu Category: 2D Materials 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

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Title: Tunneling between Quantum Hall Edge Modes in Gated Bilayer
First Author: Li, J., Penn State University, Physics, jil5369@psu.edu
PI: Zhu, J., Penn State University, Physics, jxz26@psu.edu
Category: 2D Materials
Facility: DC Field Facility
Highest Measured Field: 18 T
UCGP: No **VSP:** No **Submitted to Nature Nanotechnology**
Sign. Achievement: No
Director's Recommendation: No
Director's Comments: None

Approved

Total Reports: 34