

# Hannah Erdevig



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[h6nnah.github.io](https://h6nnah.github.io)

## EDUCATION

**University of Colorado Boulder** (May 2017)

**B.S.**, Engineering Physics, Computer Science Minor  
*summa cum laude*

## EXPERIENCE

**Graduate Researcher** (Aug. 2017 - Present)

*Vanderbilt University - Nashville, TN*

Constructed software to guide MRI-tracked focused ultrasound systems via fiducial marker registration by implementing convolution and transformation algorithms to automate image analytics

**Research Scientist** (May 2014 - Aug. 2017)

*National Institute of Standards and Technology, Magnetic Imaging Group - Boulder, CO*

Developed custom image reconstruction software for NIST Standards and Metrology MRI

Improved MRI data analysis by debugging, and refining algorithm implementation in Python

Crafted GUIs for open-source software package used by researchers at NIST

Simulated magnetic field interactions using Monte Carlo and finite element methods

Worked in a small team to design 3-D printed susceptibility phantoms as a common reference standard for magnetic characterization in medical diagnostics

Presented research at 3 international conferences and published a first-author journal article

Fundraised and organized multi-day, catered colloquium event for student researchers

**Teaching Assistant** (Aug. 2013 - May 2014)

*University of Colorado Boulder, Department of Physics - Boulder, CO*

Facilitated recitations for introductory calculus-based mechanics course and non-major physics elective

Presented material, employed Socratic Method in helping students learn material, and utilized midterm evaluations

## SKILLS

**COMPUTER LANGUAGES** Python, C/C++, Java, SQL, HTML, regex, PHP, Latex, Assembly, JS

**SOFTWARE DEVELOPMENT** GUI design, Git (version control), API integration, GDB debugging

**COMPUTATIONAL TOOLS** COMSOL, SolidWorks, Excel, MATLAB, Mathematica

## PUBLICATIONS

*MRI-Based Susceptibility Mapping for In-Vivo Iron and Blood Oximetry Measurements*. H. Erdevig. **CU Scholar** (2017)

*Accuracy of magnetic resonance based susceptibility measurements*. H. Erdevig, S. Russek, S. Carnicka, K. Stupic, K. Keenan. **AIP Advances** (2017)

## PRESENTATIONS

**ISMRM Annual Meeting** - Honolulu, HI.  
*Accuracy of magnetic resonance based susceptibility measurements* (4/25/17)

**Magnetism & Magnetic Materials** - New Orleans, LA. *MRI Based Susceptibility Mapping for In-Vivo Iron and Blood Oximetry Measurements* (11/1/16)

**American Physical Society March Meeting** - Baltimore, MD. *Accuracy of MRI-Based Magnetic Susceptibility Measurements* (3/14/16)

**MMM-InterMag** - San Diego, CA. *Accuracy of MRI-Based Magnetic Susceptibility Measurements* (1/13/16)

## AWARDS

ISMRM Best Trainee Poster (3<sup>rd</sup>) \$100 (2017)

Engineering Merit Scholarship \$750 (2016)

Dean's List (Fall '12, Fall '13, Spring '14, Fall '15)

NIST Summer Research Fellowship \$8700, \$9100 (2014, 2015)

## LEADERSHIP & OUTREACH

*Organizing Committee Member*, APS Conferences for Undergraduate Women in Physics (2016-2017)

*President*, Sigma Pi Sigma Physics Honor Society CU Boulder Chapter (2016-2017)

*STEM Outreach Workshop Facilitator*, Expanding Your Horizons (April 2016)