

Maiya Yu

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EDUCATION

University of Michigan

Bachelor of Science

Pure Mathematics, Honors Biochemistry; Minor in Computer Science

Ann Arbor, MI

September 2017 – May 2021

GPA: 3.613

RESEARCH EXPERIENCE

Tall Lab, University of Michigan

Department of Pharmacology

Undergraduate Research Assistant

Ann Arbor, MI

September 2018 – Present

October 2017 – April 2018

- Assisted in development of Dual-Dual expression system for G proteins.
- Researched effects of phosphorylation on function of G protein chaperone protein Ric-8A.
- Used anion exchange columns and fast protein liquid chromatography to purify protein for structural and functional studies.
- Cultured bacteria and insect cells in order to obtain protein for purification.
- Performed molecular biology and culture work to develop dual-dual expression system, including subcloning and transformation of bacterial plasmids, transfection of bacmids, infection, and harvesting of insect cells.
- Ran Bradford assays, SDS-PAGE, and Phos-tag PAGE to analyze protein concentrations after purification.
- Performed binding assays using radioactive nucleosides in order to test successful protein folding and phosphorylation.

Ren Lab, University of Texas at Austin

Department of Biomedical Engineering

Undergraduate Researcher

Austin, TX

June 2018 – August 2018

- Researched chemotherapeutic potential of several naphthalene-2,6-diyl-based Aldolase A inhibitors.
- Used molecular dynamics simulations and the AMOEBA chemical force field to analyze binding and compute binding free energy of several aldolase-inhibitor systems.
- Wrote Python scripts to analyze specific atomic level interactions and to calculate solvent-accessible surface area.

OTHER EXPERIENCE

MWrite Program, University of Michigan

Department of Chemistry and Sweetland Writing Center

Writing Fellow

Ann Arbor, MI

January 2020 – May 2020

January 2019 – May 2019

- Supported students and faculty in implementation of Write-to-Learn assignments in second-semester Organic Chemistry lab course.
- Held office hours to support students in a one-on-one environment.
- Met with faculty and other fellows to discuss prompt implementation and student success.
- Provided technical support to students using the Canvas peer-review interface.
- Provided students with feedback on responses to encourage revision and deeper thinking.

Math Lab, University of Michigan

Department of Mathematics

Math Tutor

Ann Arbor, MI

January 2019 – Present

- Tutored courses including Pre-Calculus, Calculus 1, 2 and 3, Differential Equations, and both proof-based and non-proof-based Linear Algebra.
- Adapted teaching style to meet different student needs.
- Provided guidance in small group and individual settings.

PRESENTATIONS

- GPCR Retreat**, Bromont, Quebec, Canada September 27, 2019
- **Poster**, A Dual-Dual Expression System for Purification of G Protein α Subunits and Heterotrimers
- Pharmacology SURF Symposium**, Ann Arbor, MI August 8, 2019
- **Oral Presentation**, A Dual-Dual Expression System for Purification of G Protein α Subunits and Heterotrimers
- Biomedical Engineering Society Annual Meeting**, Atlanta, GA October 20, 2018
- **Poster**, Computational studies of novel inhibitors of aldolase A via molecular dynamic simulations
- Summer Scholars Symposium**, Austin, TX August 2, 2018
- **Poster**, Computational studies of novel inhibitors of aldolase A via molecular dynamic simulations
- UROP Symposium**, Ann Arbor, MI April 18, 2018
- **Poster**, Protein Kinase CK2 Phosphorylation of Ric-8A Potentiated its Enzymatic Activities Towards G protein α Subunits and Permitted its Crystallization

PUBLICATIONS

1. Wenxi Yu, **Maiya Yu**, Makaia M. Papasergi-Scott, and Gregory G. Tall. Production of phosphorylated Ric-8A proteins using Protein Kinase CK2. *Protein Expression and Purification*, 154:98 – 103, 2019
2. Rui Qi, Brandon Walker, Zhifeng Jing, **Maiya Yu**, Gabriel Stancu, Ramakrishna Edupuganti, Kevin N. Dalby, and Pengyu Ren. Computational and experimental studies of inhibitor design for Aldolase A. *The Journal of Physical Chemistry B*, 123(28):6034–6041, 2019. PMID: 31268712

ACTIVITIES

- University of Michigan Science Olympiad Club** **Ann Arbor, MI**
University of Michigan *May 2019 – Present*
Executive Director
- Procured funding for the organization by writing fundraising letters and holding individual meetings with potential sponsoring units.
 - Coordinated organization and oversaw 13-person board of directors.
 - Oversaw expansion of organization to include over 200 volunteers and event to reach nearly 1000 students.
 - Supported board of directors and volunteers in administrative and executive role.
- University of Michigan Science Olympiad Club** **Ann Arbor, MI**
University of Michigan *July 2017 – May 2019*
Human Resources Officer
- Developed protocols and conduct policies for tournament volunteers to comply with University policies.
 - Coordinated and recruited over 100 tournament volunteers to ensure events ran smoothly.

SKILLS

Computer Skills

- Python, C++, Bash, L^AT_EX, HTML, and CSS
- Adobe Illustrator, Microsoft Office, G Suite, Molecular Dynamics Simulations, VMD, Pymol, and Jmol

Biochemistry

- SDS PAGE, Phos-Tag PAGE, Bradford Assay, Bacteria Culture, Column Chromatography, Western Blot, GTP γ S time course assay, PCR, Subcloning, Insect Cell Culture, and DNA Purification

Other

- Public Speaking, Science Communication

HONORS AND ACHIEVEMENTS

- **University Honors**, Fall 2017, Winter 2018, Fall 2018, Winter 2020
- **Mary E.Wilsberg Scholarship**, 2017-2018, 2018-2019, 2019-2020, 2020-2021
- **National Merit Finalist**, 2017-2018