

Stanford



Ray Chang

Postdoctoral Scholar, Bioengineering

Bio

HONORS AND AWARDS

- Stanford Bio-X SIGF Fellow, Stanford Bio-X (Sep. 2021- Aug. 2024)
- Morgridge Family SIGF Fellow, Stanford Office of the Vice Provost for Graduate Education (Sep. 2021- Aug. 2024)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Phi Tau Phi (2019 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , BIOE-PHD (2024)
- Master of Science, Stanford University , BIOE-MS (2021)
- MD, National Taiwan University (2019)
- Certified Physician, Ministry of Health, Taiwan (2019)

STANFORD ADVISORS

- Manu Prakash, Postdoctoral Faculty Sponsor

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

fluid mechanics, ultrafast biophysics, protistology

Publications

PUBLICATIONS

- **Experimental Observations of DNA Vertex Pinning: Effect of Adsorbed Polymer Type and Electric Field Reversal.** *Langmuir : the ACS journal of surfaces and colloids*
Li, K., Ma, K., Samuel, C. J., Wang, F., Pongetti, J., Chang, R., Haddon-Vukasin, G., Memarian, F. L., Darvish, A., Tran, M. J., Santiago, J. G.
2026
- **EasyVoid: A Handheld Coanda Effect Uroflowmeter for Accurate and Portable Measurement of Urinary Flow Dynamics** *IEEE JOURNAL OF TRANSLATIONAL ENGINEERING IN HEALTH AND MEDICINE*
Chang, R., Chen, Y., Chen, H., Zeng, R., Prakash, M.
2026; 14: 210-224
- **Ballistic Microscopy (BaM).** *bioRxiv : the preprint server for biology*
Jijumon, A. S., Chang, R., Prakash, M.

2025

- **Cellular Olympics: Ultrafast Cellular Motility Across the Tree of Life.** *Annual review of microbiology*
Chang, R., Prakash, M.
2025
- **Taylor dispersion for coupled electroosmotic and pressure-driven flows in all time regimes** *JOURNAL OF FLUID MECHANICS*
Samuel, C. J., Chang, R., Ma, K., Santiago, J. G.
2025; 1011
- **Vertex Pinning and Stretching of Single Molecule DNA in a Linear Polymer Solution.** *Small (Weinheim an der Bergstrasse, Germany)*
Ma, K., Samuel, C. J., Paul, S., Chang, R., Memarian, F. L., Haddon-Vukasin, G., Darvish, A., Santiago, J. G.
2025: e2503087
- **Ballistic Microscopy (BaM)** *bioRxiv*
Jijumon, A. S., Chang, R., Prakash, M.
2025
- **Energetics of the microsporidian polar tube invasion machinery.** *eLife*
Chang, R., Davydov, A., Jaroenlak, P., Budaitis, B., Ekiert, D. C., Bhabha, G., Prakash, M.
2024; 12
- **Taylor dispersion in arbitrarily shaped axisymmetric channels** *JOURNAL OF FLUID MECHANICS*
Chang, R., Santiago, J. G.
2023; 976
- **Topological damping in an ultrafast giant cell.** *Proceedings of the National Academy of Sciences of the United States of America*
Chang, R., Prakash, M.
2023; 120 (41): e2303940120
- **Energetics of the Microsporidian Polar Tube Invasion Machinery.** *bioRxiv : the preprint server for biology*
Chang, R., Davydov, A., Jaroenlak, P., Budaitis, B., Ekiert, D. C., Bhabha, G., Prakash, M.
2023
- **Modified full-face snorkel masks as reusable personal protective equipment for hospital personnel.** *PloS one*
Kroo, L., Kothari, A., Hannebelle, M., Herring, G., Pollina, T., Chang, R., Peralta, D., Banavar, S. P., Flaum, E., Soto-Montoya, H., Li, H., Combes, K., Pan, et al
2021; 16 (1): e0244422