Marcell Howard

Curriculum Vitae

PERSONAL DETAILS

Address	3941 OHara Street, Pittsburgh, PA 15260 USA
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Website	https://marcellhoward.github.io/

EDUCATION

University of Pittsburgh, Pittsburgh, PA *2019 - Present*
Ph.D., Physics

Case Western Reserve University, Cleveland, OH *2015 - 2019*
B.S., Mathematics and Physics

RESEARCH EXPERIENCE

Graduate Research Assistant *2020 - Present*
University of Pittsburgh advised by Arthur Kosowsky

Senior Honor's Thesis *2018 - 2019*
Case Western Reserve University advised by Kurt Hinterbichler

Research Experience for Undergraduates *Summer 2018*
Rutgers, the State University of New Jersey advised by Andrew Baker

Research Experience for Undergraduates *Summer 2017*
Cornell University advised by Gordon Stacey

PUBLICATIONS

Stephon Alexander, Tatsuya Daniel, Marcell Howard, and Morgane König. Exact fermionic chern-simons-kodama state in quantum gravity. *Phys. Rev. D*, 106:106012, Nov 2022

Marcell Howard, Arthur Kosowsky, and Georgios Valogiannis. Galaxy cluster statistics in modified gravity cosmologies, 2022

CONFERENCE PROCEEDINGS

Marcell Howard and Arthur Kosowsky. Galaxy Cluster Statistics in Modified Gravity Cosmologies. In *APS April Meeting Abstracts*, volume 2022 of *APS Meeting Abstracts*, page E16.007, April 2022

Marcell Howard, Andrew J. Baker, and John F. Wu. Probing the Evolution of Galaxies by Stacking Stellar Mass Selected Samples. In *American Astronomical Society Meeting Abstracts*

#233, volume 233 of *American Astronomical Society Meeting Abstracts*, page 145.08, January 2019

TEACHING EXPERIENCE

Graduate Core Course Tutor
PHYS 2565: Non-Relativistic Quantum Mechanics 1
PHYS 2566: Non-Relativistic Quantum Mechanics 2
PHYS 1373 & 2373 (Combined section): Mathematical Methods in Physics

- Held two office hours per week.
- Provided homework help as well as furthered conceptual understanding of the material.

Graduate Teaching Assistant
PHYS 0111: Introduction to Physics 2
PHYS 0174: Basic Physics for Science and Engineering 1
PHYS 0175: Basic Physics for Science and Engineering 2
PHYS 0212: Introduction to Laboratory Physics

- Held two-four recitation sessions per week.
- Graded quizzes and tests.

Undergraduate Supplemental Instructor
MATH 121: Calculus for Scientists and Engineers I
MATH 122: Calculus for Scientists and Engineers II

- Held three small groups and one recitation session per week.
- Graded quizzes and tests.

Undergraduate Teaching Assistant
PHYS 121: General Physics I - Mechanics
PHYS 122: General Physics II - Electricity and Magnetism

- Graded written homework handed in every week.
- Handed out in class assignments and provided help to various students.

TALKS AND POSTER PRESENTATIONS

Massachusetts Institute of Technology String Theory Group Meeting *Feb 2023*
An Exact Fermionic Chern-Simons-Kodama State in Quantum Gravity
Invited talk

National Society of Black Physicists *Nov 2022*
An Exact Fermionic Chern-Simons-Kodama State in Quantum Gravity
Contributed talk

Case Western Reserve University, Particle Astrophysics Seminar *Sep 2022*
An Exact Fermionic Chern-Simons-Kodama State in Quantum Gravity
Invited talk

American Physical Society April Meeting 2022 *Apr 2022*
Galaxy Cluster Statistics in Modified Gravity Cosmologies
Contributed talk

Brown University *Mar 2022*
Galaxy Cluster Statistics in Modified Gravity Cosmologies
Invited talk

National Society of Black Physicists *Nov 2021*

Galaxy Cluster Statistics in Modified Gravity Cosmologies
Contributed talk

Case Western Reserve University *May 2019*
The People vs Mimetic Gravity
Contributed poster and talk

American Astronomical Society Meeting (Seattle, WA) *Jan 2019*
Probing the Evolution of Galaxies Using Stellar Mass Selected Samples
Contributed poster

Case Western Reserve University *Oct 2018*
Counting the Degrees of Freedom in Mimetic Gravity
Contributed talk

Rutgers, the State University of New Jersey *Aug 2018*
Probing the Evolution of Galaxies Using Stellar Mass Selected Samples
Contributed poster and talk

Cornell University *Aug 2017*
Using Far-Infrared Fine-Structure Lines for Characterizing the Star Formation Processes in Nearby Galaxies
Contributed poster and talk

OUTREACH

Seminar at High School (SAHS) and Pathway Career Speaker Series *Dec 2022*
Woodland Hills High School
Invited speaker

Society of Physics Students Graduate Student Panel *Oct 2022*
University of Pittsburgh
Panel contributor

Astronomy on Tap *Sept 2022*
Two Fray's Brewery
Contributed presentation

Cornell's Focus for Teens *Summer 2017*
Cornell University
Workshop Leader

SKILLS

Programming	Python, Mathematica, Matlab
Software	SciPy/matplotlib, AstroPy, git

PROFESSIONAL ORGANIZATIONS

Pittsburgh Particle Astrophysics and Cosmology Center (PITT PACC) *2020 - Present*

National Society of Black Physicists *2018 - Present*

FELLOWSHIPS AND AWARDS

2021 Honorable Mention for the Ford Foundation Predoctoral Fellowship *2021*

Dietrich School of Arts and Sciences Summer Research Predoctoral Fellowship *2020*

Kenneth P. Dietrich School of Arts & Sciences Fellowship *2019*

Hayden Scholarship *2017*

Gaemsslen Grant Fund *2017*

Case Alumni Scholarship *2017*

University Scholarship *2015*

CWRU Grant *2015*