

Johnpierre Paglione

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Education

2004 Ph.D., Physics, University of Toronto, Canada
2001 M.Sc., Physics, University of Toronto, Canada
1999 B.Sc., Eng., Engineering Physics, Queen's University, Canada

Positions

2016-current Director, Center for Nanophysics and Advanced Materials, University of Maryland
2016-current Affiliate Professor, Materials Science and Engineering, University of Maryland
2015-current Professor, Physics, University of Maryland
2013-2015 Associate Professor, Physics, University of Maryland
2008-2013 Assistant Professor, Physics, University of Maryland
2004-2008 NSERC* Postdoctoral Fellow, University of California, San Diego
1997-2000 Electrical Engineer, Celestica Inc., Toronto, Canada

Honors

2014 Moore Foundation EPIQS Initiative Materials Synthesis Investigator Award
2013 DOE Early Career Award
2012 Richard A. Ferrell Distinguished Faculty Fellowship – University of Maryland
2010 NSF Career Award
2006 Royal Society Short Visit Award – University of Cambridge, UK
2004 NSERC Postdoctoral Fellowship Award – University of California, San Diego
2002 NSERC Postgraduate Scholarship – University of Toronto
2001 Ontario Graduate Scholarship – University of Toronto
1999 E. F. Burton Fellowship – University of Toronto

Highlights

- Collaboration with Smithsonian Museum of Natural History highlighted in [Physics Today](#).
- Superconductivity pressure study referenced in [Nature News](#) article.
- Topological Kondo Insulator study highlighted by [APS Physics](#), [Nature](#) and [Scientific American](#).
- Discovery of superconductivity highlighted by [UMD News Desk](#) and [NIST Tech Beat](#).
- Neutron scattering study highlighted in [NIST-NCNR 2011 Annual Review](#).
- Nature publication reviewed in *News & Views* article by P. Grant, [Nature 476, 37 \(2011\)](#).
- Feature on iron-based superconductivity research in [Science News](#) and [Cosmos Magazine](#).
- Invited Review Article on field of iron-based superconductivity published in [Nature Physics](#).
- Rapid Communication on topological insulator study chosen as [Editor's Selection](#).
- Discovery of new superconductor featured in Journal of Physics "Labtalk" [News Feature](#).
- Science publication reviewed in *Commentary* article by P. Coleman, [Science 316, 1290 \(2007\)](#).

Funding

2014-19 [Moore Foundation](#): EPIQS Initiative Materials Synthesis Investigator Award
2014-19 [AFOSR](#): Exploration of Advanced Superconducting Materials

* *Natural Sciences and Engineering Research Council of Canada*

2013-18	DOE-Early Career : Noncentrosymmetric Topological Superconductors
2013-14	AFOSR-DURIP : Search for Superconductivity in Mineral-Based Compounds
2013-14	ARO : Nonequilibrium Floquet States in Topological Kondo Insulators
2010-15	NSF-CAREER : MilliKelvin Magnetic Field-Angle-Resolved Probe of Quantum Materials
2010-12	NSF-MRSEC Seed : Synthesis and Exploration of Topological Insulators
2009-14	AFOSR-MURI (co-PI): Broad-Based Search for New and Practical Superconductors
2008-09	USMD Nano-Bio Fund : Nanoscale and Low-Dimensional Magnetic Instabilities

Instruction

2014-16	PHYS 199M: <i>The Manhattan Project</i> (lecture - Marquee Course)
2011-13	PHYS 375: <i>Electromagnetic Waves, Optics and Modern Physics</i> (lecture & laboratory)
2009-11	PHYS 142: <i>Principles of Physics II</i> (lecture)
2008-11	PHYS 276: <i>Electricity and Magnetism</i> (laboratory)

Service

2016	Physics priorities committee
2016	Appointments, Promotions and Tenure committee
2015	Physics Chair search committee
2014	Physics Appointments, Promotions and Tenure committee
2012	Physics teaching interview committee
2012,13,15	Physics salary/merit review committee
2010	UMD campus ELMS software evaluation committee
2010-12	CNAM Condensed Matter Physics Colloquium Committee
2009,12-15	Physics Graduate Student Admissions Committee
2008	CNAM Graduate Student Fellowship Search Committee

Professional Activities

- Panel participant, 2016 DOE Basic Research Needs workshop on Quantum Materials
- International Advisory Committee *M²S 2015 conference*, Geneva, Switzerland, 2015.
- Chair, *Superconductivity at 300mK and Beyond* International Workshop, College Park, MD, Nov. 2013.
- Member, Quantum Materials Program of the Canadian Institute for Advanced Research
- Program & Publications Committees, *M²S 2012 conference*, Washington, DC, July 2012.
- Editorial board, *ISRN Condensed Matter Physics*, Hindawi Publishing Corporation.
- Session chair, *PPHMF Conference*, NHMFL Tallahassee, FL, December 2010.
- Session chair, *American Physical Society March Meeting*, 2008-2012.
- Co-chair, *ICAM Workshop on Iron-Pnictide Superconductors*, College Park, MD, November 2008.
- Referee: Nature, Science, Physical Review, Journal of Physics, Physica.

Invited Presentations

- *Symposium on Quantum Materials Synthesis: Grand Challenges and Opportunities*, NYC, Aug 2016.
- *Gordon and Betty Moore Foundation EPiQS Annual Investigator Symposium*, August 2016.
- *Int. Workshop on Recent Progress in Superconductivity* (decl.), PyeongChang, Korea, 2016.
- *NSF Frontiers of Condensed Matter Physics Workshop*, Arlington, VA, May 2016.
- *American Physical Society March Meeting*. Baltimore, MD, March 2016.
- *JHU Workshop on Anomalous Transport in Multipolar and Topological Materials*, Baltimore, Mar 2016.
- *2015 APS Mid-Atlantic Section Meeting* (decl.), Morgan, WV, October 2015.
- *DOE Experimental Condensed Matter Physics PI Meeting*, Gaithersburg, MD, September 2015.
- *11th Int. Conf. on Materials & Mechanisms of Superconductivity*, Geneva, Switzerland, August 2015.
- *Gordon and Betty Moore Foundation EPiQS Annual Investigator Symposium*, August 2015.
- *20th International Conference on Magnetism* (decl.), Barcelona, Spain, July 2015.

- *11th ACS-CMCEE Symposia* (decl.), Vancouver, Canada, June 2015.
- *Superstripes 2015 International Conference* (decl.), Ischia, Italy, June 2015.
- *Conference on Strongly Correlated Topological Insulators: $S\text{mB}_6$ and Beyond*, Ann Arbor, MI, June 2015.
- *NSF Workshop on Emerging Frontiers in Experimental Condensed Matter*, Arlington, VA, May 2015.
- *Int. Workshop on Heavy Fermions and Quantum Phase Transitions* (decl.), Hangzhou, China, Apr 2015.
- *59th Annual Magnetism & Magnetic Materials Conference*, Honolulu, HI, November 2014.
- *Int. Workshop on Physics and Chemistry of Novel Superconductors* (decl.), Okayama, Japan, Nov. 2014.
- *European Materials Research Society 2014 Fall Meeting*, Warsaw, Poland, September 2014.
- *Materials for Quantum Technologies Workshop*, St. Andrews, Scotland, August 2014.
- *2nd International Conf. on Multi-Condensate Superconductors and Superfluids*, Italy, June 2014.
- *13th International Ceramics Conference- 6th Forum on New Materials*, Italy, June 2014.
- *Workshop on $S\text{mB}_6$ and Related Problems*, Vancouver, Canada, May 2014.
- *American Physical Society March Meeting*. Denver, CO, March 2014.
- *International Workshop on Superconductivity (declined)*, Okayama, Japan, December 2013.
- *CIFAR Quantum Materials Program Meeting*, Vancouver, Canada, October 2013.
- *International Workshop on Fe-based High-Tc Superconductors*, Riverhead, NY, September 2013.
- *International Materials Research Conference XX*, Cancun, Mexico, August 2013.
- *International Conference on Quantum Complex Matter* (declined), Ischia, Italy, May 2013.
- *3rd US-China Workshop on Superconductivity*, Hong Kong, January 2013.
- *Electronic States Induced by Electric or Optical Impacts* (declined), Orsay, France, Sept. 2012
- *10th Int. Conf. on Materials & Mechanisms of Superconductivity*, Washington, DC, July 2012.
- *3rd Int. Conference on Superconductivity and Magnetism* (declined), Istanbul, Turkey, May 2012.
- *2nd US-China Workshop on Superconductivity*, Santa Barbara, CA, December 2011.
- *International Materials Research Conference XX*, Cancun, Mexico, August 2011.
- *Institut d'Etudes Scientifiques de Cargèse*, France, July 2011.
- *American Physical Society March Meeting*. Dallas, TX, March 2011.
- *Aspen Center for Physics Conference on Pnictides and Cuprates*, Aspen, CO, January 2011.
- *Physical Properties at High Magnetic Fields* conference, NHMFL Tallahassee, FL, Dec. 2010.
- *US-China Workshop on Novel Superconductors*, Institute of Physics, Beijing, China, Sept. 2010.
- *UCSD Workshop on Correlated Electron Physics*, San Diego, CA, June 2010.
- *CIFAR Quantum Materials Program – Summer School Workshop*, Montréal, Canada, May 2010.
- *14th US-Japan Workshop on Advanced Superconductors*, NHMFL Tallahassee, FL, Dec. 2009.
- *IEEE TIC-STH Conference*, Toronto, Canada, September 2009.
- *Gordon Research Conference on Correlated Electron Systems*, Biddeford, ME, June 2008.
- *European Physical Society 20th General CMD Conference*, Prague, Czech Rep., July 2004.
- *Trieste Workshop on Novel States and Phase Transitions in Highly Correlated Matter*, Italy, July 2004.
- *Lorentz Center Workshop on Emerging Issues in Heavy Fermion Materials*, Netherlands, July 2004.
- *American Physical Society March Meeting*. Montréal, Canada, March 2004.

Invited Seminars/Colloquia

- *Rutgers University*, Piscataway, NJ, Fall 2016.
- *University of Illinois, Urbana-Champaign*, Urbana-Champaign, IL, February 2016.
- *Columbia University*, New York, NY, December 2015.
- *University of California, Riverside*, Riverside, CA, April 2014.
- *NIST Center for Neutron Research*, Gaithersburg, MD, April 2014.
- *University of California, Riverside*, Riverside, CA, April 2014.
- *University of Colorado, Boulder*, Boulder, CO, February 2014.
- *University of California, Los Angeles*, Los Angeles, CA, February 2014.
- *California Institute of Technology*, Pasadena, CA, February 2014.
- *Johns Hopkins University*, Baltimore, MD, November 2013.
- *Princeton University*, Princeton, NJ, February 2013.

- *Cornell University*, Ithaca, NY, Fall 2012.
- *University of British Columbia*, Vancouver, Canada, May 2012.
- *College of William & Mary*, Williamsburg, VA, November 2011.
- *Rutgers University*, Piscataway, NJ, April 2011.
- *Georgetown University*, Washington, DC, March 2011.
- *California Institute of Technology*, Pasadena, CA, February 2011.
- *Rice University*, Houston, TX, November 2010.
- *Johns Hopkins University*, Baltimore, MD, Fall 2009.
- *University of Waterloo*, Waterloo, Canada, December 2008.
- *NSA Laboratory for Physical Sciences*, College Park, MD, December 2008.
- *NIST Center for Neutron Research*, Gaithersburg, MD, July 2008.
- *California Institute of Technology*, Pasadena, CA, May 2007.
- *Temple University*, Philadelphia, PA, April 2007.
- *University of California, Davis*, Davis, CA, March 2007.
- *University of Ontario Institute of Technology*, Oshawa, Canada, February 2007.
- *Louisiana State University*, Baton Rouge, LA, February 2007.
- *University of Maryland*, College Park, MD, January 2007.

Book Chapters

- J. Paglione, N.P. Butch, "Growth of Topological Insulator Materials", in **Topological Insulators -Fundamentals and Perspectives**, eds. F. Ortmann, S. Valenzuela, S. Roche (Wiley-VCH), 2014 [[ISBN: 978-3527337026](#)].

Publications

1. H. Kim, K. Wang, Y. Nakajima, R. Hu, S. Ziemak, P. Syers, L. Wang, H. Hodovanets, J.D. Denlinger, P.M.R. Brydon, D.F. Agterberg, M.A. Tanatar, R. Prozorov, **J. Paglione**, "Beyond Spin-Triplet: Nodal Topological Superconductivity in a Noncentrosymmetric Semimetal", ([arXiv:1603.03375](#)).
2. S. Lee, X. Zhang, Y. Liang, S. Fackler, J. Yong, X. Wang, **J. Paglione**, R. L. Greene, I. Takeuchi, "Observation of the superconducting proximity effect in the surface state of SmB_6 thin films", *Phys. Rev. X* – to appear ([arXiv:1604.07455](#)).
3. P. Syers, **J. Paglione**, "Toward insulating behavior in stoichiometric topological insulator Bi_2Se_3 ", under review ([arXiv:1412.1422](#)).
4. Z. Xing, T. J. Huffman, P. Xu, A. J. Hollingshad, D. J. Brooker, N. E. Penthorn, M. M. Qazilbash, S. R. Saha, T. Drye, C. Roncaioli, **J. Paglione**, "The role of electron-electron interactions in the charge dynamics of rare-earth doped CaFe_2As_2 ", *Phys. Rev. B* – to appear.
5. **J. Paglione**, M.A. Tanatar, J.Ph. Reid, H. Shakeripour, C. Petrovic, L. Taillefer, "Quantum critical quasiparticle scattering within the superconducting state of CeCoIn_5 ", *Phys. Rev. Lett.* **117**, 016601 (2016).
6. X. Zhou, C. K. H. Borg, J. W. Lynn, S. R. Saha, **J. Paglione**, Efrain E. Rodriguez, "The preparation and phase diagrams of (${}^7\text{Li}_{1-x}\text{Fe}_x\text{OD}$) FeSe and ($\text{Li}_{1-x}\text{Fe}_x\text{OH}$) FeSe superconductors", *J. Materials Chem. C* **4**, 3934 (2016).
7. N. P. Butch, **J. Paglione**, P. Chow, Y. Xiao, C. A. Marianetti, C. H. Booth, J. R. Jeffries, "Pressure-resistant intermediate valence in Kondo insulator SmB_6 ", *Phys. Rev. Lett.* **116**, 156401 (2016).
8. C.K.H. Borg, X. Zhou, C. Eckberg, D.J. Campbell, S.R. Saha, **J. Paglione**, E.E. Rodriguez, "Strong anisotropy in nearly ideal-tetrahedral superconducting FeS single crystals", *Phys. Rev. B.* **93**, 094522 (2016).
9. Y. Wang, K. Wang, J. Reutt-Robey, **J. Paglione**, M.S. Fuhrer, "Breakdown of compensation and persistence of non-saturating magnetoresistance in WTe_2 thin flakes", *Phys. Rev. B.* **93**, 121108(R) (2016).
10. Y. Nakajima, P. Syers, X. Wang, R. Wang, **J. Paglione**, "One-dimensional edge state transport in a topological Kondo insulator", *Nature Physics* **12**, 213 (2016).

11. H. Baek, J. Ha, D. Zhang, B. Natarajan, J.P. Winterstein, R. Sharma, R. Hu, K. Wang, S. Ziemak, **J. Paglione**, Y. Kuk, N.B. Zhitenev, J.A. Stroscio "Creating nanostructured superconductors on demand by local current annealing", [Phys. Rev. B **92**, 094510 \(2015\)](#).
12. J.W. Lynn, X. Zhou, C.K.H. Borg, S.R. Saha, **J. Paglione**, E.E. Rodriguez, "Neutron investigation of the magnetic scattering in an iron-based ferromagnetic superconductor", [Phys. Rev. B **92**, 060510\(R\) \(2015\)](#).
13. X.F. Wang, C. Roncaioli, C. Eckberg, H. Kim, J. Yong, Y. Nakajima, S.R. Saha, P.Y. Zavalij, **J. Paglione**, "Tunable electronic anisotropy in single-crystal $A_2Cr_3As_3$ ($A = K, Rb$) quasi-one-dimensional superconductors", [Phys. Rev. B **92**, 020508\(R\) \(2015\)](#).
14. Y. Nakajima, R. Hu, K. Kirshenbaum, A. Hughes, P. Syers, X. Wang, K. Wang, R. Wang, S. R. Saha, D. Pratt, J.W. Lynn, **J. Paglione**, "Topological $RPdBi$ half-Heusler semimetals: a new family of non-centrosymmetric magnetic superconductors", [Science Advances **1**, e1500242 \(2015\)](#).
15. Y. Nakajima, R. Wang, T. Metz, X. Wang, L. Wang, H. Cynn, S.T. Weir, J.R. Jeffries, **J. Paglione**, "High-temperature superconductivity stabilized by electron-hole interband coupling in collapsed tetragonal phase of KFe_2As_2 under high pressure", [Phys. Rev. B **91**, 060508 \(2015\)](#).
16. P. Syers, D. Kim, M.S. Fuhrer, **J. Paglione**, "Tuning bulk and surface conduction in topological Kondo insulator SbB_6 ", [Phys. Rev. Lett. **114**, 096601 \(2015\)](#).
17. S. Ziemak, K. Kirshenbaum, S.R. Saha, R. Hu, J.-Ph. Reid, R. Gordon, L. Taillefer, D. Evtushinsky, S. Thirupathiah, B. Büchner, S.V. Borisenko, A. Ignatov, D. Kolchmeyer, G. Blumberg, **J. Paglione**, "Isotropic multi-gap superconductivity in $BaFe_{2-x}Pt_xAs_2$ from thermal transport and spectroscopic measurements," *invited article for focus issue* – [Super. Sci. Tech **28**, 014004 \(2015\)](#).
18. J.R. Jeffries N. P. Butch, M. J. Lipp, J. A. Bradley, K. Kirshenbaum, S. R. Saha, **J. Paglione**, C. Kenney-Benson, Y. Xiao, P. Chow, W. J. Evans, "Parallel suppression of superconductivity and Fe moment in the collapsed tetragonal phase of $Ca_{0.67}Sr_{0.33}Fe_2As_2$ under pressure", [Phys. Rev. B **90**, 144506 \(2014\)](#).
19. M.T. Edmonds, J.T. Hellerstedt, A. Tadich, A. Schenk, K.M. O'Donnell, J. Tosado, N.P. Butch, P. Syers, **J. Paglione**, M.S. Fuhrer, "Stability and Surface Reconstruction of Topological Insulator Bi_2Se_3 on Exposure to Atmosphere", [J. Phys. Chem. C, **118**, 20413 \(2014\)](#).
20. M.T. Edmonds, J.T. Hellerstedt, A. Tadich, A. Schenk, K.M. O'Donnell, J. Tosado, N.P. Butch, P. Syers, **J. Paglione**, M.S. Fuhrer, "Air-Stable Electron Depletion of Bi_2Se_3 Using Molybdenum Trioxide into the Topological Regime", [ACS Nano **8**, 6400 \(2014\)](#).
21. S.R. Saha T. Drye, S.K. Goh, L.E. Klintberg, J.M. Silver, F.M. Grosche, M. Sutherland, T.J.S. Munsie, G.M. Luke, D. K. Pratt, J. W. Lynn, **J. Paglione**, "Segregation of antiferromagnetism and high-temperature superconductivity in $Ca_{1-x}La_xFe_2As_2$ ", [Phys. Rev. B **89**, 134516 \(2014\)](#).
22. J.P.A. Makongo, N.-T. Suen, S. Guo, S. Saha, R. Greene, **J. Paglione**, S. Bovev, "The $RELi_xSn_2$ ($RE=La-Nd, Sm$, and Gd ; $0 \leq x < 1$) series revisited. Synthesis, crystal chemistry, and magnetic susceptibilities", [J. Solid State Chem. **211**, 95 \(2014\)](#).
23. D. Kim, P. Syers, N.P. Butch, **J. Paglione**, M.S. Fuhrer, "Ambipolar Surface State Thermoelectric Power of Topological Insulator Bi_2Se_3 ", [Nano Lett. **14**, 1701 \(2014\)](#).
24. M. Dumont, M. F. Dumont, H. A. Hoffman, P. R. S. Yoon, L. S. Conklin, S. R. Saha, **J. Paglione**, R. W. Sze, R. Fernandes, "Biofunctionalized Gadolinium-Containing Prussian Blue Nanoparticles as Multimodal Molecular Imaging Agents", [Bioconjugate Chem. **25**, 129 \(2014\)](#).
25. Z.-H. Zhu, A. Nicolaou, G. Levy, N. P. Butch, P. Syers, X. F. Wang, **J. Paglione**, G. A. Sawatzky, I. S. Elfimov, A. Damascelli, "Polarity-driven surface metallicity in SbB_6 ", [Phys. Rev. Lett. **111**, 216402 \(2013\)](#).
26. K. Kirshenbaum, P. S. Syers, A. P. Hope, N. P. Butch, J. R. Jeffries, S. T. Weir, J. J. Hamlin, M. B. Maple, Y. K. Vohra, **J. Paglione**, " Pressure-induced unconventional superconductivity in topological insulator Bi_2Se_3 ", [Phys. Rev. Lett. **111**, 087001 \(2013\)](#).
27. G. M. Darone, B. Hmiel, J. Zhang. S. Saha, K. Kirshenbaum, R. Greene, **J. Paglione**, S. Bovev, "Rare-earth metal gallium silicides via the gallium self-flux method. Synthesis, crystal structures, and magnetic properties of $RE(Ga_{1-x}Si_x)_2$ ($RE=Y, La-Nd, Sm, Gd-Yb, Lu$)", [J. Solid State Chem. **201**, 191 \(2013\)](#).

28. Z.H. Zhu, C.N. Veenstra, G. Levy, A. Ubaldini, P. Syers, N.P. Butch, **J. Paglione**, M.W. Haverkort, I.S. Elfimov, A. Damascelli, "Layer-by-layer entangled spin-orbital texture of the topological surface state in Bi_2Se_3 ", *Phys. Rev. Lett.* **110**, 216401 (2013).
29. D. Kim, P. Syers, N. P. Butch, **J. Paglione**, M. S. Fuhrer, "Coherent Topological Transport on the Surface of Bi_2Se_3 ", *Nature Communications* **4**, 2040 (2013).
30. L. Ma, G. F. Ji, J. Dai, S. R. Saha, **J. Paglione**, W. Yu, "Quenched Fe Moment in the Collapsed Tetragonal Phase of $\text{Ca}_{1-x}\text{Pr}_x\text{Fe}_2\text{As}_2$ ", *Chin. Phys. B* **22**, 057401 (2013).
31. X. Zhang, N.P. Butch, P. Syers, S. Ziemak, R. L. Greene, **J. Paglione**, "Hybridization, Inter-Ion Correlation, and Surface States in the Kondo Insulator SbB_6 ", *Phys. Rev. X* **3**, 011011 (2013).
32. H. Gretarsson, S. R. Saha, T. Drye, **J. Paglione**, J. Kim, D. Casa, T. Gog, W. Wu, S. R. Julian, Y.-J. Kim, "Spin-State Transition in the Fe Pnictides", *Phys. Rev. Lett.* **110**, 047003 (2013).
33. B. Fauqué, N. P. Butch, P. Syers, **J. Paglione**, S. Wiedmann, A. Collaudin, B. Grena, U. Zeitler, K. Behnia, "Magnetothermoelectric properties of Bi_2Se_3 ", *Phys. Rev. B* **87**, 035133 (2013).
34. K. Kirshenbaum, S. R. Saha, S. Ziemak, T. Drye, **J. Paglione**, "Universal pair-breaking in transition metal-substituted iron-pnictide superconductors", *Phys. Rev. B* **86**, 140505R (2012).
35. D. Kim, Q. Li, P. Syers, N.P. Butch, **J. Paglione**, S. Das Sarma, M.S. Fuhrer, "Intrinsic Electron-Phonon Resistivity in Bi_2Se_3 in the Topological Regime", *Phys. Rev. Lett.* **109**, 166801 (2012).
36. J. Zhang, B. Hmiel, A. Antonelli, P. H. Tobash, S. Bobev, S. Saha, K. Kirshenbaum, R. L. Greene, **J. Paglione**, "New rare-earth metal germanides with bismuth substitution. Synthesis, structural variations, and magnetism of the $\text{RE}[\text{BixGe}_{1-x}]_2$ (RE=Y, Pr, Nd, Sm, Gd-Tm, Lu) compounds", *J. Solid State Chem.* **196**, 586 (2012).
37. K. Kirshenbaum, N. P. Butch, S. R. Saha, P. Y. Zavalij, B. G. Ueland, J. W. Lynn, **J. Paglione**, "Tuning magnetism in FeAs-based materials via tetrahedral structure", *Phys. Rev. B* **86**, 060504R (2012).
38. T. Drye, S.R. Saha, P. Zavalij, **J. Paglione**, "Rare earth doping of lattice-tuned $(\text{Sr,Ca})\text{Fe}_2\text{As}_2$ solid solutions", invited article for focus issue – *Supercond. Sci. Tech.* **25** 084014 (2012).
39. C. Ojeda-Aristizabal, M. S. Fuhrer, N. P. Butch, **J. Paglione**, I. Appelbaum, "Towards spin injection from silicon into topological insulators: Schottky barrier between Si and Bi_2Se_3 ", *Appl. Phys. Lett.* **101**, 023102 (2012).
40. N. P. Butch, K. Jin, K. Kirshenbaum, R. L. Greene, **J. Paglione**, "Quantum critical scaling at the edge of Fermi liquid stability in a cuprate superconductor", *Proc. Nat. Acad. Sci.* **109**, 8440 (2012).
41. D. Kim, S. Cho, N.P. Butch, P. Syers, K. Kirshenbaum, **J. Paglione**, M.S. Fuhrer, "Surface conduction of topological Dirac electrons in bulk insulating Bi_2Se_3 ", *Nature Physics* **8**, 460 (2012).
42. J. R. Jeffries, N. P. Butch, K. Kirshenbaum, S. R. Saha, S. T. Weir, Y. K. Vohra, **J. Paglione**, "Suppression of magnetism and development of superconductivity within the collapsed tetragonal phase of $\text{Ca}_{0.67}\text{Sr}_{0.33}\text{Fe}_2\text{As}_2$ at high pressure", *Phys. Rev. B* **85**, 185401 (2012).
43. S.R. Saha, N.P. Butch, T. Drye, J. Magill, S. Ziemak, K. Kirshenbaum, P.Y. Zavalij, J.W. Lynn, **J. Paglione**, "Structural collapse and 45 K superconductivity in electron-doped CaFe_2As_2 ", *Phys. Rev. B* **85**, 024525 (2012).
44. S. Cho, D. Kim, P. Syers, N.P. Butch, **J. Paglione**, M.S. Fuhrer, "Topological Insulator Quantum Dot with Tunable Barriers", *Nano Letters* **12**, 469 (2012).
45. J.J. Hamlin, J.R. Jeffries, N.P. Butch, P. Syers, D.A. Zocco, S.T. Weir, Y.K. Vohra, **J. Paglione**, M.B. Maple, "High pressure transport properties of the topological insulator Bi_2Se_3 ", *J. Phys.: Condens. Matt.* **24**, 035602 (2012).
46. S. Bobev, T.-S. You, N.-T. Suen, S.R. Saha, R.L. Greene, **J. Paglione**, "Synthesis, Structure, Chemical Bonding, and Magnetism of the Series RELiGe_2 (RE = La-Nd, Sm, Eu)", *Inorganic Chemistry* **51**, 620 (2012).
47. N.P. Butch, P. Syers, K. Kirshenbaum, A.P. Hope, **J. Paglione**, "Superconductivity in the topological semimetal YPtBi ", *Phys. Rev. B* **84**, 220504(R) (2011).
48. V. Bhatia, E.E. Rodriguez, N.P. Butch, **J. Paglione**, M.A. Green, "Phase separation and superconductivity in $\text{Fe}_{1+x}\text{Te}_{0.5}\text{Se}_{0.5}$ ", *Chemical Communications* **47**, 11297 (2011).

49. Z.-H. Zhu, G. Levy, B. Ludbrook, C.N. Veenstra, J.A. Rosen, R. Comin, D. Wong, P. Dosanjh, A. Ubaldini, P. Syers, N.P. Butch, **J. Paglione**, I. S. Elfimov, A. Damascelli, "Rashba spin-splitting control at the surface of the topological insulator Bi_2Se_3 ", *Physical Review Letters* **106**, 186405 (2011).
50. K. Jin, N.P. Butch, K. Kirshenbaum, **J. Paglione** and R.L. Greene, "Link between spin fluctuations and electron pairing in copper oxide superconductors." *Nature* **476**, 73 (2011).
51. **J. Paglione**, "Iron-based superconductors: a new generation of high- T_c materials." *Physics in Canada* **67**, 85 (2011).
52. E.E. Rodriguez, C. Stock, P.-Y. Hsieh, N.P. Butch, **J. Paglione**, M.A. Green, "Interstitial Iron Controlled Superconductivity in $\text{Fe}_{1+x}\text{Te}_{0.7}\text{Se}_{0.3}$." *Chemical Science* **2**, 1782 (2011).
53. M. Dreyer, M. Gubrud, S.R. Saha, N.P. Butch, K. Kirshenbaum, **J. Paglione**, "Sr adatoms on As bridge positions on SrFe_2As_2 observed by scanning tunneling microscopy at 4.2 K", *Journal of Physics: Condensed Matter* **23** 265702 (2011).
54. N. Kumar, B.A. Ruzicka, N.P. Butch, P. Syers, K. Kirshenbaum, **J. Paglione**, H. Zhao, "Spatially resolved femtosecond pump-probe study of topological insulator Bi_2Se_3 ." *Physical Review B* **83**, 235306 (2011).
55. P.L. Bach, S.R. Saha, K. Kirshenbaum, **J. Paglione**, R.L. Greene, "High temperature resistivity in the iron pnictides and electron-doped cuprates", *Physical Review B* **83**, 212506 (2011).
56. J.R. Jeffries, N.P. Butch, H. Cynn, S.R. Saha, K. Kirshenbaum, S.T. Weir, Y.K. Vohra, **J. Paglione**, "The interplay between magnetism, structure, and strong electron-phonon coupling in binary FeAs under pressure." *Phys. Rev. B* **83**, 134520 (2011).
57. E. E. Rodriguez, C. Stock, K. Krycka, C. F. Majkrzak, K. Kirshenbaum, N. P. Butch, S. R. Shanta, **J. Paglione**, M. A. Green, "Non-collinear spin-density wave antiferromagnetism in FeAs." *Phys. Rev. B* **83**, 134438 (2011).
58. S. Cho, N.P. Butch, **J. Paglione**, M.S. Fuhrer, "Insulating Behavior in Ultrathin Bismuth Selenide Field Effect Transistors." *Nano Lett.* **11**, 1925 (2011).
59. L. Shu, R.E. Baumbach, M. Janoschek, E. Gonzales, K. Huang, T.A. Sayles, **J. Paglione**, J. O' Brien, J.J. Hamlin, D.A. Zocco, P.-C. Ho, C.A. Mc Elroy, M.B. Maple, "Correlated electron state in $\text{Ce}_{1-x}\text{Yb}_x\text{CoIn}_5$ stabilized by cooperative valence fluctuations." *Phys. Rev. Lett.* **106**, 156403 (2011).
60. S. Chi, J.W Lynn, Y. Chen, W. Ratcliff, B.G. Ueland, N.P. Butch, S.R. Saha, K. Kirshenbaum, **J. Paglione**, "Nitrogen contamination in elastic neutron scattering." *Meas. Sci. Tech.* **22**, 047001 (2011).
61. S.R. Saha, K. Kirshenbaum, N.P. Butch, P.Y. Zavalij, **J. Paglione**. "Uniform chemical pressure effect in solid solutions $\text{Ba}_{1-x}\text{Sr}_x\text{Fe}_2\text{As}_2$ and $\text{Sr}_{1-x}\text{Ca}_x\text{Fe}_2\text{As}_2$." *J. Phys.: Conf. Ser.* **273**, 012104 (2011).
62. K. Kirshenbaum, S.R. Saha, T. Drye, **J. Paglione**, "Superconductivity and magnetism in platinum-substituted SrFe_2As_2 single crystals." *Phys. Rev. B* **82**, 144518 (2010).
63. G.S. Jenkins, , A. B. Sushkov, D. C. Schmadel, N. P. Butch, P. Syers, **J. Paglione**, H. D. Drew, "Terahertz Kerr and Reflectivity Measurements on the Topological Insulator Bi_2Se_3 ." *Phys. Rev. B* **82**, 125120 (2010).
64. T.J. Williams, A.A. Aczel, E. Baggio-Saitovitch, S.L. Bud'ko, P.C. Canfield, J.P. Carlo, T. Goko, H. Kageyama, A. Kitado, J. Munevar, N. Ni, S.R. Saha, K. Kirshenbaum, **J. Paglione**, D.R. Sanchez-Candela, Y.J. Uemura, G.M. Luke, "Superfluid Density and Field-Induced Magnetism in $\text{Ba}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ and $\text{Sr}(\text{Fe}_{1-x}\text{Co}_x)_2\text{As}_2$ Measured with Muon Spin Relaxation." *Phys. Rev. B* **82**, 094512 (2010).
65. **J. Paglione**, R.L. Greene. "High-temperature superconductivity in iron-based materials." *Nature Physics* **6**, 645 (2010).
66. P. Zajdel, P.-Y. Hsieh, E. Rodriguez, N. P. Butch, J. Magill, **J. Paglione**, P.Y. Zavalij, M. Suchomel, M. Green, "Phase Separation and Suppression of the Structural and Magnetic Transitions in Superconducting doped Iron Tellurides, $\text{Fe}_{1+x}\text{Te}_{1-y}\text{S}_y$." *J. Am. Chem. Soc.* **132**, 13000 (2010).
67. A. B. Sushkov, G. S. Jenkins, D. C. Schmadel, N. P. Butch, **J. Paglione**, H. D. Drew, "Far infrared cyclotron resonance and Faraday effect in Bi_2Se_3 ." *Phys. Rev. B* **82**, 125110 (2010).

68. S. Finkelman, M. Sachs, G. Droulers, N. P. Butch, **J. Paglione**, P. Bach, R.L. Greene, Y. Dagan, " On the resistivity at low temperatures in electron-doped cuprate superconductors." [*Phys. Rev. B* **82**, 094518 \(2010\).](#)
69. S.R. Saha, N.P. Butch, K. Kirshenbaum, **J. Paglione**. "Annealing effects on superconductivity in SrFe_{2-x}Ni_xAs₂." [*Physica C* **470**, S379 \(2010\).](#)
70. N. P. Butch, K. Kirshenbaum, P. Syers, A. B. Sushkov, G. S. Jenkins, H. D. Drew, **J. Paglione**. "Strong surface scattering in ultrahigh mobility Bi₂Se₃ topological insulator crystals." [*Phys. Rev. B* **81**, 241301R \(2010\).](#)
71. X. Zhang, Y.S. Oh, Y. Liu, L. Yan, , S.R. Saha, N.P. Butch, K. Kirshenbaum, K.H. Kim, **J. Paglione**, R.L. Greene, I. Takeuchi. "Evidence of a universal and isotropic $2\Delta/k_B T_c$ in 122-type iron pnictide superconductors over a wide doping range." [*Phys Rev. B* **82**, 020515R \(2010\).](#)
72. S.R. Saha, T. Drye, K. Kirshenbaum, N.P. Butch, **J. Paglione**, P.Y. Zavalij, "Superconductivity at 23 K in Pt-doped BaFe₂As₂ single crystals." [*Journal of Physics: Condensed Matter* **22**, 072204 \(2010\).](#)
73. N.P. Butch, S.R. Saha, X.H. Zhang, K. Kirshenbaum, R.L. Greene, **J. Paglione**, "Effective carrier type and field-dependence of the reduced-T_c superconducting state in SrFe_{2-x}Ni_xAs₂." [*Physical Review B* **81**, 024518 \(2010\).](#)
74. X. Zhang, S.R. Saha, N.P. Butch, K. Kirshenbaum, **J. Paglione**, R.L. Greene, Y. Liu, L. Yan, Y.S. Oh, K.H. Kim, I. Takeuchi. "Josephson effect between electron-doped and hole-doped iron pnictide single crystals." [*Applied Physics Letters* **95**, 062510 \(2009\).](#)
75. K.C. Kirshenbaum, S.R. Saha, N.P. Butch, J. Magill, **J. Paglione**. "Superconductivity in the iron pnictide parent compound SrFe₂As₂." [*IEEE TIC-STH Toronto International Conference*, pg. 861 \(2009\) \(2009\).](#)
76. S.R. Saha, N.P. Butch, K. Kirshenbaum, **J. Paglione**, P.Y. Zavalij. "Superconductivity and ferromagnetism induced by lattice distortion in SrFe₂As₂." [*Physical Review Letters* **103**, 037005 \(2009\).](#)
77. S.R. Saha, N.P. Butch, K. Kirshenbaum, **J. Paglione**. "Evolution of superconductivity in SrFe₂As₂ with Ni substitution." [*Physical Review B* **79**, 224519 \(2009\).](#)
78. M. Sutherland, S. K. Goh, E. C. T. O'Farrell, C. Bergemann, **J. Paglione**, T.A. Sayles, M.B. Maple. "Observation of de Haas-van Alphen oscillations across the phase diagram of CeRh_{1-x}Co_xIn₅." [*Journal of Physics: Conference Series* **150**, 042193 \(2009\).](#)
79. S.K. Goh, **J. Paglione**, M. Sutherland, E.C.T. O'Farrell, C. Bergemann, T.A. Sayles, M.B. Maple. "Fermi Surface Reconstruction in CeRh_{1-x}Co_xIn₅." [*Physical Review Letters* **101**, 056402 \(2008\).](#)
80. T.A. Sayles, W.M. Yuhasz, **J. Paglione**, T. Yanagisawa, J.R. Jeffries, M.B. Maple, Z. Henkie, A. Pietraszko, T. Cichorek, R. Wawryk, Y. Nemoto, T. Goto. "Thermodynamic and transport studies of the ferromagnetic filled skutterudite compound PrFe₄As₁₂." [*Physical Review B* **77**, 144432 \(2008\).](#)
81. T.A. Sayles, W.M. Yuhasz, **J. Paglione**, T. Yanagisawa, J.R. Jeffries, M.B. Maple, Z. Henkie, A. Pietraszko, T. Cichorek, R. Wawryk, Y. Nemoto, T. Goto. "Magnetic Ordering in PrFe₄As₁₂." [*Physica B* **403**, 869 \(2008\).](#)
82. **J. Paglione**, P.-C. Ho, M.B. Maple, M. A. Tanatar, L. Taillefer, Y. Lee, C. Petrovic. "Ambient-pressure bulk superconductivity deep in the magnetic state of CeRhIn₅." [*Physical Review B* **77**, 100505 \(2008\).](#)
83. **J. Paglione**, T.A. Sayles, P.-C. Ho, J.R. Jeffries, M.B. Maple. "Incoherent Non-Fermi Liquid Scattering in a Kondo Lattice." [*Nature Physics* **3**, 703 \(2007\).](#)
84. M.A. Tanatar, **J. Paglione**, C. Petrovic, L. Taillefer. "Anisotropic Violation of the Wiedemann-Franz Law at a Quantum Critical Point." [*Science* **316**, 1320 \(2007\).](#)
85. D.G. Hawthorn, S.Y. Li, M. Sutherland, E. Boaknin, R.W. Hill, C. Proust, F. Ronning, M.A. Tanatar, **J. Paglione**, D. Peets, R. Liang, D.A. Bonn, W.N. Hardy, N.N. Kolesnikov, L. Taillefer. "Doping Dependence of the Superconducting Gap in Tl₂Ba₂CuO_{6+δ} from heat transport." [*Physical Review B* **75**, 104518 \(2007\).](#)
86. **J. Paglione**, M.A. Tanatar, D.G. Hawthorn, F. Ronning, R.W. Hill, M. Sutherland, L. Taillefer, C. Petrovic. "Nonvanishing Energy Scales at the Quantum Critical Point of CeCoIn₅." [*Physical Review Letters* **97**, 106606 \(2006\).](#)
87. F. Ronning, R.W. Hill, M. Sutherland, D.G. Hawthorn, M.A. Tanatar, **J. Paglione**, L. Taillefer, M.J. Graf, R.S. Perry, Y. Maeno, A.P. Mackenzie. "Thermal Conductivity in the Vicinity of the Quantum Critical End Point in Sr₃Ru₂O₇." [*Physical Review Letters* **97**, 067005 \(2006\).](#)

88. M.A. Tanatar, **J. Paglione**, S. Nakatsuji, D.G. Hawthorn, E. Boaknin, R.W. Hill, F. Ronning, M. Sutherland, L. Taillefer, C. Petrovic, P.C. Canfield, Z. Fisk. "Unpaired Electrons in the Heavy-Fermion Superconductor CeCoIn₅." [*Physical Review Letters*, **95**, 067002 \(2005\)](#).
89. **J. Paglione**, M.A. Tanatar, D.G. Hawthorn, R.W. Hill, F. Ronning, M. Sutherland, L. Taillefer, C. Petrovic, P.C. Canfield. "Heat Transport as a Probe of Electron Scattering by Spin Fluctuations: The Case of Antiferromagnetic CeRhIn₅." [*Physical Review Letters* **94**, 216602 \(2005\)](#).
90. M. Sutherland, S.Y. Li, D.G. Hawthorn, R.W. Hill, F. Ronning, M.A. Tanatar, **J. Paglione**, H. Zhang, L. Taillefer, J. DeBenedictis, R. Liang, D.A. Bonn, W.N. Hardy. "Delocalized Fermions in Underdoped Cuprate Superconductors." [*Physical Review Letters* **94**, 147004 \(2005\)](#).
91. M.F. Smith, **J. Paglione**, M.B. Walker, L. Taillefer. "Origin of anomalous low-temperature downturns in the thermal conductivity of cuprates." [*Physical Review B* **71**, 014506 \(2005\)](#).
92. S.Y. Li, L. Taillefer, D.G. Hawthorn, M.A. Tanatar, **J. Paglione**, M. Sutherland, R.W. Hill, C.H. Wang, X.H. Chen. "Giant electron-electron scattering in the Fermi-liquid state of Na_{0.7}CoO₂." [*Physical Review Letters* **93**, 056401 \(2004\)](#).
93. **J. Paglione**, M.A. Tanatar, D.G. Hawthorn, E. Boaknin, R.W. Hill, F. Ronning, M. Sutherland, L. Taillefer, C. Petrovic, P.C. Canfield. "Field-Induced Quantum Critical Point in CeCoIn₅." [*Physical Review Letters* **91**, 246405 \(2003\)](#).
94. E. Boaknin, M.A. Tanatar, **J. Paglione**, D.G. Hawthorn, F. Ronning, R.W. Hill, M. Sutherland, L. Taillefer, J. Sonier, S.M. Hayden, J.W. Brill. "Multiband super-conductivity in NbSe₂ from heat transport." [*Physica C* **408**, 727 \(2003\)](#).
95. D.G. Hawthorn, R.W. Hill, F. Ronning, M. Sutherland, E. Boaknin, M.A. Tanatar, **J. Paglione**, S. Wakimoto, H. Zhang, L. Taillefer. "Field-induced thermal metal-to-insulator transition in underdoped LSCO." [*Physica C* **408**, 725 \(2003\)](#).
96. **J. Paglione**, M.A. Tanatar, D.G. Hawthorn, E. Boaknin, R.W. Hill, F. Ronning, M. Sutherland, L. Taillefer, C. Petrovic, P.C. Canfield. "Field-induced quantum critical point in CeCoIn₅." [*Physica C* **408**, 705 \(2003\)](#).
97. M. Sutherland, D.G. Hawthorn, R.W. Hill, F. Ronning, S. Wakimoto, H. Zhang, C. Proust, E. Boaknin, C. Lupien, M.A. Tanatar, **J. Paglione**, R. Liang, D.A. Bonn, W.N. Hardy, L. Taillefer. "Doping dependence of superconducting gap in YBa₂Cu₃O_y from universal heat transport." [*Physica C* **408**, 672 \(2003\)](#).
98. D.G. Hawthorn, R.W. Hill, C. Proust, F. Ronning, M. Sutherland, E. Boaknin, C. Lupien, M.A. Tanatar, **J. Paglione**, S. Wakimoto, H. Zhang, L. Taillefer, T. Kimura, M. Nohara, H. Takagi, N.E. Hussey. "Field-Induced Thermal Metal-to-Insulator Transition in Underdoped La_{2-x}Sr_xCuO_{4+δ}." [*Physical Review Letters* **90**, 197004 \(2003\)](#).
99. E. Boaknin, M.A. Tanatar, **J. Paglione**, D.G. Hawthorn, F. Ronning, R.W. Hill, M. Sutherland, L. Taillefer, J. Sonier, S.M. Hayden, J.W. Brill. "Heat Conduction in the Vortex State of NbSe₂: Evidence for Multiband Superconductivity." [*Physical Review Letters* **90**, 117003 \(2003\)](#).
100. P.M.C Rourke, **J. Paglione**, F. Ronning, L. Taillefer, K. Kadowaki. "Elastic Tensor of YNi₂B₂C." [*Physica C* **397**, 1 \(2003\)](#).
101. **J. Paglione**, C. Lupien, W.A. MacFarlane, J.M. Perz, L. Taillefer, Z.Q. Mao, Y. Maeno. "Elastic Tensor of Sr₂RuO₄." [*Physical Review B*, **65**, 220506 \(2001\)](#).
102. **J. Paglione**. "High-T_c Ceramic Superconductors for Microwave Communications", [*Journal of the Canadian Ceramic Society*, **66** \(4\): 257 \(1997\)](#).