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Education

B.S. in Physics, Tennessee Technological University, 1993

Ph.D. in Physics, State University of New York at Stony Brook, 2000

Professional Experience

2000-2002: Postdoctoral Research Associate, Brookhaven National Laboratory

2002-2009: Assistant Physicist to Physicist, Brookhaven National Laboratory

2009-2018: Instrument Scientist, Oak Ridge National Laboratory

2018- : Neutron Scattering Scientist, Oak Ridge National Laboratory

Current Professional Activities

- Neutron Scattering Scientist and Point of Contact for the Hybrid Spectrometer (HySpec) at Oak Ridge National Laboratory.
- Collaboration on data collection and analysis with neutron scattering instruments
- Collaboration on experimental studies on structure and dynamics of condensed matter materials

Instrument Development Successes

- Technical contact for design through commissioning of a soft x-ray beam line at the National Synchrotron Light Source at Brookhaven National Laboratory
- Direction and technical contact for upgrade of a cryogenic scanning transmission soft x-ray microscope to improve tomography capabilities
- Project management and technical contact for design concept through partial installation of the cold neutron triple axis spectrometer CTAX at Oak Ridge National Laboratory
- Technical contact for final design through unpolarized and polarized commissioning of HySpec, a direct geometry time of flight spectrometer at the Spallation Neutron Source at Oak Ridge National Laboratory

Publications

1. Yuan B., Butch N.P., Xu G., Winn B., Clancy J.P., Kim Y.J., "Neutron scattering study of magnetic anisotropy in the tetragonal antiferromagnet Bi₂CuO₄", *Physical Review B* **103**, 134436 (2021).
2. Chen L., Chung J.H., Chen T., Duan C., Schneidewind A., Radelytskyi I., Voneshen D.J., Ewings R.A., Stone M.B., Kolesnikov A.I., Winn B., Chi S.X., Mole R.A., Yu D.H., Gao B., Dai P.C., "Magnetic anisotropy in ferromagnetic CrI₃", *Physical Review B* **101**, 134418 (2020).
3. Frandsen B.A., Petersen K.A., Ducharme N.A., Shaw A.G., Gibson E.J., Winn B., Yan J.Q., Zhang J., Manley M.E., Hermann R.P., "Spin dynamics and a nearly continuous magnetic phase transition in an entropy-stabilized oxide antiferromagnet", *Physical Review Materials* **4**, 074405 (2020).
4. He X., Bansal D., Winn B., Chi S.X., Boatner L.A., Delaire O., "Anharmonic Eigenvectors and Acoustic Phonon Disappearance in Quantum Paraelectric SrTiO₃", *Physical Review Letters* **124**, 145901 (2020).
5. Nambu Y., Barker J., Okino Y., Kikkawa T., Shiomi Y., Enderle M., Weber T., Winn B., Graves-Brook M., Tranquada J.M., Ziman T., Fujita M., Bauer G.E., Saitoh E., Kakurai K., "Observation of Magnon Polarization", *Physical Review Letters* **125**, 027201 (2020).
6. Sapkota A., Li Y., Winn B., Podlesnyak A.A., Xu G., Xu Z., Ran K., Chen T., Sun J., Wen J., Wu L., Yang J., Li Q., Gu G.D., Tranquada J.M., "Electron-phonon coupling and superconductivity in the doped topological crystalline insulator (Pb_{0.5}Sn_{0.5})_{1-x}NxTe", *Physical Review B* **102**, 104511 (2020).

7. Sun B., Niu S., Hermann R.P., Moon J., Shulumba N., Page K., Zhao B., Thind A.S., Mahalingam K., Milam-Guerrero J., Haiges R., Mecklenburg M., Melot B.C., Jho Y., Howe B.M., Mishra R., Alatas A., Winn B., Manley M.E., Ravichandran J., Minnich A.J., "High frequency atomic tunneling yields ultralow and glass-like thermal conductivity in chalcogenide single crystals", *Nature Communications* **11**, 6039 (2020).
8. Garlea V.O., Sanjeeva L.D., McGuire M.A., Batista C.D., Samarakoon A.M., Graf D., Winn B., Ye F., Hoffmann C., Kolis J.W., "Exotic Magnetic Field-Induced Spin-Superstructures in a Mixed Honeycomb-Triangular Lattice System", *Physical Review X* **9**, 011038 (2019).
9. He L., Li C.W., Hamilton W.A., Hong T., Tong X., Winn B., Crow L., Bailey K.M., Gallego N., "Anomalous neutron scattering 'halo' observed in highly oriented pyrolytic graphite", *Journal of Applied Crystallography* **52**, 296-303 (2019).
10. Kim M.G., Winn B., Chi S.X., Savici A.T., Rodriguez-Rivera J.A., Chen W.C., Xu X., Li Y., Kim J.W., Cheong S.W., Kiryukhin V., "Spin-liquid-like state in pure and Mn-doped TbInO₃ with a nearly triangular lattice", *Physical Review B* **100**, 024405 (2019).
11. Plumb K.W., Changlani H.J., Scheie A., Zhang S., Krizan J.W., Rodriguez-Rivera J.A., Qiu Y., Winn B., Cava R.J., Broholm C., "Continuum of quantum fluctuations in a three-dimensional S=1 Heisenberg magnet", *Nature Physics* **15**, 54-59 (2019).
12. Banerjee A., Lampen-Kelley P., Knolle J., Balz C., Aczel A.A., Winn B., Liu Y., Pajerowski D.M., Yan J.Q., Bridges C.A., Savici A.T., Chakoumakos B.C., Lumsden M.D., Tennant D.A., Moessner R., Mandrus D., Nagler S.E., "Excitations in the field-induced quantum spin liquid state of α -RuCl₃", *npj Quantum Materials* **3**, 8 (2018).
13. Ran K., Zhong R., Chen T., Gan Y., Wang J., Winn B., Christianson A.D., Li S., Ma Z., Bao S., Cai Z., Xu G., Tranquada J.M., Gu G.D., Sun J., Wen J., "Unusual phonon density of states and response to the superconducting transition in the In-doped topological crystalline insulator Pb_{0.5}Sn_{0.5}Te", *Physical Review B* **97**, 220502(R) (2018).
14. Sibille R., Gauthier N., Yan H., Hatnean M.C., Ollivier J., Winn B., Filges U., Balakrishnan G., Kenzelmann M., Shannon N., Fennell T., "Experimental signatures of emergent quantum electrodynamics in Pr₂Hf₂O₇", *Nature Physics* **14**, 711-715 (2018).
15. Asai S., Soda M., Kasatani K., Ono T., Garlea V.O., Winn B., Masuda T., "Spin dynamics in the stripe-ordered buckled honeycomb lattice antiferromagnet Ba₂NiTeO₆", *Physical Review B* **96**, 104414 (2017).
16. Luo C., Bansal D., Li J., Viehland D., Winn B., Ren Y., Li X., Luo H., Delaire O., "Neutron and x-ray scattering study of phonon dispersion and diffuse scattering in (Na,Bi)TiO_{3-x} BaTiO₃ single crystals near the morphotropic phase boundary", *Physical Review B* **96**, 174108 (2017).
17. Savici A.T., Zaliznyak I.A., Garlea V.O., Winn B., "Data processing workflow for time of flight polarized neutrons inelastic measurements", *Journal of Physics: Conference Series* **862**, 012023 (2017).
18. Xu Z., Schneeloch J.A., Wen J., Winn B., Granroth G.E., Zhao Y., Gu G.D., Zaliznyak I.A., Tranquada J.M., Birgeneau R.J., Xu G., "Surprising loss of three-dimensionality in low-energy spin correlations on approaching superconductivity in Fe_{1+y}Te_{1-x}Se_x", *Physical Review B* **96**, 134505 (2017).
19. I.A. Zaliznyak, A.T. Savici, V.O. Garlea, B. Winn, U. Filges, J.A. Schneeloch, J.M. Tranquada, G. Gu, A. Wang, C. Petrovic, "Polarized neutron scattering on HYSPEC: the HYbrid SPECTrometer at SNS" *Journal of Physics: Conference Series* **862**, 012030 (2017).
20. R. Zhong, B. Winn, G. Gu, D. Reznik, J.M. Tranquada, "Evidence for a Nematic Phase in La_{1.75}Sr_{0.25}NiO₄" *Phys. Rev. Lett.* **118**, 17, 177601 (2017).
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- Tetrahedra in the Quantum Breathing Pyrochlore $\text{Ba}_3\text{Yb}_2\text{Zn}_5\text{O}_{11}$ ” *Phys. Rev. Lett.* **116**, 257204 (2016).
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 30. D. Fobes, I.A. Zaliznyak, Z. Xu, R. Zhong, G. Gu, J.M. Tranquada, L. Harriger, D. Singh, V.O. Garlea, M. Lumsden, and B. Winn., “Ferro-orbital ordering transition in iron telluride Fe_{1+y}Te ”, *Phys. Rev. Lett.* **112**, 187202 (2014).
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