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DAVID M. NISSON

Career Objective:

Software developer or data scientist

Education:

University of California, Davis, B.S. with Highest Honors in Physics, June 2010.

University of California, Davis, M.S. in Physics, September 2013.

University of California, Davis, Ph. D. in Physics, June 2015.

Research Experience:

- Intern for Dr. Nicholas J. Curro, Theoretical and Computational Physicist (September 2016-present)
- Intern for Dr. Adam Moule, Data Analyst (February 2016-August 2016)
- Volunteer Intern for SpinEvolution Software (March 2015-March 2016)
 - Simulating nuclear magnetic resonance (NMR) in periodic crystal lattices using SpinEvolution
- Graduate Student Researcher in Condensed Matter Physics for Dr. N. J. Curro, UC Davis (Summer 2010-June 2015)
 - Growing and synthesizing large single crystals of the compounds Bi_2Se_3 and $\text{Bi}_2\text{Te}_2\text{Se}$
 - Using NMR to probe bismuth chalcogenide topological insulators
 - Theoretically and computationally predicting NMR properties in advanced materials
- Research Assistant in High Energy Physics for Dr. John Conway, UC Davis (Spring 2009-Summer 2010)

Research Presentations:

- April 2014 – Nuclear Magnetic Resonance as a Probe of the Topological Insulator Bi_2Se_3
 - MRS Spring Meeting 2014
 - Moscone West Convention Center, San Francisco, California
- March 2014 – Anomalous Nuclear Magnetic Resonance Spectra in Powdered Bi_2Se_3
 - APS March Meeting 2014
 - Colorado Convention Center, Denver, Colorado
- March 2013 – Nuclear Magnetic Resonance as a Probe of the Electronic States of Bi_2Se_3
 - APS March Meeting 2013
 - Baltimore Convention Center, Baltimore, Maryland
- April 2012 – Nuclear Magnetic Resonance Measurements of Cu- and Ca-doped Bi_2Se_3 (poster)
 - Interdisciplinary Graduate and Professional Symposium
 - University of California, Davis
- November 2011 - Bulk Nuclear Magnetic Resonance Measurements of Topological Insulators
 - California APS Section Meeting 2011
 - Stanford Linear Accelerator Center, Menlo Park

- February 2010 – 2-D Gaussian Fit Algorithm for Tagging Boosted Top Quarks
 - “CPAPS Day” at the Physics Department
 - University of California, Davis
- April 2009 – Use of Neural Networks to find Evidence of Extra Dimensions of Spacetime (poster)
 - Undergraduate Research Conference
 - University of California, Davis

Publications:

- **D. M. Nisson**, N. J. Curro. *Nuclear magnetic resonance Knight shifts in the presence of strong spin-orbit and crystal-field potentials*. New Journal of Physics **18**, 073041 (2016)
- **D. M. Nisson**, A. P. Dioguardi, X. Peng, D. Yu, and N. J. Curro. *Anomalous nuclear magnetic resonance spectra in Bi₂Se₃ nanowires*. Phys. Rev. B **90**, 125121 (2014)
- K. R. Shirer, J. T. Haraldsen, A. P. Dioguardi, J. Crocker, N. apRoberts-Warren, A. C. Shockley, C.-H. Lin, **D. M. Nisson**, J. C. Cooley, M. Janoschek, K. Huang, N. Kanchanavatee, M. B. Maple, M. J. Graf, A. V. Balatsky, and N. J. Curro. *Nuclear magnetic resonance studies of pseudospin fluctuations in URu₂Si₂*. Phys. Rev. B **88**, 094436 (2013)
- A. C. Shockley, N. apRoberts-Warren, **D. M. Nisson**, P. L. Kuhns, A. P. Reyes, S. Yuan, and N. J. Curro. *NMR investigation of the Knight shift anomaly in CeIrIn₅ at high magnetic fields*. Phys. Rev. B **88**, 075109 (2013)
- **D. M. Nisson**, A. P. Dioguardi, P. Klavins, C. H. Lin, K. Shirer, A. C. Shockley, J. Crocker, and N. J. Curro. *Nuclear magnetic resonance as a probe of electronic states of Bi₂Se₃*. Phys. Rev. B **87**, 195202 (2013)
- A. P. Dioguardi, J. Crocker, A. C. Shockley, N. apRoberts-Warren, C. Lin, K. R. Shirer, **D. Nisson**, A. Lodhia, P. Klavins and N. J. Curro. *Angular dependent ⁷⁵As NMR study of the electric field gradient in CaFe₂As₂*. Supercond. Sci. Technol. **26**, 025012 (2013)
- Kent R. Shirer, Abigail C. Shockley, Adam P. Dioguardi, John Crocker, Ching H. Lin, Nicholas apRoberts-Warren, **David M. Nisson**, Peter Klavins, Jason C. Cooley, Yi-feng Yang, and Nicholas J. Curro. *Long range order and two-fluid behavior in heavy electron materials*. Proceedings of the National Academy of Sciences of the United States of America **109**, E3067-E3073 (2012)
- H. Xiao, T. Hu, A. P. Dioguardi, N. apRoberts-Warren, A. C. Shockley, J. Crocker, **D. M. Nisson**, Z. Viskadourakis, Xianyang Tee, I. Radulov, C. C. Almasan, N. J. Curro, and C. Panagopoulos. *Evidence for filamentary superconductivity nucleated at antiphase domain walls in antiferromagnetic CaFe₂As₂*. Phys. Rev. B **85**, 024530 (2012)

Awards and Achievements:

- Dissertation Year Fellowship, August 2014-July 2015

- Graduate Student Mentorship Fellowship, August 2013-July 2014
- Alfred H. and Marie E. Gibeling Fellowship, November 2012-July 2013
- Graduate Student Mentorship Fellowship, November 2012-July 2013
- Eugene Cota-Robles Diversity Fellowship, October 2010-July 2012
- UC Davis Regents Scholarship, September 2008-June 2010

Professional Memberships:

- Materials Research Society, 2012-present
- American Physical Society, 2011-present
- American Association for the Advancement of Science, 2002-present

Disability Support Group Memberships:

- Autistic Self-Advocacy Network, 2016-present
- Yolo People First Disability Advocacy Group, 2012-present
- Autism, Asperger Syndrome Coalition for Education Networking and Development (AASCEND), 2000-present