Tamas L. Nagy, Ph.D.

University of California, Los Angeles
615 Charles E Young Dr S
BSRB Rm 454
Los Angeles, CA 90095

Email: iam [at] tamasnagy.com
Website: https://tamasnagy.com

Current Position

2023— **Postdoctoral Scholar**, Neurology, Univ. of California, Los Angeles

Topic: "How do Satellite Cells Count? Information Processing in Motile Cellular Collectives"
Advisor: Thomas A. Rando, M.D., Ph.D.

Education

2024 **Course Attendee**, Physiology: Modern Cell Biology Using Microscopic, Biochemical and Computational Approaches, Marine Biological Laboratory, Woods Hole MA.

Course Directors: Amy Gladfelter, Ph.D., Cliff Braggwynne, Ph.D.
Rotation Advisors: Stephan Grill, Ph.D., Manu Prakash, Ph.D.

2015—2023 **Ph.D.**, Biomedical Informatics, University of California, San Francisco

Thesis: "Neutrophils actively swell to potentiate rapid migration"
Advisor: Orion D. Weiner, Ph.D.

2011—2015 **B.S.** in Chemistry, **B.S.** in Mathematical Sci, University of Kentucky, Lexington

Research Interests

Cellular Decision Making; Collective Intelligence; Nonequilibrium Dynamics; Information Propagation; Tissue Regeneration; Cellular Motility

Selected Awards & Grants

2024— **LLHF Fellowship Grant**, Larry L. Hillblom Foundation, Sonoma, CA ($225,000)

2017—2020 **Moritz-Heyman Discovery Fellow**, University of California, San Francisco

2015—2020 **NSF Graduate Research Fellow**, National Science Foundation (~$110,000)

2013 **AMGEN/CRSB Fellow** w/Jennifer Doudna, University of California, Berkeley

2011—2015 **Otis A. Singletary Scholar**, University of Kentucky (Tuition, Board, & stipend)

Publications

De Belly, H., Gallen, A.F., Strickland, E., Estrada, D.C., Zager, P.J., **Nagy, T. L.**, Burkhardt, J.K., Turlier, H., Weiner, O.D. (2025). Long range mutual activation establishes Rho and Rac polarity during cell migration. *bioRxiv*. https://doi.org/10.1101/2024.10.01.616161.
Preprint (Submitted).

Nagy, T.L., Strickland, E., and Weiner, O.D. (2024). Neutrophils actively swell to potentiate rapid migration. *Elife* 12. https://doi.org/10.7554/eLife.90551.
Editorial assessment: Fundamental and compelling

Graziano, B. R., Town, J. P., Sitarska, E., **Nagy, T. L.**, Fošnarič, M., Penič, S., Iglič, A., Kralj-Iglič, V., Gov, N. S., Diz-Muñoz, A., & Weiner, O. D. (2019). Cell confinement reveals a branched-actin independent circuit for neutrophil polarity. PLoS Biology, 17(10), e3000457. https://doi.org/10.1371/journal.pbio.3000457

Saha, S., **Nagy, T. L.** & Weiner, O. D. Joining forces: crosstalk between biochemical signalling and physical forces orchestrates cellular polarity and dynamics. *Philos. Trans. R. Soc. Lond. B Biol. Sci.* 373, (2018). https://doi.org/10.1098/rstb.2017.0145

Mavor, D., Barlow, K.A.,…, **Nagy, T.L.**,…, et al. (2018). Extending chemical perturbations of the ubiquitin fitness landscape in a classroom setting reveals new constraints on sequence tolerance. *Biol. Open* 7. https://doi.org/10.1242/bio.036103.

Nagy, T. & Kampmann, M. CRISPulator: a discrete simulation tool for pooled genetic screens. *BMC Bioinformatics* 18, 347 (2017). https://doi.org/10.1186/s12859-017-1759-9

Webb, S., **Nagy, T.**, Moseley, H., Fried, M. & Dutch, R. E. Hendra virus fusion protein transmembrane domain contributes to pre-fusion protein stability. *J. Biol. Chem.* (2017). https://doi.org/10.1074/jbc.M117.777235

Mentorship

2025— Mentor to Samuel Adubofour (Undergraduate COMPASS student)
2024—2025 Mentor to Yutzil Herrera (Undergraduate COMPASS student)
Spring 2025 Mentor to Candace Wang (UCLA MSTP Student)
Winter 2022 Rotation Advisor to Sneha Rao (UCSF DSCB Student)
Fall 2018 Rotation Advisor to Evelyn Strickland (UCSF Biophysics Student)

Selected Talks & Posters

2025 **Poster** "How do Muscle Stem Cells Count? Information Propagation in Motile Cellular Collectives", Gordon Research Conference on Directed Cell Migration, Barga, Italy

2023 **Talk** "Neutrophils actively swell to potentiate their migration" American Society for Cell Biology Meeting, Boston, MA

2023 **Poster** "Immune cells actively increase their volumes to facilitate migration" UCSF Cardiovascular Research Institute Departmental Retreat, Santa Cruz, CA
****Best Poster Award****

2023 **Poster** "Immune cells actively increase their volumes to facilitate migration" Gordon Research Conference on Directed Cell Migration, Galveston, TX

2022 **Poster** "Dissecting the role of regulatory volume changes in neutrophil chemotaxis" 66th Annual Meeting of the Biophysical Society, San Francisco, CA
****Best Poster Award****

2020 **Talk** "Leveraging Julia for Data Science", invited speaker, 2020 Computational Biology Skills Seminar, UC Berkeley, remote

2019 **Poster** "Dissecting the mechanistic basis of the chemoattractant-induced volume increase in neutrophils", 2019 Gordon Research Conference on Directed Cell Migration, Galveston, TX

2018 **Poster** "Dissecting the mechanistic basis of the chemoattractant-induced volume increase in neutrophils", 2018 Ion Channels & Immunity Symposium, NYU Langone Health, New York City, NY

2018 **Poster** "Active control of cell volume during immune cell migration", 2018 Training Grantees Meeting, National Institute of Biomedical Imaging and Bioengineering, Bethesda, MD

2016 **Talk** "Leveraging CRISPR for Precision Biology", Workshop with Jacob Corn and Martin Kampmann, American Society for Cell Biology Annual Meeting, San Francisco, CA

2013 **Talk** "Engineered CRISPR/Cas-based System for RNA-guided, Tag-less, Spatiotemporal Imaging of Endogeneous RNA," AMGEN symposium, Berkeley, CA

Software

I regularly develop and release open-source software as part of my work, some of my most substantial packages are highlighted below

- `TiffImages.jl`: A high performance, extensible reader and writer for TIFF images in Julia
- `OMETIFF.jl`: Read and interact with high-dimensional images
- `Crispulator.jl`: Simulation tool for designing pooled CRISPR screens

Service

2023—2025 Co-Chair, 2025 Directed Cell Migration Gordon Research Seminar

2017—2019 iPQB Graduate Student Admissions Interviewer and Committee Member, UCSF

2018 Teaching Assistant, Algorithms, University of California, San Francisco

2017 Teaching Assistant, Algorithms, University of California, San Francisco
****UCSF Graduate Division Teaching Award****

2014 Teaching Assistant, Organic Chemistry II, University of Kentucky

2013 Teaching Assistant, Organic Chemistry I, University of Kentucky

2013—2014 Public Relations, Society for the Promotion of Undergraduate Research (SPUR)

References (Alphabetical)

Fred Chang, UCSF, fred.chang [at] ucsf.edu

Amy Gladfelter, Duke University, amy.gladfelter [at] duke.edu

Stephan Grill, Max Planck Institute of Molecular Cell Biology and Genetics, grill [at] mpi-cbg.de

Martin Kampmann, UCSF, martin.kampmann [at] ucsf.edu

Thomas A Rando, UCLA, TRando [at] mednet.ucla.edu

Orion Weiner, UCSF, orion.weiner [at] ucsf.edu

Built on 13 June 2025