

# ETHAN CHANG

Ph.D. Student | WashU in St. Louis

📞 949 735 6077

✉ etchang949@gmail.com

📍 St. Louis, MO, USA

🌐 ethan-chang-nmc.github.io

🐙 /ethan-chang-nmc

🌐 /in/ethan-chang-nmc

## SUMMARY

Passionate researcher interested in computational neuroscience. Key interests include generalizing neural networks, mathematical modeling, AI/ML/DL, and astrocytes.

## SKILLS

**Languages** Python, MATLAB, R, Java, C, SQL, HTML, CSS, JavaScript.

**Other** Sage, LaTeX, Excel, Powerpoint.

## EDUCATION

- |                |   |                                    |
|----------------|---|------------------------------------|
| 2025 – Present | <b>Ph.D. in Neuroscience</b><br>School of Medicine, Division of Biology & Biological Sciences (DBBS) <ul style="list-style-type: none"><li>Thesis Advisor: TBD</li></ul>  | Washington University in St. Louis |
| 2021 – 2025    | <b>Bachelor of Arts in Mathematics and<br/>Bachelor of Science in Neuroscience with High Distinction</b> <ul style="list-style-type: none"><li>Minor in Psychology. Cluster in Philosophy: Ethics and Values.</li></ul> | University of Rochester            |

## CERTIFICATES

- |             |  |                         |
|-------------|--|-------------------------|
| 2025        | <b>Advanced Data Analytics Professional Certificate (in progress)</b>        | Google                  |
| 2025        | <b>Corporate Finance Professional Certificate (in progress)</b>              | Columbia X              |
| 2025        | <b>Computer Science for Artificial Intelligence Professional Certificate</b> | Harvard X               |
| 2021 – 2025 | <b>Biotechnology Certificate</b>   | University of Rochester |
| 2024        | <b>Generative AI for Business Leaders</b>                                    | IBM                     |

## AWARDS/GRANTS

- |             |  |                         |
|-------------|--|-------------------------|
| 2021 – 2025 | <b>Undergraduate</b> <ul style="list-style-type: none"><li>Schwartz Discover Grant, 2024</li><li>Dean's List</li><li>BankCard Services Scholarship Award, 2021</li></ul> | University of Rochester |
|-------------|--|-------------------------|

## RESEARCH

- |                |   |                                    |
|----------------|---|------------------------------------|
| 2025 – Present | <b>Doctoral Researcher: Rotating in Ackerman Lab</b><br>Department of Pathology and Immunology, School of Medicine <ul style="list-style-type: none"><li>Laboratory of Dr. Sarah Ackerman, Ph.D.</li><li>Research Focus: Working on characterizing astrocyte subtypes in zebrafishish.</li></ul>  | Washington University in St. Louis |
| 2021 – 2025    | <b>Researcher in Center for Translational Neuromedicine</b><br>Department of Neurology, University of Rochester Medical Center <ul style="list-style-type: none"><li>Laboratory of Dr. Maiken Nedergaard, M.D., D.M.Sc.</li><li>Official positions: School of Medicine and Dentistry Intern, Glymphatic System Technical Associate I, Schwartz Discover Scholar</li><li>Research Focus: The contribution of aquaporin-4 (located on astrocytic endfeet) to glymphatic function.</li></ul> | University of Rochester            |

## PUBLICATIONS

- Gahn-Martinez D, Giannetto M, **Chang E**, Beam N, Pla V, Nedergaard M. Chronic Intraventricular Cannulation for the Study of Glymphatic Transport. *eNeuro*. doi: 10.1523/ENEURO.0537-24.2025
- Giannetto M, Gomolka R, Gahn-Martinez D, Newbold E, Bork P, **Chang E**, Gresser M, Thompson T, Mori Y, Nedergaard M. Glymphatic fluid transport is suppressed by the AQP4 inhibitor AER-271. *Glia*. doi: 10.1002/glia.24515

## PRESENTATIONS

- Chang E (presenter)**, Giannetto M, Agarwald I, Nick Vento, Gahn-Martinez D, Nedergaard M. Aquaporin-4 Expression on Glymphatic Clearance Routes and Function. Schwartz Discover Scholar Showcase. 2024
- Chang E (presenter)**, Giannetto M, Gahn-Martinez D, Nedergaard M. Aquaporin-4 Expression and Size-Dependent Solute Movement in the Brain. University of Rochester Undergraduate Research Exposition. 2024.
- Chang E (presenter)**, Barth RK. Isolation of Hydrogen Sulfide Producing Bacteria from the environment. Department of Microbiology and Immunology Poster Session. 2023.
- Giannetto M, Gomolka R, Gahn-Martinez D, Newbold E, Bork P, **Chang E (presenter)**, Gresser M, Thompson T, Mori Y, Nedergaard M. Glymphatic fluid transport is suppressed by the AQP4 inhibitor AER-271. University of Rochester Undergraduate Program in Biology and Medicine Poster Symposium. 2023.

## TEACHING

2022 – Present

### Teaching

- **Teacher for UR SPLASH**  
Co-taught a free class with Audrey Jung to RCSD High School students, introducing basic neuroscience concepts behind mental and degenerative disorders and how to get involved in research. 2024.
- **Teaching Assistant: NSCI 201P**  
Basic Neurobiology Lab at the University of Rochester, Department of Brain and Cognitive Sciences with Dr. Renee Miller, Ph.D. 2023.
- **Biology and Chemistry Tutor**  
Provided one-on-one tutoring assistance to high school biology and chemistry students. 2022-2023.

2023 – Present

### Mentoring

- Audrey Jung, University of Rochester Undergraduate, C.O. 2027. Neuroscience Undergraduate Council.
- Isha Agarwal, University of Rochester Undergraduate C.O. 2026. Center for Translational Neuromedicine.
- Nick Ventokl, University of Rochester Undergraduate C.O. 2026. Center for Translational Neuromedicine.

## SERVICE AND LEADERSHIP

2025 – Present

### Graduate

Washington University in St. Louis

- **Member of Graduate Student Advisory Board**  
Center for Career Engagement, where I gave insights to optimize resources for graduate students interested in pursuing industry as a career path.

2021 – 2025

### Undergraduate

University of Rochester

- **Deputy Chair for Academic Affairs Committee**  
Student's Association, where I played a key role in leading a team of nine on 15+ initiatives to enhance the student academic experience. Spearheaded projects expanding research opportunities and fostering inter- and intradepartmental collaboration.
- **Emergency Department Clinical Support**  
Strong Memorial Hospital. Supported clinical operations during the COVID-19 Omicron peak. Main responsibilities include vital acquisition, EKG, and phlebotomy. Helped nurses and doctors as needed.
- **Student Research Ambassador**  
Office of Undergraduate Research at the University of Rochester. Acted as a point of contact to answer questions about research involvement for 6000+ undergraduate students and served on the student research panels at admission events.
- **Emergency Medical Technician**  
RC-MERT, providing free and confidential service to students. Also served on the Selections Committee, where we assessed 80-100 applications and facilitated interviews.
- **Archery Club Executive Board**  
I helped run practices with 25+ people. Increased range time by 50% and assisted in managing equipment, club logistics, conflict resolution, and funding/budgeting.
- **Hospital volunteering**  
Friends of Strong, assisting multiple departments in logistics
- **College coach volunteer**  
AmeriCorps/Hoekelman Center at SMH. Assisted and encouraged underserved students at RCSD to attend college, where graduation rates rose to 71%

## RELEVANT COURSES

• Cellular Neurobiology	• Probability and Statistics	• Numerical Analysis	• Organic Chemistry I and II	• Social Psychology
• Neural Systems	• Data Structures and Algorithms	• Topology	• Biochemistry	• Clinical Psychology
• Computational Neuroscience	• Linear Algebra	• Stochastic Processes	• Genetics	• Social Political Philosophy
• Differential Equations	• Machine Learning	• Multidimensional Calculus	• Microbiology	• Philosophy of Death

## LANGUAGES

English - native, Mandarin Chinese - intermediate