

Maiya Yu

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EDUCATION

Stanford University
Doctorate in Philosophy
Structural Biology

Palo Alto, CA
September 2021 –

University of Michigan College of Literature, Science, and the Arts
Bachelor of Science
Pure Mathematics, Biochemistry – High Honors; Minor in Computer Science

Ann Arbor, MI
September 2017 – May 2021
GPA: 3.682

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
3. Alexander Vizurraga, Rashmi Adhikari, Jennifer Yeung, **Maiya Yu**, and Gregory G Tall. Mechanisms of Adhesion G protein Coupled Receptor activation. *Journal of Biological Chemistry*, 2020
4. Jennifer Yeung, Rehemani Adili, Emily N. Stringham, Rong Luo, Alexander Vizurraga, Luciana K. Rosselli-Murai, Hannah M. Stoveken, **Maiya Yu**, Xianhua Piao, Michael Holinstat, and Gregory G. Tall. GPR56/ADGRG1 is a platelet collagen-responsive GPCR and hemostatic sensor of shear force. *Proceedings of the National Academy of Sciences*, 2020

RESEARCH EXPERIENCE

University of Michigan
Department of Pharmacology, Advisor: Dr. Gregory G. Tall
Undergraduate Research Assistant

Ann Arbor, MI
September 2018 – Present
October 2017 – April 2018

- Worked on and coordinated projects involving purification of heterotrimeric G proteins and G protein chaperones Ric-8A and Ric-8B for structural and functional analyses.
- Purified proteins and complexes using affinity chromatography, ion-exchange chromatography, gel-filtration chromatography, and an AKTA FPLC system.
- Used bacterial expression systems and recombinant baculoviral expression systems in insect cells to express proteins of interest.
- Ran Bradford assays, SDS-PAGE, Phos-tag PAGE, and Western blots to analyze proteins before, during, and after purification.
- Produced recombinant plasmids using molecular biology techniques including DNA purification, PCR subcloning, restriction enzyme digestions, DNA ligation reactions, and bacterial culture.
- Performed binding assays using radiolabeled GTP γ S in order to test successful protein folding and phosphorylation.

University of Texas at Austin
Department of Biomedical Engineering, Advisor: Dr. Pengyu Ren
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.

TEACHING EXPERIENCE

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.

Virtual Tech Camps
iD Tech

Remote
July 2020 – August 2020

Online Instructor

- Taught weeklong virtual programming courses in C++, Python, and Scratch for elementary and high school students.
- Developed supplementary activities to support student knowledge and development of key programming skills.
- Implemented informal assessment measures and altered pedagogical techniques to ensure instruction is developmentally appropriate.

MWrite Program, University of Michigan
Department of Chemistry and Sweetland Writing Center
Senior Writing Fellow

Ann Arbor, MI
January 2021 – May 2021

- Coordinated logistics for other Writing Fellows and faculty.
- Planned and held weekly meetings to discuss prompt implementation and student success.
- Produced video to introduce students to the MWrite program.
- Set up and organized the use of Piazza as a class forum.
- Continued to hold office hours and provide students with feedback.

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.

PRESENTATIONS

BioTalk Seminar, Ann Arbor, MI August 7, 2020

- **Oral Presentation**, A Dual-Dual Expression System for Purification of G Protein α Subunits and Heterotrimers

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

ACTIVITIES

Michigan Science Olympiad Board

East Lansing, MI

Michigan Science Olympiad

August 2020– Present

Board Member

- Served on Event Committee to determine full slate of events for State Tournament.
- Served as first and only college student on the Michigan Science Olympiad Board.

University of Michigan Science Olympiad Club

Ann Arbor, MI

University of Michigan

May 2019 – Present

Executive Director

- Procured funding in the amount of \$20,000 for the organization by coordinating writing of fundraising letters to potential departmental sponsors.
- 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 including planning a transition to an online tournament.

University of Michigan Science Olympiad Club

Ann Arbor, MI

University of Michigan

July 2017 – May 2019

Human Resources Officer

- Developed protocols and policies for tournament volunteer conduct 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 G protein activity assay, PCR, Subcloning, Insect Cell Culture, and DNA Purification

Other

- Public Speaking, Science Communication

HONORS AND ACHIEVEMENTS

Leon P. Zukowski Award, University of Michigan Department of Mathematics

2021

- *For outstanding service in the Math Lab*

Graduate Research Fellowship, National Science Foundation

2021-2026

University Honors, University of Michigan Fall 2017, Winter 2018, Fall 2018, Winter 2020, Fall 2020, Winter 2021

Mary E. Wilsberg Scholarship, Grand Haven Area Community Foundation

2017-2021

- *For a student who has not only excelled academically but has also demonstrated well-rounded community participation and service to others*

National Merit Finalist, National Merit Scholarship Corporation

2017-2018