

# Eman Ahmed PH.D. SCHOLAR

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- Ph.D. Scholar in Biomedical Engineering with specialisation in polymer chemistry, protein stabilisation, and machine learning applications in biomaterials
- Published author with three peer-reviewed articles in Tissue Engineering Part A, ACS Polymers Au, and Biophysical Journal
- Demonstrated expertise in high-throughput polymer characterisation, nanotechnology, and automated enzyme assays
- Proven track record in research project coordination, working as a research fellow, teaching, and graduate assistantship

## EDUCATION

### Biomedical Engineering — Doctor of Philosophy (Ph.D.)

SEPT 2022 - EXPECTED MAY 2026

Rutgers University, New Brunswick, New Jersey

- Research Focus: Random Copolymers for Protein Stabilisation
- Recipient of Rutgers Biomedical and Health Sciences Fellowship

### Biomedical Engineering — Bachelor of Science

SEPT 2015 - MAY 2021

Rutgers University, New Brunswick, New Jersey

- Recipient of Egypt Higher Education Initiative (HEI) Scholarship (2015-2021)
- Honourable Mention for Tension-Induced Rupture of Lipid Membranes Project (2018)
- Graduated with academic honours, Dean's List

## RESEARCH EXPERIENCE

### Random Copolymers for Protein Stabilisation — Research Fellow and Graduate Researcher

SEP 2023 -

PRESENT

Rutgers University, New Brunswick, New Jersey

- Investigating polymer-enzyme hybrids in water-miscible organic solvents utilising high-throughput approaches
- Developing automated methodologies for evaluating protein stabilisation
- Presented research findings at Biomedical Engineering Society Conference (San Diego, CA, Oct 2025)

### Dr. Adam Gormley Laboratory — Undergraduate Research

MAY 2018 - SEPT 2018

Rutgers University, New Brunswick, New Jersey

- Conducted polymer vacuum filtration and polymer solubility characterisation studies
- Contributed to research on polymer-based biomaterial systems

### Dr. Alexander Neimark Laboratory — Undergraduate Research

SEPT 2017 - APRIL 2018

Rutgers University, New Brunswick, New Jersey

- Investigated tension-induced rupture of lipid membranes utilising computational methodologies
- Presented research at Gulf Coast Undergraduate Research Symposium (Rice University, Oct 2018)
- Awarded Honourable Mention at Aresty Undergraduate Research Symposium (April 2018)

## EMPLOYMENT

### Biomedical Engineering Department — Graduate Assistant

SEPT 2024 - PRESENT

Rutgers University, New Brunswick, New Jersey

- Supporting departmental operations and research initiatives
- Assisting faculty members with student mentorship
- Collaborating on various grant projects

### Introduction to Biomedical Engineering — Teaching Assistant

SEPT 2023 - JUNE 2024

Rutgers School of Engineering, New Brunswick, New Jersey

- Assisted in course instruction and laboratory sessions for undergraduate students
- Conducted office hours and provided academic support for foundational biomedical engineering concepts

- Assessed student assignments and provided constructive feedback

## Biomedical Engineering Department — Research Fellow

SEPT 2022 - SEP 2023

Rutgers University, New Brunswick, New Jersey

- Rotated in Gormley Lab to accumulate highly needed skills for biomaterials formation and characterisation
- Completed necessary course work in nanotechnology, biocontrol, and medical implants with competitive grades
- Assisted in grant writing and execution

## PUBLICATIONS

### — Peer-Reviewed Journal Articles

- **Ahmed, Eman**, et al. "Mapping biomaterial complexity by machine learning." *Tissue Engineering Part A* 30.19-20 (2024): 662-680.
- Ramirez, Cesar; **Ahmed, Eman**, et al. "Automation-Assisted Photoinduced Atom Transfer Radical Polymerization." *ACS Polymers Au* (2025).
- Ramirez, Cesar; ... **Ahmed, Eman**, et al. "SAXS Assistant: Automated SAXS analysis for structural discovery in biologics and polymeric nanoparticles." *Biophysical Journal* 124.21 (2025): 3772-3786.

## CONFERENCE PRESENTATIONS

### — High Throughput Approach for Evaluating Polymer-Enzyme Hybrids

- Biomedical Engineering Society Conference, San Diego, California, October 2025
- Biomedical Engineering Students Society, Rutgers University, December 2024

### — Tension-Induced Rupture of Lipid Membranes

- Gulf Coast Undergraduate Research Symposium, Rice University, Houston, Texas, October 2018
- Aresty Undergraduate Research Symposium, Rutgers University, April 2018

## HONORS & AWARDS

### — Fellowships & Scholarships

- Rutgers Biomedical and Health Sciences Fellowship, \$33,999 stipend with full tuition remission (2022-2023)
- Recipient of Egypt Higher Education Initiative (HEI) Scholarship (2016-2021)
- Honourable Mention for Tension-Induced Rupture of Lipid Membranes Project (2018)
- Graduated with highest honours, and Dean's List for all semesters

## ACTIVITIES & SERVICE

### — Professional Organizations

- Biomedical Engineering Student Society, General Body Member (Sept 2022-Present)
- Biomedical Engineering Society, Engineering Governing Council Representative (May 2018-May 2019)

### — Extracurricular Activities

- Rutgers Women's Ice Hockey Team, Winger (Sept 2016-May 2017)
- Douglass Residential College, General Body Member (Sept 2015-May 2019)

## TECHNICAL SKILLS

### — Laboratory & Research

- Polymer synthesis and characterisation, vacuum filtration, solubility analysis
- Nanotechnology techniques, gold nanoparticle diagnostics
- SAXS (Small-Angle X-ray Scattering) analysis and automation
- High-throughput screening using liquid handling robots

## — Computational & Data Analysis

- Machine learning applications in biomaterials research
- Data analysis and visualisation
- Automated high-throughput experiment design