

Salvatore Zerbo

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EDUCATION

Drexel University

Philadelphia, PA

Sep 2014 – Jun 2019

BACHELOR OF SCIENCE IN PHYSICS

- Minors in Astrophysics and Mathematics
- **Cumulative GPA: 3.87**

HONORS & AWARDS

- Dean's List Sep 2014 – Jun 2019
- A.J. Drexel Scholarship Sep 2014 – Jun 2019
- Drexel Dragon Award Sep 2014 – Jun 2019
- First Honors May 2019
- STAR Scholar Jun 2015 – Sep 2015

NOTABLE & RELEVANT COURSEWORK

- **Graduate:**
 - Dynamics | General Relativity
- **Undergraduate:**
 - Cosmology | Galactic Astrophysics | Observational Astrophysics
 - Particle Physics | Discrete Event Simulation | Numerical Analysis

SENIOR THESIS

- **Title:** Development of a Low Energy Neutron Source for Bubble Chamber Calibrations
- **Advisor:** Professor Russell Neilson

EXPERIENCE

Drexel University

Philadelphia, PA

Apr 2017 – Mar 2018

Oct 2018 – Jun 2019

RESEARCH ASSISTANT

- Designed a gui in Python for viewing and fitting bubble chamber data
- Designed and simulated a low energy neutron source for calibrations using GEANT4 as part of my senior thesis
- Aided in construction and performed routine maintenance and operation of prototype bubble chamber for dark matter detection

University of

Pennsylvania

Philadelphia, PA

Apr 2018 – Sep 2018

RESEARCH ASSISTANT

- Simulated self-interacting dark matter models using n-body simulations in GADGET on the NERSC computing cluster
- Wrote scripts for setting up initial condition states and performing data analysis in Python
- Discovered and analyzed issues with the setup of the initial condition states

Temple University

Philadelphia, PA

Mar 2016 – Sep 2016

RESEARCH ASSISTANT

- Designed a gui in MATLAB for calculating film thickness and optical properties using acquired Ellipsometer data
- Prepared and grew superconducting MgB_2 thin films
- Collected and analyzed data on superconducting films for desired properties

Drexel University

Philadelphia, PA

Jun 2015 – Oct 2015

RESEARCH ASSISTANT

- Developed an algorithm for combining overlapping void regions into single spheroid object
- Converted SDSS data for visualization using Python and MATLAB
- Created 3D visualizations of voids and galaxies for analysis using VisIt

SKILLS

Python | MATLAB | C# | LaTeX | Simulations | Data Modeling & Analysis | Bash | Linux | Git | Racket | Debugging

ACTIVITIES

Drexel University

CLUBS

- Track Club Sep 2014 – Mar 2019
 - Travel Coordinator Sep 2018 – Mar 2019
 - Vice President Dec 2017 – Jun 2018

PUBLICATIONS

Bressler, M., Campion, P., Cushman, V., Morrese, A., Wagner, J., Zerbo, S., Neilson, R., Crisler, M. and Dahl, C. (2019). A buffer-free concept bubble chamber for PICO dark matter searches. *Journal of Instrumentation*, 14(08), pp.P08019-P08019. arXiv: 1905.07367.