# Stanley "Alex" Breitweiser

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*The first Python program I ever wrote did my calculus homework.*

## Education

**University of Pennsylvania** — **Philadelphia, PA**
*Ph.D., Physics* — *August 2017 - Present*
- Studying the behavior of quantum sensors in condensed matter systems
- Research conduced with Lee Bassett

**New York University** — **New York, NY**
*M.S., Physics* — *September 2015–December 2016*
- Focused on emergent quantum phenomena in strongly correlated materials
- 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

**Quantum Engineering Laboratory, University of Pennsylvania** — **Philadelphia, PA**
*August 2017 - Present*

**Wray Group, NYU Physics** — **New York, NY**
*Assistant Research Scientist* — *January 2017 - July 2017*
- Continued 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)
- Analyzed streaming distributed data sets, averaging several terabytes per day
- Pioneered new and improved real-time analytics that led to large customer traffic increase
- Leveraged technologies such as Redis, Hadoop, and Impala

## Teaching

**University of Pennsylvania** — **Philadelphia, PA**
*Teaching Assistant* — *Fall 2017*
- (Laboratory) Physics I: Mechanics and Wave Motion (Fall 2017)
- (Laboratory) Physics II: Electromagnetism and Radiation (Fall 2017)

**New York University** — **New York, NY**
*Teaching Assistant* — *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 - Spring 2013)

## Other programs

**MIT, Johns Hopkins University** **Baltimore, MD**
*Quantum Science Summer School* *Summer 2017*

**Princeton University** **Princeton, NJ**
*Summer School on Condensed Matter Physics* *Summer 2016*

**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*

## Standardized Tests

**GRE Subject (2014)**: 960 Physics

**GRE (2014)**: 170 Quantitative, 167 Verbal, 5.0 Writing

**SAT (2009)**: 800 Mathematics, 790 Reading, 650 Writing

**ACT (2009)**: 35 Composite, 35 Math, 35 Science, 34 English, 34 Reading, 31 Writing