Stanley "Alex" Breitweiser | CV

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sabreitweiser

Education

New York University — **New York, NY**
M.S. Physics, 3.67 GPA — *September 2015–December 2016 (expected)*
- Focusing on quantum phenomena in condensed matter systems
- Research conducted with L. Andrew Wray

University of Chicago — **Chicago, IL**
B.S. Mathematics & B.A. Physics, with General Honors — *September 2010–June 2014*

Research and Industry Experience

Wray Group, NYU Physics — **New York, NY**
Junior Research Scientist — *January 2017 -*
- Continuing research performed while working towards MS

Wray Group, NYU Physics — **New York, NY**
Research Assistant — *March 2016 - December 2016*
- Performed RIXS, ARPES, and XAS measurements at the Advanced Light Source in Lawrence Berkeley National Lab
- Ran ab-initio DFT calculations to find band structure and density of states
- Created and analyzed modified tight-binding models to find approximate electronic states

BitGravity (Tata Communications) — **Burlingame, CA**
Software Engineer — *June 2014–August 2015*
- Developed C++ and Python on Unix stack for a global CDN (Content Distribution Network)
- Designed and built distributed streaming data mining and analysis systems
- Used software management tools like SVN/Git, Jenkins, JIRA, and Confluence

Teaching

New York University — **New York, NY**
TA — *Spring 2016 - Fall 2016*
- (Graduate) Quantum Mechanics I (Fall 2016)
- Computational Physics (Fall 2016)
- Mathematical Physics (Spring 2016)

University of Chicago — **Chicago, IL**
Reader — *Fall 2012 - Spring 2013*
- Introduction to Analysis and Linear Algebra (Fall 2012, Winter & Spring 2013)

Other programs

University of Chicago — **Chicago, IL**
Directed Reading Program in Mathematics, Algebraic Number Theory — *Winter 2013*

University of Chicago (Center in Paris) — **Paris, France**
Paris Mathematics Program — *Spring 2012*

Programming Languages

Most Experienced	Intermediate	Familiar
○ C & C++	○ Julia	○ R
○ Python	○ Wolfram (Mathematica)	○ Fortran
○ Matlab		○ Java

Publications (First Authorships in bold)

1. "Spectroscopic characterization of symmetries, energetics and collective electron dynamics surrounding Mn1+ in a Prussian blue analogue", S. Alexander Breitweiser, Ruimin Qiao, L. Miao, H. He, Ali Firouzi, Shahrokh Motallebi, Christian W. Valencia, Hannah S. Israel, Mai Fujimoto, Wanli Yang, and L. Andrew Wray, in preparation (Nov. 2016).

2. "Melting of Hund's rule correlations at the onset of large moment antiferromagnetism in doped URu2Si2", Haowei He, Lin Miao, S. Alexander Breitweiser, Andrew Gallagher, Ryan E. Baumbach, Sheng Ran, M. Brian Maple, Shih-Wen Huang, Yi-De Chuang, Jonathan Denlinger, Nicholas P. Butch, and L. Andrew Wray, in preparation (Nov. 2016).

3. "Momentum-resolved measurement of disorder-induced electronic states near a topological insulator Dirac point", Lin Miao, Yishuai Xu, Daniel Older, S. Alexander Breitweiser, Weida Wu, Rudro R. Biswas, and L. Andrew Wray, in preparation (Nov. 2016).

4. "Irreversible thermal evolution promoting magnetism at the surface of topological Kondo insulator SmB6" Haowei He, Lin Miao, Edwin Augustin, Janet Chiu, Surge Wexler, S. Alexander Breitweiser, Boyoun Kang, B.-K. Cho, Chul-Hee Min, Yi-De Chuang, Jonathan Denlinger, L. Andrew Wray, in submission (Nov. 2016).

5. "Measurement of collective excitations in VO2 by resonant inelastic x-ray scattering" He, Haowei and Gray, A. X. and Granitzka, P. and Jeong, J. W. and Aetukuri, N. P. and Kukreja, R. and Miao, Lin and Breitweiser, S. Alexander and Wu, Jinpeng and Huang, Y. B. and Olalde-Velasco, P. and Pelliciari, J. and Schlotter, W. F. and Arenholz, E. and Schmitt, T. and Samant, M. G. and Parkin, S. S. P. and Dürr, H. A. and Wray, L. Andrew. Phys. Rev. B, 94:161119, Oct 2016.