Brian J. Kirby
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Education:
Ph.D, Physics, December 2004
University of Missouri, Columbia, Missouri
Advisor: James Rhyne

B. S., Physics (Magna Cum Laude), Minor in Mathematics, May 2000
Pittsburg State University, Pittsburg, Kansas

Primary Research Interests:
Exchange coupling in magnetic multilayers
Magnetism at complex oxide interfaces
Development of artificial magnetic semiconductors
Morphology of organic photovoltaics
Neutron scattering techniques for studying magnetic materials

Work History:
September 2006- present:
Physicist, Condensed Matter Science Group, Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, Maryland

January 2005- August 2006:
Postdoctoral Research Associate, Manuel Lujan Jr. Neutron Scattering Center, Los Alamos National Laboratory, Los Alamos New Mexico

July 2000- December 2004:
Graduate Assistant, Department of Physics and Astronomy, University of Missouri Columbia, Missouri

Summer 1999:
Undergraduate Research Fellow, Princeton Plasma Physics Laboratory
Princeton, New Jersey

in preparation (5)

Planar systems for spintronics by combining ion implantation and lithography
E. Menéndez, H. Modarresi, C. Petermann, J. Nogués, H. Liu, B. J. Kirby, J. A. Borchers, A. S. Mohd, A. Koutsioumpas, E. Babcock, S. Mattauch, L. Lagae, C. Van Haesendonck, A. Vantomme, and K. Temst.

Magnetization reversal characteristics in (001)-oriented L10 FePt exchange spring magnets with soft magnetic layers of varied Curie temperature
Jung-Wei Liao, Unai Atxitia, Dustin A. Gilbert, B. J. Kirby, Richard F. L. Evans, Sheng-Chieh Liao, Kai Liu, Roy W. Chantrell, and Chih-Huang Lai.

Magnetic Yoking and Enhanced Interactions in Perpendicularly Coupled Hard/Soft Bilayer Films
Dustin A. Gilbert, Jung-Wei Liao, B. J. Kirby, Chih-Huang Lai, and Kai Liu.

Multiple Phased GdxFe1-x/NiCoO Thin Films with Field-Tunable Exchange Bias
Dustin A. Gilbert, Justin Olamit, Brian Kirby, Randy K. Dumas, Brian Maranville, Elke Arenholz, Julie Borchers, and Kai Liu.

Anomalous Magnetic Coupling in CaRuO3/CaMnO3 Heterostructures
A. J. Grutter, J. A. Borchers, B. J. Kirby, C. L. Flint, C. He, A. Vailionis, and Y. Suzuki.

submitted (8)

Fabrication and Characterization of Compositionally Graded Ni[x]Cu[1-x] films.
Casey W. Miller and B. J. Kirby

Experimental Realization of Artificially Skyrmion Lattices
Dustin A. Gilbert, Brian B. Maranville, Andrew L. Balk, Brian J. Kirby,
Peter Fischer, Daniel T. Pierce, John Unguris, Julie A. Borchers, and Kai Liu.

Proximity Driven Enhanced Magnetic Order at Ferromagnetic Insulator / Magnetic Topological Insulator Interface
Mingda Li, Cui-Zu Chang, Brian J. Kirby, Michelle Jamer, Wenping Cui, Lijun Wu, Peng Wei, Ferhat Katmis, Yimei Zhu, Don Heiman, Ju Li, and Jagadeesh S. Moodera.

Controllable magnetic phase front in a vertically graded NixCu1-x film

B. J. Kirby, H. F. Belliveau, D. D. Belyea, T. Eggers, P. A. Kienzle, A. J. Grutter, P. Riego, A. Berger, and Casey W. Miller.

Exchange-Coupled Rare-Earth-Free Permanent Magnets with Energy Product of 25 MGOe at Room Temperature
Tieren Gao, J. A. Borchers, B. J. Kirby, R. Skomski, Ichiro Takeuchi, *et al.*.

Phase separation enhanced magneto-electric coupling in LCMO/BTO ultra-thin films
A. Alberca, C. Munuera, J. Azpeitia, B. Kirby, N. M. Nemes, A. Perez, J. Tornos, F. J. Mompean, C. Leon, J. Santamaria, and M. Garcia-Hernandez.

Oscillatory Non-collinear Magnetism Induced by Interfacial Charge Transfer in Metallic Oxide Superlattices
J. Hoffman, B. J. Kirby, J. Kwon, J. W. Freeland, I. Martin, O. G. Heinonen, P. Steadman, H. Zhou, C. M. Schleputz, S. G. E. te Velthuis, J. -M. Zuo, and A. Bhattacharya.

Electric Field Control of Interfacial Ferromagnetism in CaMnO3/CaRuO3 Heterostructures
A. J. Grutter, B. J. Kirby, M. T. Gray, C. L. Flint, U. S. Alaan, Y. Suzuki, and J. A. Borchers.

published (58)

Effective anisotropy gradient in pressure graded [Co/Pd] multilayers
B. J. Kirby, P. K. Greene, B. B. Maranville, J. E. Davies, and Kai Liu.
Journal of Applied Physics, **117**, 063905 (2015). hyperlink ➪.

Interfacial exchange coupling in Fe/(Ga,Mn)As bilayers
A. M. Alsmadi, Y. Choi, D. J. Keavney, K. F. Eid, X. Liu, J. Leiner, K. Tivakornsasithorn, B. J. Kirby, M. Dobrowolska, and J. K. Furdyna.
Physical Review B, **89**, 224409 (2014). hyperlink ➪.

Magnetocaloric Effect in Thin Films and Heterostructures
Casey W. Miller, D. D. Belyea, and B. J. Kirby.
Journal of Vacuum Science & Technology A , **32**, 040802 (2014). hyperlink ➪.

The effect of interfacial octahedral behavior in ultrathin manganite films

E. J. Moon, B. J. Kirby, P. V. Balachandran, D. J. Keavney, X. M. Cheng, R. J. Sichel-Tissot, C. M. Schleputz, E. Karapetrova, J. M. Rondinelli, and S. J. May.
Nano Letters, **14**, 2509 (2014). hyperlink ➪.

Deposition Order Dependent Magnetization Reversal in Pressure Graded Co/Pd films
P. K. Greene, B. J. Kirby, J. W. Lau, J. A. Borchers, M. R. Fitzsimmons, and Kai Liu.
Applied Physics Letters, **104**, 152401 (2014). hyperlink ➪.

Interdependence between training and magnetization reversal in exchange bias Co-CoO systems prepared by ion implantation
E. Menendez, T. Dias, J. Geshev, J. F. Lopez-Barbera, J. Nogues, R. Steitz, B. J. Kirby, J. A. Borchers, L. M. C. Pereira, A. Vantomme, and K. Temst.
Physical Review B, **89**, 14407 (2014). hyperlink ➪.

Structural and magnetic etch damage in CoFeB
L. Krayer, J. W. Lau, and B. J. Kirby.
Journal of Applied Physics **115**, 17B751 (2014). *hyperlink ➪.*

Magnetic depth profile in GaMnAs layers with vertically graded Mn concentrations
J. Leiner, B. J. Kirby, M. R. Fitzsimmons, K. Tivakornsasithorn, X. Liu, J. K. Furdyna, and M. Dobrowolska.
Journal of Magnetism and Magnetic Materials, **350**, 135 (2013). hyperlink ➪.

Structural control of magnetic anisotropy in a strain-driven multiferroic EuTiO3 thin film
X. Ke, T. Birol, R. Misra, J.-H. Lee, B. J. Kirby, D. G. Schlom, C. J. Fennie, and J. W. Freeland.
Physical Review B, **88**, 094434 (2013). hyperlink ➪

Magnetoelastic Coupling in LaCaMnO3 / BaTiO3 Ultra-Thin Films
A. Alberca, N. M. Nemes, F.J. Mompean, Titusz Fehér, Ferenc Simon, J. Tornos, C. Leon, C. Munuera, B. J. Kirby, M. R. Fitzsimmons, A. Hernando, J. Santamaria, and M. Garcia-Hernandez.
Physical Review B, **88**, 134410 (2013). hyperlink ➪

Interfacial Ferromagnetism in LaNiO3/CaMnO3 Superlattices
A. J. Grutter, H. Yang, B. J. Kirby, M. R. Fitzsimmons, J. A. Aguiar, N. D. Browning, C. A. Jenkins, E. Arenholz, V. V. Mehta, U. S. Alaan, and Y. Suzuki.
Physical Review Letters, **111**, 087202 (2013). hyperlink ➪

Exchange length and controllable interfacial domain wall formation in laminated exchange coupled composites
H. -C. Hou, B. J. Kirby, K. Z. Gao, and C. -H. Lai.
Applied Physics Letters, **102**, 162408 (2013). hyperlink ➪

Magnetic Properties of GaAs/Fe Core/Shell Nanowires
R. E. Pimpinella, M. R. McCartney, D. Zhang, D. J. Smith, K. L. Krycka, B. J. Kirby, B. J. O'Down, L. Sonderhouse, J. Leiner, X. Liu, M. Dobrowolska, and J. K. Furdyna
Journal of Applied Physics, **113**, 17B520 (2013). hyperlink ➪

Morphological Annealing Characterization of Plastic Solar Cells Using Polarized Neutron Reflectivity
B. W. Guralnick, B. J. Kirby, C. F. Majkrzak, and M. E. Mackay.
Applied Physics Letters, **102**, 083305 (2013). hyperlink ➪

Depth-resolved magnetization reversal in nanoporous perpendicular anisotropy multilayers
B. J. Kirby, M. T. Rahman, R. K. Dumas, J. E. Davies, C. H. Lai, and Kai Liu.
Journal of Applied Physics, **113**, 033909 (2013). hyperlink ➪

Interfacial ferromagnetism and exchange bias in CaRuO3/CaMnO3 superlattices
C. He, A. J. Grutter, M. Gu, N. D. Browning, Y. Takamura, B. J. Kirby, J. A. Borchers, J. W. Kim, M. R. Fitzsimmons, X. Zhai, V. V. Mehta, F. J. Wong, and Y. Suzuki.
Physical Review Letters, **109**, 197202 (2012). hyperlink ➪

Chiral modulations and reorientation effects in MnSi thin films
E. A. Karhu, U. K. Robler, A. N. Bogdanov, S. Kahwaji, B. J. Kirby, H. Fritzsche, M. D. Robertson, C. F. Majkrzak, and T. L. Monchesky.
Physical Review B, **85**, 094429 (2012). hyperlink ➪

X-ray and neutron reflectivity and electronic properties of PCBM-poly(bromo)styrene blends and bilayers with poly(3-hexylthiophene)
Stuart B. Kirschner, Nathaniel P. Smith, Kevin A. Wepasnick, Howard E. Katz, Brian J. Kirby, Julie A. Borchers, and Daniel H. Reich.
Journal of Materials Chemistry, **22**, 4364 (2012). hyperlink ➪

Exchange Coupling in Magnetic Semiconductor Multilayers and Superlattices

J. K. Furdyna, J. Leiner, X. Liu, M. Dobrowolska, S. Lee, J. -H. Chung, and B. J. Kirby
Acta Physica Polonica A, **121**, 973 (2012). hyperlink ➪

Controlling Spin Ordering in Frustrated Magnets via Heteroepitaxy
Jodi M. Iwata-Harms, Franklin J. Wong, B. J. Kirby, Julie A. Borchers, Michael F. Toney, Britney B. Nelson-Cheeseman, Marco Liberati, Elke Arenholz, and Yuri Suzuki.
Physical Review B, **85**, 214424 (2012). hyperlink ➪

Optimization of spin-triplet supercurrent in ferromagnetic Josephson junctions
Carolin Klose, Trupti S. Khaire, Yixing Wang, W. P. Pratt, Jr., Norman O. Birge, B. J. McMorran, T. P. Ginley, J. A. Borchers, B. J. Kirby, B. B. Maranville and J. Unguris
Physical Review Letters, **108**, 127002 (2012). hyperlink ➪

Phase-Sensitive Specular Neutron Reflectometry for Imaging the Nanometer Scale Compositional Depth Profile of Thin-Film Materials
B. J. Kirby, P. A. Kienzle, N. F. Berk, J. Krycka, F. Heinrich, and C. F. Majkrzak
Current Opinion in Colloid & Interface Science, **17** 44, (2012). hyperlink ➪

(001) FePt graded media with PtMn underlayers
C. -C. Chiang, L.-W. Wang, H.-C. Hou, J.-W. Liao, H.-J. Lin, F.-H. Chang, B. J. Kirby, and C.-H. Lai
Applied Physics Letters, **99**, 212504 (2011). hyperlink ➪

Structural properties of Bi2Te3 and Bi2Se3 topological insulators grown by molecular beam epitaxy on GaAs(100) substrates
X. Liu, D. J. Smith, J. Fan, Y.-H. Zhang, H. Cao, Y. P. Chen, J. Leiner, B. J. Kirby, M. Dobrowolska, and J. K. Furdyna
Applied Physics Letters **99**, 171903 (2011). hyperlink ➪

Modulation Doping of Ferromagnetism in Antiferromagnetic Manganite Superlattice
T. S. Santos, B. J. Kirby, S. Kumar, S. J. May, J. A. Borchers, B. B. Maranville, J. Zarestky, S. G. E. te Velthuis, J. van den Brink, and A. Bhattacharya.
Physical Review Letters **107**, 167202 (2011). hyperlink ➪

Interfacial electronic and magnetic properties of a Y0.6 Pr0.4 Ba2 Cu3O7 /La2/3 Ca1/2 MnO3 superlattice
Jian Liu, B. J. Kirby, B. Gray, M. Kareev, H. -U. Habermeier, G. Cristiani, J. W. Freeland, and J. Chakhalian.

Physical Review B **84**, 092506 (2011). hyperlink ➪

Symmetric interfacial reconstruction in La0.7Ca0.3MnO3/YBa2Cu3O7/ La0.7Ca0.3MnO3 heterostructures
C. Visani, J. Tornos, N. M. Nemes, M. Rocci, C. Leon, J. Santamaria, S. G. E. te Velthuis, Yaohua Liu, A. Hoffmann, J. W. Freeland, M. Garcia-Hernandez, M. R. Fitzsimmons, B. J. Kirby, M. Varela, and S. J. Pennycook.
Physical Review B Rapid Communications **84**, 060405 (2011). hyperlink ➪

Helical magnetic order in MnSi thin films
E. A. Karhu, S. Kahwaji, M. D. Robertson, H. Fritzsche, B. J. Kirby, C. F. Majkrzak, and T. L. Monchesky.
*Physical Review B Rapid Communication*s **84**, 060404 (2011). hyperlink ➪

Fingerprinting magnetic reversal in graded anisotropy FePtCu films
R. K. Dumas, Yeyu Fang, B. J. Kirby, Chaolin Zha, V. Bonanni, Josep Nogues, and Johan Åkerman.
Physical Review B **84** 054434 (2011). hyperlink ➪

Investigation of weak interlayer exchange coupling in the GaMnAs/GaAs superlattice with insulating nonmagnetic spacers
Jae-Ho Chung, Taehee Yoo, Sun-Jae Chung, Sanghoon Lee, B. J. Kirby, X. Liu, and J. K. Furdyna.
Journal of Applied Physics **110**, 013912 (2011). hyperlink ➪

Impact of interfacial magnetism on magnetocaloric properties of thin film heterostructures
B.J. Kirby, J. W. Lau, D. V. Williams, C. A. Bauer, and Casey W. Miller,
Journal of Applied Physics **109**, 07C307 (2011). hyperlink ➪

Antiferromagnetic exchange coupling between GaMnAs layers separated by a nonmagnetic GaAs:Be spacer
J. Leiner, K. Tivakornsasithorn, X. Liu, J. K. Furdyna, C.M. Dobrowolska, B. J. Kirby, H. Lee, T. Yoo, and Sanghoon Lee,
Journal of Applied Physics **109**, 07C307 (2011). hyperlink ➪

Magnetization Reversal Mechanisms in Heusler Alloy Spin Valves
T. P. Ginley, J. A. Borchers, B. J. Kirby, C. L. Dennis, M. J. Carey, and J. R. Childress.

Journal of Applied Physics **109**, 07B110 (2011). hyperlink ➪

Observation of Antiferromagnetic Interlayer Exchange Coupling in a GaMnAs/GaAs:Be GaMnAs trilayer structure
J. Leiner, H. Lee, T. Yoo, Sanghoon Lee, B. J. Kirby, K. Tivakornsasithorn, X. Liu, J. K. Furdyna, and M. Dobrowolska,
Physical Review B **82**, 195205 (2010). hyperlink ➪

Phase-sensitive neutron reflectometry measurements applied in the study of photovoltaic films
J. W. Kiel, M. E. Mackay, B. J. Kirby, B. B. Maranville, and C. F. Majkrzak,
Journal of Chemical Physics **133**, 074902 (2010). hyperlink ➪

Vertically graded anisotropy in Co/Pd multilayers
B. J. Kirby, J. E. Davies, Kai Liu, S. M. Watson, G. T. Zimanyi, R. D. Shull, P. A. Kienzle, and J. A. Borchers,
Physical Review B **81**, 100405(R) (2010). hyperlink ➪

Nanoparticle concentration profile in polymer-based solar cells
W. Kiel, B. J. Kirby, C. F. Majkrzak, B. B. Maranville, and M. E. Mackay,
Soft Matter **6**, 641 (2010). hyperlink ➪

Giant magnetoresistance and long-range antiferromagnetic interlayer exchange coupling in (Ga,Mn)As/GaAs:Be multilayers
Sunjae Chung, Sanghoon Lee, J.-H. Chung, Taehe Yoo, B. Kirby, X. Liu, and J. K. Furdyna
Physical Review B **82**, 054420 (2010). hyperlink ➪

Application of Polarized Neutron Reflectometry and X-Ray Resonant Magnetic Reflectometry for Determining the Inhomogeneous Magnetic Structure in Fe/Gd Multilayers
E. A. Kravtsov, D. Haskel, S. G. E. te Velthuis, J. S. Jiang, and B. J. Kirby,
Bulletin of the Russian Academy of Sciences: Physics **74**, 1471 (2010). hyperlink ➪

Ferromagnetic semiconductor GaMnAs: Magnetic anisotropy and Interlayer exchange coupling
Sanghoon Lee, J. -H. Chung, X. Liu, J. K. Furdyna, and B. J. Kirby,
Materials Today **12**, 14 (2009). hyperlink ➪

Inhomogeneous magnetic states in Fe/Gd heterostructures probed by the complementary use of magnetic neutron and x-ray reflectometry
E. Kravtsov, D. Haskel, S. G. E. te Velthuis, J. S. Jiang, and B. J. Kirby,
Physical Review B **79**, 134438 (2009). hyperlink ➪

Direct Observation of Magnetic Gradient in Co/Pd Pressure-Graded Media
B. J. Kirby, S. M. Watson, J. E. Davies, Kai Liu, R. D. Shull, and J. A. Borchers,
Journal of Applied Physics **105**, 07C929 (2009). hyperlink ➪

Anomalous Ferromagnetism in TbMnO3 Thin Films
B. J. Kirby, D. Kan, A. Luykx, M. Murakami, D. Kundaliya, and I. Takeuchi,
*Journal of Applied Physic*s **105**, 07D917 (2009). hyperlink ➪

Carrier-Mediated Antiferromagnetic Interlayer Exchange Coupling in Diluted Magnetic Semiconductor Multilayers Ga1-xMnxAs / GaAs:Be
J.-H Chung, S. J. Chung, Sanghoon Lee, B. J. Kirby, J. A. Borchers, Y. J. Cho, X. Liu, and J. K. Furdyna,
Physical Review Letters **101**, 237202 (2008). hyperlink ➪

Ferromagnetism in CuO-ZnO Multilayers
C. Sudakar, K. Padmanabhan, R. Naik, G. Lawes, B. J. Kirby, Sanjiv Kumar, and V. M. Naik,
Applied Physics Letters **93**, 042502 (2008). hyperlink ➪

The Use of Symmetry to Correct Larmor Phase Aberrations in Spin Echo Scattering Angle Measurement
R.Pynn, W. T. Lee, P. Stonaha, V. R. Shah, A. L. Washington, B. J. Kirby, C. F. Majkrzak, and B. B. Maranville,
Review of Scientific Instruments **79**, 063901 (2008). hyperlink ➪

Extreme Magnetic Anisotropy and Multiple Superconducting Transition Signatures in a [Nb(23nm)/Ni(5nm)]5 Multilayer
L.E. De Long, S. A. Kryukov, A. G. Joshi, W. Xu, D. He, L.A. Bosomtwi, M. R. Fitzsimmons, and B. J. Kirby.
Physica C **76**, 245301 (2008). hyperlink ➪

Magnetization Reversal of Ga1-xMnxAs Layers Separated by a Non-Magnetic Spacer

B. J. Kirby, J. A. Borchers, X. Liu, Z. Ge, Y. J. Cho, M. Dobrowolska, and J. K. Furdyna.
Journal of Applied Physics **103**, 07C116 (2008). hyperlink ➪

Suppression of Nuclear Polarization near the Surface of Optically Pumped GaAs
M.R. Fitzsimmons, B. J. Kirby, N. W. Hengartner, F. Trouw, M. J. Erickson, S.D. Flexner, T. Kondo, C. Adelmann, C. J. Palmstrom, P. A. Crowell, W. Chen, T. R. Gentile, J. A. Borchers, C. F. Majkrzak, and R. Pynn.
Physical Review B **76**, 245301 (2007). hyperlink ➪

Definitive Evidence of Interlayer Coupling Between Ga1-xMnxAs Layers Separated by a Non-Magnetic Spacer
B.J. Kirby, J. A. Borchers, X. Liu, Z. Ge, Y. J. Cho, M. Dobrowolska, and J. K. Furdyna.
Physical Review B **76**, 205316 (2007). hyperlink ➪

Pinned Magnetization in the Antiferromagnet & Ferromagnet of an Exchange Bias System
M. R. Fitzsimmons, B. J. Kirby, S. Roy, Zhi-Pan Li, I. V. Roschin, S. K. Sinha, and Ivan K. Schuller,
Physical Review B **75**, 214412 (2007). hyperlink ➪

Pinned Spin Depth Profile of an Oxidized-Mn/Ga1-xMnxAs Exchange Bias Bilayer
B. J. Kirby, M.R. Fitzsimmons, J. A. Borchers, Z. Ge, X. Liu, and J. K. Furdyna.
IEEE Transactions on Magnetics **43**, 3016 (2007). hyperlink ➪

Magnetic Compound Refractive Lens for Focusing and Polarizing Cold Neutron Beams
K. C. Littrell, S. G. E. te Velthuis, G. P. Felcher, S. Park, B. J. Kirby, and M. R. Fitzsimmons.
Review of Scientific Instruments **78**, 035101 (2007). hyperlink ➪

Magnetic and Chemical Nonuniformity in Ga1-xMnxAs Films as Probed with X-Ray and Polarized Neutron Reflectometry
B. J. Kirby, J. A. Borchers, J. J. Rhyne, K. V. O'Donovan, S. G. E. te Velthuis, A. Hoffmann, S. Roy, Cecilia Sanchez-Hanke, T. Wojtowicz, X. Liu, W. L. Lim, M. Dobrowolska, and J. K. Furdyna,
Physical Review B **74**, 245304 (2006). hyperlink ➪

Spin Dynamics and Magnon-Phonon Interactions in Nd0.6Sr0.4MnO3
B. J. Kirby, J. J. Rhyne, H. Kaiser, Y. Tokura, and H. Kuwahara,

Journal of Magnetism and Magnetic Materials **302**, 237 (2006). hyperlink ➪

Effects of Capping on the Ga1-xMnxAs Magnetic Depth Profile
B. J. Kirby, J. A. Borchers, J. J. Rhyne, K. V. O'Donovan, T. Wojtowicz, X. Liu, Z. Ge, S. Shen, and J. K. Furdyna,
Applied Physics Letters **86**, 072506 (2005). hyperlink ➪

Annealing Dependent Magnetic Depth Profile in Ga1-xMnxAs
B. J. Kirby, J. J. Rhyne, J. A. Borchers, K. V. O'Donovan, S. G. E. te Velthuis, A. Hoffmann, T. Wojtowicz, X. Liu, W. L. Lim, and J. K. Furdyna,
Physical Review B **69** 081307(R) (2004). hyperlink ➪

Spin Excitations in LaCaMnO3
L. Stumpe, B. Kirby, H. Kaiser, J. J. Rhyne, and J. Mitchell,
Journal of Applied Physics **91**, 7511 (2002). hyperlink ➪

Invited Presentations:

PNR as a probe of novel functionalities in magnetic multilayers
Workhop on Current Trends and Futrure Perspectives in Neutron Reflectometry, Lillestrom, Norway, June, 2015.

using neutrons to probe interfaces in novel functional materials
Missouri University Research Reactor Seminar, Columbia, MO, December, 2014.

Buried Interfaces in Novel Multilayer Structures
Arfken Seminar, Miami University, Oxford, OH, December, 2013.

Buried Interfaces in Novel Multilayer Structures
Materials Science and Engineering Seminar, Drexel University, Philadelphia, PA, November, 2013.

Depth-Resolved Magnetometry Using Polarized Neutron Reflectometry
American Vacuum Society Mid-Atlantic Chapter Regional Meeting, Gaithersburg, MD, May 2013.

Interfaces in Novel Electronic Materials - Neutron Reflectometry at the NCNR
10th Workshop on X-ray and Neutron Scattering Techniques for Surface Nano-Characterization, Busan, South Korea, December, 2012.

Interfaces in Novel Electronic Materials - Neutron Reflectometry at the NCNR

HANARO Seminar, Korea Atomic Energy Research Institute, Daejeon, South Korea, December, 2012.

Depth-resolved magnetometry of graded anisotropy nanostructures
Twin Cities IEEE Magnetic Society, Seagate Technology, Bloomington, MN, July, 2012.

Depth-resolved magnetometry of graded anisotropy nanostructures
Twin Cities IEEE Magnetic Society, University of Minnesota, Minneapolis, MN, July, 2012.

Directly Probing Anisotropy Gradients Using Polarized Neutron Reflectometry, INTERMAG, Taipei, Taiwan, April 2011.

Probing Interfaces in Novel Electronic Materials Using Neutron Reflectometry
NIST Workshop: Measurements to Enable Science and Engineering Beyond CMOS, St. Michaels, Maryland, April 2011.

interfacial properties of electronic materials - neutron reflectometry at NIST
University of Virginia Materials Science Seminar, Charlottesville, Virginia, November 2010.

interfacial properties of electronic materials - neutron reflectometry at NIST
University of South Florida Physics Colloquium, Tampa, Florida, October 2010.

Neutron Scattering Studies of Dilute Magnetic Semiconductors,
NIST Center for Neutron Research Seminar, Gaithersburg, Maryland, May 2006.

Polarized Neutron Reflectivity as a Probe of Nuclear Polarization in GaAs
B. J. Kirby, Institute for Complex Adaptive Materials Conference, Sante Fe, NM, November 2005.

Mechanisms of Annealing-Induced Ferromagnetic Enhancement in Ga1-xMnxAs
B. J. Kirby, Lujan Neutron Scattering Center Seminar Series, Los Alamos, NM, October 2004.

Mechanisms of Annealing-Induced Ferromagnetic Enhancement in Ga1-xMnxAs
B. J. Kirby, University of Missouri-Columbia O. M. Stewart Colloquium, Columbia, MO, Oct. 2004.

Annealing-Dependent Phenomena in Ga1-xMnxAs
B. J. Kirby, International Workshop on Polarized Neutrons in Condensed Matter Investigations,
Washington D. C., June 2004.

Annealing-Dependent Phenomena in Ferromagnetic Semiconductors
B. J. Kirby, University of Missouri-Columbia Department of Physics Condensed Matter Seminar,
Columbia, Missouri, September 2003.

Neutron Scattering Studies of Ferromagnetic Semiconductors
B.J. Kirby, Missouri University Research Reactor Fellowship Award Seminar,
Columbia, Missouri, May 2003.

Princeton Plasma Physics Laboratory FQ Equilibrium Code UNIX Workstation Port
B.J. Kirby and M. D. Mulligan, FA-SURE Conference, Argonne National Laboratory,
Argonne,Illinois, June 1999.

Professional Activities:
Member of the American Physical Society

Member of the APS Topical Group on Magnetism and its Applications

Member of the National Neutron Scattering Society of America

Scientific Journal Referee, including: Nature Communications, Physical Review Letters, Physical Review B, Applied Physics Letters, Journal of Applied Physics, Journal of Physics - Condensed Matter, IEEE Transactions on Magnetics, Superlattices and Microstructures, Journal of Physics D - Condensed Matter, and the Korean Journal of Chemical Engineering.

2015 - present: Beam Experiment Coordinator, NIST Center for Neutron Research.

2015 - present: Member, IEEE Magnetic Society Education Committee.

2014: Focus Topic Organizer, Magnetic Oxide Thin Films and Heterostructures, American Physical Society March Meeting, Denver, Colorado.

2013: Abstract sorter, 2014 American Physical Society March Meeting Sorters Meeting, College Park, Maryland

2013: Chairperson, Ultra-Thin Films, 58th Magnetism and Magnetic Materials Conference, Denver, Colorado.

2013: Chairperson, Magnetic Nanoparticles Session, American Physical Society March Meeting, Baltimore, Maryland.

2011: Chairperson, Magnetic Semiconductors Session, 56th Magnetism and Magnetic Materials Conference, Scottsdale, Arizona

2011: Co-chairperson, National Institute of Standards and Technology Summer School on Inelastic and Small Angle Scattering, Gaithersburg, Maryland.

2008: Abstract sorter, 2009 American Physical Society March Meeting Sorters Meeting, College Park, Maryland

2008: Chairperson, Multilayers Session, 53rd Magnetism and Magnetic Materials Conference, Austin, Texas

2008: Co-chairperson, National Institute of Standards and Technology Summer School on Small Angle Scattering and Reflectometry, Gaithersburg, Maryland.

2007: Chairperson, Magnetic Semiconductors Session, 52nd Magnetism and Magnetic Materials Conference, Tampa Florida.

2007: Chairperson, Magnetic Semiconductors Session, 10th Joint Magnetism and Magnetic Materials / Intermag Conference, Baltimore, Maryland.

2006: Chairperson, III-V Magnetic Semiconductors Session,
American Physical Society March Meeting, Baltimore, Maryland.

2005: Chairperson, Magnetic Semiconductors Session,
50th Magnetism and Magnetic Materials Conference, San Jose, California.

2004: Lecturer - NIST Summer School on Neutron Small Angle Scattering and Reflectometry from Submicron Structures, Gaithersburg, Maryland.

2004: Graduate, LANSCE Winter School on Magnetism, Los Alamos, New Mexico.

2002: Graduate, NIST Center for Neutron Research Summer School on Small Angle Neutron Scattering and Neutron Reflectometry, Gaithersburg, Maryland

2001: Graduate, National School on Neutron Scattering and X-Ray Scattering, Argonne National Laboratory, Argonne, Illinois

Awards / Honors:

2014: NIST Center for Neutron Research Annual Research Highlight, “Effect of interfacial octahedral behavior in ultrathin manganite films.”

2013: NIST Center for Neutron Research Annual Research Highlight, “Interfacial ferromagnetism in CaRuO3 / CaMnO3.”

2012: NIST Bronze Medal, awarded for “elucidation of complex magnetic coupling in ferromagnetic, semiconducting multilayers using innovative polarized neutron reflectivity methods”.

2011: NIST Center for Neutron Research Advances in Measurement, “Directly probing anisotropy gradients using polarized neutron reflectometry.”

2011: NIST Center for Neutron Research Annual Research Highlight, “Modulation Doping of Ferromagnetism in Antiferromagnetic Manganite Superlattices.”

2009: NIST Center for Neutron Research Annual Research Highlight, “Film Morphology of Polymer-based Solar Cells.”

2009: NIST Center for Neutron Research Annual Research Highlight, “Antiferromagnetic Exchange Coupling in the Dilute Ferromagnetic Semiconductor GaMnAs.”

2006: National Synchrotron Light Source, Brookhaven National Laboratory, Annual Research Highlight, “Magnetic and Chemical Nonuniformity in Ga1-xMnxAs Films as Probed with X-Ray and Polarized Neutron Reflectometry.”

2004: NIST Center for Neutron Research Annual Research Highlight, “Annealing Dependent Magnetic Depth Profile in Ga1-xMnxAs.”

2001-2003: Missouri University Research Reactor Research Fellowship Award

1999: DOE Energy Research Undergraduate Laboratory Fellowship, Princeton Plasma Physics Laboratory

1996-2000: Pittsburg State University Honors College scholarship

Contributed Conference Presentations & Accepted Abstracts:

Ferromagnetic phase front in vertically graded Ni[x]Cu[1-x] alloy films
B. J. Kirby, H. F. Belliveau, D. D. Belyea, and C. W. Miller.
American Physical Society March Meeting, Denver, Colorado, March 2014.

Perpendicular to in-plane anisotropy gradient in Co films induced via tailored O-implantation profiles
B. J. Kirby, J. A. Borchers, E. Menéndez, J. Lopez-Barbera, A. Vantomme, K.Temst, and J. Nogués.
58th Magnetism and Magnetic Materials Conference, Denver, Colorado.

Probing depth-dependent magnetization reversal in nanoporous Co/Pt with polarized neutron reflectometry
B. J. Kirby, M. T. Rahman, R. K. Dumas, J. E. Davies, C. H. Lai, and Kai Liu.
12th Joint MMM / Intermag Conference, Chicago, Illinois, January 2013.

Tunable exchange length in laminate exchange coupled composite media
B. J. Kirby, Hao-Cheng Hou, and Chih-Huang Lai
American Physical Society March Meeting, Boston, Massachusetts, March 2012.

Graded anisotropy and Pd polarization in pressure-varied Co/Pd multilayers
B.J. Kirby, P. Greene, and Kai Liu.

56th Conference on Magnetism and Magnetic Materials, Scottsdale, Arizona, November, 2011.

Impact of interfacial magnetism on magnetocaloric properties of thin film heterostructures
B.J. Kirby, J. W. Lau, D. V. Williams, C. A. Bauer, and Casey W. Miller,
55th Conference on Magnetism and Magnetic Materials, Atlanta, Georgia, November, 2010.

Neutron reflectometry as a probe of nanoparticle distribution in polymer photovoltaics
B. J. Kirby, J. W. Kiel, B. B. Maranville, C. F. Majkrzak, and M. Mackay,
American Physical Society March Meeting, Portland, Oregon, March 2010.

Exchange Coupling in Fe / GaMnAs multilayer structures
B. J. Kirby, J. Leiner, X. Liu, M. Dobrowolska, and J. K. Furdyna,
11th Joint Intermag / Magnetism and and Magnetic Materials Conference,
Washington D. C., January 2010.

Inhomogeneous magnetic depth profile of MnGe films
B. J. Kirby, M. Commisso-Dolph, J. Floro, and S. Wolf,
11th Joint Intermag / Magnetism and and Magnetic Materials Conference,
Washington D. C., January 2010.

Depth-Dependent Magnetic Anisotropy in Co/Pd Multilayers
B.J. Kirby, J. E. Davies, S. M.Watson, P.A. Kienzle,

R. D. Shull, J. A. Borchers, G. Zimanyi and Kai Liu,
American Physical Society March Meeting, Pittsburgh, Pennsylvania, March 2009.

Antiferromagnetic exchange coupling in GaMnAs /GaMnBeAs superlattices
B.J. Kirby, J. -H Chung, S. J. Chung, Sanghoon Lee,

J. A. Borchers, Y. J. Cho, X. Liu, and J. K. Furdyna
American Physical Society March Meeting, Pittsburgh, Pennsylvania, March 2009.

Anomalous Ferromagnetism in TbMnO3 Thin Films
B. J. Kirby, D. Kan, A. Luykx, M. Murakami, D. Kundaliya, and I. Takeuchi,
53rd Conference on Magnetism and Magnetic Materials, Austin, Texas 2008.

Origin of Anomalous Moment in Ferro/Antiferro LCMO Layers
B. J. Kirby & S. M. Watson, Jian Liu, M. Kareev, & J. Chakhalian,
American Physical Society March Meeting, New Orleans, Louisiana, March 2008.

In-Plane & Depth-Dependent FM Ordering in a LSMO/Y(Pr)BCO Superlattice
B.J. Kirby, C. Majkrzak, J. Chakhalian, J. W. Freeland,
H. U. Habermeier, G. Cristiani, and B. Keimer,
52nd Conference on Magnetism and Magnetic Materials, Tampa, Florida, November 2007.

Definitive Evidence of Interlayer Coupling Between Ga1-xMnxAs
Layers Separated by a Nonmagnetic Spacer
B. J. Kirby, J. A. Borchers, X. Liu, Z. Ge, Y. Cho, M. Dobrowolska and J. K. Furdyna,
52nd Conference on Magnetism and Magnetic Materials, Tampa, Florida, November 2007.

Interlayer Exchange Coupling in Ga1-xMnxAs/GaAs Multilayers
B. J. Kirby, M.R. Fitzsimmons, J. A. Borchers, X. Liu, Z. Ge, Y. Cho, and J. K. Furdyna,
American Physical Society March Meeting, Denver, Colorado, March 2007.

Pinned Spin Depth Profile of an Oxidized-Mn/Ga1-xMnxAs Exchange Bias Bilayer
B. J. Kirby, M.R. Fitzsimmons, J. A. Borchers, Z. Ge, X. Liu, and J. K. Furdyna,
10th Joint Magnetism and Magnetic Materials / Intermag Conference, Baltimore, MD, January 2007.

Magnetic and Chemical Depth Profiles of an Exchange-Biased MnO/GaMnAs Bilayer
B. J. Kirby, J. A. Borchers, M. R. Fitzsimmons, J. J. Rhyne, X. Liu, Z. Ge, and J. K. Furdyna,
American Physical Society March Meeting. Baltimore, Maryland, March 2006.

Surface Magnetization Deficit in Ga1-xMnxAs
B.J. Kirby, J. J. Rhyne, J. A. Borchers, S. Roy, Cecilia Sanchez-Hanke,

X. Liu, W. L. Lim, and J. K. Furdyna.
50th Conference on Magnetism and Magnetic Materials, San Jose, California, November 2005.

Polarized Neutron Reflectivity as a Probe of Nuclear Polarization in GaAs
B. J. Kirby, M. R. Fitzsimmons, S. Park, F. Trouw, A. Shapiro, D. Smith, J. A. Borchers, C. F. Majkrzak, T. R. Gentile, W. Chen, P. Crowell, C. Adelmann, C. Palmstrøm, and R. Pynn.
7th LANSCE User Group Meeting, Los Alamos, New Mexico, September 2005.

Effects of Capping on the Ga1-xMnxAs Magnetic Depth Profile
B.J. Kirby, J. J. Rhyne, J. A. Borchers, K. V. O'Donovan, T. Wojtowicz, X. Liu, Z. Ge, S. Shen, and J. K. Furdyna.
49th Conference on Magnetism and Magnetic Materials, Jacksonville, Florida, November 2004.

Annealing-Dependent Phenomena in Ga1-xMnxAs
B. J. Kirby, J. J. Rhyne, J. A. Borchers, K. V. O'Donovan, S. G. E. te Velthuis, A. Hoffmann, T. Wojtowicz, X. Liu, W. L. Lim, and J. K. Furdyna, American Conference on Neutron Scattering, College Park, Maryland, June 2004.

Magnetic Depth Profile and Annealing Dependence in Ga1-xMnxAs
B. J. Kirby, J. J. Rhyne, J. A. Borchers, K. V. O'Donovan, S. G. E. te Velthuis,
A. Hoffmann, J. K. Furdyna, T. Wojtowicz, and X. Liu,
9th Joint MMM/Intermag Conference, Anaheim, California, January 2004.

Depth Profile & Annealing Dependence in Ga1-xMnxAs
J. J. Rhyne, B. J. Kirby, S. G. E. te Velthuis, A. Hoffmann ,J. A. Borchers,
K. V. O'Donovan, J. K. Furdyna, T. Wojtowicz, and X. Liu,
International Conference on Magnetism, Rome, Italy, August 2003.

Magnetization Profile in GaMnAs
J. J. Rhyne, B. J. Kirby, S. G. E. te Velthuis, A. Hoffmann, T. Wojtowicz, X. Liu, and J. K. Furdyna,
Bulletin of the American Physical Society 48, # 1 (March 2003).