

Songxue Chi

(T) 865-341-4454 (E) chis@ornl.gov

Webpage: <https://www.ornl.gov/staff-profile/songxue-chi>

EDUCATION

University of Tennessee, Knoxville, U.S.A.

Ph. D. in Physics

December 2008

Pukyong National University, R. Korea

M.S. in Physics

August 2001

Yanbian University, P. R. China

B.S. in Physics

July 1993

PROFESSIONAL EXPERIENCE

01/2013 – present **Oak Ridge National Laboratory, USA**

R&D staff

11/2010 – 01/2013 **Oak Ridge Associated Universities, USA**

Post doctoral associate, working at the Oak Ridge National Laboratory

01/2009 – 11/2010 **NIST Center for Neutron Research, USA**

Instrument Scientist

AWARDS

Supplemental Performance Award from ORNL, November 2017.

Chancellor's Honor for Extraordinary Professional Promise April, 2008

JINS Neutron Fellowship Feb, 2008

Sigma Pi Sigma, the Physics National Honor Society membership May, 2006

PUBLICATIONS

Peer Reviewed Journal Articles: **138**

ORCID ID: <https://orcid.org/0000-0002-3851-9153>

Web of Science Core Collection Metrics as of 12/10/2024: H-index: 39, sum of Citations: 5511

High Impact Articles (IF>7): 35

1. **Pervasive symmetry-lowering nanoscale structural fluctuations in the cuprate $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$** R. J. Spieker, M. Spaić, S. Bayliff, I. Khayr, X. He, D. Zhai, Z. W. Anderson, N. Bielinsk, F. Ye, Y. Liu, S. Chi, S. Sarker, M. J. Krogstad, R. Osborn, D. Pelc, M. Greven *Phys. Rev. B*, **113**, 014101 (2026)
2. **Kohn Anomalies and Phonon Anharmonicity in Iridium** Shaofei Wang, Simon Th'ebaud, Duncan H. Moseley, James R. Torres, Michael E. Manley, Yongqiang Cheng, Songxue Chi, Douglas L. Abernathy, Garrett E. Granroth, Andrei, T. Savici, Andrew F May, Parul Raghuvanshi, Lucas Lindsay, and Raphael H. Hermann *Phys. Rev. B*, **112**, 184305 (2025)
3. **Magnetic dynamics in NiTiO_3 honeycomb antiferromagnet using neutron scattering** Srimal Rathnayaka , Luke Daemen, Tao Hong , Songxue Chi , Stuart Calder , John A. Schneeloch , Yongqiang Cheng , Bing Li , and Despina Louca *Phys. Rev. B*, **112**, 104426 (2025)
4. **Anomalous Hall effect emerging from field-induced Weyl nodes SmAlSi** Yuxiang Gao , Shiming Lei, Eleanor Clements , Yichen Zhang , Xue-Jian Gao , Songxue Chi , Kam Tuen Law , Ming Yi and Jeffrey Lynn *Phys. Rev. Mater.* **9**, L061201 (2025)
5. **First Order Preemptive Ising-nematic Transition in $\text{K}_5\text{Fe}_4\text{Ag}_6\text{Te}_{10}$** N. Giles-Donovan, Y. Chen, H. Fukui, T. Manjo, S. Chi, H. Zhong, S. Cao, Y. Tang, Y. Wang, X. Lu, Y. Song, and R. J. Birgeneau *Phys. Rev. B*, **111**, 224103 (2025)
6. **Designing Spin-Crossover Systems to Enhance Thermopower and Thermoelectric Figure-of-Merit in Paramagnetic Materials** Md Mobarak Hossain Polash, Matthew Stone, Songxue Chi, and Daryoosh Vashaee *Energy and Environ. Mater* **0**, e12822 (2024)
7. **Uncovering the phonon spectra and lattice dynamics of plastically deformable InSe van der Waals crystals** Jiangtao Wu, Yifei Liu, Yifei Lin, Gaoting Lin, Mingfang Shu, Fengfeng Zhu, Yan Wu, Russell Ewings, Helen Walker, Guochu Deng, Songxue Chi, Shengwei Jiang, Matteo Baggioli, Min Jin, Tianran Wei, Jiong Yang, Xun Shi, Yupeng Ma, Cuiping Zhang, Pengfei Jiao, Haozhe Wang, Weiwei Xie *Nature Communications* **15**, 6248 (2024)
8. **Hybrid magnon-phonon localization enhances function near ferroic glassy states** Michael Manley, Paul Stonaha, Nickolaus Bruno, Ibrahim Karaman, Raymundo Arroyave , Songxue Chi, Douglas Abernathy, Matthew Stone, Yuriy Chumlyakov Jeffrey Lynn *Science Advances*, **10**, eadn2840 (2024)
9. **Multiple lattice instabilities and complex ground state in $\text{Cs}_2\text{AgBiBr}_6$** Xing He, Matthew Krogstad, Mayanak K Gupta, Tyson Lanigan-Atkins, Chengjie Mao, Feng Ye, Yaohua Liu, Tao Hong, Songxue Chi, Haotong Wei, Jinsong Huang, Stephan Rosenkranz, Raymond Osborn, and Olivier Delaire, *PRX Energy*, **3**, 1, 013014 (2024)
10. **Quantum critical behavior of the hyperkagome magnet Mn_3CoSi** Hiroki Yamauchi, Dita Puspita Sari, Yukio Yasui, Terutoshi Sakakura, Hiroyuki Kimura, Akiko Nakao, Takashi Ohhara, Takashi Honda, Katsuaki Kodama, Naoki Igawa, Kazutaka Ikeda, Kazuki Iida, Mitsutaka Nakamura, Daichi Ueta, Tetsuya Yokoo, Matthias D. Frontzek, Songxue Chi, Jaime A. Fernandez-Baca, Kenji M. Kojima, Donald Arseneau, Gerald Morris, Bassam Hitti, Yipeng Cai, Adam Berlie, Isao Watanabe, Pai-Tse Hsu, Yu-Sheng Chen, Min Kai Lee, Amelia Elisabeth Hall, Geetha Balakrishnan, Lih-Jeng Chang, and Shin-ichi Shamoto *Physical Review Research*, **6**, 013144 (2024).

11. **Two-step electronic response to magnetic ordering in a van der Waals ferromagnet**
Han Wu, Jian-Xin Zhu, Lebing Chen, Matthew W Butcher, Ziqin Yue, Dongsheng Yuan, Yu He, Ji Seop Oh, Jianwei Huang, Shan Wu, Cheng Gong, Sung-Kwan Mo, Jonathan Denlinger, Donghui Lu, Makoto Hashimoto, Matthew B. Stone, Alexander I. Kolesnikov, Songxue Chi, Junichiro Kono, Andriy H. Nevidomskyy, Robert J. Birgeneau, Pengcheng Dai, and Ming Yi *Physical Review B*, **109**, 4, 045416 (2024).
12. **Quantum to classical crossover in generalized spin systems: example of the temperature-dependent spin dynamics of FeI₂** D. Dahlbom, D. Brooks, M. S. Wilson, S. Chi, A. I. Kolesnikov, M. B. Stone, H. Cao, Y.-W. Li, K. Barros, M. Mourigal, C. D. Batista, and X. Bai *Physical Review B*, **109**, 1, 014427 (2024).
13. **Magnetism and Fermiology of Kagome Magnet YMn₆Sn₄Ge₂** Hari Bhandari, Rebecca L. Dally, Peter E. Siegfried, Resham Regmi, Kirrily C. Rule, Songxue Chi, Jeffrey W. Lynn, I. I. Mazin, and Nirmal J. Ghimire *npj Quantum Materials* **9**, 6 (2024)
14. **Antiferromagnet to ferromagnet crossover driven by nonmagnetic Co doping in heavy-fermion YbRh₃Si₇**
Long Qian, Kelly Neubauer, Joshua Miller, Yuxiang Gao, Jordan Murley, Songxue Chi, Shiming Lei, Pengcheng Dai, and E. Morosan *Physical Review B*, **108** 184404(2023)
15. **Helical Magnetic State in the Vicinity of the Pressure-Induced Superconducting Phase in MnP** Sachith E. Dissanayake, Masaaki Matsuda, Kazuyoshi Yoshimi, Shusuke Kasamatsu, Feng Ye, Songxue Chi, William Steinhardt, Gilberto Fabbris, Sara Haravifard, Jinguang Cheng, Jiaqiang Yan, Jun Gouchi, and Yoshiya Uwatoko *Physical Review Research*, **5**, 043026 (2023).
16. **Static and dynamical properties of the spin-5/2 nearly ideal triangular lattice antiferromagnet Ba₃MnSb₂O₉**
Mingfang Shu, Weicen Dong, Jinlong Jiao, Jiangtao Wu, Gaoting Lin, Yoshitomo Kamiya, T. Hong, H. Cao, M. Matsuda, W. Tian, S. Chi, G. Ehlers., Z. Ouyang, H. Chen, Y. Zou, Z Qu, Q. Huang, H. Zhou and Jie Ma *Phys. Rev. B* **108**, 174424 (2023)
17. **Effect of random antiferromagnetic exchange disorder on the spin waves in a three-dimensional Heisenberg ferromagnet** S. Hameed, Z. Wang, D. M. Gautreau, J. Joe, K. P. Olson, S. Chi, P. M. Gehring, T. Hong, D. M. Pajerowski, T. J. Williams, Z. Xu, M. Matsuda, T. Birol, R. M. Fernandes, and M. Greven *Physical Review B*, **108**, 134406 (2023).
18. **Antiferromagnet to ferromagnet crossover driven by non-magnetic Co doping in the heavy fermion YbRh₃Si₇**
Long Qian, Kelly Neubauer, Joshua Miller, Yuxiang Gao, Jordan Murley, Songxue Chi, Shiming Lei, Pengcheng Dai, and E. Morosan *Physical Review B*, **108**, 184404(2023).
19. **Topology stabilized fluctuations in a magnetic nodal semimetal** Nathan C. Drucker, Thanh Nguyen, Fei Han, Phum Siriviboon, Xi Luo, Nina Andrejevic, Ziming Zhu, Grigory Bednik, Quynh T. Nguyen, Zhantao Chen, Linh K. Nguyen, Tongtong Liu, Travis J. Williams, Matthew B. Stone, Alexander I. Kolesnikov, Songxue Chi, Jaime Fernandez-Baca, Christie S. Nelson, Ahmet Alatas, Tom Hogan, Alexander A. Puretzky, Shengxi Huang, Yue Yu, and Mingda Li *Nature Communications* **14**, 5182 (2023)
20. **Gapless spin-excitations in the superconducting state of a quasi-one-dimensional spin-triplet superconductor**
Keith M. Taddei, Bing-Hua Lei, Michael A. Susner, Hui-Fei Zhai, Thomas J. Bullard, Liurukara D. Sanjeewa, Qiang Zheng, Athena S. Sefat, Songxue Chi, Clarina dela Cruz, David J. Singh, and Bing Lv *Physical Review B*, **107**, L180504 (2023).
21. **Strongly over-doped La_{2-x}Sr_xCuO₄: Evidence for Josephson-coupled grains of strongly-correlated superconductor** Yangmu Li, A. Sapkota, P. M. Lozano, Zengyi Du, Zebin Wu, Asish Kundu, B. L. Winn, Songxue Chi, M. Matsuda, M. Frontzek, I. Bo_zovi_c, Abhay N. Pasupathy, Ilya K. Drozdov, Kazuhiro Fujita, G. D. Gu, I. A. Zaliznyak, Qiang Li, and J. M. Tranquada *Physical Review B*, **106**, 224515 (2022).

22. **Antiferromagnetic fluctuations and orbital-selective Mott transition in the van der Waals ferromagnet $\text{Fe}_{3-x}\text{GeTe}_2$** Xiaojian Bai, Frank Lechermann, Yaohua Liu, Yongqiang Cheng, Alexander I. Kolesnikov, Feng Ye, Travis J. Williams, Songxue Chi, Garrett E. Granroth, Andrew F. May, and Stuart Calder *Physical Review B* 106, L180409 (2022)
23. **Unconventional short-range structural fluctuations in cuprate superconductors** D. Pelc, R. J. Spieker, Z. W. Anderson, M. J. Krogstad, N. Bninkos, N. G. Lielinski, B. Yu, T. Sasagawa, L. Chauviere, P. Dosanjh, R. Liang, D. A. Bonn, A. Damascelli, S. Chi, Y. Liu, R. Osborn, and M. Greven *Scientific Reports* 12, 20483 (2022)
24. **Magnetic excitation linking quasi-one-dimensional Chevrel-type selenide and arsenide superconductors** Logan M. Whitt, Tyra C. Douglas, Songxue Chi, Keith M. Taddei, Jared M. Allred *Physical Review Materials* 6, 124804 (2022)
25. **Incommensurate magnetic orders and possible field-induced skyrmion state in the square-net centrosymmetric EuGa_2Al_2 system** Jaime M. Moya, Shiming Lei, Eleanor M. Clements, Kevin Allen, Qizhi Li, Y.Y.Peng, Matthew James Krogstad, Raymond Osborn, Douglas S. Robinson, Stella Sun, P. Abbamonte, Songxue Chi, Anand B. Puthirath, Jeffrey W. Lynn, and E. Morosan *Phys. Rev. Mater.* 6, 074201 (2022)
26. **Generic character of charge and spin density waves in superconducting cuprates** Sangjun Lee Edwin W. Huang, Thomas A. Johnson, Xuefei Guo, Ali A. Husain, Matteo Mitrano, Kannan Lu, Alexander V. Zakrzewski, Gilberto A. de la Pena, Yingying Peng, Hai Huang, Sang-Jun Lee, H. Jang, Jun-Sik Lee, Young Il Joe, William B. Doriese, Paul Szypryt, Daniel Swetz, Songxue Chi, Adam A Aczel, Gregory J. MacDougall, Steven A. Kivelson, Eduardo Fradkin, P. Abbamonte *PNAS* 119, e2119429119 (2022)
27. **Parallel Spin Stripes and Their Coexistence with Superconductivity at Optimal and High Doping in $\text{La}_{1.6-x}\text{Nd}_{0.4}\text{Sr}_x\text{CuO}_4$** Qianli Ma, Kirrily C. Rule, Zachary W. Cronkwright, Mirela Dragomir, Gabrielle Mitchell, Evan M. Smith, Songxue Chi, Alexander I. Kolesnikov, Matthew B. Stone, and Bruce D. Gaulin *Phys. Rev. Research* 3, 023151 (2021)
28. **Growth and characterization of large $(\text{Y},\text{La})\text{TiO}_3$ and $(\text{Y},\text{Ca})\text{TiO}_3$ single crystals** S. Hameed, J. Joe, L. R. Thoutam, J. Garcia-Barriocanal, B. Yu, G. Yu, S. Chi, T. Hong, T. J. Williams, J. W. Freeland, P. M. Gehring, Z. Xu, M. Matsuda, B. Jalan, and M. Greven *Physical Review Materials* 5, 125003 (2021)
29. **Magnetic order and its interplay with structure phase transition in the van der Waals ferromagnet VI_3** Yiqing Hao, Yiqing Gu, Yimeng Gu, Erxi Feng, Huibo Cao, Songxue Chi, Hua Wu and Jun Zhao *Chin. Phys. Lett.* 38, 096101 (2021)
30. **Canted antiferromagnetic order and spin dynamics in the honeycomb-lattice compound $\text{Tb}_2\text{Ir}_3\text{Ga}_9$** Feng Ye, Zachary Morgan, Wei Tian, Songxue Chi, Xiaoping Wang, Michael E. Manley, David Parker, Mojammel A. Khan, J. F. Mitchell, and Randy Fishman *Physical Review B*, 103, 184413 (2021).
31. **Field-induced topological Hall effect and double-fan spin structure with a c-axis component in the metallic kagome antiferromagnetic compound YMn_6Sn_6** Qi Wang, Kelly J. Neubauer, Chunruo Duan, Qiangwei Yin, Satoru Fujitsu, Hideo Hosono, Feng Ye, Rui Zhang, Songxue Chi, Kathryn Krycka, Hechang Lei, and Pengcheng Dai *Phys. Rev. B* 103, 014416 (2021)
32. **Quantized thermoelectric Hall effect induces giant power factor in a topological semimetal** Fei Han, Nina Andrejevic, Thanh Nguyen, Brian Skinner, Quynh Nguyen, Zhiwei Ding, Ricardo Pablo-Pedro, Shreya Parjan, Vladyslav Kozii, Ahmet Alatas, Ercan Alp, Songxue Chi, Jaime Fernandez-Baca, Shengxi Huang, Liang Fu, Mingda Li *Nature Communications*, 11, 6167 (2020).
33. **Noncollinear magnetic structure and magnetoelectric coupling in buckled honeycomb $\text{Co}_4\text{Nb}_2\text{O}_9$: A single crystal neutron diffraction study** Lei Ding, Minseong Lee, Tao Hong, Zhiling Dun, Ryan Sinclair, Songxue Chi, Harish K. Agrawal, Eun Sang Choi, Bryan C. Chakoumakos, Haidong Zhou and Huibo Cao *Phys. Rev. B* 102, 174443 (2020)

34. **Competition of three-dimensional magnetic phases in $\text{Ca}_2\text{Ru}_{1-x}\text{Fe}_x\text{O}_4$: A structural perspective**
Songxue Chi, Feng Ye, Gang Cao, Huibo Cao, and Jaime A. Fernandez-Baca *Phys. Rev. B* **102**, 014452 (2020)
35. **Extended anharmonic collapse of phonon dispersions in SnS** T. Lanigan-Atkins, S. Yang, J. L. Niedziela, D. Bansal, A. F. May, A. A. Poretzky, J. Y. Y. Lin, D. M. Pajerowski, T. Hong, S. Chi, G. Ehlers, and O. Delaire *Nature Communications* **11**, 4430 (2020)
36. **High-temperature short-range order in Mn_3RhSi** Hiroki Yamauchi, Dita Puspita Sari, Isao Watanabe, Yukio Yasui, Lieh-Jeng Chang^e, Keietsu Kondof, Takashi U. Ito, Motoyuki Ishikado, Masato Hagihara, Matthias D. Frontzek, Songxue Chi, Jaime A. Fernandez-Baca, James Lord, Adam Berlie, Chris Goodway, Atsuhiko Kotani, Shigeo Mori, Shin-ichi Shamoto *Commun Mater* **1**, 43 (2020)
37. **Giant isotope effect on phonon dispersion and thermal conductivity in methylammonium lead iodide**
M. E. Manley, K. Hong, P. Yin, S. Chi, Y. Cai, L. L. Daemen, R. P. Hermann, H. Wang, A. May, M. Asta, M. Ahmadi *Science Advances*, **6**, 31, eaaz1842 (2020)
38. **Topological singularity-induced chiral Kohn anomaly in a Weyl semimetal** Thanh Nguyen, Fei Han, Nina Andrejevic, Ricardo Pablo-Pedro, Anuj Apte, Zhiwei Ding, Kunyan Zhang, Ahmet Alatas, Ercan Alp, Songxue Chi, Jaime Fernandez-Bacc, Masaaki Matsuda, David A. Tennant, Yang Zhao, Zhijun Xu, Jeffrey W. Lynn, Shengxi Huang, and Mingda Li *Phys. Rev. Lett.* **124**, 236401 (2020)
39. **Anisotropic effect of a magnetic field on the neutron spin resonance in FeSe** Tong Chen, Youzhe Chen David W. Tam Bin Gao Yiming Qiu Astrid Schneidewind Igor Radelytskyi, Karel Prokes, Songxue Chi, Masaaki Matsuda, Collin Broholm, and Pengcheng Dai *Phys. Rev. B* **101**, 140504 (R) (2020)
40. **Magnetic anisotropy in ferromagnetic CrI_3** Lebing Chen, Jae-Ho Chung, Tong Chen, Chunruo Duan, Astrid Schneidewind, Igor Rodelytskyi, David J. Voneshen, Russel A. Ewings, Matthew B. Stone, Alexander I. Kolesnikov, Barry Winn, Songxue Chi, R. A. Mole, D.H.Hu, Bin Gao, and Pengcheng Dai *Phys. Rev. B* **101** 134418 (2020)
41. **Coexistence of Soft Modes and Dynamic Ti Disorder in Cubic BaTiO_3 Studied by Inelastic Neutron Scattering** Izumi Tomeno, Jaime Fernandez-Baca, Songxue Chi, Kunihiko Oka, and Yorihiro Tsunoda, *Journal of the Physical Society of Japan* **89**, 054601 (2020)
42. **The f -electron State of the Heavy Fermion Superconductor NpPd_5Al_2 and the Isostructural Family**
Naoto Metoki, Adam A. Aczel, Dai Aoki, Songxue Chi, Jaime A. Fernandez-Baca, Jean-Christophe Griveau, Masato Hagihara, Tao Hong, Yoshinori Haga, Kazuhiko Ikeuchi, Y. Inamura, Kazuya Kamazawa, Ryoichi Kajimoto, Hideaki Kitazawa, Takatsugu Masuda, Masaaki Matsuda, Mitsutaka Nakamura, Junya Ohtsuki, Daniel Pajerowski, Hiroyuki S. Suzuki, Etsuji Yamamoto, and Hiroki Yamauchi *JPS Conf. Proc.* **30**, 011123 (2020)
43. **Anharmonic Eigenvectors and Acoustic Phonon Disappearance in Quantum Paraelectric SrTiO_3** Xing He, Dipanshu Bansal, Barry Winn, Songxue Chi, Lynn Boatner, and Olivier Delaire *Phys. Rev. Lett.* **124**, 145901 (2020)
44. **Lattice distortion in the spin-orbital entangled state in RVO_3 perovskites** J. -Q. Yan, W. Tian, H. B. Cao, S. Chi, F. Ye, A. Llobet, Q. Chen, J. Ma, Y. Ren, J. -G. Cheng, J. -S. Zhou, M. A. McGuire, R. J. McQueeney *Phys. Rev. B* **100**, 184423 (2019)
45. **Flat band magnetism and helical magnetic order in Ni-doped SrCo_2As_2** Yu Li, Zhonghao Liu, Zhuang Xu, Yu Song, Yaobo Huang, Dawei Shen, Ni Ma, Ang Li, Songxue Chi, Matthias Frontzek, Huibo Cao, Qingzhen Huang, Weiyi Wang, Yaofeng Xie, Yan Rong, David P. Young, J. F. DiTusa, and Pengcheng Dai *Phys. Rev. B* **100**, 094446 (2019)
46. **Spin-liquid-like state in pure and Mn-doped TbInO_3 with a nearly triangular lattice** M. G. Kim, B. Winn, S. Chi, A. T. Savici, J. A. Rodriguez-Rivera, W. C. Chen, X. Xu, Y. Li, J. W. Kim, S.-W. Cheong, and V. Kiryukhin *Phys. Rev. B* **100**, 024405 (2019)
47. **Low-temperature anharmonicity and the thermal conductivity of cesium iodide** Bin Wei, Chao Yang, Xiaoxia Yu, Xin Rao, Xueyun Wang, Songxue Chi, Xuefeng Sun, Jiawang Hong *Phys. Rev. B* **99**, 184301 (2019)

48. **Anomalous magnetic behavior of Ba₂CoO₄ with isolated CoO₄ tetrahedra** Qiang Zhang, Guixin Cao, Feng Ye, Huibo Cao, Masaaki Matsuda, D. A. Tennant, Songxue Chi, S. E. Nagler, W. A. Shelton, Rongying Jin, E. W. Plummer, Jiandi Zhang *Phys. Rev. B* **99**, 094416 (2019)
49. **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)₂As₂** Rui Zhang, Weiyi Wang, Thomas A. Maier, Meng Wang, Matthew B. Stone, Songxue Chi, Barry Winn, and Pengcheng Dai *Phys. Rev. B* **98**, 060502 (R) (2018)
50. **Local orthorhombic lattice distortions in the paramagnetic tetragonal phase of superconducting NaFe_{1-x}Ni_xAs** Weiyi Wang, Yu Song, Chongde Cao, Yu Li, I L. W. Harriger, Wei Tian, Songxue Chi, Rong Yu, Andriy H. Nevidomskyy, and Pengcheng Dai *Nature Communications* **9**, 3128 (2018)
51. **The f-electron states in PrPd₅Al₂** Naoto Metoki, Hiroki Yamauchi, Hiroyuki S. Suzuki, Hideaki Kitazawa, Masato Hagihara, Takatsugu Masuda, Adam Aczel, Songxue Chi, Tao Hong, Masaaki Matsuda, Daniel Pajerowski, and Jaime A. Fernandez-Baca *Journal of the Physical Society of Japan*, **87**, 094704 (2018)
52. **Coexistence of superconductivity and short-range double-stripe spin correlations in Te-vapor annealed FeTe_{1-x}Se_x with x = 0.2** Zhijun Xu, J. A. Schneeloch, Ming Yi, Yang Zhao, Masaaki Matsuda, D. M. Pajerowski, Songxue Chi, R. J. Birgeneau, Genda Gu, J. M. Tranquada, and Guangyong Xu *Phys. Rev. B* **97**, 214511 (2018)
53. **Glassy phonon heralds a strain glass state in a shape memory alloy** P J Stonaha, ME Manley, I Karaman, R Arroyave, N Bruno, M Chisholm, S Chi, D Abernathy *Phys. Rev. Lett.* **120**, 245701 (2018)
54. **Dynamic spin-lattice coupling and nematic fluctuations in NaFeAs** Yu Li, Zahra Yamani, Yu Song, Weiyi Wang, Chenglin Zhang, David W. Tam, Tong Chen, Zhuang Xu, Songxue Chi, Ke Xia, Li Zhang, Shifeng Cui, Wenan Guo, Ziming Fang, Yi Liu, and Pengcheng Dai *Phys. Rev. X* **8**, 021056 (2018)
55. **Supersonic propagation of lattice energy by phasons in fresnoite** M. E. Manley, P. J. Stonaha, D. L. Abernathy, Songxue Chi, R. Sahul, R. P. Hermann, J. D. Budai *Nature Communications*, **9**, 1823 (2018)
56. **Momentum-resolved observations of the phonon instability driving geometric improper ferroelectricity in yttrium manganite** Dipanshu Bansal, Jennifer L. Niedziela, V. Ovidiu Garlea, Douglas L. Abernathy, Songxue Chi, Yang Ren, Haidong Zhou, and Olivier Delaire *Nature Communications*, **9**, 1, 15 (2018)
57. **Suppression of the antiferromagnetic order when approaching the superconducting state in a phase-separated crystal of K_xFe_{2-y}Se₂** Shichao Li, Yuan Gan, Jinghui Wang, Ruidan Zhong, J. A. Schneeloch, Zhijun Xu, Wei Tian, M. B. Stone, Songxue Chi, M. Matsuda, Y. Sidis, Ph. Bourges, Qiang Li, Genda Gu, J. M. Tranquada, Guangyong Xu, R. J. Birgeneau, and Jinsheng Wen *Phys. Rev. B* **96**, 094503 (2017)
58. **Manganese-induced magnetic symmetry breaking and its correlation with the metal-insulator transition in bilayered Sr₃(Ru_{1-x}Mn_x)₂O₇** Qiang Zhang, Feng Ye, Wei Tian, Huibo Cao, Songxue Chi, Dalgis Mesa, Biao Hu, Zhenyu Diao, David A. Tennant, Rongying Jin, Ward Plummer, Jiandi Zhang *Phys. Rev. B* **95**, 220403(R) (2017)
59. **Competing spin density wave, collinear, and helical magnetism in Fe_{1+x}Te** C. Stock, E. E. Rodriguez, P. Bourges, R. A. Ewings, H. Cao, S. Chi, J. A. Rodriguez-Rivera, and M. A. Green *Phys. Rev. B* **95**, 144407 (2017)
60. **Magnetic Structure and Quadrupolar Order Parameter Driven by Geometrical Frustration Effect in NdB₄** Hiroki Yamauchi, Naoto Metoki, Ryuta Watanuki, Kazuya Suzuki, Hiroshi Fukazawa, Songxue Chi, and Jaime A. Fernandez-Baca, *J. Phys. Soc. Jpn* **86**, 044705 (2017)
61. **Itinerant Antiferromagnetism in RuO₃** Berlijn, P. C. Snijders, O. Delaire, H.-D. Zhou, T. A. Maier, H.-B. Cao, S. Chi, M. Matsuda, Y. Wang, M. R. Koehler, P. R. C. Kent, and H. H. Weitering *Phys. Rev. Lett.* **118**, 077201 (2017)
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63. **Phase diagram and neutron spin resonance of superconducting NaFe_{1-x}Cu_xAs** Guotai Tan, Yu Song, Rui Zhang, Lifang Lin, Zhuang Xu, Long Tian, Songxue Chi, Barry Winn, M. K. Graves-Brook, Shiliang Li, and Pengcheng Dai *Phys. Rev. B* **95**, 054501 (2017)
64. **A Mott insulator continuously connected to iron pnictide superconductors** Song Y., Yamani Z., Cao C., Li Y., Zhang C., Chen J.S., Huang Q.Z., Wu H., Tao J., Zhu Y., Tian W., Chi S.X., Cao H.B., Huang Y.B., Dantz M., Schmitt T., Yu R., Nevidomskyy A.H., Morosan E., Si Q., Dai P.C., *Nature Communications*, **7**, 13879 (2016)
65. **Magnetic precursor of the pressure-induced superconductivity in Fe-ladder compound** Songxue Chi, Yoshiya Uwatoko, Huibo Cao, Yasuyuki Hirata, Kazuki Hashizume, Takuya Aoyama, and Kenya Ohgushi *Phys. Rev. Lett.* **117**, 047003 (2016)

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77. **The effects of Co_3O_4 on the structure and unusual magnetism of LaCoO_3** A M Durand, T J Hamil, D P Belanger, S Chi, F Ye, J A Fernandez-Baca, Y Abdollahian and C H Booth *J. Phys.: Condens. Matter* **27** 126001 (2015)
78. **Temperature and composition phase diagram in the iron-based ladder compounds $\text{Ba}_{1-x}\text{Cs}_x\text{Fe}_2\text{Se}_3$** Takafumi Hawaii, Yusuke Nambu, Kenya Ohgushi, Fei Du, Yasuyuki Hirata, Maxim Avdeev, Yoshiya Uwatoko, Yurina Sekine, Hiroshi Fukazawa, Jie Ma, Songxue Chi, Yutaka Ueda, Hideki Yoshizawa, and Taku J. Sato *Phys. Rev. B* **91**, 184416 (2015)
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127. **Effect of magnetic field on the spin resonance in $\text{FeTe}_{0.5}\text{Se}_{0.5}$ as seen via inelastic neutron scattering** Jinsheng Wen, Guangyong Xu, Zhijun Xu, Zhi Wei Lin, Qiang Li, Ying Chen, Songxue Chi, Genda Gu, J. M. Tranquada *Phys. Rev. B* **81**, 100513(R) (2010)
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TALKS AND PRESENTATIONS

Invited talks:

1. Effect of antiferromagnetic spin correlations on lattice distortion and charge ordering in $\text{Pr}_{0.5}\text{Ca}_{1.5}\text{MnO}_4$

Invited seminar at the Dept. of Phys. of University of Tennessee (Oct. 2007)

2. Evolution of CE-phase in layered manganites

Seminar at NIST Center for Neutron Research (Aug. 2008)

3. Spin fluctuations in iron-based superconductors

Seminar at NIST Center for Neutron Research (June 2009)

4. Crystalline Electric Field (CEF) as a probe for AFM order and SC state of $\text{CeFeAsO}_{1-x}\text{F}_x$

Seminar at ORNL (June 2010)

5. Magnetic phase transitions of Ni-doped MnTiO_3

Seminar at ORNL (Dec. 2011)

6. Magnetic structure and spin dynamics of the intercalated iron selenide superconductors

Seminar at ORNL (Oct. 2013)

7. HB3 Backend Upgrade Plan

Seminar at ORNL (Oct. 2015)

8. HB3 Neutron Velocity Selector Project

Scientific Productivity Steering Committee Meeting (Sept. 2016)

9. Status of Triple-axis Spectrometers at HFIR

Quantum Materials Young Investigator Workshop (June 2018)

10. Harnessing the High Flux: Neutron Scattering Instrumentation at HFIR

NSD and NTD Seminar Series: Why Neutrons

Conference Oral Presentations

1. Current-Voltage Characteristic of Pulsed Laser Ablated SrBi₂Ta₂O₃ Thin Films

2001 Physical Society-Spring Meeting. (South Korea)

2. Structural and magnetic properties of single layered manganite Pr_{0.5}Ca_{1.5}MnO₄

2006 American Physical Society March Meeting

3. Magnetic structure and crystal field potential of PrOs₄As₁₂

2007 American Physical Society March Meeting

4. Phase separation in Pr_{0.55}Ca_{1.45}MnO₄ evidenced by magnetic excitations

2008 American Physical Society March Meeting

5. The crystal electric field as a probe for long range magnetic ordering and superconductivity in CeFeAsO_{1-x}F_x

2009 American Physical Society March Meeting

6. Evolution of the bulk properties, structure, magnetic order and superconductivity with Ni doping in CaFe_{2-x}Ni_xAs₂

2010 American Physical Society March Meeting

7. Neutron study of spin fluctuations in iron chalcogenide

2011 American Physical Society March Meeting

8. Elastic neutron scattering study of BaMn_{0.97}Li_{0.03}O₃ single crystal

2011 American Crystallographic Association Meeting

9. Magnetic phase transitions in single crystalline Mn_{1-x}Ni_xTiO₃

2012 American Physical Society March Meeting

10. Effective J₁-J₂ model for the spin wave in the superconducting (Tl,Rb)₂Fe₄Se₅

2013 American Physical Society March Meeting

11. Magnetic order and negative thermal expansion in Ca₂Ru_{1-x}Fe_xO₄

2014 American Physical Society March Meeting

12. Neutron scattering studies on semiconducting Rb_{0.8}Fe_{1.5}S

2015 American Physical Society March Meeting

13. The pressure effects on the antiferromagnetic orders in iron-based ladder compounds BaFe₂S₃

2016 American Physical Society March Meeting

14. Magnetic precursor of the pressure-induced superconductivity in Fe-ladder compound

2017 American Physical Society March Meeting

15. The magnetic field effect on the two competing magnetic phases in Ca₂Ru_{0.92}Fe_{0.08}O₄

2018 American Physical Society March Meeting

16. Competition of three-dimensional magnetic phases in Ca₂Ru_{1-x}Fe_xO₄: A structural perspective

2021 American Physical Society March Meeting

17. Field-induced spin reorientation transition in Ca₂Ru_{1-x}Fe_xO₄

2024 American Physical Society March Meeting

18. Backend Redesign of the High-flux Triple-Axis Spectrometer TAX

2024 Design and Engineering of Neutron Instruments Meeting (DENIM XIII)

19. Magnetic competitions in Ca₃(Ru_{1-x}Ti_x)₂O₇

2025 American Physical Society March Meeting

FUNDINGS

PI: 2025 Graduate Research at ORNL (GRO), Awarded funding to mentor graduate student

PI: 2024 HB3 Backend Rebuild

PI: 2024 Graduate Research at ORNL (GRO), Awarded funding to mentor graduate student

PI: 2024 Proposal "Probing Spin-Orbit Mott Insulators with Pressure" was awarded funding to mentor a postdoc associate.

PI: 2016 HB3 Neutron Velocity Selector

Co-PI: 2013 WAND Phase-One Upgrade

Contributor 2024 Mag-L, 11T 50mm cryogen free magnet for HFIR beamlines

Contributor 2023 LDRD GPU-based Resolution And Visualization Interface for Triple-Axis Spectrometers

Contributor 2021 Alignment Robot for Large Format Neutron Sample Environments with Square One Systems- Design, Inc., Funding for SBIR/STTR

Collaborator 2021 NSF CAREER funding and DOE EPSCoR funding. "Machine Learning Assisted Discovery of Nanostructures with Significant Phonon Localization" PI: Yan Wang University of Nevada, Reno

SERVICES

Workshops

Lead Organizer August 2020 Neutrons and Complementary Techniques for Quantum Materials

Lead Organizer September 2022 Neutrons and Complementary Techniques for Quantum Materials

Lead Organizer July 2024 Neutrons and Complementary Techniques for Quantum Materials

Advisory Board

Since Sept. 2022 Advisory board member of the DOE supported consortium CA2REERs

Funding Reviews

2024 Discovery and Innovation Grant for the University of Wisconsin-Milwaukee

2024 Technical Reviewer for ORNL LDRD proposal

Manuscript Reviews

More than **75** verified reviews of manuscripts for 20 research journals such as *Nature Physics*, *Nature Communications*, *Physical Review Letters*, *Physical Review B* and *Journal of Physics:Condensed Matter*.

Proposal Reviews

Since 2010, NCNR proposal reviews

Session Chair at Conferences

1. Session K6: Ruthenates 2016 American Physical Society March Meeting
2. Session A43: Spin Orbit Physics in Oxides I 2017 American Physical Society March Meeting
3. Session X11: Fe-based superconductivity - Neutron scattering and magnetism 2018 American Physical Society March Meeting
4. Session N24: Interplay of magnetism and superconductivity 2025 APS Global Physics Summit

Editorial Roles:

Associate Editor for ***Frontiers in Electronic Materials***

Instrument Development and Upgrades:

BT7 Analyzer System (NIST Center for Neutron Research)

WAND Single Crystal Measurement Capability and Phase I Upgrade (HFIR ORNL)

HB3 Sample Area Omega Shielding (HFIR ORNL)

HB3 Neutron Velocity Selector Project (HFIR ORNL)

HB3 Backend Redesign (HFIR ORNL)

Technical Support:

High-Temperature Steering committee

HFIR Alignment Station Upgrade Plan Group

IPTS Feasibility Review Working Group
HFIR Beam Room Planning Working Group
"Wash Up Meeting" Working Group

Other Services:

Since 2021 NSD Award Committee