Alan Pearl

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Education

2017 - Pres. **University of Pittsburgh** – Pittsburgh, PA
GPA: 3.89

Dec 2018 Physics M.S.
Physics Ph.D. Candidate, **expected 2022-2023**
Thesis Title: *Illuminating the Galaxy-Halo Connection*
Thesis Advisor: Prof. Andrew Zentner

2013 - 2017 **Rensselaer Polytechnic Institute** – Troy, NY
GPA: 3.75

May 2017 Physics B.S., *magna cum laude*

Awards and Merit-Based Scholarships

Total: $110,188

2020 **Arts & Sciences Graduate Fellowship** ($23,688)
Dept. of Physics and Astronomy, Pitt

Thomas-Lain Fund Scholarship ($5,000): Essay contest
Dept. of Physics and Astronomy, Pitt

2017 **Class of 1902 Research Prize** ($500): For the best research results culminating in a paper
School of Science, RPI

Sigma Pi Sigma, Dept. of Physics, RPI

Honorable Mention for Poster Presentation
Undergraduate Research Symposium, RPI

2016 **Archimedean Society**: For at least one semester with a 4.0 GPA, RPI

2014 **Jarvis Memorial Scholarship** ($21,000): For excellence in first year of college
Manchester Scholarship Foundation

2013 **Rensselaer Medal** ($60,000), RPI

Research Projects

2021 - Pres. Implement two-point correlation functions into differentiable HOD models
Advisor: Prof. Andrew Zentner

2019 - 2021 Constructed a mock galaxy catalog for the PFS collaboration
Advisor: Prof. Rachel Bezanson

2016 - 2017 Used LAMOST data to construct a map of bulk velocity of the Milky Way disk
Advisor: Prof. Heidi Newberg

Refereed Journal Publications

2017 *A Map of the Local Velocity Substructure in the Milky Way Disk*
Pearl, Alan N.; Newberg, Heidi Jo; Carlin, Jeffrey L.; Smith, R. Fiona 2017, ApJ, 847, 123P

Late-Stage Paper Draft

2021 *CLIMBER: Galaxy-Halo Connection Constraints from Next-Generation Surveys*
Pearl, Alan; Bezanson, Rachel; Newman, Jeffrey; Zentner, Andrew
View draft: https://alanpearl.github.io/documents/climber-paper.pdf

Software

`mocksurvey`
Lead developer, Python package that creates mock galaxy catalogs using UniverseMachine

`halotools`
Contributor, Python package that provides a wide array of galaxy-halo connection models

Invited Talks

March 2021 Astro Seminar Series, Tufts University

Oct 2020 Guest Lecture, Bridgewater State University

Conference and Workshop Presentations

Mock Galaxy-Halo Constraints from Next-Generation MOS Surveys
May 2021 STScI Workshop: Multi-object Spectroscopy for Statistical Measures of Galaxy Evolution

Interactive Tutorial: Fitting Models with MCMC
March 2021 McWilliams Software Development Series, Carnegie Mellon University
June 2020 AstroPGH Summer Seminar Series, University of Pittsburgh

Interactive Tutorial: Debugging in Python
May 2020 AstroPGH Boot Camp 2020, University of Pittsburgh

Talk: Building Mock Universes with the Galaxy-Halo Connection
Feb 2020 Three Minute Thesis, Dept. of Physics and Astronomy, Pitt

Poster: Local Velocity Substructure in the Milky Way Disk
Jan 2017 American Astronomical Society, 229th AAS Meeting, id.142.14

Broader Outreach Talks

July 2021 *The Connection Between Galaxies and Dark Matter*
No-Jargon Talk Series, hosted by Women and Minorities in Physics at Pitt

Nov 2019 *Black Holes*
Astronomy on Tap Lecture, Pittsburgh

May 2017 *How to Become a Scientist – and Other Perks of Higher Education*
Guest Lecture, North End Middle School, Waterbury, CT

Teaching Assistant Appointments

Spring 2020 *Physics 0111 – Introduction to Physics 2.* Instructor: Matteo Broccio
Recitation TA, Undergraduate course, University of Pittsburgh

Fall 2019 *Mathematical Methods for Physics.* Instructor: Brian Batell
Grader, Graduate/Undergraduate course, University of Pittsburgh

Summer 2018 *Stars, Galaxies, and the Cosmos.* Instructors: Zeynep Kalendar, Melanie Good
Recitation TA, Undergraduate course, University of Pittsburgh

Spring 2018 *Galaxies and Cosmology.* Instructor: Jeffrey Newman
Grader, Graduate/Undergraduate course, University of Pittsburgh

Basics of Space Flight. Instructor: John Radzilowicz
Recitation TA, Undergraduate course, University of Pittsburgh

Fall 2017 *Hubble to Stonehenge.* Instructor: Jeffrey Newman
Recitation TA, Undergraduate course, University of Pittsburgh