

Erin E. Healy, PhD

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EDUCATION

Princeton University	Princeton, NJ, USA
PhD. in Physics	<i>January 2023</i>
M.A. in Physics (incidental)	<i>Sept. 2019</i>
University of Pennsylvania	Philadelphia, PA, USA
B.A. in Classics, Minor in Comparative Literature, <i>Cum Laude</i>	<i>Sept. 2008 to May 2012</i>
Post-baccalaureate coursework in Physics	<i>Jan. 2015 to May 2017</i>

RESEARCH EXPERIENCE

Kavli Institute of Cosmological Physics at the University of Chicago	Princeton, NJ, USA
<i>Postdoctoral fellow</i>	<i>Dec. 2022 to Present</i>

Advisor: Prof. Jeff McMahon

- Developing novel calibration tools for the Simons Observatory large- and small-aperture telescopes, a cosmic microwave background experiment in Chile.

Princeton University	Princeton, NJ, USA
<i>Graduate Research Assistant in Experimental Cosmology</i>	<i>July 2017 to Nov. 2022</i>

Advisor: Prof. Suzanne Staggs

- Designing and implementing first-of-its-kind detector and readout technology for the Simons Observatory.
- Developing assembly protocols to enable the repeatable and reliable assembly for 60,000 detectors across 49 arrays.
- Modeling the thermal, mechanical, and electrical environment to optimize detector performance, and RF environment for resonator performance.

University of Pennsylvania	Philadelphia, PA, USA
<i>Post-baccalaureate Research Assistant in Experimental Astrophysics</i>	<i>Nov. 2015 to May 2017</i>

Advisor: Prof. Mark Devlin

- Responsible for the assembly and validation of the solar panel array for BLAST (Balloon-borne Large Aperture Submillimeter Telescope), which flew in Antarctica in Jan. 2020.
- Additional projects included the repair and operation a 300mK test cryostat and contributions to the assembly and testing of the in-flight thermometry.

HONORS AND AWARDS

Charlotte Elizabeth Procter Fellow , Princeton University	2021-2022
Graduate Instrumentation Research Award, Honorable Mention , Department of Energy, Office of High Energy Physics	2021
Kusaka Memorial Prize in Physics , Princeton University	2021
Joseph Henry Merit Prize , Princeton University	2017
Benjamin Franklin Scholar , University of Pennsylvania	2012
Academic All-Ivy in Field Hockey , University of Pennsylvania	2011

PUBLICATIONS

- McCarrick, Heather and **Healy, Erin**, et al., "The Simons Observatory microwave SQUID multiplexing detector module design." *The Astrophysical Journal* (2021).
- Healy, Erin**, et al., "The Simons Observatory: mechanical and electrical robustness of the universal focal-plane modules." *Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy XI* (2022).
- Healy, Erin**, et al. "The Simons Observatory 220 and 280 GHz Focal-Plane Module: Design and Initial Characterization." *Journal of Low Temperature Physics* (2022).
- McCarrick, Heather, et al. (including **Healy, Erin**). "The 90 and 150 GHz universal focal-plane modules for the Simons Observatory." *Journal of Low Temperature Physics*. 2022.
- Huber, Zachary, et al. (including **Healy, Erin**). "The Simons Observatory: Magnetic Shielding Measurements for the Universal Multiplexing Module." *Journal of Low Temperature Physics* (2022).
- Wang, Yuhang and Zheng, Kaiwen, et al. (including **Healy, Erin**). "Simons Observatory Focal-Plane Module: In-lab Testing and Characterization Program." *Journal of Low Temperature Physics* (2022).
- Healy, Erin**, et al. "Assembly development for the Simons Observatory focal plane readout module." *Proceedings Volume 11453, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy X* (2020).
- Li, Yaqiong, et al. (including **Healy, Erin**). "Assembly and Integration Process of the High-Density Detector Array Readout Modules for the Simons Observatory." *Journal of Low Temperature Physics* (2020): 199:985-993.
- Vavagiakis, Eve, et al. (including **Healy, Erin**). "The Simons Observatory: Magnetic Sensitivity Measurements of Microwave SQUID Multiplexers." *Transactions on Applied Superconductivity* (2020).
- Xu, Zhilei, et al. (including **Healy, Erin**). "The Simons Observatory: the Large Aperture Telescope Receiver (LATR) integration and validation results." *Proceedings Volume 11453, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy X* (2020).
- Rao, Mayuri Sathyanarayana and Feaver-Silva, Maximiliano, et al. (including **Healy, Erin**). "Simons Observatory Microwave SQUID Multiplexing Readout: Cryogenic RF Amplifier and Coaxial Chain Design." *Journal of Low Temperature Physics* (2020).
- Ali, Aamir, et al. (including **Healy, Erin**). "Small Aperture Telescopes for the Simons Observatory." *Journal of Low Temperature Physics* (2020): 200:461-471.
- The Simons Observatory Collaboration (including **Healy, Erin**). "The Simons Observatory: Astro2020 Decadal Project Whitepaper." *Astro2020 Decadal Project Whitepaper, arXiv:1907.08284* (2019).
- The Simons Observatory Collaboration (including **Healy, Erin**). "The Simons Observatory: science goals and forecasts." *Journal of Cosmology and Astroparticle Physics* (2019).
- Galitzki, Nicholas, et al. (including **Healy, Erin**). "The Simons Observatory: instrument overview." *Proceedings Volume 10708, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX* (2018).
- Simon, Sara, et al. (including **Healy, Erin**). "Feedhorn development and scalability for Simons Observatory and beyond." *Proceedings Volume 10708, Millimeter, Submillimeter, and Far-Infrared Detectors and Instrumentation for Astronomy IX* (2018).

OTHER EDUCATIONAL EXPERIENCE

Simons Foundation-NSBP Summer Program Mentor	Princeton, NJ, USA <i>July to August 2020</i>
Princeton Prison Teaching Initiative Math Instructor	Princeton, NJ, USA <i>Aug. 2018 to Jan. 2020</i>
KICP Summer School: CMB Detectors and Instrumentation	Chicago, IL, USA <i>Aug. 2017</i>
The Tutoring Center Physic Tutor Physics and Chemistry Tutor	Philadelphia, PA, USA <i>Sept. 2016 to May 2017</i> <i>Sept. 2009 to May 2012</i>

OTHER PROFESSIONAL EXPERIENCE

AppNexus Account Executive	New York, NY, USA <i>June 2012 to June 2014</i>
The Student Leadership Project Business Development Intern	Philadelphia, PA, USA <i>Jan. to May 2012</i>
KIPP Renaissance High School Operations Intern	New Orleans, LA, USA <i>June to July 2011</i>

SKILLS

Lab & Assembly	Milling, cryogenics, dilution refrigerators, RF components, wire bonding
Computer	SolidWorks, Python, LabView, IC layout software, PCB design