GABRIEL P. LYNCH

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EDUCATION

The University of Chicago *2014-2018*
Bachelor of Arts in Physics with Honors June 2018
Bachelor of Arts in Mathematics June 2018
Thesis (Honors): "A holographic look at topologically disconnected black hole remnants"
Advisor: Prof. Carlos Wagner

RESEARCH EXPERIENCE

Cosmological Physics and Advanced Computation Group September 2018 - August 2019
Research Aide *Argonne National Laboratory*

- Analyzed cosmological simulation output using parallelized code (MPI) on Argonne supercomputing resources, such as searching for dark matter deficient galaxies and tracking their histories.
- Studied the use of quantum sensors for the direct detection of ultra light dark matter.
- Performed tests on mock galaxy catalogs produced by the group for the LSST-DESC collaboration in order to improve the analysis pipeline.

ATLAS Group June 2016 - September 2016
Department of Energy SULI Intern *Argonne National Laboratory*

- Analyzed and determined event selection criteria of simulated ATLAS detector data using the ROOT data analysis framework.
- Simulated particle collision data subject to various constraints using MadGraph5 and Pythia6.
- Wrote a project paper and presented research to others in the Argonne ATLAS group.

TEACHING

Junior Tutor October 2016 - June 2018
Department of Mathematics *University of Chicago*

- Held tutorial sessions twice a week for students in introductory calculus classes in order to review and reiterate class lessons.
- Provided student feedback in the form of graded quizzes and problem sets.

AWARDS AND HONORS

Departmental Honors for Undergraduate thesis in physics June 2018

Argonne Scholarship with grant of $53,000 per year 2014-2018

Dean's List for high academic achievement at the University of Chicago 2014-2016, 2017-2018

PRESENTATIONS

"Black hole remnants and topology changes" June 2018
Thesis presentation *University of Chicago*

"Boosted Higgs and Top Yukawa Coupling" September 2016
Interal group presentation *Argonne National Laboratory*

PROFESSIONAL MEMBERSHIPS

Large Synoptic Survey Telescope - Dark Energy Science Collaboration (LSST-DESC)

SELECTED COURSEWORK AND SKILLS

Physics
PHYS 364: General Relativity
PHYS 243: Advanced Quantum Mechanics
PHYS 250: Computational Physics
Mathematics
MATH 263: Introduction to Algebraic Topology
MATH 274: Intro. to Differentiable Manifolds

Computer Languages Python C++ Fortran 77 Mathematica

Computer Skills Distributed computing MPI Git ROOT