

CV of Joseph Paul Hollowed

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EDUCATION

DePaul University: Chicago IL

Attended September 2013 – August 2017

B.S. in Physics; Minor in Computer Science awarded August 2017

Cumulative GPA: 3.75 / 4.00

Major Course GPA: 3.87 / 4.00

University of Michigan: Ann Arbor MI

Attended September 2019 – Present

PhD in Physics and Scientific Computing anticipated 2024

RESEARCH EXPERIENCE

University of Michigan Physics Department

Graduate Student, September 2019–Present

University of Michigan

- Work on weak-lensing simulation-support for galaxy-cluster cosmology

Cosmological Physics and Advanced Computing Group

Argonne Associate, September 2017–July 2019

Argonne National Laboratory

- Contributed to development of cosmological simulation components and processing tools
- Contributed to generation and validation of synthetic galaxy catalogues
- Worked on weak-lensing simulation support for galaxy-cluster cosmology

Cosmological Physics and Advanced Computing Group

Research Aide, June 2016–September 2016; December 2016–September 2017

Argonne National Laboratory

- Performed analysis of South Pole Telescope data against simulated analogues, working toward probes of cosmology using galaxy-cluster velocity-dispersion observables

X-Ray Science Microscopy Group

Research Aide, June 2015–September 2015; December 2015

Argonne National Laboratory

- Developed image segmentation software for use with X-Ray fluorescence microscopy data

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 via Kepler Space Telescope data

PUBLICATIONS

Heitmann, K., Uram, T., Finkel, H., Frontiere, N. Habib, S., Pope, A., Rangel, E., Hollowed, J., Korytov, D., Larsen, P., ... & Foster, I. (2019). **HACC Cosmological Simulations: First Data Release**. *The Astrophysical Journal Supplement Series*. 244. 17. 10.3847/1538-4365/ab3724.

Korytov, D., Hearin, A., Kovacs, E., Larsen, P., Rangel, E., Hollowed, J., ... & Chang, C. (2019). **CosmoDC2: A Synthetic Sky Catalog for Dark Energy Science with LSST**. *arXiv preprint arXiv:1907.06530*.

PRESENTATIONS

“Modeling Systematics in Galaxy Cluster Mass Estimation” - 5/21/19

Young Scientist Symposium Series, *Argonne National Laboratory, Lemont IL*

“Cluster Weak Lensing Simulations” - 2/26/19

LSST Dark Energy Science Collaboration Meeting, *University of California, Berkeley, Berkeley CA*

“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

Argonne 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)

TEACHING

Physics & Mathematics:

Electromagnetism, Optics, and Radiation (Laboratory): Fall and Winter 2020

REFERENCES

Salman Habib, Argonne National Laboratory

Katrin Heitmann, Argonne National Laboratory

Lindsey Bleem, Argonne National Laboratory

Jesús Pando, Physics Chair, DePaul University