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

Alexander, S., Daniel, T., Howard, M., & König, M. (2022, Nov). Exact fermionic chern-simons-kodama state in quantum gravity. *Phys. Rev. D*, *106*, 106012. Retrieved from https://link.aps.org/doi/10.1103/PhysRevD.106.106012 doi: 10.1103/PhysRevD.106.106012

Howard, M., Kosowsky, A., & Valogiannis, G. (2022). *Galaxy cluster statistics in modified gravity cosmologies.* arXiv. Retrieved from https://arxiv.org/abs/2205.13015 doi: 10.48550/ARXIV.2205.13015

CONFERENCE PROCEEDINGS

Howard, M., Baker, A. J., & Wu, J. F. (2019, January). Probing the Evolution of Galaxies by Stacking Stellar Mass Selected Samples. In *American astronomical society meeting abstracts #233* (Vol. 233, p. 145.08).

TEACHING EXPERIENCE

Graduate Core Course Tutor
PHYS 1373: Mathematical Methods in Physics
PHYS 2565: Non-Relativistic Quantum Mechanics 1

- 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

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

Astronomy on Tap *Sept 2022*
Two Fray's Brewery
Speaker

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*