

Motasem ElGamel

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Education

University of Pittsburgh <i>Physics - Ph.D. (expected 2024)</i>	2021 - Present <i>Pittsburgh, PA</i>
University of Pittsburgh <i>Physics - M.Sc.</i>	2019 - 2021 <i>Pittsburgh, PA</i>
University of Science and Technology at Zewail City <i>Physics - B.Sc. (Graduated Magna Cum Laude)</i>	2015 - 2019 <i>Giza, Egypt</i>

Fellowships and Awards

Andrew W. Mellon Predoctoral Fellowship <i>University of Pittsburgh</i> <ul style="list-style-type: none">Awarded school-wide to doctoral students of exceptional promise and ability across the disciplines.	2023-2024
Best Poster Award at Physics of Life 2023, Harrogate, UK <ul style="list-style-type: none">Awarded to the poster presentation: “Effects of molecular noise on cell size control”.	2023
Pitt Graduate and Professional Student Government (GPSG) Travel Grant <i>University of Pittsburgh</i>	2023
Thomas-Lain Scholarship Essay Competition <i>Department of Physics and Astronomy, University of Pittsburgh</i> <ul style="list-style-type: none">Awarded for excellence in scientific essay writing and judged by three faculty members.	2023

Publications

Submitted

2. **M. ElGamel** and A. Mugler. Effects of molecular noise on cell size control. *arXiv preprint arXiv:2303.15232*, 2023

Published

1. **M. ElGamel**, H. Vashistha, H. Salman, and A. Mugler. Multigenerational memory in bacterial size control. *Physical Review E*, 108(3):L032401, 2023

Research Experience

Graduate Research Assistant (Advisor: Andrew Mugler, Ph.D.) <i>University of Pittsburgh</i> <ul style="list-style-type: none">Studying the effects of noise on bacterial growth on the single-cell level and population level.	Fall 2020 - Present
Undergraduate Thesis (Advisor: Ali Nassar, Ph.D.) <i>University of Science and Technology at Zewail City</i> <ul style="list-style-type: none">Explored the dynamics of the Ising model in 1 and 2 dimensions at criticality using analytical methods and simulations.	2018 - 2019
Research Work in High Energy Astrophysics (Advisor: Alaa Ibrahim, Ph.D.) <i>University of Science and Technology at Zewail City</i> <ul style="list-style-type: none">Analysed and interpreted the data of x-ray bursts emission activity in strong magnetic fields neutron stars using HEAsoft and IDL software and the data of NASA’s RXTE mission.	2017 - 2018

Workshops and Summer Schools

Les Houches Theoretical Biophysics Summer School 2023 <i>École de physique des Houches</i> <ul style="list-style-type: none">Poster presentation: “Theory of noisy population growth in bacteria”.Worked on assessing selection and coevolution in protein sequences as part of a group project.	July 2023 <i>Les Houches, France</i>
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Talks and Presentations

Physics of Life 2023 Conference

Poster presentation: “Effects of molecular noise on cell size control”.

March 2023

Harrogate, UK

APS March Meeting 2023

Contributed talk: “Adder minimizes cell size noise in bacteria”.

March 2023

Las Vegas, NV

Gordon Research Conference and Seminar

Selected talk and poster: “Effects of molecular noise on cell size control”.

January 2023

Ventura, CA

NSF Center for the Physics of Biological Function - Physics of Life Symposium

Selected talk: “Theory of cell size homeostasis”.

November 2022

New York City

The 2nd Biology for Physics Conference

Selected talk: “Multigenerational memory in bacterial size control”.

July 2022

Barcelona, Spain

APS March Meeting 2022

Contributed talk: “Multigenerational memory in cell size homeostasis”.

March 2022

Chicago, IL

Skills

Programming Languages: Python, C++, Matlab, Mathematica, LabVIEW.

Techniques: Monte Carlo, Stochastic Simulation Algorithm.

Teaching Experience

Graduate Teaching Assistant

University of Pittsburgh

- PHYS 0110: Introduction to Physics 1.
- PHYS 0111: Introduction to Physics 2.
- PHYS 0174: Basic Physics for Science and Engineering 1.
- Lead recitations, held office hours, prepared quizzes, graded exams and wrote up homework solutions.

Undergraduate Junior Teaching Assistant

University of Science and Technology at Zewail City

- PHYS 101: Introduction to Physics 1.
- PEU 438: Compact Objects.

Mentoring and Service

Journal Reviewer

- Reviewing articles for *Physical Review E* and *Physical Review Letters*.

Undergraduate Research Mentor

Department of Physics and Astronomy, University of Pittsburgh

- Mentored undergraduate students Jianan Zhao and Lucas Ribaudo in research.

Peer-Mentor in the Alumni Mentorship Program

Zewail City Alumni Association

- Mentored undergraduate student Mira Mohammed.

Graduate Student Mentor

Fall 2022 - Spring 2023

Department of Physics and Astronomy, University of Pittsburgh

- Mentored two incoming graduate students.

Zewail City Science Festival

Summer 2016, Summer 2017

University of Science and Technology at Zewail City

- ZC Science Festival is a “conference for the public”. It aims to deliver scientific concepts in a simplified manner to the public and spread the culture of science.
- Participated as an organizer, wrote a scientific talk for the public audience and gave a mathematics talk.