

# Travis J. Williams

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PERSONAL

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## EMPLOYMENT

### UT-Battelle LLC, Oak Ridge National Laboratory

November 1, 2016 - present

#### Instrument Scientist

Supervisor: Dr. Jaime Fernandez-Baca

- Elastic and Inelastic Neutron Scattering
- Leading the effort for a new Muon Spectroscopy facility at ORNL.
  - Three workshops organized
  - Leading authorship of 3 published workshop reports, 2 journal publications
  - PI of Seed LDRD “*Laser Stripping for a Next-Generation Muon Source*”
  - Submission of 2 NSF full proposals
- Preparation of the Scientific Justification for the Second Target Station
  - *Two workshops organized*
  - *Editor and co-author of “Early Scientific Opportunities at the Second Target Station”*
- Science Lead for the planned MANTA Instrument, HFIR
  - McStas simulations and beamline design
  - Internal and external presentations
- Three Invited, 7 Contributed Conference presentations, 3 First Authored publications, 9 Co-authored publications

### UT-Battelle LLC, Oak Ridge National Laboratory

November 4, 2013 – October 31, 2016

#### Eugene P. Wigner Fellow

Supervisor: Dr. Mark Lumsden

- Elastic and Inelastic Neutron Scattering
  - *Twelve Time-of-Flight Experiments on 4 Spectrometers at the Spallation Neutron Source*
  - *Twenty-one Triple Axis Experiments on 6 spectrometers at the High Flux Isotope Reactor*
- Characterization techniques, including:
  - *Laue, Powder and Single Crystal X-ray Diffraction*
  - *SQUID Magnetometry*
  - *Transport Measurements*
- Crystal Growth techniques
- Four Conference presentations, 2 First Authored publications, Seven Co-authored publications

**McMaster University**

*September 3, 2007 – October 31, 2013*

**Graduate Student**

*Supervisor: Dr. Graeme Luke*

- Muon Spin Rotation
  - *More than 50 Experiments at TRIUMF, Vancouver, Canada*
- Inelastic Neutron Scattering
  - *Experiments at Chalk River National Lab and NIST Center for Neutron Research*
- Characterization techniques, including:
  - *Laue, Powder and Single Crystal X-ray Diffraction*
  - *SQUID Magnetometry*
  - *Transport Measurements*
- Crystal Growth techniques
- Six Conference presentations, 3 First-Authored publications, Twenty-three Co-authored publications

**EDUCATION**

**McMaster University, Hamilton, Ontario, Canada**

Doctor of Philosophy, Physics

*October 2013*

Thesis: “Electronic and Magnetic Properties of Ba(Fe,Co)<sub>2</sub>As<sub>2</sub> and URu<sub>2</sub>Si<sub>2</sub>”

**McMaster University, Hamilton, Ontario, Canada**

Master of Science, Physics

*September 2009*

Thesis: “Studies of the Ferromagnetic Superconductors URhGe and UCoGe”

**University of Western Ontario, London, Ontario, Canada**

Bachelor of Science (Hons.), Physics

*May 2007*

**OTHER SKILLS**

**Sample Environments** - Experience with He-4, He-3, Closed-Cycle and Dilution Refrigerators.  
- Neutron scattering and  $\mu$ SR in High Magnetic Fields and High Pressure

**Languages** – English, Fluent; French, Professional Proficiency

**Software** - Microsoft Office, Matlab, Origin, LaTeX. McPhase, Mcstas

**Analysis Packages** - DAVE/MSlice, Horace, SpinW, RESLIB, Mantid (neutron)  
- MSRFit, muSRfit ( $\mu$ SR)

**PUBLICATIONS****First Author**

1. **T.J. Williams**, G.J. MacDougall, B.W. Reimer, F.X. Gallmeier, C.R. dela Cruz and D. Louca. (2023) *SEEMS: A Single Event Effects and Muon Spectroscopy facility at the Spallation Neutron Source*. Rev. Sci. Instrum. **94**, 033908.  
DOI: 10.1063/5.0135721 CITATIONS: 0
2. **T.J. Williams**, H. Barath, Z. Yamani, J.A. Rodriguez-Riviera, J.B. Leao, J.D. Garrett, G.M. Luke, W.J.L. Buyers and C. Broholm. (2017) *Gapped Excitations in the High-Pressure Antiferromagnetic Phase of URu<sub>2</sub>Si<sub>2</sub>*. Physical Review B. **95**, 195171. [Editor's suggestion]  
DOI: 10.1103/PhysRevB.95.195171 CITATIONS: 12
3. **T.J. Williams**, M.N. Wilson, A.A. Aczel, M.B. Stone and G.M. Luke. (2017) *Hidden Order Signatures in the Antiferromagnetic Phase of U(Ru<sub>1-x</sub>Fe<sub>x</sub>)<sub>2</sub>Si<sub>2</sub>*. Physical Review B. **95**, 104440.  
DOI: 10.1103/PhysRevB.95.104440 CITATIONS: 15
4. **T.J. Williams**, A.E. Taylor, A.D. Christianson, S.E. Hahn, R.S. Fishman, D.S. Parker, M.A. McGuire, B.C. Sales and M.D. Lumsden. (2016) *Extended Magnetic Exchange Interactions in the High-Temperature Ferromagnet MnBi*. Applied Physics Letters. **108** 192403.  
DOI: 10.1063/1.4948933 CITATIONS: 41
5. **T.J. Williams**, A.A. Aczel, M.D. Lumsden, S.E. Nagler, M.B. Stone, J.-Q. Yan and D. Mandrus. (2015) *Magnetic Correlations in the Quasi-2D Semiconducting Ferromagnet CrSiTe<sub>3</sub>*. Physical Review B **92** 144404.  
DOI: 10.1103/PhysRevB.92.144404 CITATIONS: 143
6. **T.J. Williams**, N.P. Butch, G.M. Luke, M.B. Maple, Z. Yamani and W.J.L. Buyers. (2012) *Neutron Scattering Study of URu<sub>2-x</sub>Re<sub>x</sub>Si<sub>2</sub> with x=0.10: Driving Order Towards Quantum Criticality*. Physical Review B **86** 235104.  
DOI: 10.1103/PhysRevB.86.235104 CITATIONS: 12
7. **T.J. Williams**, A.A. Aczel, S.L. Bud'ko, P.C. Canfield, J.P. Carlo, T. Goko, N.Ni, S.R. Saha, J. Paglione, Y.J. Uemura and G.M. Luke. (2010) *Superfluid Density and Field-Induced Magnetism in Ba(Fe<sub>1-x</sub>Co<sub>x</sub>)<sub>2</sub>As<sub>2</sub> and Sr(Fe<sub>1-x</sub>Co<sub>x</sub>)<sub>2</sub>As<sub>2</sub> Measured with Muon Spin Relaxation*. Physical Review B **82** 094512.  
DOI: 10.1103/PhysRevB.82.094512 CITATIONS: 53
8. **T.J. Williams**, A.A. Aczel, E. Baggio-Saitovich, S.L. Bud'ko, P.C. Canfield, J.P. Carlo, T. Goko, J. Munevar, N. Ni, Y.J. Uemura, W. Yu, G.M. Luke. (2009) *Muon Spin Rotation Measurement of the Magnetic Field Penetration Depth in Ba(Fe<sub>0.93</sub>Co<sub>0.07</sub>)<sub>2</sub>As<sub>2</sub>: Evidence for Multiple Superconducting Gaps*. Physical Review B **80** 094501  
DOI: 10.1103/PhysRevB.80.094501 CITATIONS: 101

### Other Authored Papers

9. S.-H. Do, H. Zhang, D.A. Dahlbom, **T.J. Williams**, V.O. Garlea, T. Hong, T.-H. Jang, S.-W. Cheong, J.-H. Park, K. Barros, C.D. Batista and A.D. Christianson. (2023) *Understanding temperature-dependent  $SU(3)$  spin dynamics in the  $S=1$  antiferromagnetic  $Ba_2FeSi_2O_7$* . npj Quantum Mater. **8**, 5.  
DOI: 10.1038/s41535-022-00526-7 CITATIONS: 1
10. Q. Ma, E.M. Smith, Z.W. Cronkwright M. Dragomir, G. Mitchell, B.W. Winn, **T.J. Williams** and B.D. Gaulin. (2022) *Magnetic Field Tuning of Parallel Spin Stripe Order and Fluctuations near the Pseudogap Quantum Critical Point in  $La_{1.6-x}Nd_{0.4}Sr_{0.24}CuO_4$* . Phys. Rev. B. **106**, 214427.  
DOI: 10.1103/PhysRevB.106.214427 CITATIONS: 0
11. X. Bai, F. Lechermann, Y. Liu, Y. Cheng, A.I. Kolesnikov, F. Ye, **T.J. Williams**, S. Chi, G.E. Granroth, A.F. May and S. Calder. (2022) *Antiferromagnetic fluctuations and orbital-selective Mott transition in the van der Waals ferromagnet  $Fe_{3-x}GeTe_2$* . Phys. Rev. B. **106**, L180409.  
DOI: 10.1103/PhysRevB.106.L180409 CITATIONS: 0
12. A.A. Aczel, Q. Chen, J.P. Clancy, C. dela Cruz, D. Reif-i-Plessis, G.J. MacDougall, C.J. Pollock, M.H. Upton, **T.J. Williams**, N. LaManna, J. Beare, G.M. Luke and H.D. Zhou. (2022) *Spin-orbit coupling controlled ground states in the double perovskite iridates  $A_2BIrO_6$  ( $A=Ba, Sr$ ;  $B=Lu, Sc$ )*. Phys. Rev. Mat. **6**, 094409.  
DOI: 10.1103/PhysRevMaterials.6.094409 CITATIONS: 0
13. S.-H. Do, J.A. Paddison, G. Sala, **T.J. Williams**, K. Kaneko, K. Kuwahara, A.F. May, J. Yan, M.A. McGuire, M.B. Stone, M.D. Lumsden and A.D. Christianson. (2022) *Gaps in Topological Magnon Spectra: Intrinsic vs. Extrinsic Effects*. Phys. Rev. B. **106**, L060408.  
DOI: 10.1103/PhysRevB.106.L060408 CITATIONS: 5
14. D. Louca, G.J. MacDougall and **T.J. Williams**. (2022) *Report from: US Muon Workshop 2021: A Road Map for a Future Muon Facility February 1-2, 2021*. Neutron News. **2022**, 1.  
DOI: 10.1080/10448632.2022.2094141 CITATIONS: 1
15. S. Hameed, J. Joe, L.R. Thoutam, J.G. Barriocanal, B. Yu, G. Yu, S. Chi, T. Hong, **T.J. Williams**, J.W. Freeland, P. Gehring, Z. Xu, M. Matsuda, B. Jalan and M. Greven. (2022) *Growth and Characterization of large  $(Y,La)TiO_3$  and  $(Y,Ca)TiO_3$  single crystals*. Physical Review Materials. **5**, 125003.  
DOI: 10.1103/PhysRevMaterials.5.125003 CITATIONS: 4
16. S.-H. Do, H. Zhang, **T.J. Williams**, T. Hong, V.O. Garlea, T.-H. Jang, S.-W. Cheong, J.-H. Park, C.D. Batista and A.D. Christianson. (2021) *Decay and Renormalization of a longitudinal mode in a quasi-two-dimensional antiferromagnet*. Nature Communications **12**, 5331.  
DOI: 10.1038/s41467-021-25591-7 CITATIONS: 10

17. S. Hameed, S. El-Khatib, K.P. Olson, B. Yu, **T.J. Williams**, T. Hong, Q. Sheng, K. Yamakawa, J. Zang, Y.J. Uemura, G. Zhao, C. Jin, L. Fu, Y. Gu, F. Ning, Y. Cai, K. M. Kojima, J.W. Freeland, M. Matsuda, C. Leighton, and M. Greven. (2021) *Nature of the ferromagnetic-antiferromagnetic transition in  $Y_{1-x}La_xTiO_3$* . Physical Review B. **104**, 024410.  
DOI: 10.1103/PhysRevB.104.024410                      CITATIONS: 11
18. Y. Shen, C.N. Saunders, C.M. Bernal, D.L. Abernathy, **T.J. Williams**, M.E. Manley and B. Fultz. (2021) *Prediction and Observation of Intermodulation Sidebands from Anharmonic Phonons*. Physical Review B. **103** 134302.  
DOI: 10.1103/PhysRevB.103.134302                      CITATIONS: 0
19. D. Reig-i-Plessis, T.A. Johnson, K. Lu, Q. Chen, J.P.C. Ruff, M.H. Upton, **T.J. Williams**, S. Calder, H.D. Zhou, J.P. Clancy, A.A. Aczel and G.J. MacDougall. (2020) *Structural, electronic, and magnetic properties of nearly-ideal  $J_{\text{eff}} = 1/2$  iridium halides*. Physical Review Materials. **4** 124407.  
DOI: 10.1103/PhysRevMaterials.4.124407                      CITATIONS: 10
20. G. Pokharel, H. Suriya Arachige, **T.J. Williams**, A.F. May, R.S. Fishman, G. Sala, S. Calder, G. Ehlers, D.S. Parker, T. Hong, A. Wildes, D. Mandrus, J.A.M. Paddison and A.D. Christianson. (2020) *Cluster Frustration in the Breathing Pyrochlore Magnet  $LiGaCr_4S_8$* . Physical Review Letters. **125**, 167201. [Editor's suggestion]  
DOI: 10.1103/PhysRevLett.125.167201                      CITATIONS: 20
21. S. Calder, A. Haglund, Y. Liu, D.M. Pajerowski, H.B. Cao, **T.J. Williams**, V.O. Garlea and D. Mandrus. (2020) *Magnetic structure and exchange interactions in the layered semiconductor  $CrPS_4$* . Physical Review B **102** 024408.  
DOI: 10.1103/PhysRevB.102.024408                      CITATIONS: 24
22. Y. Liu, A. Rakhman, C.D. Long, Y. Liu and **T.J. Williams**. (2020) *Laser-Assisted High-Energy Proton Pulse Extraction for Feasibility Study of Co-located Muon Source at the SNS*. Nuclear Inst. And Methods A. **962**, 163706.  
DOI: 10.1016/j.nima.2020.163706                      CITATIONS: 6
23. H. Zhang, S. Liu, C. Nelson, L.N. Bezmaternykh, Y.-S. Chen, S.Y. Wang, R. Lobo, K. Page, M. Matsuda, D. Pajerowski, **T.J. Williams** and T.A. Tyson. (2019) *Structural Features Enabling Multiferroic Behavior in the  $RX_3(BO_3)_4$  System*. Journal of Physics: Condensed Matter. **31**, 505704.  
DOI: 10.1088/1361-648X/ab415f                      CITATIONS: 4
24. A.A. Aczel, J.P. Clancy, Q. Chen, H.D. Zhou, D. Reig-i-Plessis, G.J. MacDougall, J.P.C. Ruff, M.H. Upton, Z. Islam, **T.J. Williams**, S. Calder and J.-Q. Yan. (2019) *Revisiting the Kitaev material candidacy of  $Ir^{4+}$  double perovskite iridates*. Phys. Rev. B. **99**, 134417.  
DOI: 10.1103/PhysRevB.99.134417                      CITATIONS: 27
25. A.A. Aczel, L.S. DeBeer-Schmitt, **T.J. Williams**, M.A. McGuire, N. Ghimire, L. Li and D. Mandrus. (2018) *Extended exchange interactions stabilize long-period magnetic structures in  $Cr_{1/3}NbS_2$* . Appl. Phys. Lett. **113**, 032404.  
DOI: 10.1063/1.5038021                      CITATIONS: 14

26. A.V. Zakrzewski, S. Gangopadhyay, G.J. MacDougall, A.A. Aczel, S.H. Calder and **T.J. Williams**. (2018) *Evolution of Magnetic and Orbital Properties in the Magnetically-Diluted A-Site Spinel  $Cu_{1-x}Zn_xRh_2O_4$* . Phys. Rev. B. **97**, 214411.  
DOI: 10.1103/PhysRevB.97.214411 CITATIONS: 10
27. T.J.S. Munsie, M.N. Wilson, A. Millington, C.M. Thompson, R. Flacau, C. Ding, S. Guo, Z. Gong, A.A. Aczel, H.B. Cao, **T.J. Williams**, H.A. Dabkowska, F. Ning, J.E. Greedan, and G.M. Luke. (2017) *Neutron Diffraction and  $\mu$ SR Studies of Two Polymorphs of Nickel Niobate ( $NiNb_2O_6$ )*. Phys. Rev. B **96**, 144417.  
DOI: 10.1103/PhysRevB.96.144417 CITATIONS: 8
28. D. Ziat, A.A. Aczel, R. Sinclair, Q. Chen, H.D. Zhou, **T.J. Williams**, M.B. Stone, A. Verrier and J.A. Quilliam. (2017) *Frustrated spin-1/2 molecular magnetism in the mixed-valence antiferromagnets  $Ba_3MRu_2O_9$  (M= In, Y, Lu)*. Phys. Rev. B. **95**, 184424.  
DOI: 10.1103/PhysRevB.95.184424 CITATIONS: 28
29. A.A. Aczel, A.M. Cook, **T.J. Williams**, S. Calder, A.D. Christianson, G.-X. Cao, D. Mandrus, Y.B. Kim and A. Paramakanti. (2016) *Highly-anisotropic exchange interactions of  $j_{\text{eff}} = 1/2$  iridium moments on the fcc lattice in  $La_2BIRo_6$  (B=Mg, Zn)*. Phys. Rev. B. **93** 214426.  
DOI: 10.1103/PhysRevB.93.214426 CITATIONS: 44
30. D.R. Gardner, C.J. Bonnoit, R. Chisnell, A.H. Said, B.M. Leu, **T.J. Williams**, G.M. Luke and Y.S. Lee. (2016) *Inelastic x-ray scattering measurements of phonon dynamics in  $URu_2Si_2$* . Phys. Rev. B. **93** 075123.  
DOI: 10.1103/PhysRevB.93.075123 CITATIONS: 8
31. M.N. Wilson, **T.J. Williams**, Y.-P. Cai, A.M. Hallas, T. Medina, T.J. Munsie, S.C. Cheung, B.A. Frandsen, L. Liu, Y.J. Uemura and G.M. Luke. (2016) *Antiferromagnetism and Hidden Order in Isoelectronic Doping of  $URu_2Si_2$* . Phys. Rev. B. **93** 064402.  
DOI: 10.1103/PhysRevB.93.064402 CITATIONS: 32
32. A.E. Taylor, 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. Cao, M.D. Lumsden and A.D. Christianson. (2015) *Influence of Interstitial Mn on Magnetism in Room-Temperature Ferromagnet  $Mn_{1+\delta}Sb$* . Phys. Rev. B. **91** 224418.  
DOI: 10.1103/PhysRevB.91.224418 CITATIONS: 26
33. L.D. Casto, A.J. Clune, M.O. Yokosuk, J.L. Musfeldt, **T.J. Williams**, H.L. Zhuang, M.-W. Lin, K. Xiao, R.G. Hennig, B.C. Sales, J-Q. Yan and D. Mandrus. (2015) *Strong Spin-Lattice Coupling in  $CrSiTe_3$* . APL Mat. **3** 041515.  
DOI: 10.1063/1.4914134 CITATIONS: 210
34. Y. Tsujimoto, A. Kitada, M. Nishi, Y. Narumi, K. Kindo, T. Goko, Y.J. Uemura, A.A. Aczel, **T.J. Williams**, G.M. Luke, Y. Ajiro and H. Kageyama. (2014) *Spin-singlet Ground State of Two-Dimensional Quantum Spin Antiferromagnet  $(CuCl)Ca_2Nb_3O_{10}$* . Journal of the Physical Society of Japan. **83** 074712.  
DOI: 10.7566/JPSJ.83.074712 CITATIONS: 4

35. J. Munevar, H. Micklitz, M. Alzamora, C. Arguello, T. Goko, F.L. Ning, A.A. Aczel, **T.J. Williams**, G.F. Chen, W. Yu, G.M. Luke, Y.J. Uemura, E. Baggio-Saitovich. (2014) *Magnetism in Superconducting  $\text{EuFe}_2\text{As}_{1.4}\text{P}_{0.6}$  Single Crystals Studied by Local Probes*. Solid State Communications. **187** 18.  
DOI: 10.1016/j.ssc.2014.02.001 CITATIONS: 18
36. R.M. D'Ortenzio, H.A. Dabkowska, S.R. Dunsinger, B.D. Gaulin, M.J.P. Gingras, T. Goko, J.B. Kycia, L. Liu, T. Medina, T.J. Munsie, D. Pomaranski, K.A. Ross, Y.J. Uemura, **T.J. Williams** and G.M. Luke. (2013) *Possible Quantum Spin Liquid Ground State in  $\text{Yb}_2\text{Ti}_2\text{O}_7$* . Physical Review B. **88** 134428  
DOI:10.1103/PhysRevB.88.041102 CITATIONS: 81
37. Cui Ding, Huiyuan Man, Chuan Qin, Jicai Lu, Yunlei Sun, Quan Wang, Biqiong Yu, Chunmu Feng, T. Goko, C. Arguello, L. Liu, B.J. Frandsen, Y.J. Uemura, Hangdong Wang, H. Luetkens, E. Morenzoni, W. Han, C.Q. Jin, T. Munsie, **T.J. Williams**, R.M. D'Ortenzio, T. Medina, G.M. Luke, T. Imai and F.L. Ning. (2013)  *$(\text{La}_{1-x}\text{Ba}_x)(\text{Zn}_{1-x}\text{Mn}_x)\text{AsO}$ : A Two-Dimensional "1111" Diluted Magnetic Semiconductor in Bulk Form*. Physical Review B. **88** 041102.  
DOI:10.1103/PhysRevB.88.041102 CITATIONS: 83
38. S. Chatterjee, J. Trinckauf, T. Hanke, D.E. Shai, J.W. Harter, **T.J. Williams**, G.M. Luke, K.M. Shen and J. Geck. (2013) *Formation of the coherent heavy fermion liquid at the 'hidden order' transition in  $\text{URu}_2\text{Si}_2$* . Physical Review Letters. **110** 186401.  
DOI: 10.1103/PhysRevLett.110.186401 CITATIONS: 51
39. U. Nagel, T. Uleksin, T. Room, R.P.S.M. Lobo, P. Lejay, C.C. Homes, J. Hall, A.W. Kinross, S. Purdy, **T.J. Williams**, G.M. Luke and T. Timusk. (2011) *The Normal State of  $\text{URu}_2\text{Si}_2$ : Spectroscopic Evidence for an Anomalous Fermi Liquid*. Proceedings of the National Academy of Sciences of the United States of America (2012) **109** 19161.  
DOI: 10.1073/pnas.1208249109 CITATIONS: 54
40. W.T. Guo, Z.G. Chen, **T.J. Williams**, J.D. Garrett, G.M. Luke and N.L. Wang. (2012) *Hybridization Gap versus Hidden Order Gap in  $\text{URu}_2\text{Si}_2$  as Revealed by Optical Spectroscopy*. Physical Review B **85** 195105.  
DOI: 10.1103/PhysRevB.85.195105 CITATIONS: 21
41. J.P. Carlo, T. Goko, I.M. Gat-Malureanu, P.L. Russo, A.T. Savici, A.A. Aczel, G.J. MacDougall, J.A. Rodriguez, **T.J. Williams**, G.M. Luke, C.R. Wiebe, Y. Yoshida, S. Nakatsuji, Y. Maeno, T. Taniguchi and Y.J. Uemura. (2012) *New Magnetic Phase Diagram of  $(\text{Sr,Ca})_2\text{RuO}_4$* . Nature Materials **11** 323-328.  
DOI: 10.1038/nmat3236 CITATIONS: 83
42. J.S. Hall, **T.J. Williams**, G.M. Luke, U. Nagel, T. Uleskin, T. Room and T. Timusk. (2012) *Observation of Multiple-Gap Structure in Hidden Order State of  $\text{URu}_2\text{Si}_2$  from Optical Conductivity*. Physical Review B **86** 035132.  
DOI: 1103/PhysRevB.86.035132 CITATIONS: 24
43. M.H. Hamidian, A.R. Schmidt, I. Firmo, P. Bradley, J.D. Garrett, **T.J. Williams**, G.M. Luke, Y. Dubi, A.V. Balatsky and J.C. Davis. (2011) *How Kondo-Holes Create Intense Nanoscale Heavy Fermion Hybridization Disorder*. Proceedings of the National Academy of Sciences of the United States of America **108** 18233.  
DOI: 10.1073/pnas.1115027108 CITATIONS: 57

44. S.R. Dunsinger, A.A. Aczel, C. Arguello, H. Dabkowska, A. Dabkowski, M.-H. Du, T. Goko, B. Javanparast, T. Lin, F. Ning, H.M. Noad, D.J. Singh, **T.J. Williams**, Y.J. Uemura, M.J. Gingras and G.M. Luke. (2011) *Spin Ice: Magnetic Excitations without Monopole Signatures using  $\mu$ SR*. Physical Review Letters **107** 207207  
DOI: 10.1103/PhysRevLett.107.207207 CITATIONS: 92
45. Z. Deng, C.Q. Jin, Q.Q. Liu, X.C. Wang, J.L. Zhu, S.M. Feng, L.C. Chen, R.C. Yu, C. Arguello, T. Goko, F. Ning, J. Zhang, Y. Wang, A.A. Aczel, T. Munsie, **T.J. Williams**, G.M. Luke, T. Kakeshita, S. Uchida, W. Higemoto, T.U. Ito, B. Gu, S. Maekawa, G.D. Morris and Y.J. Uemura. (2011) *Li(Zn,Mn)As: A New Generation Ferromagnet Based on the I-II-V Semiconductor*. Nature Communications **2** 422.  
DOI: 10.1038/ncomms1425 CITATIONS: 183
46. J. Munevar, D.R. Sanchez, M. Alzamora, E. Baggio-Saitovich, J.P. Carlo, T. Goko, A.A. Aczel, **T.J. Williams**, G.M. Luke, H.-H. Wen, X. Zhu, F. Han and Y.J. Uemura. (2011) *Static Magnetic Order of  $Sr_4A_2O_6Fe_2As_2$  ( $A = Sc$  and  $V$ ) Revealed by Local Probes*. Physical Review B **84** 024527.  
DOI: 10.1103/PhysRevB.84.024527 CITATIONS: 30
47. E. Steven, A. Kiswandhi, D. Krstovka, J. Brooks, M. Almeida, A.P. Goncalves, M.S. Henriques, G. Luke and **T.J. Williams**. (2011) *Robust Properties of the Superconducting Ferromagnet UCoGe*. Applied Physics Letters **98** 132507.  
DOI: 10.1063/1.3572034 CITATIONS: 15
48. Y. Tsujimoto, A. Kitada, J.P. Carlo, Y.J. Uemura, T. Goko, A.A. Aczel, **T.J. Williams**, G.M. Luke, Y. Narumi, K. Kindo, M. Nishi, Y. Ajiro, K. Yoshimura and H. Kageyama. (2010) *Two-Dimensional  $S = 1$  Quantum Antiferromagnet ( $NiCl$ ) $Sr_2Ta_3O_{10}$* . Chemistry of Materials **2010** 4625.  
DOI: 10.1021/sm100660v CITATIONS: 17
49. A.A. Aczel, **T.J. Williams**, T. Goko, J.P. Carlo, W. Yu, Y.J. Uemura, T. Klimczuk, R.J. Cava and G.M. Luke. (2010) *Muon spin rotation/relaxation measurements of the non-centrosymmetric superconductor  $Mg_{10}Ir_{19}B_{16}$* . Physical Review B **82** 024520.  
DOI: 10.1103/PhysRevB.82.024520 CITATIONS: 31
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## AWARDS

### Laboratory Director's Research and Development Seed Fund

UT-Battelle, LLC, Oak Ridge National Laboratory  
 October 2017  
 Value: \$189,000 over two years

### Eugene P. Wigner Fellowship

UT-Battelle, LLC, Oak Ridge National Laboratory  
 November 2013  
 Value: \$224,000 over two years

### Frank Denee Scholarship

McMaster University  
 September 2011  
 Value: \$6,000

### Carl Westcott Fellowship

TRIUMF  
 September 2011  
 Value: \$7,400

**David and Grace Prosser Scholarship**

McMaster University / Ontario Graduate Scholarship Program  
*September 2009*  
Value: \$15,000

**Frank Denee Scholarship**

McMaster University  
*September 2009*  
Value: \$6,000

**Eugene Bolotkin Scholarship**

McMaster University  
*September 2007*  
Value: \$11,000

**OTHER ACADEMIC CONTRIBUTIONS**

Contributed Talk at the American Physical Society (APS) 2023 March Meeting Conference: *“Nature of the Dirac Magnon Gap in the van der Waal Ferromagnet CrSiTe<sub>3</sub>”*.

Contributed Talk at the American Conference on Neutron Scattering 2022 Conference: *“Development of the Multi-Analyzer Neutron Triple Axis (MANTA) Spectrometer at ORNL”*.

Contributed Talk at the American Physical Society (APS) 2021 March Meeting Conference: *“Competing interactions in the quasi-2D heavy fermion Ce<sub>2</sub>RhIn<sub>8</sub>”*.

Organized the Workshop: *“US Muon Workshop 2021: A road map for a future Muon Facility”*. February 1-2, 2021

Contributed Talk at the 15<sup>th</sup> International Conference on Muon Spin Rotation, Relaxation and Resonance: *“SEEMS: a potential Muon Source at Oak Ridge National Laboratory”*. July 5-10, 2020.

Contributed Talk at the American Physical Society (APS) 2020 March Meeting Conference: *“Magnetic Correlations in the Quasi-2D Semiconducting Ferromagnet CrGeTe<sub>3</sub>”*.

Organized the Workshop: *“Inaugural Meeting on the Opportunities at the SEEMS Facility”*. June 10-12, 2019

Invited Talk at the Workshop, *“Quantum Condensed Matter Young Investigators Meeting”*: titled *“SEEMS: a Single Event Effects & Muon Spectroscopy facility at the Spallation Neutron Source”*. June 6-7, 2019

Contributed Talk at the American Conference on Neutron Scattering 2018 Conference: *“Hidden Order Signatures in the Antiferromagnetic Phases of URu<sub>2</sub>Si<sub>2</sub> under Chemical and Hydrostatic Pressure”*.

Invited Talk at the American Physical Society (APS) 2018 March Meeting Conference: *“Hidden Order Signatures in the Antiferromagnetic Phases of URu<sub>2</sub>Si<sub>2</sub> under Chemical and Hydrostatic Pressure”*.

Organized the Workshop: “*Synthesis and Collective Phenomena in 2D and Layered Materials*”. July 31, 2017.

Invited Talk at the Workshop, “*Quantum Condensed Matter Young Investigators Meeting*”: titled “*Quantum Condensed Matter Science at the Second Target Station*”. June 15-16, 2017

Contributed Talk at the 14<sup>th</sup> International Conference on Muon Spin Relaxation, Rotation and Resonance: “*Future Muon Source Possibilities at the Spallation Neutron Source*”.

Contributed Talk at the American Physical Society (APS) 2017 March Meeting Conference: “*Magnetic Correlations in URu<sub>2</sub>Si<sub>2</sub> under Chemical and Hydrostatic Pressure*”.

Organized the Workshop, “*Early Quantum Materials Science at the Second Target Station*”. Jan. 5-6, 2017.

Organized the Workshop, “*Future Muon Source Possibilities at the Spallation Neutron Source*”, Sept. 1-2, 2016.

Contributed Talk at the American Conference on Neutron Scattering 2016 Conference: “*Extended Magnetic Exchange Interactions in the High-Temperature Ferromagnet MnBi*”.

Contributed Talk at the American Physical Society (APS) 2016 March Meeting Conference: “*Magnetic Structure and Dynamics in the Itinerant High-Temperature Ferromagnet MnBi*”.

Contributed Talk at the American Physical Society (APS) 2015 March Meeting Conference: “*Magnetic Correlations in the Quasi-2D Semiconducting Ferromagnet CrSiTe<sub>3</sub>*”.

Poster Presentation at the American Conference on Neutron Scattering 2014: “*Effect of Iron Doping on the Magnetic Structure of U(Ru<sub>1-x</sub>Fe<sub>x</sub>)<sub>2</sub>Si<sub>2</sub>*”.

Poster Presentations at the ICAM-FAPERJ 2013 Summer Institute: “*Spin Correlations in the Different Phases of URu<sub>2</sub>Si<sub>2</sub>*”.

Contributed Talk at the American Physical Society (APS) 2013 March Meeting Conference: “*Spin Correlations in the Different Phases of URu<sub>2</sub>Si<sub>2</sub>*”.

Contributed Talk at the American Conference on Neutron Scattering 2012 Conference: “*Spin Correlations in the Different Phases of URu<sub>2</sub>Si<sub>2</sub>*”.

Poster Presentation at the Canadian Institute for Advanced Research (CIFAR) Quantum Materials 2011 Conference: “*Neutron Scattering Studies of URu<sub>2-x</sub>Re<sub>x</sub>Si<sub>2</sub> with x=0.1: Driving Hidden Order Toward Quantum Criticality*”.

Contributed Talk at the 12th International Conference on Muon Spin Rotation, Relaxation and Resonance ( $\mu$ SR 2011). “ *$\mu$ SR Studies of Electron-doped 122 Pnictide Superconductors*”

Contributed Talk at the American Physical Society (APS) 2011 March Meeting Conference. “*Neutron Scattering Studies of URu<sub>2-x</sub>Re<sub>x</sub>Si<sub>2</sub> with x=0.1: Driving Hidden Order Toward Quantum Criticality.*”

Contributed Talk at the American Physical Society (APS) 2010 March Meeting Conference. “ *$\mu$ SR Studies of Electron-doped 122 Pnictide Superconductors*”

Contributed Talk at the American Physical Society (APS) 2009 March Meeting Conference.  
*“Studies of the Ferromagnetic Superconductors URhGe and UCoGe”*