Ye Yuan

Ph.D. Candidate
Cellular and Molecular Biology Program
University of Michigan
Email: yeyu@umich.edu
ORCID: 0000-0001-9641-9102
Website: https://yeyuan98.github.io/

EDUCATION

Ph.D. Candidate in Cellular and Molecular Biology May 2020 – Present
University of Michigan Ann Arbor, MI

Graduate Data Science Certificate Program 2022 - 2024
University of Michigan Ann Arbor, MI

M.S.E. in Mechanical Engineering Sep 2018 - May 2020
University of Michigan Ann Arbor, MI

B.S. in Applied Physics Sep 2014 - May 2018
University of Science and Technology of China Hefei, China

RESEARCH EXPERIENCE

Graduate Student Research Assistant May 2020 - Present
Department of Cell and Developmental Biology, University of Michigan Ann Arbor, MI
Advisor: Dr. Swathi Yadlapalli
Focus: Subcellular mechanisms of the circadian clocks in Drosophila clock neurons of whole-mount brains
- Imaging of endogenous clock genes, transcripts and proteins by in situ hybridization and CRISPR editing
- Probing interaction among clock RNA/protein components by proximity labeling and reverse genetics
- Genome-wide characterization of novel clock mutants by ATAC-seq and RNA-seq

Graduate Student Research Assistant Sep 2018 – May 2020
Department of Mechanical Engineering, University of Michigan Ann Arbor, MI
Advisor: Dr. Pramod Reddy and Dr. Edgar Meyhofer
Focus: Real-time, environment-controlled calorimetry of individual *Drosophila melanogaster*

Undergraduate Thesis Sep 2017 - Apr 2018
Department of Physics, University of Science and Technology of China Hefei, China
Advisor: Dr. Changgan Zeng
Focus: Finite element simulation of surface plasmon modes in graphene for simpler optical generation

Undergraduate Visiting Research Assistant Jul 2017 - Aug 2017
Department of Mechanical Engineering, University of Michigan Ann Arbor, MI
Advisor: Dr. Jianping Fu
Focus: Single particle tracking revealed cell migration patterns of human neurogenesis organoid model

ACADEMIC HONORS

Rackham Predoctoral Fellowship, University of Michigan Rackham Graduate School 2024
University award for outstanding doctoral dissertation research (full funding)

Patten Graduate Research Scholarship, University of Michigan Medical School 2022
Department award for excellence in research

Outstanding Graduate Scholarship, University of Science and Technology of China 2018
University award for undergraduate study (top 10%)

PUBLICATION

1. **Yuan,Y.**, Yadlapalli, S. (Invited commentary) Regulation of circadian rhythms by clock protein nuclear bodies. *Proceedings of the National Academy of Sciences.* 10.1073/pnas.2321334121 (2024)
2. **Yuan, Y.***, Chen, Q., Brovkina, M., Clowney, E.J., Yadlapalli, S. Clock-dependent chromatin accessibility rhythms regulate circadian transcription. *PLoS Genetics.* 10.1371/journal.pgen.1011278 (2024, * co-corresponding authors)
3. Xiao, Y.†, **Yuan, Y.**†, Yadlapalli, S. A one-step CRISPR-based strategy for endogenous gene tagging in *Drosophila melanogaster*. *Journal of Visualized Experiments.* 10.3791/64729 (2024)
(† co-first authors)
4. **Yuan, Y.,** Xiao, Y., Yadlapalli, S. The role of spatiotemporal organization and dynamics of clock complexes in circadian regulation. *Current Opinion in Cell Biology.* 78: 102129 (2022)
5. **Yuan, Y.***,Clark, D., Padilla, M.A., Yadlapalli, S. Streamlined, cell-specific single-molecule RNA-FISH in whole mount Drosophila brains. *Frontiers in Physiology.* 09: 1051544 (2022)
(* co-corresponding authors)
6. Xiao, Y.†, **Yuan, Y.**†, Jimenez, M., Soni, N., Yadlapalli, S.. Clock proteins regulate spatiotemporal organization of clock genes to control circadian rhythms. *Proceedings of the National Academy of Sciences.* e2019756118 (2021)
(† co-first authors)
7. Xue, X., Sun, Y., Resto-Irizarry, A., **Yuan, Y.**, Aw Yong, K., Zheng, Y., Weng, S., Shao, Y., Chai, Y., Studer, L., Fu, J. Mechanics-guided embryonic patterning of neuroectoderm tissue from human pluripotent stem cells. *Nature Materials.* 17: 633-641 (2018)

ORAL PRESENTATION

Cell Bio 2024 (ASCB and EMBO joint meeting), San Diego, CA 2024 (scheduled)
Drosophila Research Symposium, Ann Arbor, MI 2024
Developmental Genetics Meeting, Ann Arbor, MI 2022
Department of Cell and Developmental Biology Annual Retreat, Maumee, OH 2022

POSTER PRESENTATION

Cell Bio 2024 (ASCB and EMBO joint meeting), San Diego, CA 2024 (scheduled)
Cell Bio 2023 (ASCB and EMBO joint meeting), Boston, MA 2023
64th Annual Drosophila Research Conference, Chicago, IL 2023

Post-Transcriptional Gene Regulation, Gordon Research Conference, Newry, ME 2022
50th Anniversary of Cellular and Molecular Biology Program, Ann Arbor, MI 2022
50th Anniversary of Neuroscience Graduate Program, Ann Arbor, MI 2022
Society for Research on Biological Rhythms, Amelia Island, FL 2020

TEACHING EXPERIENCE

Graduate Student Instructor Fall 2020, Fall 2019
Undergraduate course "Biomechanics for Engineering Students" University of Michigan
Undergraduate Teaching Assistant Winter 2017
Undergraduate course "Theoretical Mechanics A" University of Science and Technology of China

OPEN-SOURCE SOFTWARE CONTRIBUTIONS

Open-source packages are vital for scientific data analysis and I strive to contribute where I could.

Workflow manager "snakemake" https://github.com/snakemake/snakemake
bug-fixing commits for platform-specific issues on Windows

R-Bioconductor core package "GenomicRanges" https://github.com/Bioconductor/GenomicRanges
bug-fixing suggestions on function "nearestKNeighbors"

ImageJ2 plugin for ROI-based image analysis "punctaTracker" https://github.com/yeyuan98/punctaTracker
this plugin has been used for most image analysis tasks in the lab

Reproducible guides on common data analysis tasks https://yeyuan98.github.io/
~100 viewers with ~1000 views overall; helped multiple colleagues in the U-M community

MENTORING

I mentored multiple students on lab basics, experiment design to specific procedures and data analysis.
I was fortunate to coauthor publications with several of them.

Undergraduate Students: Dunham Clark, Rebecca Tran
Rotation Students: Marc-Antonio Padilla, Amanda Linskens
Technicians: Christopher Wilson, Rafael De Gouvea, Haokai Liu