

Ashwin Balaji

Ph.D. Student in Biophysics, admitted Autumn 2019

Publications

PUBLICATIONS

- **Structural remodeling of target-SNARE protein complexes by NSF enables synaptic transmission.** *Nature communications*
White, K. I., Khan, Y. A., Qiu, K., Balaji, A., Couch-Cardel, S., Esquivies, L., Pfuetzner, R. A., Diao, J., Brunger, A. T.
2025; 16 (1): 8371
- **Efficient Double Helix Detection with Steerable Filters.** *bioRxiv : the preprint server for biology*
Barentine, A. E., Balaji, A., Moerner, W. E.
2025
- **A Super-Resolution Spatial Atlas of SARS-CoV-2 Infection in Human Cells.** *bioRxiv : the preprint server for biology*
Andronov, L., Han, M., Balaji, A., Zhu, Y., Qi, L. S., Moerner, W. E.
2025
- **High-resolution dynamic imaging of chromatin DNA communication using Oligo-LiveFISH.** *Cell*
Zhu, Y., Balaji, A., Han, M., Andronov, L., Roy, A. R., Wei, Z., Chen, C., Miles, L., Cai, S., Gu, Z., Tse, A., Yu, B. C., Uenaka, et al
2025
- **Dynamic basis of supercoiling-dependent DNA interrogation by Cas12a via R-loop intermediates.** *Nature communications*
Aris, K. D., Cofsky, J. C., Shi, H., Al-Sayyad, N., Ivanov, I. E., Balaji, A., Doudna, J. A., Bryant, Z.
2025; 16 (1): 2939
- **Pre-fusion AAA+ remodeling of target-SNARE protein complexes enables synaptic transmission.** *bioRxiv : the preprint server for biology*
White, K. I., Khan, Y. A., Qiu, K., Balaji, A., Couch-Cardel, S., Esquivies, L., Pfuetzner, R. A., Diao, J., Brunger, A. T.
2024
- **Nanoscale cellular organization of viral RNA and proteins in SARS-CoV-2 replication organelles.** *Nature communications*
Andronov, L., Han, M., Zhu, Y., Balaji, A., Roy, A. R., Barentine, A. E., Patel, P., Garhyan, J., Qi, L. S., Moerner, W. E.
2024; 15 (1): 4644
- **Revealing the 3D nanoscale organization of MyosinH in the apical complex of toxoplasma gondii through single-molecule localization microscopy with the double-helix point spread function**
Balaji, A., Zarko, L., Dahlberg, P. D., Boothroyd, J. C., Moerner, W. E.
CELL PRESS.2024: 30A-31A
- **Nanoscale cellular organization of viral RNA and proteins in SARS-CoV-2 replication organelles.** *bioRxiv : the preprint server for biology*
Andronov, L., Han, M., Zhu, Y., Roy, A. R., Barentine, A. E., Garhyan, J., Qi, L. S., Moerner, W. E.
2023
- **Stabilizing a centrifugal force microscope to study DNA folding**
Orlowski, A. A., Huq, M., Balaji, A., Carter, A. R.
CELL PRESS.2023: 548A
- **Stabilizing a centrifugal force microscope to study DNA folding.** *Biophysical journal*
Orlowski, A. A., Huq, M., Balaji, A., Carter, A. R.
2023; 122 (3S1): 548a
- **Characterizing the distribution of myosin H in the apical complex of conoid protruded and conoid retracted Toxoplasma gondii**

Balaji, A., Dahlberg, P. D., Segev-Zarko, L., Sun, S., Chiu, W., Boothroyd, J., Moerner, W. E.
CELL PRESS.2022: 409A

- **Single-molecule analysis of DNA interrogation by Cas9 and Cas12a on supercoiled DNA**

Aris, K. D. P., Cofsky, J., Wright, A. V., Ivanov, I. E., Balaji, A., Doudna, J. A., Bryant, Z.
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- **Construction of a centrifugal force microscope**

Golden, G. N., Carter, A., Balaji, A.
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