Matthew B. Stone

Oak Ridge National Laboratory
PO Box 2008 MS6475
Oak Ridge, TN 37831-6430
stonemb@ornl.gov
orcid.org/0000-0001-7884-9715

Education

2002	Ph.D. in Physics Johns Hopkins University, Baltimore, MD 21218
2000	M.A. in Physics Johns Hopkins University, Baltimore, MD 21218
1996	B.S. in Physics *summa cum laude* Moravian College, Bethlehem, PA 18018

Experience

2013-present	Oak Ridge National Laboratory, Oak Ridge, TN 37831 SEQUOIA Lead Instrument Scientist at the Spallation Neutron Source Group Leader: Mark Lumsden (2013-present)
2007-2013	Oak Ridge National Laboratory, Oak Ridge, TN 37831 ARCS Instrument Scientist at the Spallation Neutron Source Group Leader: Mark Hagen (2007-2012), Mark Lumsden (2012-2013).
2006-2007	Oak Ridge National Laboratory, Oak Ridge, TN 37831 HB1 Triple-axis-spectrometer post-doctoral research associate Group Leader: Jaime Fernandez-Baca
2004-2006	Oak Ridge National Laboratory, Oak Ridge, TN 37831 Neutron Spectroscopy, post-doctoral research associate Advisor: Dr. Stephen E. Nagler
2002-2004	Pennsylvania State University, University Park, PA 16802 Post-doctoral fellow, magnetic media and granular materials group Advisors: Profs. Peter E. Schiffer and Nitin Samarth
1996-2002	Johns Hopkins University, Baltimore, MD 21218 Research assistant, low-dimensional magnetism Conducted research at Johns Hopkins University, The National Institute of Standards and Technology, Los Alamos National Laboratory, and the Hahn-Meitner Institute in Berlin Advisors: Profs. Daniel H. Reich and Collin L. Broholm.

Skills

Measurement	As an experimental physicist, I have a broad knowledge base for successful experimental design and measurement. I have significant experience using neutron scattering instrumentation including time of flight and triple axis instrumentation as well as commercial X-ray scattering instruments. I have performed extensive measurements of thermodynamic quantities as a function of temperature and magnetic field such as heat capacity, magnetic susceptibility, and electrical transport. I have experience with liquid helium based cryostats including dilution refrigerators, Quantum Design PPMS and MPMS (SQUID) systems, and superconducting magnets. I have experience in designing sample environment and additional instrumentation to expand the scientific capabilities of neutron scattering instruments.
Sample Prep.	I have successfully grown a series of single crystal deuterated low-dimensional magnets. In addition, I have used photolithography, projection lithography and e-beam lithography for producing measurement devices and thin-film samples. I have worked in clean room facilities.
Analysis	One of my strengths is the ability to appropriately analyze large quantities of data. I am fluent in programming techniques and have working knowledge of the C programming language, IDL, Mathematica, MatLab, Python and the IgorPro analysis packages. I also have a working knowledge of the UNIX, Windows and Macintosh operating systems.
Management	I am able to responsibly supervise and participate in multiple projects while taking into account the specific personalities of the individuals and groups involved to maximize output and results.
Teamwork	I enjoy working on both an individual basis and as part of a team. I am considerate of other team members while remaining committed to the completion of the task.
Large Projects	I have managed multiple large scale scientific projects with budgets of more than a million dollars.
Communication	I am able to effectively communicate with members of the scientific and non-scientific community. I place great emphasis on the quality of communicating scientific data and ideas via written, graphical and oral presentations.

Awards and Honors

Most Integrated Project Award for Ugly Data Days May 7, 2018.
Winner of the Director's award for Outstanding Team Accomplishment for ORNL in 2016.
Winner of the Team Award in the Research Accomplishment category for ORNL in 2016.
Elsevier Valued Reviewer (2016).
Awarded "Recognized Reviewer Status" from the 'Annals of Nuclear Energy' (2015).
Recognized for "prolific, high-caliber and unhesitating service as a referee for 'New Journal of Physics' in 2014". Awarded to only 5% of their referees.
Performance award from ORNL November 2014.
Performance award from ORNL April 2014 for design, installation and commissioning of the ARCS radial collimator.
Performance award from ORNL October 2013.
Battelle prize awarded for work on iron based superconductors, 2011.
Awarded ORNL Laboratory Directed Research and Development (LDRD) funding for "In-situ Neutron Scattering Studies of Fuel Cell Materials" project under the Advanced Materials Initiative (2010-2012).
Invited Early Career Scientist to X-rays and Neutrons: Essential Tools for Nanoscience Research, Washington, D.C., June, 2005
Finalist, Neutron Scattering Society of America Outstanding Student Research Award, 2004
J. Brien Key Memorial Scholarship for Graduate Research, Johns Hopkins University, 2001
Comenius Scholar, Moravian College, 1992-1996
Phi Alpha Theta, National History Honor Society, 1996
Omicron Delta Kappa, National Leadership Honor Society, 1995
Sigma Pi Sigma, National Physics Honor Society, 1995
Pi Mu Epsilon, National Mathematics Honor Society, 1995

Professional Societies

American Physical Society
Division of Condensed Matter Physics
Topical Group on Magnetism and its Applications
Neutron Scattering Society of America
The International Society for Sample Environment
The International Society for Neutron Instrument Engineers

Volunteer and Synergistic Activities

Member of the NSSD Diversity Action Group (2019).
The Syllabary – Editor, author, and lead writer for the newsletter of the SEQUOIA time-of-flight chopper spectrometer.
Issue 1 - January 2016
Issue 2 - January 2017
Issue 3 - January 2019
External reviewer of the Swiss National Science Foundation 2019

National School on Neutron and X-ray Scattering June, 2019, inelastic time-of-flight spectroscopy laboratory instructor.
External reviewer of CSNS (Chinese Spallation Neutron Source) thermal chopper spectrometer 2018
Participant in SSURF Scientific Expo on Capitol Hill, May 2018
National School on Neutron and X-ray Scattering June, 2017, inelastic time-of-flight spectroscopy laboratory instructor.
External reviewer of the Swiss National Science Foundation 2017
Organizer of the August 2017 Quantum Camp workshop at ORNL
CNCS radial collimator evaluation team 2017.
Served on the Program Committee for the 2018 International Conference on Magnetism
Served as an organizer for invited sessions to the APS 2017 March Meeting.
Organized the "Neutron Lifecycle Lecture Series" which provided seven lectures on the different aspects of neutron scattering measurements. The talks were intended to instruct undergraduate and graduate students as well as the staff of the facility. (summer 2016)
NOMAD radial collimator advisory committee member 2015.
Member of the ORNL Neutron Scattering Directorate Science Planning and Software Working Group (2015-2018).
National School on Neutron and X-ray Scattering June, 2015, inelastic time-of-flight spectroscopy laboratory instructor.
Member of the ORNL Neutron Scattering Directorate High Magnetic Field and Low Temperature Sample Environment Working Group (2015-present)
Instructor at the IGERT (Integrative Graduate Education and Research Traineeship) workshop at the ORNL neutron scattering facilities, April 2015.
Chair of the Energy and Environment Stewardship (EES) committee at the First Presbyterian Church of Oak Ridge (2015).
Organizer of the September 2014 "Workshop on Magnetic fields and Neutron Scattering" at ORNL.
Member of the ORNL Neutron Scattering Directorate SNS Scheduling Committee (2014-present).
Instructor of the September 2014 workshop "What Can Neutrons Do for You?" at ORNL.
Instructor for Siemens Teachers as Researchers (STARs) program at the Oak Ridge National Laboratory 2013.
National School on Neutron and X-ray Scattering June, 2012, inelastic time-of-flight spectroscopy laboratory instructor.
Science Highlights Editorial Committee member, Neutron Sciences Directorate, ORNL (2013-2018).
Member of the ORNL Neutron Scattering Directorate SNS Tour Bureau (2013-2015, 2018-present)
Organizer of the 2011 "Forum on Inelastic Neutron Scattering" (FINS) at ORNL.
Responsible for scheduling, training and use of the back-scattering Laue X-ray machine at the SNS (2011-2013)
SNS HFIR User Group (SHUG) Executive Committee member (elected position)2009-2011
SNS HFIR User Group (SHUG) Executive Committee Secretary (2009-2011)
National School on Neutron and X-ray Scattering June 2009, inelastic time-of-flight

spectroscopy laboratory instructor.
National School on Neutron and X-ray Scattering September 2008, inelastic time-of-flight spectroscopy laboratory instructor.
Tutorial Session presentation of "An Introduction to Inelastic Neutron Scattering" SNS HFIR Users Group meeting October 2007, Oak Ridge National Laboratory
Member of CG-1 cold TAS instrument development team at ORNL
Session Chair 2007 Neutron Scattering Sciences Division "Science Day Away"
Session of Elders, First Presbyterian Church Oak Ridge, TN, Personnel committee chair (2007-2009). Christian Education committee co-chair (2019-2021).
Session Chair for APS March Meetings 2005-2008, 2014-2015, 2017-2018.
Member of SEQUOIA and ARCS chopper spectrometer instrument development team at ORNL
Session Chair for MMM/Intermag meetings
Referee for APS, ACS, IOP, and Elsevier publications
Referee for Canada Foundation for Innovation
Referee for beam time proposals to the NIST Center for Neutron Research (NCNR)
Life member of the fraternal service organization Alpha Phi Omega
Outreach assistant for the Johns Hopkins University MRSEC 1997-2001
Graduate research assistant mentor, Johns Hopkins University, 2000
Academic Program Committee, student member, Moravian College 1994-1996
Undergraduate physics tutor, Moravian College, 1994-1996

Pedagogical Workshop Attendance

Quantum Materials Workshop, February 18-20, 2019, Oak Ridge National Laboratory, Oak Ridge, TN.

McStas Tutorial, October 18-19, 2018 Oak Ridge National Laboratory, Oak Ridge, TN.

Mini-workshop on Magnetic Structures, August 22-26, 2016, Oak Ridge National Laboratory, Oak Ridge, TN.

Horace workshop, January 13-14, 2015, Oak Ridge National Laboratory, Oak Ridge, TN.

McPhase workshop, August 25-29, 2013. Oak Ridge National Laboratory, Oak Ridge, TN.

DFT and Vibrational Spectroscopy Hands-on Training Course, October 1-3, 2013. Oak Ridge National Laboratory, Oak Ridge, TN.

References

Dr. Douglas L. Abernathy, ARCS Instrument Scientist, Neutron Scattering Division, Oak Ridge National Laboratory, PO Box 2008 MS6475, Oak Ridge TN 37831, (865) 576-5105, abernathydl@ornl.gov

Prof. Collin L. Broholm, Dept. of Physics and Astronomy, Johns Hopkins University Baltimore, MD 21218, (410) 516-7840, broholm@pha.jhu.edu

Dr. Mark E. Hagen, Head of the Data Management and Software Center, European Spallation Source, Universitetsparken 5, 2100 Copenhagen, Denmark, mark.hagen@esss.se

Dr. Mark. D. Lumsden, Inelastic Spectroscopy Group Leader, Neutron Scattering Division, Oak Ridge National Laboratory, PO Box 2008 MS6475, Oak Ridge, TN 37831-6475, (865)-241-0090, lumsdenmd@ornl.gov.

Dr. Stephen E. Nagler, Chief Scientist, Neutron Scattering Division, Oak Ridge National Laboratory, PO Box 2008 MS6393, Oak Ridge TN 37831, (865) 574-5240, naglerse@ornl.gov

Prof. Daniel H. Reich, Dept. of Physics and Astronomy, Johns Hopkins University Baltimore, MD 21218, (410) 516-7899, dhr@pha.jhu.edu

Prof. Nitin Samarth, Dept. of Physics, The Pennsylvania State University PMB 099, University Park, PA 16802, (814) 863-0316, nsamarth@phys.psu.edu

Prof. Peter Schiffer, Dept. of Physics, University of Illinois at Urbana-Champaign, 422 Swanlund Administration Building, 601 E. John Street, Champaign IL, (217) 244-7179, pschiffe@illinois.edu

Dr. Igor Zaliznyak, Brookhaven National Laboratory, BLDG 734, ISB, Condensed Matter Physics & Materials Science Department, Upton, NY 11973, (631) 344-3761, zaliznyak@bnl.gov

Publications - - has appeared on web of science

160 publications listed on Web of Science / Publons
h-index = 34
7 publications with more than 100 citations

1. F. Weickert, Adam A. Aczel, Matthew B. Stone, V. Ovidiu Garlea, Chao Dong, Yoshimitsu Kohama, Roman Movshovich, A. Demuer. N. Harrison, M. B. Gamza, A. Steppke, M. Brando, H. Rosner, and A. A. Tsirlin, "Field-induced double dome and Bose-Einstein condensation in the crossing quantum spin chain system $AgVOAsO_4$", Physical Review B (in-press).

2. B. Gao, T. Chen, D. W. Tam, C-L. Huang, K. Sasmal, D. T. Adroja, F. Ye, H. Cao, G. Sala, M. B. Stone, C. Baines, J. A. T. Barker, H. Hu, J-H. Chung, X. Xu, S-W. Cheong, B. Maple, A. H. Nevidomskyy, E. Morosan, G. Chen, and P. Dai, "Experimental signatures of a quantum spin liquid in effective spin ½ $Ce_2Zr_2O_7$ pyrochlore." Nature Physics (2019).

3. Q. Chen, S. Fan, K. M. Taddei, M. B. Stone, A. I. Kolesnikov, J.-G. Cheng, J. L. Musfeldt, H. D. Zhou, and A. A. Aczel, "Large positive zero field splitting in the cluster magnet $Ba_3CeRu_2O_9$." Journal of the American Chemical Society **141**, 9928 (2019).

4. J. A. Schneeloch, R. Zhong, M. B. Stone, I. A. Zaliznyak, G. D. Gu, G. Xu, and J. M. Tranquada, "Gapless spin excitations in superconducting $La_{2-x}Ca_{1+x}Cu_2O_6$ with T_c up to 55 K", Physical Review B **99**, 174515 (2019).

5. S. Wu, W. A. Phelan, L. Liu, J. R. Morey, J. A. Tutmaher, J. C. Neuefeind, A. Huq, M . B. Stone, M. Feygenson, D. W. Tam, B. A. Frandsen, B. Trump, C. Wan, S. R. Dunsiger, T. M. McQueen, Y. J. Uemura, and C. L. Broholm, "Incommensurate magnetism near quantum criticality in CeNiAsO." Physical Review Letters **122**, 197203 (2019).

6. J. Gaudet, E. M. Smith, J. Dudemaine, J. Beare, C. R. C. Buhariwalla, N. P. Butch, G. Xu, M. B. Stone, A. I. Kolesnikov, C. A. Marjerrison, G. M. Luke, A. D. Bianchi, and B. D. Gaulin, "Quantum spin ice dynamics in the dipole-octupole pyrochlore magnet $Ce_2Zr_2O_7$." Physical Review Letters **122**, 187201 (2019).

7. M. B. Stone, G. Sala, J. Lin, "Design of a radial collimator for the SEQUOIA direct geometry chopper spectrometer." Physica B: Condensed Matter **564**, 17 (2019).

8. J. C. Leiner, H. O. Jeschke, R. Valenti, S. Zhang, O. Tchernyshyov, A. T. Savici, J. Lin, M. B. Stone, M. D. Lumsden, J. Hong, O. Delaire, W. Bao, and C. L. Broholm, "Frustrated magnetism and spin-Peierls like transition in Mott insulating $(V_{1-x}Cr_x)_2O_3$." Physical Review X **9**, 11035 (2019).

9. L. Clark, G. Sala, D. Maharaj, M. B. Stone, K. S. Knight, M. T. F. Telling, S.-W. Cheong, and B. D. Gaulin, "Two-dimensional spin liquid behavior in the triangular-honeycomb antiferromagnet $TbInO_3$." Nature Physics (2019).

10. M. Ramazanoglu, A. Sapkota, A. Pandey, J. Lamsal, D. L. Abernathy, J. L. Niedziela, M. B. Stone, R. Salci, D. A. Acar, F. O. Oztirpan, S. Ozonder, A. Kreyssig, A. I. Goldman, D. C. Johnston, and R. J. McQueeney, "Heisenberg model analysis on inelastic powder neutron scattering data using pure and K doped $BaMn_2As_2$ Samples." Physica B **551**, 51 (2018).

11. B. Yuan, J. P. Clancy, J. A. Sears, A. I. Kolesnikov, M. B. Stone, Z. Yamani, C. Won, N. Hur, B. C. Jeon, T. W. Noh, A. Paramekanti, and Young-June Kim, "Neutron scattering investigation of rhenium orbital ordering in 3d-5d double perovskite Ca_2FeReO_6." Physical Review B **98**, 214433 (2018).

12. Y. Li, R. Zhong, M. B. Stone, A. I. Kolesnikov, G. D. Gu, I. A. Zaliznyak, and J. M. Tranquada, "Antiferromagnetic spin gap limits the coherent superconducting gap in cuprates." Physical Review B **98**, 224508 (2018).

13. A. E. Taylor, R. Morrow, M. D. Lumsden, S. Calder, M. H. Upton, A. I. Kolesnikov, M. B. Stone, R. S. Fishman, A. Paramekanti, P. M. Woodward, and A. D. Christianson, "Origin of magnetic excitation gap in double perovskite Sr_2FeOsO_6." Physical Review B **98**, 214422 (2018).

14. S. Calder, D. M. Pajerowski, M. B. Stone, and A. F. May, "Spin-gap and two-dimensional magnetic excitations in Sr_2IrO_4." Physical Review B Rapid Communications **98**, 220402(R) (2018).

15. G. Sala, M. B. Stone, B. K. Rai, A. F. May, C. R. Dela Cruz, H. Suriya Arachchige, G. Ehlers, V. R. Fanelli, V. O. Garlea, M. D. Lumsden, D. Mandrus, and A. D. Christianson, "Physical properties of the trigonal binary compound Nd_2O_3." Physical Review Materials **2**, 114407 (2018). November 21, 2018.

16. L. Chen, J-Ho Chung, B. Gao, T. Chen, M. B. Stone, A. I. Kolesnikov, Q. Huang, and P. Dai, "Topological spin excitations in honeycomb ferromagnet CrI_3." Physical Review X **8**, 041028. November 14, 2018. (Featured on the Department of Energy Office of Science website for University Research)

17. D. D. Maharaj, G. Sala, C. A. Majerrison, M. B. Stone, J. E. Greedan, and B. D. Gaulin, "Spin gaps in the ordered states of $La_2Li_XO_6$ (X=Ru, Os) and their relation ot the distortion of the cubic double perovskite structure in 4d3 and 5d3 magnets." Physical Review B **98**, 104434 (2018).

18. R. Zhang, W. Wang, T. A. Maier, M. Wang, M. B. Stone, S. Chi, B. Winn, and P. Dai, "Neutron spin resonance as a probe of Fermi surface nesting and superconducting gap symmetry in $Ba_{0.67}K_{0.33}(Fe_{1-x}Co_x)_2As_2$.", Physical Review B – Rapid Communication **98**, 060502(R) (2018).

19. H. L. Smith, Y. Shen, D. S. Kim, F. C. Yang, C. P. Adams, C. W. Li, D. L. Abernathy, M. B. Stone, and B. Fultz, "The temperature dependence of phonons in $FeGe_2$." Physical Review Materials **2**, 103602 (2018).

20. C. Mauws, A. M. Hallas, G. Sala, A. A. Aczel, P. M. Sarte, J. Gaudet, D. Ziat, J. A. Quilliam, J. A. Lussier, M. Bieringer, H. D. Zhou, A. Wildes, M. B. Stone, D. Abernathy, G. M. Luke, B. D. Gaulin, and C. R. Wiebe, "Dipolar-octupolar Ising antiferromagnetism in $Sm_2Ti_2O_7$: A moment fragmentation candidate." Physical Review B Rapid **97**, 100401(R) (2018).

21. M. Matsuda, F. Lin, R. Yu, J. –G. Cheng, W. Wu, J. P. Sun, J. H. Zhang, P. J. Sun, K. Matsubayashi, T. Miyake, T. Kato, J.-Q. Yan, M. B. Stone, Q. Si, J. L. Luo and Y. Uwatoko, "Evolution of magnetic double helix and quantum criticality near a dome of superconductivity in CrAs." Physical Review X **8**, 031017 (2018).

22. J. Gaudet, A. M. Hallas, C. R. C. Buhariwalla, G. Sala, M. B. Stone, M. Tachibana, K. Baroudi, R. J. Cava and B. D. Gaulin, "Magneto-elastic induced vibronic bound state in the spin ice pyrochlore $Ho_2Ti_2O_7$." Physical Review B **98**, 014419 (2018).

23. G. Sala, D. D. Maharaj, M. B. Stone, H. A. Dabkowska, and B. D. Gaulin, "Crystal field excitations from Yb^{3+} ions at defective sites in highly stuffed $Yb_2Ti_2O_7$." Physical Review B **97**, 224409 (2018).

24. R. L. Dally, Y. Zhao, Z. Xu, R. Chisnell, M. B. Stone, J. W. Lynn, L. Balents, and S. D. Wilson, "Amplitude mode in a planar triangular antiferromagnet $Na_{0.9}MnO_2$." Nature Communications **9**, 2188 (2018).

25. J. C. Leiner, J. Oh, A. I. Kolesnikov, M. B. Stone, M. D. Le, E. E. Gordon, M.-H. Whangbo, M. Mourigal, S.-W. Cheong, and Je-Geun Park, "Magnetic excitations of the Cu^{2+} quantum spin chain in Sr_3CuPtO_6." Physical Review B **97**, 104426 (2018).

26. E. A. Goremychkin, H. Park, R. Osborn, S. Rosenkranz, J-P. Castellan, A. D. Christianson, V. F. Fanelli, M. B. Stone, E. D. Bauer, K. J. McClellan, D. D. Byler and J. M. Lawrence, "Band excitations in $CePd_3$: a comparison of neutron scattering and ab initio theory." Science **359**, 186 (2018).

27. J. A. Schneeloch, Z. Gugchia, M. B. Stone, W. Tian, R. Zhong, K. M. Mohanty, G. Xu, G. D. Gu, and J. M. Tranquada, "Growth and structural characterization of large superconducting crystals of $La_{2-x}Ca_{1+x}Cu_2O_6$." Physical Review Materials **1**, 074801 (2017).

28. P. Lampen-Kelley, A. Banerjee, A. A. Aczel, H. B. Cao, M. B. Stone, C. A. Bridges, J.-Q. Yan, S. E. Nagler, and D. Mandrus, "Destabilization of magnetic order in a dilute Kitaev spin liquid candidate." Physical Review Letters **119**, 237203 (2017).

29. M. B. Stone, D. H. Siddel, A. M. Elliott, D. Anderson, and D. L. Abernathy, "Characterization of plastic and boron carbide additive manufactured neutron collimators." Review of Scientific Instruments **88**, 123102 (2017). Editor's Pick.

30. J. L. Niedziela, R. Mills, M. J. Loguillo, H. D. Skorpenske, D. Armitage, H. L. Smith, J. Y. Y. Lin, M. S. Lucas, M. B. Stone, and D. L. Abernathy, "High temperature sample environments for time-of-flight inelastic neutron scattering." Review of Scientific Instruments, **88**, 105116 (2017).

31. G. Sala, S. Maskova, and M. B. Stone, "Frustrated ground state in the metallic Ising anti-ferromagnet Nd_2Ni_2In." Physical Review Materials **1**, 054404 (2017).

32. P. M. Sarte, A. A. Aczel, G. Ehlers, C. Stock, B. D Gaulin, C. Mauws, M. B. Stone, S. Calder, S. E. Nagler, J. W. Hollett, J. S. Gardner, J. P. Attfield, and C. R. Wiebe, "Quantum confinement of monopole quasiparticles in a quantum spin ice." Journal of Physics Condensed Matter **29**, 45 (2017).

33. A. Sapkota, B. G. Ueland, V. K. Anand, D. L. Abernathy, M. B. Stone, J. L. Niedziela, D. C. Johnston, A. Kreyssig, A. I. Goldman, and R. J. McQueeney, "Extremely anisotropic spin fluctuations due to effective one-dimensional coupling in the highly-frustrated metal $CaCo_{2-y}As_2$." Physical Review Letters **119**, 147201 (2017).

34. J. S. Helton, S. K. Jones, D. Parshall, M. B. Stone, D. A. Shulyatev, and J. W. Lynn, "Spin wave damping arising from phase coexistence below Tc in colossal magnetoresistive $La_{0.7}Ca_{0.3}MnO_3$." Physical Review B **96**, 104417 (2017).

35. S. Li, Y. Gan, J. Wang, R. Zhong, J. A. Schneeloch, Z. Xu, S. Chi, W. Tian, M. Matsuda, M. B. Stone, Ph. Bourges, Y. Sidis, G. Gu, J. M. Tranquada, G. Xu, R. J. Birgeneau, and J. Wen, "Suppression of the antiferromagnetic order when approaching the superconducting state in $K_xFe_{2-y}Se_2$." Physical Review B **96**, 094503 (2017).

36. L. Ge, J. Flynn, J. A. M. Paddison, M. B. Stone, S. Calder, M. A. Subramanian, A. P. Ramirez, and M. Mourigal, "Spin order and dynamics in the diamond-lattice Heisenberg antiferromagnets $CuRh_2O_4$ and $CoRh_2O_4$." Physical Review B **96**, 064413 (2017). (Editors' Suggestion).

37. N. J. Laurita, G. G. Marcus, B. A. Trump, J. Kindervater, M. B. Stone, T. M. McQueen, C. L. Broholm, and N. P. Armitage, "Low energy magnon dynamics and magneto-optics of the skyrmion insulator Cu_2SeO_3." Physical Review B **95**, 235155 (2017). (Editors' Suggestion).

38. D. Ziat, A. A. Aczel, R. Sinclair, Q. Chen, H. D. Zhou, T. J. Williams, M. B. Stone, A. Verrier, and J. A. Quilliam, "Frustrated spin-1/2 molecular magnetism in the mixed-valence antiferromagnets $Ba_3MRu_2O_9$ (M=In, Y, Lu)", Physical Review B **95**, 1884424 (2017).

39. A. Banerjee, J. Yan, J. Knolle, C. A. Bridges, M. B. Stone, M. D. Lumsden, D. G. Mandrus, D. A. Tennant, R. Moessner, and S. E Nagler, "Neutron scattering in the proximate quantum spin liquid α-$RuCl_3$." Science **356**, 1055 (2017).

40. H. L. Smith, C. W. Li, A. Hoff, G. R. Garrett, D. S. Kim, F. C. Yang, M. S. Lucas, T. Swan-Wood, J. Y. Y. Lin, M. B. Stone, D. L. Abernathy, M. Demetriou, and B. Fultz, "Separating the configurational and vibrational entropy contributions in metallic glasses." Nature Physics **13**, 9 (2017).

41. M. Ramazanoglu, A. Sapkota, A. Pandey, D. L. Abernathy, J. L. Niedziela, M. B. Stone, A. Kreyssig, A. I. Goldman, D. C. Johnston, and R. J. McQueeney, "Robust antiferromagnetic spin waves across the metal-insulator transition in hole-doped $BaMn_2As_2$." Physical Review B **95**, 224401 (2017).

42. J. Brambleby, J. L. Manson, P. A. Goddard, M. B. Stone, R. Johnson, P. Manuel, J. A. Villa, C. M. Brown, H. Lu, S. Chikara, V. Zapf, S. H. Lapidus, R. Scatena, P. Macchi, Y. Chen, L. Wu and J. Singleton, "Combining Micro- and Macroscopic Probes to Untangle Single-Ion and Spatial Exchange Anisotropies in an S=1 Ni(II) Quantum Antiferromagnet." Physical Review B **95**, 134435 (2017).

43. K. A. Ross, J. M. Brown, R. J. Cava, J. W. Krizan, S. E. Nagler, J. A. Rodriquez-Rivera, and M. B. Stone, "Single-ion properties of the S_{eff}=1/2 XY antiferromagnetic pyrochlores $NaA'Co_2F_7$ (A' = Ca^{2+}, Sr^{2+}), Physical Review B **95**, 144414 (2017).

44. H. Man, J. Guo, R. Zhang, R. U. Schönemann, Z. Yin, M. Fu, M. B. Stone, Q. Huang, Y. Song, W. Wang, D. Singh, F. Lochner, T. Hickel, I. Eremin, L. Harriger, J. W. Lynn, C. Broholm, L. Balicas, Q. Si, and P. Dai, "Spin excitations and the Fermi surface of superconducting FeS." Nature Quantum Materials **14** (2017).

45. T. J. Williams, A. A. Aczel, M. B. Stone, M. N. Wilson, and G. M. Luke, "Hidden order signatures in the antiferromagnetic phase of $U(Ru_{1-x}Fe_x)_2Si_2$." Physical Review B **95**, 10440 (2017).

46. R. Toft-Petersen, Ellen Fogh, Takumi Kihara, N. H. Andersen, K. Fritsch, G. E. Granroth, M. B. Stone, J. Lee, D. Vaknin, H. Nojiri, and N. B. Christensen, "Re-emergence of commensurate longitudinal order in magneto-electric $LiNiPO_4$ explored in pulsed fields." Physical Review B **95**, 64421 (2017).

47. M. Zhu, K. V. Shanavas, Y. Wang, T. Zou, W. F. Sun, W. Tian, V. O. Garlea, A. Podlesnyak, M. Matsuda, M. B. Stone, D. Keavney, Z. Q. Mao, D. J. Singh and X. Ke, "Non-Fermi surface nesting driven commensurate magnetic ordering in Fe-doped Sr_2RuO_4.", Physical Review B **95**, 054413 (2017).

48. G. Simutis, S. Gvasaliya, N. S. Beesetty, T. Yoshida, J. Robert, S. Petit, A. I. Kolesnikov, M. B. Stone, F. Bourdarot, H. C. Walker, D. T. Adroja, O. Sobolev, J. T. Park, C. Hess, T. Masuda, A. Revcolevschi, B. Büchner, and A. Zheludev, "Spin pseudogap in the S=1/2 chain material Sr_2CuO_3 with impurities." Physical Review B **95**, 054409 (2017). .

49. M. B. Stone, V. O. Garlea, B. Gillon, A. Cousson, A. D. Christianson, M. D. Lumsden, S. E. Nagler, D. Mandrus, and B. C. Sales, "Excitations and magnetization density distribution in the dilute ferromagnetic semiconductor $Yb_{14}MnSb_{11}$." Physical Review B, Rapid Communications and Editors Suggestion **95**, 020412(R) (2017).

50. J. A. M. Paddison, M. Daum, Z. Dun, G. Ehlers, Y. Liu, M. B. Stone, H. Zhou, M. Mourigal, "Continuous excitations of the triangular-lattice quantum spin liquid $YbMgGaO_4$." Nature Physics **13**, 117 (2017).

51. R. Morrow, A. E. Taylor, D. J. Singh, J. Xiong, S. Rodan, A. U. B. Wolter, S. Wurmehl, B. Büchner, M. B. Stone, A. I. Kolesnikov, A. A. Aczel, A. D. Christianson, P. M. Woodward, "Spin orbit coupling control of anisotropy, ground state and frustration in $5d^2$ Sr_2MgOsO_6." Nature-Scientific Reports **6**, 32462 (2016).

52. F. C. Yang, J. A. Muñoz, O. Hellman, L. Mauger, M. S. Lucas, S. J. Tracy, M. B. Stone, D. L. Abernathy, Yuming Xiao, and B. Fultz, "Thermally-driven electronic topological transition in FeTi." Physical Review Letters **117**, 076402 (2016).

53. S. V. Carr, C. Zhang, Y. Song, G. Tan, D. Abernathy, M. B. Stone, G. Granroth, T. G. Perring, and Pencheng Dai, "Electron doping evolution of the magnetic excitations in $NaFe_{1-x}Co_xAs$." Physical Review B **93**, 214506 (2016). Editor's Suggestion.

54. J. J. Wagman, J. P. Carlo, J. Gaudet, G. Van Gastel, D. L. Abernathy, M. B. Stone, G. E. Granroth, A. I. Koleshnikov, A. T. Savici, Y. J. Kim, H. Zhang, D. Ellis, Y. Zhao, L. Clark, A. B. Kallin, E. Mazurek, H. A. Dabkowska and B. D. Gaulin, "Neutron scattering studies of spin-phonon hybridization and superconducting spin-gaps in the high temperature superconductor La2-x(Sr, Ba)xCuO4." Physical Review B **93**, 94416 (2016).

55. A. Banerjee, C. A. Bridges, J-Q. Yan, A. A. Aczel, L. Li, M. B. Stone, G. E. Granroth, M. D. Lumsden, J. Knolle, S. Bhattacharjee, Y. Yiu, R. Moessner, D. A. Tennant, D. G. Mandrus, and S. E. Nagler, "Proximate Kitaev quantum spin liquid behavior in α-RuCl3." Nature Materials, **15**, 733 (2016). Featured in economictimes.indiatimes.com, redorbit.com, hngn.com, nanowerk.com, and sci-news.com. Chosen as #18 on the list of Discover magazine's top 100 science stories for 2016.

56. A. M. Hallas, J. Gaudet, M. N. Wilson, T. J. Munsie, A. A. Aczel, M. B. Stone, R. S. Freitas, A. M. Arevalo-Lopez, J. P. Attfield, M. Tachibana, C. R. Wiebe, G. M. Luke, and B. D. Gaulin, "Γ_5 ground state in the effective S=1/2 XY Pyrochlore Antiferromagnet Yb2Ge2O7", Physical Review B **93**, 104405 (2016).

57. Y. Yiu, A. A. Aczel, G. E. Granroth, D. L. Abernathy, M. B. Stone, W. J. L. Buyers, J. Y. Y. Lin, G. D. Samolyuk, G. M. Stocks and S. E. Nagler, "Light atom quantum oscillations in UC and US." Physical Review B **93**, 014306 (2016).

58. J. L. Manson, Q-z. Huang, C. M. Brown, J. W. Lynn, M. B. Stone, J. Singleton, and F. Xiao, "Magnetic structure and exchange interactions in quasi-one-dimensional $MnCl_2(urea)_2$." Inorganic Chemistry **54**, 11897 (2015).

59. S. Calder, J. H. Lee, M. B. Stone, M. D. Lumsden, J. C. Lang, M. Feygenson, Z. Zhao, J.-Q. Yan, Y. G. Shi, Y. S. Sun, Y. Tsujimoto, K. Yamaura, and A. D. Christianson, "Giant, spin-phonon-electronic coupling in a 5d oxide." Nature Communications **6**, 8916 (2015).

60. T. J. Williams, A. A. Aczel, M. D. Lumsden, S. E. Nagler, M. B. Stone, J.-Q. Yan, and D. Mandrus, "Magnetic Correlations in the Quasi-2D Semiconducting Ferromagnet CrSiTe3." Physical Review B **92**, 144404 (2015).

61. M. B. Stone, M. D. Lumsden, V. O. Garlea, B. Grenier, E. Ressouche, E. C. Samulon, and I. R. Fisher, "Field induced spin density wave and spiral phases in a layered antiferromagnet." Physical Review B Rapid Communications **92**, 020415(R) (2015).

62. M. Mourigal, S. Wu, M. B. Stone, J. R. Neilson, J. M. Caron, T. M. McQueen, and C. L. Broholm, "Block magnetic excitations in the orbital-selective Mott insulator BaFe2Se3." Physical Review Letters **115**, 047401 (2015).

63. A. E. Tayler, T. Berlijn, S. E. Hahn, A. F. May, T. J. Williams, L. Poudel, S. Calder, R. S. Fishman, M. B. Stone, A. A. Aczel, H. B. Cao, M. D. Lumsden, and A. D. Christianson, "Influence of interstitial Mn on magnetism in room-temperature ferromagnet $Mn_{1+\delta}Sb$." Physical Review B **91**, 224418 (2015).

64. J. J. Wagman, D. Parshall, M. B. Stone, A. T. Savici, Y. Zhao, H. A. Dabkowska, and B. D. Gaulin, "Quasi-two dimensional spin and phonon excitations in $La_{1.965}Ba_{0.035}CuO_4$." Physical Review B **91**, 224404 (2015).

65. J. Ma, J. H. Lee, S. E. Hahn, T. Hong, H. Cao, A. A. Aczel, Z. Dun, M. B. Stone, W. Tian, Y. Qiu, J. Copley, H. Zhuo, R. S. Fishman, M. Matsuda, "Strong competition between orbital-ordering and itinerancy in a frustrated spinel vanadate." Physical Review B, Rapid Communications **91** 020407(R) (2015).

66. M. B. Stone, J.L. Niedziela, M. A. Overbay, and D. L. Abernathy, "The ARCS radial collimator." EPJ Web of Conferences **83**, 03014 (2015).

67. D. L. Abernathy, J. L. Niedziela and M. B. Stone, "Extracting source parameters from beam monitors on a chopper spectrometer." EPJ Web of Conferences **83**, 03001 (2015).

68. W. T. Fuhrman, J. Leiner, P. Nikolic, G. E. Granroth, M. B. Stone, M. D. Lumsden, L. DeBeer-Schmitt, P. A. Alekseev, J.-M. Mignot, S. M. Koohpayeh, P. Cottingham, W. Adam Phelan, L. Schoop, R. J. Cava, T. M. Mcqueen, and C. Broholm, "Spin-exciton and topology in SmB6." Physical Review Letters **114**, 036401 (2015).

69. J. Lee, S. Demura, M. B. Stone, K. Iida, G. Ehlers, C. R. dela Cruz, M. Matsuda, K. Deguchi, Y. Takano, O. Miura, D. Louca, and S.-H. Lee, "Coexistence of ferromagnetism and superconductivity in $CeO_{0.3}F_{0.7}BiS_2$." Physical Review B **90**, 224410 (2014).

70. M. B. Stone, Y. Chen, D. H. Reich, C. Broholm, G. Xu, J. R. D. Copley, J. C. Cook, "Magnons and continua in a magnetized and dimerized spin-1/2 chain." Physical Review B **90**, 094419 (2014).

71. J. L. Niedziela and M. B. Stone, "Structure and dynamics of cadmium telluride studied by x-ray and inelastic neutron scattering." Applied Physics Letters **105**, 102101 (2014).

72. J. Leiner, V. Thampy, A. D. Christianson, D. L. Abernathy, M. B. Stone, M. D. Lumsden, A. S. Sefat, B. C. Sales, J. Hu, Z. Mao, W. Bao, and C. Broholm, "Modified magnetism within the coherence volume of superconducting $Fe_{1+\delta}Se_xTe_{1-x}$." Physical Review B **90**, 100501(R). Rapid communication and Editors' Suggestion.

73. M. B. Stone, J. L. Niedziela, M. J. Loguillo, M. A. Overbay, and D. L. Abernathy, "A radial collimator for a time-of-flight neutron spectrometer." Review of Scientific Instruments **85**, 85101 (2014).

74. M. B. Stone, J. L. Niedziela, D. Abernathy, L. DeBeer-Schmidt, G. E. Granroth, M. Graves-Brook, G. Ehlers, A. I. Kolesnikov, A. Podlesnyak, and B. Winn, "A comparison of four direct geometry time-of-flight spectrometers at the Spallation Neutron Source." Review of Scientific Instruments **85**, 045113 (2014). Listed as a 'most cited' paper in the first half of 2015 by the Review of Scientific Instruments.

75. D. Parshall, D. Abernathy, M. B. Stone, Th. Wolf, R. Heid, T. Egami, and D. Reznik, "Phonon spectrum of SrFe2As2 determined using simultaneous fitting of multiple Brillouin zones." Physical Review B **89**, 064310 (2014).

76. J. H. Soh, G. S. Tucker, D. K. Pratt, D. L. Abernathy, M. B. Stone, S. Ran, S. L. Bud'ko, P. C. Canfield, A. Kreyssig, R. J. McQueeney and A. I. Goldman, "Inelastic neutron scattering study of a nonmagnetic collapsed tetragonal phase of CaFe2As2: Evidence of the impact of spin fluctuations on superconductivity in the iron-arsenide compounds." Physical Review Letters **111**, 227002 (2013). Editor's choice selection.

77. M. B. Stone, G. Ehlers, and G. Granroth, "S=2 quasi-one-dimensional spin waves in $CrCl_2$." Physical Review B **88**, 104413 (2013).

78. K. Kimura, S. Nakatsuji, J. Wen, C. Broholm, M. B. Stone, E. Nisibori, H. Sawa, Y. Karaki, Y. Shiumura and T. Sakakibara, "Quantum effects in a magnetic Coulomb phase of the exchange spin ice $Pr_2Zr_2O_7$." Nature Communications **4**, 1934 (2013).

79. J. R. Morris, C. I. Contescu, M. F. Chisholm, V. R. Cooper, J. Guo, L. He, Y. Ihm, E. Mamontov, Y. B. Melnichenko, R. Olsen, S. J. Pennycook, M. Stone, H. Zhang, and N. C. Gallego, "Modern approaches to studying gas adsorption in nanoporous carbons." Journal of Materials Chemistry A **1**, 9341 (2013).

80. A. D. Christianson, M. D. Lumsden, K. Marty, C.H. Wang S. Calder, D. L. Abernathy, M. B. Stone, H. A. Mook, M. A. McGuire, A. S. Sefat, B. C. Sales, D. Mandrus, and E. A. Goremychkin, "Doping dependence of the spin excitations in Fe based superconductors $Fe_{1+y}Te_{1-x}Se_x$." Physical Review B **87**, 224410 (2013).

81. O. Delaire, I. I. Al-Qasir, J. Ma, A. M. dos Santos, B. C. Sales, L. Mauger, M. B. Stone, D. L. Abernathy, Y. Xiao, and M. Somayazulu, "Effects of temperature and pressure on phonons in $FeSi_{1-x}Al_x$." Physical Review B **87**, 184304 (2013).

82. J. Lee, M. B. Stone, A. Huq, T. Yildrim, G. Ehlers, Y. Mizuguchi, and S.-H. Lee, "Crystal structure, lattice vibrations, and superconductivity of $LaO_{1-x}F_xBiS_2$." Physical Review B **87**, 205134 (2013).

83. R. J. Olsen, M. Beckner, M. B. Stone, P. Pfeifer, C. Wexler and H. Taub, "Diffusive behavior of absorbed hydrogen", Carbon **58**, 46 (2013).

84. C. M. Lavelle, C.-Y. Liu, M. B. Stone, "Toward a new polyethylene scattering law determined using inelastic neutron scattering," Nuclear Instruments and Methods in Physics Research A: Accelerators, Spectrometers, Detectors and Associated Equipment **711**, 166 (2013).

85. M. S. Lucas, L. Mauger, J. A. Munoz, I. Halevy, J. Horwath, S. L. Semiatin, M. B. Stone, D. L. Avernathy, Y. Xiao, P. Chow, and B. Fultz, "Phonon densities of states of face-centered-cubic Ni-Fe alloys." Journal of Applied Physics **113**, 17A308 (2013).

86. S. Chi, F. Ye, W. Bao, M. Fang, H. D. Wang, C. H. Dong, A. T. Savici, G. E. Granroth, M. B. Stone and R. S. Fishman, "Neutron scattering study on spin dynamics in superconducting $(Tl,Rb)_2Fe_4Se_5$." Physical Review B **87**, 10501 (2013).

87. J. A. Munoz, M. S. Lucas, L. Mauger, I. Halevy, J. Horwath, S. L. Semiatin, Y. Xiao, P. Chow, M. B. Stone, D. L. Abernathy, and B. Fultz, "Electronic structure and vibrational entropies of fcc Au-Fe alloys." Physical Review B **87**, 14301 (2013).

88. B. C. Sales, A. F. May, M. A. McGuire, M. B. Stone, D. J. Singh, and D. Mandrus, "Transport, thermal, and magnetic properties of the quasi-one-dimensional narrow-gap semiconductor $CrSb_2$.", Physical Review B **86**, 235136 (2012).

89. K. Iida, J. Lee, M. B. Stone, M. Kofu, M. Matsuda, Y. Yoshida, and S.-H. Lee, "Two-dimensional incommensurate magnetic fluctuations in $Sr_2(Ru_{0.99}Ti_{0.01})O_4$," Journal of the Physical Society of Japan **81**, 124710 (2012).

90. Z. Xu, J. Wen, T. Berlijn, P. M. Gehring, C. Stock, M. B. Stone, W. Ku, G. Gu, S. M. Shapiro, R. J. Birgeneau, and G. Xu, "Thermal evolution of the full three-dimensinoal magnetic excitations in the multiferroic BiFeO3." Physical Review B, **86**, 174419 (2012).

91. Meng Wang, Miaoyin Wang, Hu Miao, S. V. Carr, D. L. Abernathy, M. B. Stone, X. C. Wang, Lingyi Xing, C. Q. Jin, Xiaotian Zhang, Jiangping Hu, Tao Xiang, Hong Ding, and Pengcheng Dai, "Impurity effects in the stoichiometric electron-overdoped LiFeAs superconductor," Physical Review B **86**, 144511 (2012).

92. S. Toth, B. Lake, K. Hradil, T. Guidi, K. C. Rule, M. B. Stone, and A. T. M. N. Islam, "Magnetic soft modes in the triangular antiferromagnet a-CaCr2O4." Physical Review Letters **109**, 12703 (2012).

93. Kirsten M. Ø. Jensen, Emil S. Božin, Christos D. Malliakas, Matthew B. Stone, Mark D. Lumsden, Mercouri G. Kanatzidis, Stephen M. Shapiro and Simon J. L. Billinge, "Lattice dynamics reveals a local symmetry breaking in the emergent dipole phase of PbTe." Physical Review B **86**, 85313 (2012). Editors' Suggestion article.

94. M. S. Lucas, L. Mauger, J. A. Munoz, G. B. Wilkes, O. N. Senkov, E. Michel, J. Horwath, S. L. Semiatin, M. B. Stone, D. L. Abernathy, E. Karapetrova, "Absence of chemical ordering in equimolar FeCoCrNi," Applied Physics Letters **100**, 251907 (2012).

95. M. C. Shapiro, S. C. Riggs, M. B. Stone, C. R. Dela Cruz, S. Chi, A. Podlesnyak, and I. R. Fisher, "Structure and magnetic properties of the pyrocholre Iridate $Y_2Ir_2O_7$." Physical Review B **85**, 214434 (2012).

96. S. Calder, V. O. Garlea, D. F. McMorrow, M. D. Lumsden, M. B. Stone, J. C. Lang, J.-W. Kim, J. A. Schlueter, Y. G. Shi, Y. S. Sun, K. Yamaura, and A. D. Christianson "Magnetically driven metal insulator transition in $NaOsO_3$", Physical Review Letters **108**, 257209 (2012). Featured on Science Daily website http://www.sciencedaily.com/releases/2012/07/120711134534.htm

97. M. B. Stone, M. D. Lumsden, S. E. Nagler, D. J. Singh, J. He, B. C. Sales, and D. Mandrus, "Quasi-one-dimensional magnons in an intermetallic marcasite", Physical Review Letters **108**, 167202 (2012).

98. J. S. Helton, M. B. Stone, D. A. Shulyatev, Y. M. Mukovskii, and J. W. Lynn, "Paramagnetic spin correlations in colossal magnetoresistive $La_{0.7}Ca_{0.3}MnO_3$", Physical Review B **85**, 144401 (2012).

99. I. A. Zaliznyak, Z. J. Xu, J. S. Wen, J. M. Tranquada, G. D. Gu, V. Solovyov, V. N. Glazkov, A. I. Zheludev, V. O. Garlea and M. B. Stone, "Continuous magnetic and structural phase transitions in $Fe_{1+y}Te$", Physical Review B **85**, 085105 (2012).

100. O. Delaire, M. B. Stone, J. Ma, A. Huq, D. Gout, C. Brown, K. Wang, and Z.-F. Ren, "Phonons and spin excitations in $BiFeO_3$", Physical Review B **85**, 064405 (2012).

101. D. L. Abernathy, M. B. Stone, M. J. Loguillo, M. S. Lucas, O. Delaire, X. Tang, J. Y. Y. Lin, and B. Fultz, "Design and operation of the wide angular range chopper spectrometer ARCS at the SNS." Review of Scientific Instruments **83**, 15114 (2012). – Listed as a 'most cited' paper in the years 2012, 2013, and 2014 by the Review of Scientific Instruments.

102. J. Ma, J.-Q. Yan, S. O. Diallo, R. Stevens, A. Llobet, F. Trouw, D. L. Abernathy, M. B. Stone, and R. J. McQueeney, "Role of magnetic exchange energy on charge ordering in RSFO (R=La, Pr, and Nd)", Physical Review B **84**, 224115 (2011).

103. M. B. Stone, C. A. Tulk, A. dos Santos, J. J. Molaison, S. Chang, J. B. Leao, E. C. Samulon, M. C. Shapiro, and I. R. Fisher, "Pressure dependent diffraction and spectroscopy of a dimerized antiferromagnet." Journal of the Physical Society of Japan **80** SB005 (2011).

104. Miaoyin Wang, Chen Fang, Dao-Xin Yao, GuoTai Tan, Leland W. Harriger, Yu Song, Tucker Netherton, Chenglin Zhang, Meng Wang, Matthew B. Stone, Wei Tian, Jiangping Hu, and Pengcheng Dai, "Spin Waves and magnetic exchange interactions in insulating $Rb_{0.89}Fe_{1.58}Se_2$." Nature Communications **2**, 580 (2011).

105. Zaliznyak, I. Xu, J. M. Tranquada, G. Gu, A. M. Tsvelik, and M. B. Stone, "Unconventional temperature enhanced magnetism in $Fe_{1.1}Te$." Physical Review Letters **107**, 216403 (2011). Featured on http://www.neutrons.ornl.gov.

106. A. Möchel, I. Sergueev, H.-C. Wille, J. Voigt, M. Prager, M. B. Stone, B. C. Sales, Z. Guguchia, A. Shengelaya, V. Keppens, and R. P. Hermann, "Lattice dynamics and anomalous softening in the $YbFe_4Sb_{12}$ skutterudite.", Physical Review B **84** 184306 (2011). Chosen as an Editors' Suggestion article.

107. M. B. Stone, A. A. Podlesnyak, G. Ehlers, A. Huq, E. C. Samulon, M. C. Shapiro, I. R. and Fisher, "Persistence of mangons in a site-diluted dimerized frustrated antiferromagnet." Journal of Physics: Condensed Matter **23**, 416003 (2011). Featured on http://www.ornl.gov, http://www.physorg.com, http://www.azom.com and http://neutrons.ornl.gov.

108. J. A. Muñoz, M. S. Lucas, O. Delaire, M. L. Winterrose, L. Mauger, C. W. Li, A. O. Sheets, M. B. Stone, D. L. Abernathy, Y. Xiao, P. Chow, and B. Fultz, "Positive vibrational entropy of chemical ordering in FeV." Physical Review Letters **107**, 115501 (2011).

109. M. B. Stone, M. J. Loguillo, and D. L. Abernathy, "Ultrathin aluminum sample cans for single crystal inelastic neutron scattering." Review of Scientific Instruments **82**, 055117 (2011).

110. N. D. Markovskiy J. A. Muñoz, M. S. Lucas, Chen W. Li, O. Delaire, M. B. Stone, D. L. Abernathy and B. Fultz, "Non-harmonic phonons in MgB2 at elevated temperatures." Physical Review B **83**, 174301 (2011).

111. M. S. Lucas J. A Munõz, O. Delaire, N. Markoviskiy, M. B. Stone, D. Abernathy, I. Halevy, L. Mauger, J. B. Keith, M. L. Winterrose, Y. Xiao, M. Lerche, and B. Fultz, "Effects of composition, temperature, and magnetism on phonon in bcc Fe-V alloys." Physical Review B **82**, 144306 (2010).

112. O. Delaire, K. Marty, M. B. Stone, P. R. C. Kent, M. S. Lucas, D. L. Abernathy, D. Mandrus, and B. C. Sales, "Phonon softening and metallization of a narrow-gap semiconductor by thermal disorder." Proceedings of the National Academy of Science (PNAS), **108**, 4725 (2011). Featured on http://www.physorg.com.

113. M. S. Lucas, J. A. Munõz, L. Mauger, W. L. Chen, A. Sheets, Z. Turgut, J. Horwath, S. L. Semiatin, D. Abernathy, M. B. Stone, O. Delaire, and Y. Xiao, "Chemical effects on the phonon densities of states of bcc Fe-Co alloys." Journal of Applied Physics **108**, 023519 (2010).

114. H.-F. Li, C. Broholm, D. Vaknin, D. L. Abernathy, D. K. Pratt, W. Tian, Y. Qiu, N. Ni, M. B. Stone, S. O. Diallo, R. Fernandes, J. L. Zarestky, S. L. Bud'ko, P. C. Canfield and R. J. McQueeney, "In-plane anisotropy of magnetic excitations in superconducting $Ba(Fe_{0.926}Co_{0.074})_2As_2$." Physical Review B *Rapid Communication and Editors Suggestion* **82**, 140503 (2010).

115. M. D. Lumsden, A. D. Christianson, E. A. Goremychkin, S. E. Nagler, H. A. Mook, M. B. Stone, D. L. Abernathy, T. Guidi, G. J. MacDougall, C. de la Cruz, A. S. Sefat, M. A. McGuire, B. C. Sales, and D. Mandrus, "Evolution of spin excitations into the superconducting state in $FeTe_{1-x}Se_x$." Nature Physics (Advanced online publication, January 17, 2010).

116. Vasiliev, O. Volkova, A. Baranov, I. Presnyakov, A. Sobolev, G. Demazeau, M. Stone, A. Zheludev, R. Klingeler and B. Büchner, "Thermodynamic properties and neutron diffraction studies of silver ferrite $AgFeO_2$" J. Phys. Cond. Matt. **22**, 016007 (2010).

117. O. Delaire, A. F. May, M. A. McGuire, W. D. Porter, M. S. Lucas, M. B. Stone, D. L. Abernathy and G. J. Snyder, "Phonon Density of States and Heat Capacity of $La_{3-x}Te_4$." Physical Review B **80**, 184302 (2009).

118. E. S. Božin, P. Juhás, W. Zhou, M. B. Stone, D. L. Abernathy, A. Huq and S. J. L. Billinge, "Quantitative structure refinement from the ARCS chopper spectrometer." Journal of Physics: Conference Series **251**, 012080 (2010).

119. D. Parshall, K. A. Lokshin, J. Niedziela, A. D. Christianson, M. D. Lumsden, H. A. Mook, S. E. Nagler, M. A. McGuire, M. B. Stone, D. L. Abernathy, A. S. Sefat, B. C. Sales, D. G. Mandrus and T. Egami, "Spin Excitations in $BaFe_{1.84}Co_{0.16}As_2$ Superconductor Observed by Inelastic Neutron Scattering." Physical Review B **80**, 012502 (2009). Also chosen for Virtual Journal of Applications of Superconductivity, **17** 2009.

120. E. S. Bozin, P. Juhas, W. Zhou, M. B. Stone, D. L. Abernathy, A. Huq and S. J. L. Billinge, "Neutron powder diffraction using the ARCS chopper spectrometer at the Spallation Neutron Source." Journal of Applied Crystallography **42**, 724 (2009).

121. M. D. Lumsden, A. D. Christianson, D. Parshall, M. B. Stone, S. E. Nagler, H. A. Mook, K. Lokshin, T. Egami, D. L. Abernathy, E. A. Goremychkin, R. Osborn, M. A. McGuire, A. S. Sefat, R. Jin, B. C. Sales, and D. Mandrus, "Two-dimensional resonant magnetic excitation in $BaFe_{1.84}Co_{0.16}As_2$." Physical Review Letters **102**, 107005 (2009).

122. R. G. Moore, M. D. Lumsden, M. B. Stone, J. Zhang, R. Jin, D. Mandrus and E. W. Plummer, "Phonon softening and anomalous mode near the x_c=0.5 quantum critical point in $Ca_{2-x}Sr_xRuO4$" Physical Review B **79**, 172301 (2009).

123. J. T. Haraldsen, M. B. Stone, M. D. Lumsden, T. Barnes, R. Jin, J. W. Taylor, and F. Fernandez-Alonso, "Spin-lozenge thermodynamics and magnetic excitations in Na3RuO4" J. Phys. Cond. Matt. **21**, 506003 (2009).

124. A. D. Christianson, M. D. Lumsden, O. Delaire, M. B. Stone, D. L. Abernathy, M. A. McGuire, A. S. Sefat, R. Jin, B. C. Sales, D. Mandrus, E. D. Mun, P. C. Canfield, J. Y. Y. Lin, M. Lucas, M. Kresch, J. B. Keith, B. Fultz, E. A. Goremychkin, and R. J. McQueeney, "Phonon Density of States of $LaFeAsO_{1-x}F_x$" Physical Review Letters **101**, 157004 (2008). also chosen for Virtual Journal of Applications of Superconductivity, **15** (2008).

125. D. J. Costantino, T. J. Scheidemantel, M. B. Stone, C. Conger, K. Klein, M. Lohr, Z. Modig, and P. Schiffer "Starting to move through a granular medium." Physical Review Letters, **101**, 108001 (2008).

126. Shiliang Li, Songxue Chi, Jun Zhao, Hai-Hu Wen, Matthew B. Stone, Jeffrey W. Lynn and Pengcheng Dai "Impact of oxygen annealing process on the superconducting heat capacity anomaly and magnetic resonance in $Pr_{0.88}LaCe_{0.12}CuO_4$." Physical Review B **78**, 014520 (2008).

127. M. B. Stone, M. D. Lumsden, S. Chang, E. C. Samulon, C. D. Batista and I. R. Fisher, "Singlet-triplet dispersion reveals additional frustration in the triangular dimer compound $Ba_3Mn_2O_8$." Physical Review Letters **100**, 237201 (2008). Chosen as the focus of the 2011 summer neutron scattering school at the NIST Center for Neutron Research (NCNR).

128. M. B. Stone, M. D. Lumsden, Y. Qiu, E. C. Samulon, C. D. Batista and I. R. Fisher "Dispersive magnetic excitations in the S=1 antiferromagnet $Ba_3Mn_2O_8$." Physical Review B **77**, 134406 (2008).

129. M. B. Stone, W. Tian, M. D. Lumsden, G. E. Granroth, D. Mandrus, J.-H. Chung, N. Harrison and S. E. Nagler, "Quantum spin correlations in an organometallic alternating-sign chain." Physical Review Letters **99**, 087204 (2007). Included in the September 2007 issue of the Virtual Journal of Quantum Information.

130. Y. Chen, M. B. Stone, M. Kenzelmann, C. D. Batista, D. H. Reich, and C. Broholm, "Phase diagram and spin Hamiltonian of weakly-coupled anisotropic S=1/2 chains in $CuCl_2$•$2((CD_3)_2SO)$." Physical Review B **75**, 214409 (2007).

131. M. B. Stone, C. Broholm, D. H. Reich, O. Tchernyshyov, P. Schiffer, P. Vorderwisch and N. Harrison "Field-driven phase transitions in a quasi-two-dimensional quantum antiferromagnet." New Journal of Physics **9**, 31 (2007). *Invited* Focus issue on Correlated Electrons, Magnetism and Superconductivity in High Magnetic Fields. Chosen to be included in IOP Select, http://Select.iop.org.

132. M. B. Stone, F. Fernandez-Alonso, D. T. Adroja, N. S. Dalal, D. Villagrán, F. A. Cotton and S. E. Nagler, "Inelastic neutron scattering study of a quantum spin-trimer." Physical Review B **75**, 214427 (2007). Featured in *nano universe* at http://nanouniverse.blogspot.com/.

133. M. B. Stone, I. A. Zaliznyak, T. Hong, D. H. Reich and C. L. Broholm, "Quasiparticle breakdown in a quantum spin liquid." NIST Special Publication. Annual Report of the NIST Center for Neutron Research (2006).

134. W. Tian, M. B. Stone, D. G. Mandrus, B. C. Sales, R. Jin, D. T. Adroja and S. E. Nagler, "Magnetic excitations in the orbitally degenerate triangular lattice $LiVO_2$." Physica B, **385-386**, 50 (2006).

135. M. B. Stone, W. Tian, G. E. Granroth, M. D. Lumsden, D. G. Mandrus, J-H. Chung and S. E. Nagler, "Spin-dynamics of the low-dimensional magnet $(CH_3)_2NH_2CuCl_3$." Physica B, **385-386**, 438 (2006).

136. M. B. Stone, W. Tian, T. P. Murphy, S. E. Nagler, and D. G. Mandrus, "Field Dependent Phase Diagram of the Quantum Spin Chain $(CH_3)_2NH_2CuCl_3$." proceedings of the 24th international low-temperature physics conference, AIP Conference Proceedings, **850**, 1015 (2006).

137. K. Chen, M. B. Stone, R. Barry, M. Lohr, W. McConville, K. Klein, B. L. Sheu, A. J. Morss, T. Scheidemantel, and P. Schiffer, "Flux Through a Hole from a Shaken Granular Medium" Physical Review E **74**, 011306 (2006).

138. M. B. Stone, C. Broholm, D. H. Reich, O. Tchernyshyov, P. Vorderwisch and N. Harrison "Quantum Criticality in an Organic Magnet." Physical Review Letters **96**, 257203 (2006).

139. M. B. Stone, M. D. Lumsden, R. Jin, B. C. Sales, D. Mandrus, Y. Qiu and S. E. Nagler, "Temperature dependent bilayer ferromagnetism in $Sr_3Ru_2O_7$." Physical Review B, **73**, 174426 (2006).

140. M. B. Stone, I. A. Zaliznyak, T. Hong, D. H. Reich and C. L. Broholm, "Quasiparticle breakdown in a quantum spin liquid." Nature, **440**, 187 (2006).

141. G. Xiang, A. W. Holleitner, B. L. Sheu, F. M. Mendoza, O. Maksimov, M. B. Stone, P. Schiffer, D. D. Awschalom, and N. Samarth "Magnetoresistance Anomalies in (Ga,Mn)As Epilayers with Perpendicular Magnetic Anisotropy." Physical Review B. **71**, 241307(R) (2005), also in Journal of Nanoscale Science & Technology **11**, Issue 25 (2005).

142. M. B. Stone, T. J. Scheidemantel, D. P. Bernstein, R. Barry, M. D. Pelc, Y. K. Tsui, K. Klein, K. Chen and P. Schiffer, "Getting to the bottom and top of a granular medium." in *Powders and Grains 2005*, R. Garcia-Rojo, H. J. Herrmann and S. McNamara, Eds. A.A. Balkema, Rotterdam (2005).

143. K. F. Eid, B. L. Sheu, O. Maksimov, M. B. Stone, P. Schiffer and N. Samarth, "Nanoengineered Curie Temperature in Laterally-patterned Ferromagnetic Semiconductor Heterostructures." Applied Physics Letters **86**, 152505 (2005), also in Journal of Nanoscale Science & Technology **11**, Issue 15 (2005).

144. K. F. Eid, M. B. Stone, O. Maksimov, T. C. Shih, K. C. Ku, W. Fadgen, C. J. Palmstrøm, P. Schiffer and N. Samarth "Exchange biasing of the ferromagnetic semiconductor (Ga,Mn)As by MnO." *Invited*, Journal of Applied Physics **97**, 10D304 (2005).

145. D. S. Rana, D. G. Kuberkar, M. B. Stone, P. Schiffer, and S. K. Malik "Metamagnetic steps in Eu-based manganite compounds." Journal of Applied Physics **97**, 10H710 (2005).

146. K. F. Eid, O. Maksimov, M. B. Stone, P. Schiffer and N. Samarth "Annealing dependence of exchange bias in MnO / $Ga_{1-x}Mn_xAs$ heterostructures." Journal of Superconductivity **18**, 421 (2005).

147. D.S. Rana, D.G. Kuberkar, M. B. Stone, P. Schiffer, and S.K. Malik, "Sharp Step-like Metamagnetic Transition in the Charge-ordered Manganite Compound $(La_{0.3}Eu_{0.2})(Ca_{0.3}Sr_{0.2})MnO_3$." Journal of Physics: Condensed Matter **17**, 989 (2005).

148. F. M. Woodward, J. W. Lynn, M. B. Stone, R. Mahendiran, P. Schiffer, J. F. Mitchell, D. N. Argyriou and L. C. Chapon, "Field-Induced Avalanche to the ferromagnetic state in the phase-separated ground state of the Manganites." Physical Review B **70**, 174433 (2004).

149. M. B. Stone, R. Barry, D. P. Bernstein, Y. K. Tsui, and P. Schiffer, "Local jamming via penetration of a granular medium." Physical Review E **70**, 041301 (2004).

150. J. L. Lyon, D. A. Fleming, M. B. Stone, P. Schiffer, and M. E. Williams, "Synthesis of Fe oxide Core/Au Shell Nanoparticles by Iterative Hydroxylamine Seeding." Nano Letters **4**, 719 (2004).

151. K. F. Eid, M. B. Stone, K. C. Ku, P. Schiffer N. Samarth, T. Shih and C. Palmstrom "Exchange Biasing of the Ferromagnetic Semiconductor $Ga_{1-x}Mn_xAs$." Applied Physics Letters **85**, 1556 (2004).

152. M. B. Stone, D. P. Bernstein, R. Barry, M. D. Pelc, Y. K. Tsui, and P. Schiffer, "Getting to the Bottom of a Granular Medium." Nature **427**, 503 (2004).

153. X. Liu, W. L. Lim, L. V. Titova, T. Wojtowicz, M. Kutrowski, K. J. Yee, M. Dobrowolska, J. K. Furdyna, S. J. Potashnik, M. B. Stone, P. Schiffer, I. Vurgaftman, and J. R. Meyer, "External Control of the Direction of Magnetization in Ferromagnetic InMnAs/GaSb Heterostructures." Physica E **20**, 370 (2004).

154. M. B. Stone, K. C. Ku, S. J. Potashnik, B. L. Sheu, N. Samarth and P. Schiffer, "Capping-Induced Suppression of Annealing Effects on $Ga_{1-x}Mn_xAs$ Epilayers." Applied Physics Letters **83**, 4568 (2003).

155. S. J. Potashnik, K. C. Ku, R. F. Wang, M. B. Stone, N. Samarth, P. Schiffer and S. H. Chun "Coercive field and magnetization deficit in $Ga_{1-x}Mn_xAs$ epilayers." Journal of Applied Physics **93**, 6784 (2003).

156. C. Broholm, Y. Chen, M. Kenzelmann, C. P. Landee, K. Lefmann, Y. Qiu, D. H. Reich, C. Richel, M. B. Stone, and M. M. Turnbull, "Spinons, Solitons, and Breathers in Spin-1/2 Chains." NIST Special Publication 1006. Annual Report of the NIST Center for Neutron Research (2003).

157. M. B. Stone, D. H. Reich, C. Broholm, K. Lefmann, C. Rischel, C. P. Landee, and M. M. Turnbull, "Extended Quantum Critical Phase in a Magnetized Spin-(1/2) Antiferromagnetic Chain." Physical Review Letters **91**, 037205 (2003).

158. J. S. Gardner, A. Keren, G. Ehlers, C. Stock, Eva Segal, J. P. Roper, B. Fåk, M. B. Stone, P. R. Hammar, D. H. Reich, and B. D. Gaulin, "Dynamic Frustrated Magnetism in $Tb_2Ti_2O_7$ at 50 mK." Physical Review B **68**, 180401 (2003).

159. M. B. Stone, "Quantum Critical Behavior of Low-Dimensional Spin ½ Heisenberg Antiferromagnets." Johns Hopkins University Ph.D. Thesis (2002).

160. M. B. Stone, Y. Chen, J. Rittner, H. Yardimci, D. H. Reich, C. Broholm, D. V. Ferraris, and T. Lectka, "Frustrated 3-Dimensional Quantum Spin Liquid in CuHpCl," Physical Review B **65**, 064423 (2002).

161. C. Broholm, G. Aeppli, Y. Chen, D. C. Dender, M. Enderle, P. R. Hammar, Z. Honda, K. Katsumata, C. P. Landee, M. Oshikawa, L. P. Regnault, D. H. Reich, S. M. Shapiro, M. Sieling, M. B. Stone, M. M. Turnbull, I. Zaliznyak, and A. Zheludev, "Magnetized States of Quantum Spin Chains", P211-234 in *High Magnetic Fields: Applications in Condensed Matter Physics and Spectroscopy*. C. Berthier, L. P. Lévy, and G. Martinez, Eds. Springer Verlag (2002).

162. M. B. Stone, I. Zaliznyak, D. H. Reich, and C. Broholm, "Frustration-Induced Two Dimensional Quantum Disordered Phase in Piperazinium Hexachlorodicuprate," Physical Review B. **64**, 144405 (2001).

163. J. L. Manson, J. A. Schleter, U. Geiser, M. B. Stone, and D. H. Reich, "Crystal Structures and Magnetic Properties of $Mn[N(CN)_2]_2L$ {L=2,5-dimethylpyrazine and aminopyrazine}," Polyhedron **20**, 1423 (2001).

164. P. R. Hammar, M. B. Stone, D. H. Reich, C. Broholm, P. J. Gibson, M. M. Turnbull, C. P. Landee, and M. Oshikawa, "Characterization of a quasi-one-dimensional spin-1/2 magnet which is gapless and paramagnetic for $g\mu_B H<J$ and $K_B T<<J$," Physical Review B **59**, 1008 (1999).

Reports and Non-Peer Reviewed Publications

1. B. Winn, H. Agrawal, C. Broholm, M. Collins, S. Elorfi, M. Fitzsimmons, C. Fletcher, D. Pajerowski, J. Pierce, T. Sherline, M. Stone, E. Stringfellow Development Plan: Sample Environments for Magnetic Fields, Low Temperature & Wet Cryostats, Sample Environment Steering Committee (2015).

2. M. B. Stone, "A Survey of Magnetic Field Sample Environments for Neutron Scattering." posted to the on-line forums of "The International Society for Sample Environment" at http://sampleenvironment.org/. (2015).

3. M. B. Stone, "Neutron Science Productivity Report – SEQUOIA" (2015).

4. M. B. Stone and B. L. Winn, "Neutron Scattering and High Magnetic Fields." Workshop report." (2014). ORNL/TM-2014/65253316.

5. M. B. Stone and J. L. Niedziela, "Examination of methods determining the monochromatic energy at ARCS." (2013).

6. M. B. Stone and J. L. Niedziela, "Alignment of single crystals at ARCS." (2013).

7. M. B. Stone and A. T. Savici, "Mantid DGS data reduction guide." (2012-present).

8. M. B. Stone, "The Magnetic Materials Characterization Laboratory for the CLO second floor laboratories." (2012).

9. M. B. Stone and D. L. Abernathy, "FINS 2011 Workshop Report." (2011).

Patents

A method for producing collimators and other components from neutron absorbing materials using additive manufacturing – U.S. Nonprovisional Patent Application, Filed October 9, 2018.

Invited Presentations

"The Direct Geometry Chopper Spectrometer Instrument Suite at SNS", Quantum Materials Young Investigators Workshop, Oak Ridge, TN, June 6, 2019.

"Upgrades to the Inelastic Instrument Suite at the Spallation Neutron Source", Design Review of the thermal chopper spectrometer at the CSNS, Sun Yat-Sen University, Guangzhou, China July 21, 2018.

"SEQUOIA's Past, Present, and Future" QENS/WINS 2018 Hong Kong July 20, 2018.

"Current status of the inelastic instrument suite at the Spallation Neutron Source" Quantum Materials Young Investigators Workshop, June 2018.

"Science with neutrons at the Spallation Neutron Source and High Flux Isotope Reactor at Oak Ridge National Laboratory." Presentations to congressional staff members from the United States Senate and House of Representatives as part of the SSURF (Society for Science at User Research Facilities) day on Capitol Hill, April 25, 2018.

"Status of the SEQUOIA spectrometer at SNS" 2017 Review of the Instrument Suites for Inelastic Scattering, Oak Ridge National Laboratory, November 14, 2017.

"Opportunities for condensed matter research with neutron spectroscopy at Oak Ridge National Laboratory" ORNL/Virginia Tech/University of Virginia Joint Workshop on Neutron Scattering for Science and Engineering, September 27, 2017.

"An introduction to inelastic neutron scattering" Physical Sciences Lecture, Moravian College, Bethlehem, Pennsylvania, April 10, 2017.

"Magnetic field dependent ordered phases in the quantum antiferromagnet $Ba_3Mn_2O_8$" Neutron Scattering Seminar, The Paul Scherer Institute, Laboratory for neutron scattering and imaging, Villigen, Switzerland, November 12, 2015.

"A proposal for a 14 Tesla vertical field magnet for the SNS" Presentation to the Science Advisory Committee of the Neutron Sciences Directorate, Oak Ridge National Laboratory, Oak Ridge, TN, October 2, 2015.

"A comparison of the direct geometry spectrometers at the Spallation Neutron Source" Neutron Sciences Directorate Seminar Series, Oak Ridge National Laboratory, Oak Ridge, TN, September 12, 2013.

"Opportunities for condensed matter research with neutrons at Oak Ridge National Laboratory." Korean Physics Symposium, APS March Meeting, Baltimore, MD, March 20, 2013.

"Quasi-one dimensional magnons in an intermetallic marcasite." Quantum Condensed Matter Division & Virtual Institute Meeting: New states of matter and their excitations. Oak Ridge National Laboratory, Oak Ridge, TN, September 12, 2012.

"Pressure dependent diffraction and spectroscopy of a dimerized antiferromagnet." SNAP workshop at the Oak Ridge National Laboratory, Oak Ridge, TN, November 2011.

"Persistence of magnons in a doped dimerized antiferromagnet" The International Workshop on Neutron Applications on Strongly Correlated Electron Systems 2011, Ibaraki Quantum Beam Research Center, Tokai, Ibaraki, Japan, February 2011.

"Triplet and quasi-elastic excitations in a non-magnetic doped spin-liquid" Neutron Scattering Sciences Advisory Committee, Oak Ridge, TN, October 2010.

"$CrSb_2$ is a Quasi-One-Dimensional Antiferromagnet." Neutron Scattering Sciences Division Seminar, Oak Ridge, TN, December 2009.

"An Introduction to Inelastic Neutron Scattering." The 2009 Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists. Nashville, TN. February 13, 2009.

"Exploring Excitations in Quantum Spin Liquids: The Life and Death of Magnons" University of Tennessee Department of Physics and Astronomy, Condensed Matter Physics Seminar, November 26, 2007.

"The Life and Death of Magnons" University of Connecticut Institute of Materials Science Colloquium, September 20, 2007.

"Exploring Excitations in Quantum Spin-Liquids" Oak Ridge National Laboratory, Neutron Scattering Science Division Seminar, September 17, 2007.

"Exploring Spin-Liquid Excitations in the Quantum Magnets MCCL and PHCC" Clemson University Department of Physics and Astronomy. Colloquium, April 19, 2007.

"Quasiparticle Condensation and Breakdown in a Quantum Spin liquid" Symposium on Bose-Einstein Condensation. March Meeting of the American Physical Society, March 7 (2007).

"Where the Spectrum Ends: Spectrum Termination and Reentrance in a 2D Organometallic Magnet" Rice University, Houston, TX. Physics and astronomy colloquium February 14 (2007).

"Frustrated Chains Planes and Clusters: a Low-Dimensional Quest in a Three Dimensional World" Iowa State University, Ames, IA. Physics and astronomy colloquium February 5 (2007).

"Where the Spectrum Ends: Spectrum Termination and Reentrance in a 2D Organometallic Magnet" Georgia Institute of Technology, Atlanta, GA. Physics and astronomy colloquium January 31 (2007).

"Where the Spectrum Ends: Spectrum Termination and Reentrance in a 2D Organometallic Magnet" Catholic University of America, Washington D.C.. Physics and astronomy colloquium January 25 (2007).

"Where the Spectrum Ends: Spectrum Termination and Reentrance in a 2D Organometallic Magnet" Union College, Schenectady, NY. Physics and astronomy colloquium January 23 (2007).

"Where the Spectrum Ends: Spectrum Termination and Reentrance in a 2D Organometallic Magnet" University of Minnesota, Minneapolis, MN. Condensed matter physics seminar January 18 (2007).

"Quantum Spin Liquid in a Two Dimensional Antiferromagnet" for symposium on Bose-Einstein Condensation. 10^{th} Joint MMM/Intermag Conference, Baltimore, MD January 7-11 (2007).

"Where the Spectrum Ends: Spectrum Termination and Reentrance in a 2D Organic Magnet" Iowa State University, Ames, IA. Condensed matter physics seminar September 14 (2006).

"Temperature Dependent Bilayer Ferromagnetism in $Sr_3Ru_2O_7$" Competing Interactions and Colossal Responses in Transition Metal Compounds, Telluride, CO, July 16-22 (2006).

"Quantum Criticality in an Organomettalic Magnet" American Conference on Neutron Scattering (ACNS), St. Charles, IL, June 18-22 (2006).

"Quantum Freezing and Reentrant Melting in an Organic Magnet" Study of Matter at Extreme Conditions (SMEC), Miami, FL, April 17-21 (2005).

"Field Dependence of Gapped Spin Liquids" HFIR Center for Neutron Scattering at the Oak Ridge National Laboratory (2004).

"Capping Effects in the Ferromagnetic Semiconductor $Ga_{1-x}Mn_xAs$" Intel World Headquarters, Santa Clara, CA (2004).

"Getting to the Bottom of Granular Materials" Indiana University physics department seminar, Bloomington IN (2004).

"Getting to the Bottom of Granular Materials" Cleveland State University physics seminar, Cleveland, OH (2004).

"Getting to the Bottom of Granular Materials" Brookhaven National Laboratory physics seminar, Upton, NY (2004).

"Getting to the Bottom of Granular Materials" Miami University physics department seminar, Oxford, OH (2004).

"Getting to the Bottom of Granular Materials" Pennsylvania State University condensed matter physics seminar, State College, PA (2004).

"Gapped Frustrated Quantum Magnets." NIST Center for Neutron Scattering Research Seminar, Gaithersburg, MD (2001).

Presentations

"Crystal field excitations in the 2D antiferromagnet Nd_2Ni_2In." International Conference on Neutron Scattering, Daejong, South Korea July (2017).

"Excitations and magnetization density distribution in the dilute ferromagnetic semiconductor $Yb_{14}MnSb_{11}$", March Meeting of the American Physical Society, New Orleans, LA (2017).

"Excitations and Long Range Order in a Crystalline Dilute Ferromagnetic Semiconductor." American Conference on Neutron Scattering, Long Beach, CA (2016).

"Field induced spin density and spiral phases in a layered antiferromagnet." March Meeting of the American Physical Society, Baltimore, MD (2016).

"Structure and dynamics of CdTe studied by X-ray and neutron scattering." March Meeting of the American Physical Society, San Antonio, Texas (2015).

"A new magnetic excitation in YBCO." 27^{th} International Conference on Low Temperature Physics, Buenes Aires, Argentina (2014).

"$CrCl_2$ is a Quasi-One-Dimensional Antiferromagnet." March Meeting of the American Physical Society, Denver, CO (2014).

"A comparison of the direct geometry spectrometers at the Spallation Neutron Source" International Conference on Neutron scattering, Edinburgh, United Kingdom (2013).

"Quasi-one dimensional magnetic excitations in an intermettalic marcasite." American Conference on Neutron Scattering, Georgetown, Washington D.C. (2012).

"Triplet and quasi-elastic excitations in a non-magnetic doped spin-liquid", American Conference on Neutron Scattering, Ottawa, Canada (2010).

"$CrSb_2$ is a Quasi-One-Dimensional Antiferromagnet." March Meeting of the American Physical Society, Portland, OR (2010).

"Beyond Simple Bilayers in the Triangular Lattice Dimer Compound $Ba_3Mn_2O_8$" March Meeting of the American Physical Society, Pittsburg, PA (2009).

"Dispersive Excitations in the S=1 Antiferromagnet $Ba_3Mn_2O_8$" March Meeting of the American Physical Society, New Orleans, LA (2008).

"FM-AFM Alternating Exchange in the Low-d Magnet DMACuCl3 (MCCL)" March Meeting of the American Physical Society, Baltimore, MD (2006).

"Quantum Freezing and Reentrant Melting in a Quantum Spin Liquid" March Meeting of the American Physical Society, Los Angeles, CA (2005).

"Magnetic Excitations of $Sr_3Ru_2O_7$" March Meeting of the American Physical Society, Los Angeles, CA (2005).

"Exchange Biasing of the Ferromagnetic Semiconductor $Ga_{1-x}Mn_xAs$" March Meeting of the American Physical Society, Montreal, Canada (2004).

"Length Scales and Boundary Effects on Local Jamming in Granular Media" March Meeting of the American Physical Society, Montreal, Canada (2004).

"Length Scales and Boundary Effects on Local Jamming in Granular Media" Southern Workshop on Granular Materials, Pucon, Chile (2003).

"Remote Sensing of Texture via a Granular Medium." March Meeting of the American Physical Society, Austin, TX (2003).

"Wavevector Dependence of the Magnetic Excitation Spectrum of Cu_2(1,4diaza-cycloheptane)$_2Cl_4$ (CuHpCl)." March Meeting of the American Physical Society, Seattle, WA (2001).

"Spin Dynamics in Piperazinium Hexachlorodicuprate (PHCC)." March Meeting of the American Physical Society, Minneapolis, MN (2000).

"Spin Dynamics of Cu_2(1,4-diazacycloheptane)$_2Cl_4$ (CuHpCl)." March Meeting of the American Physical Society, Atlanta, GA (1999).

Children's Sermons

"Making lists with Mary and Martha" July 21, 2019, First Presbyterian Church of Oak Ridge, Oak Ridge, TN 37830.

"May the faith be with you" May 5, 2019, First Presbyterian Church of Oak Ridge, Oak Ridge, TN 37830.

"Transformers: more than meets the eye", March 3, 2019, First Presbyterian Church of Oak Ridge, Oak Ridge TN 37830.

"Ground-hog day" February 3, 2019, First Presbyterian Church of Oak Ridge, Oak Ridge, TN 37830.

Project Management

2013-present SEQUOIA lead instrument scientist. The lead instrument scientist or point-of-contact has half of the local contact responsibilities for the instrument. The lead instrument scientist also serves to manage the operation, upgrades, and scientific mission of the instrument. The SEQUOIA instrument hosts approximately 50 experiments per year with approximately 25 peer-reviewed publications each year.

2017-2018 SEQUOIA vacuum upgrade project. The SEQUOIA vacuum upgrade project was performed to improve the vacuum control system at the instrument as well as provide pumping redundancy to the vacuum system. The upgrade project also addressed safety issues which were present in the original vacuum control system.

2016-2019 14 Tesla vertical field cryomagnet for neutron scattering. This project oversaw the design, acquisition, testing and installation of a 14 tesla vertical field split-coil cryomagnet for use in neutron scattering measurements at the Spallation Neutron Source. The project includes the acquisition of a He-3 and dilution refrigerator sample environment.

2011 ARCS radial collimator project – The ARCS radial collimator project oversaw the design, procurement, acquisition, installation and testing of the ARCS radial collimator. This collimator has allowed for more complicated sample environments to be used at the ARCS chopper spectrometer without significant background scattering.

Funding

Awarded more than six million dollars in funding since 2011

Printed neutron collimator funding from SBIR/STTR – 2018-2019 application in progress as an unfunded collaborator for this project.

MRSEC-IRG Materials Research Science and Engineering Center – Interdisciplinary Research Group, preproposal submitted for "Understanding phonons interactions with tailored dislon microstructures" Listed as an unfunded collaborator for this project.

Awarded funding from Shull-Wolllan Center to host two university professors as guests of the Shull-Wollan Center and the Neutron Sciences Division. Summer 2018

ARCS/SEQUOIA low-background toploading cryostat (2018). $186,675 (burdened cost). Funding was awarded through the ORNL Neutron Scattering Directorate mid-scale project proposal call

BrightnESS – "Building a research infrastructure and synergies for highest scientific impact on ESS" H2020-INFRADEV-1-2015-1, Grant Agreement Number 676548. Listed as an unfunded collaborator for this project.

SEQUOIA radial collimator project. $982,000 (burdened cost). Funding successfully competed in 2018 for a scattered beam radial collimator for the SEQUOIA instrument. Funding was awarded through the ORNL Neutron Scattering Directorate large-scale project proposal call.

SEQUOIA Brillouin Scattering project. $986,000 (burdened cost). Funding successfully competed in 2018 for Brillouin scattering detector and instrumentation for the SEQUOIA instrument. Funding was awarded through the ORNL Neutron Scattering Directorate large-scale project proposal call.

SEQUOIA vacuum upgrade project. $1,112,512 (burdened cost) Funding successfully competed in 2015 for the vacuum upgrade project for the SEQUOIA instrument. Funding was awarded through the ORNL Neutron Scattering Directorate large-scale project proposal call.

Challenge Program 2016 – Awarded funding to mentor two undergraduate students at ORNL for the summer in 2016. Students worked on projects to use machine learning to interpret inelastic neutron scattering measurements. Funding provided by ORNL outreach programmatic funds.

HERE Program – Awarded funding from 2016-2017 to mentor an undergraduate student to study resolution calculations for time-of-flight chopper spectrometers. Funding provided by ORNL outreach programmatic funds.

14 T magnet project –$2,077,000 (burdened cost). Funding successfully competed in 2016 for the design and purchase of a 14 T magnet for time-of-flight neutron scattering measurements. Funding provided by the ORNL Neutron Scattering Directorate large-scale project proposal call.

ARCS radial collimator project. Awarded funding in 2011 for the ARCS scattered beam radial collimator. (approximately $350,000, burdened cost) Funding was from Neutron Scattering Directorate operating funds.

Awarded ORNL Laboratory Directed Research and Development (LDRD) funding, $641,000 (burdened cost), for “In-situ Neutron Scattering Studies of Fuel Cell Materials” project under the Advanced Materials Initiative (2010-2012).