CV of Joseph Paul Hollowed

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EDUCATION

DePaul University: Chicago IL
Attended September 2013 – August 2017
Major: ***Physics***; Minor: ***Computer Science***
Bachelor of Science awarded August 2017
Cumulative GPA: 3.75 / 4.00
Major Course GPA: 3.87 / 4.00

RESEARCH EXPERIENCE

Cosmological Physics and Advanced Computing Group
Argonne Associate, September 2017–Present
Argonne National Laboratory

- Working full-time with the group on a post-baccalaureate research position
- Contributing to the development of cosmological simulation processing tools
- Performing analysis of simulation outputs, such as validation of modeled galaxy catalogs against observational data
- Continuing work in the pursuit of galaxy-cluster cosmology, focusing on gravitational lensing

Cosmological Physics and Advanced Computing Group
Research Aide, June 2016–September 2016; December 2016–September 2017
Argonne National Laboratory

- Served as a research aide, collaborating with graduate students, postdocs, and Argonne Staff Scientists, performing statistical analysis on both observational data and cosmological simulation outputs
- Focused on working toward probes of cosmology using galaxy-cluster dynamics

X-Ray Science Microscopy Group
Research Aide, June 2015–September 2015; December 2015
Argonne National Laboratory

- Position awarded and held through the DePaul Dean's Undergraduate Fellowship
- Served as the primary developer on image segmentation software, written in Python, for use with X-Ray fluorescence data gathered from the group's x-ray microscope

DePaul AstroPhysics Working Group
Research Member, March 2015 – June 2015
DePaul University Physics Department

- Founded the Working Group with a small team of students and faculty
- Worked on exoplanet detection/confirmation by developing MATLAB utilities to handle Kepler Space Telescope data, presenting progress each week to supervising professors

PRESENTATIONS

"Simulation Calibration of Cluster WL Mass Measurements" - 6/25/18 and 7/26/18
South Pole Telescope Cluster Face to Face, *University of Chicago, Chicago, IL and*
LSST Dark Energy Science Collaboration Meeting, *Carnegie Mellon University, Pittsburgh, PA*

"Validation of Synthetic Sky Catalogs" - 11/7/2017 and 11/14/2017
American Physical Society Prairie Session Fall Meeting, *University of Illinois at Chicago, Chicago IL*
Young Scientist Symposium Series, *Argonne National Laboratory, Lemont IL*

"Cluster Cosmology from Velocity Dispersions" - 8/31/2016 and 11/4/2016
Internal Group Presentation, *Argonne National Laboratory, Lemont IL*
DePaul Undergraduate Science Showcase, *DePaul University, Chicago IL*

"Image Segmentation of X-Ray Fluorescence Data" - 9/4/2015 and 11/6/2015
Internal Group Presentation, *Argonne National Laboratory, Lemont IL*
DePaul Undergraduate Science Showcase (poster)**,** *DePaul University, Chicago IL*

FELLOWSHIPS

Michigan Institute for Computational Discovery and Engineering: Awarded Spring 2018
DePaul Dean's Undergraduate Fellowship: Summer 2015

AWARDS AND HONORS

High Energy Physics Pacesetters Award: Summer 2018
Physics Student of the Year/Most Outstanding Graduating Senior in Physics Award: Spring 2017
DePaul University graduating honors: *magna cum laude:* Spring 2017
DePaul College of Science and Health Dean's List: All quarters of attendance
DePaul College of Computing and Digital Media Dean's List: All quarters of attendance
Dean's Scholarship of $11,000 per year at DePaul University: 2013-2017

PROFESSIONAL MEMBERSHIP

American Physical Society
Large Synoptic Survey Telescope Dark Energy Science Collaboration (LSST DESC)

COURSEWORK AND SKILLS

Physics & Mathematics:
PHY170, PHY171, PHY172: University Physics I, II, III
PHY200: Light and Atoms
PHY270: Introduction to Modern Physics
PHY300, PHY301: Methods of Computational/Theoretical Physics I, II
PHY342: Computational Physics
PHY370: Electronics
PHY380: Experimental Physics I

PHY310, PHY311: Classical Mechanics I, II
PHY360, PHY361: Quantum Mechanics I, II
PHY330: Senior Capstone: Cosmology
PHY399: Independent Study – Computational Cosmology I, II
MAT170, MAT171, MAT172: Calculus I, II, III w/Differential Equations
MAT260, MAT261: Multivariable Calculus I, II

Computer Science:
IT223: Data Analysis
CSC241, CSC242: Introduction to Computer Science I, II in Python
CSC300, CSC301: Data Structures I, II in Java
CSC373, CSC374: Computer Systems I, II in C

Computer Skills:

- Known Languages: Python, Matlab/Octave, C, C++
- Very familiar with maintaining and contributing to code repositories via version control systems including Git and Subversion
- Experience with working in a variety of environments on large networks, including supercomputers at Argonne National Lab (ANL) and the National Energy Research Scientific Computing Center (NERSC), often requiring familiarity with important API's for parallel computing such as MPI

REFERENCES

Dr. Salman Habib, Argonne National Laboratory
Dr. Katrin Heitmann, Argonne National Laboratory
Dr. Lindsey Bleem, Argonne National Laboratory
Prof. Jesús Pando, Physics Chair, DePaul University