Experimental Condensed Matter Physics
Principal Investigators' Meeting Agenda

Monday, September 28, 2015

7:30–8:15am	*****Breakfast*****
8:15–8:40am	*Introductory Remarks* **Mick Pechan**
Session I	Chair: **Philip Kim**, Harvard University
8:40–9:00am	**Pablo Jarillo-Herrero**, Massachusetts Institute of Technology *Quantum transport in topological insulator nanoelectronic devices*
9:00–9:20am	**Jeanie Lau**, University of California, Riverside *Spontaneous and field-induced symmetry breaking in low dimensional nanostructures*
9:20–9:40am	**Ramesh Mani**, Georgia State University *Magnetotransport studies of low-dimensional electron systems based on GaAs/ALGaAs heterostructures and graphene*
9:40–10:00am	**Bob Westervelt**, Harvard University *Imaging electrons in atomically layered materials*
10:00–10:30am	*****Break*****
Session II	Chair: **Tom Lemberger**, Ohio State University
10:30–10:50am	**Luis Balicas**, Florida State University *Novel and unconventional superconductors: quantum critically and possible field-induced superconducting states*
10:50–11:10am	**Girsh Blumberg**, Rutgers University *Raman spectroscopy of pnictide and other unconventional superconductors*
11:10–11:30am	**Ian Fisher**, SLAC National Accelerator Laboratory *Correlated materials - synthesis and physical properties*
11:30–11:50am	**Johnpierre Paglione**, University of Maryland *Non-centrosymmetric topological superconductivity*
11:50–12:10pm	**Brian Maple**, University of California, San Diego *Superconductivity and magnetism in d- and f-electron materials*
12:10–1:35pm	*****Working Lunch***** *(Meeting Discussions)*
Session III	Chair: **Axel Hoffman**, Argonne National Laboratory
1:35–2:10pm	**Linda Horton**, Director of Materials Science & Engineering *DMSE Overview*

2:10–2:30pm	**Geoff Beach**, Massachusetts Institute of Technology *Interface-driven chiral magnetism in ultrathin metallic ferromagnets: towards skyrmion spintronics*
2:30–2:50pm	**Frances Hellman**, Lawrence Berkeley National Laboratory *Non-equilibrium magnetism: materials and phenomena*
2:50–3:10pm	**FengyuanYang**, Ohio State University *Novel regimes of spin transport: pure spin currents in antiferromagnets and time-resolved studies of spin dynamics*
3:10–3:40pm	*****Break*****
Session IV	Chair: **Jan Musfeldt**, University of Tennessee
3:40–4:00pm	**Ted Hodapp**, American Physical Society *APS conference for undergraduate women in physics*
4:00–4:20pm	**Dave Sellmyer**, University of Nebraska *Physics of nanoscale magnets*
4:20–4:40pm	**Adam Kaminski**, Ames Laboratory (**Paul Canfield FWP)** *Complex states, emergent phenomena, and superconductivity in intermetallic and metal-like compounds*
4:40–5:00pm	**Michael McGuire**, Oak Ridge National Laboratory (**Brian Sales FWP)** *Correlated and complex materials*
5:00–5:20pm	**Poster Session I Introductions**
5:20–5:40pm	*****Free Time*****
5:40–7:00pm	*****Working Dinner***** (Scientific Highlights of the day: Discussion and Input from Attendees)
7:00–9:00pm	**Poster Session I**

Tuesday, September 29, 2015

7:30–8:30am	*****Breakfast*****
Session V	Chair: **Mansour Shayegan**, Princeton University
8:30–8:50am	**Lloyd Engel**, Florida State University *High magnetic field microwave spectroscopy of two-dimensional systems in GaAs and graphene*
8:50–9:10am	**Aron Pinczuk**, Columbia University *Artificially structured semiconductors to model novel quantum phenomena*

9:10–9:30am	**Michael Zudov**, University of Minnesota *Emergent phenomena in quantum hall systems far from equilibrium*
9:30–9:50am	**Wei Pan**, Sandia National Laboratory *Quantum electronic phenomena and structures*
9:50–10:10am	**Ray Ashoori**, Massachusetts Institute of Technology *Novel temperature limited tunneling spectroscopy of quantum hall systems*
10:10–10:40am	***Break***
Session VI	Chair: **Jun Kono**, Rice University
10:40–11:00am	**Dragomir Davidovic**, Georgia Tech *Electronic manipulation of magnetization in zero-dimensional magnets*
11:00–11:20am	**Nadya Mason**, University of Illinois, Champaign *Controlling superconductivity via tunable nanostructure arrays*
11:20–11:40am	**Ali Yazdani**, Princeton University *Probing correlated superconductors and their phase transitions on the nanometer scale*
11:40–12:00pm	**Alex Zettl**, Lawrence Berkeley National Laboratory *Novel sp2-bonded materials and related nanostructures*
12:00–1:30pm	***Working Lunch*** *(Meeting Discussions)*
Session VII	Chair: **John Mitchell**, Argonne National Laboratory
1:30–1:50pm	**Dennis Drew**, University of Maryland *Infrared hall effect in correlated electronic materials*
1:50–2:10pm	**Gunter Luepke**, College of William and Mary *Time-resolved spectroscopy of insulator-metal transition: exploring low-energy dynamics in strongly correlated systems*
2:10–2:30pm	**Jon Simon**, University of Chicago *Dynamics of emergent crystallinity in photonic quantum materials*
2:30–2:50pm	**Gleb Finkelstein**, Duke University *Symmetries, interactions and correlation effects in carbon nanotubes*
2:50–3:20pm	***Break***
Session VIII	Chair: **Ilya Krivorotov**, University of California, Irvine
3:20–3:40pm	**Wai-Kwong Kwok**, Argonne National Laboratory *Superconductivity and magnetism*
3:40–4:00pm	**Leonardo Civale,** Los Alamos National Laboratory *Towards a universal description of vortex matter in superconductors*
4:00–4:20pm	**Joe Orenstein**, Lawrence Berkeley National Laboratory *Quantum materials*

4:20–4:40pm	**Ivan Schuller**, University of California, San Diego *Nanostructured materials: from superlattices to quantum*
4:40–5:00pm	**Poster Session II Introductions**
5:00–5:20pm	*****Free Time*****
5:20–7:00pm	*****Working Dinner***** (Scientific Highlights of the day: Discussion and Input from Attendees)
7:00–9:00pm	**Poster Session II**

Wednesday, September 30, 2015

7:30–8:30am	*****Breakfast*****
Session IX	Chair: **Leonid Rokhinson**, Purdue University
8:30–8:50am	**Milind Kunchur**, University of South Carolina *Dissipative and fast-timescale phenomena in superconductors*
8:50–9:10am	**Lu Li**, University of Michigan *Probing high temperature superconductors with magnetometry in ultrahigh magnetic fields*
9:10–9:30am	**Ni Ni**, University of California, Los Angeles *Exploring superconductivity at the edge of magnetic or structural instabilities*
9:30–9:50am	**Leonid Butov**, University of California, San Diego *Cold exciton gases in semiconductor heterostructures*
9:50–10:20am	*****Break*****
Session X	Chair: **Doug Natelson**, Rice University
10:20–10:40am	**Anand Bhattacharya**, Argonne National Laboratory *Digital synthesis - a pathway to create and control novel states of condensed matter*
10:40–11:00am	**Greg MacDougall**, University of Illinois, Champaign *Establishing the consequences of intertwined order parameters in spatially modulated superconductors*
11:00–11:20am	**Min Ouyang**, University of Maryland *Exploring photon-coupled fundamental interactions in colloidal semiconductor based hybrid nanostructures*
11:20–12:00pm	*Open Discussion on Future Program Topics and Concluding Comments* **Mick Pechan**
12:00pm	**Meeting Adjourns**