

# Stanford

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## Rahel Woldeyes

Postdoctoral Scholar, Bioengineering

### Bio

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#### BIO

The goal of my current research is to use high resolution imaging techniques to interrogate outstanding questions in cardiovascular cell biology, with a focus on the signaling pathways that trigger heart muscle contraction. In the Wah Chiu lab, I am using cryo-electron tomography-based imaging approaches to connect the molecular and cellular scales of biology and accelerate our understanding of human health and disease.

#### HONORS AND AWARDS

- K99/R00 MOSAIC Scholar, NIH/NHLBI (12/2021-current)
- NSF GRFP Fellow, NSF/Graduate Research Fellowship Program (2013-2017)

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of California San Francisco (2017)

### Publications

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#### PUBLICATIONS

- **Altered Cardiac Energetics and Mitochondrial Dysfunction in Hypertrophic Cardiomyopathy.** *Circulation*  
Ranjbarvaziri, S., Kooiker, K. B., Ellenberger, M., Fajardo, G., Zhao, M., Vander Roest, A. S., Woldeyes, R. A., Koyano, T. T., Fong, R., Ma, N., Tian, L., Traber, G. M., Chan, et al  
2021
- **Comparing serial X-ray crystallography and microcrystal electron diffraction (MicroED) as methods for routine structure determination from small macromolecular crystals.** *IUCrJ*  
Wolff, A. M., Young, I. D., Sierra, R. G., Brewster, A. S., Martynowycz, M. W., Nango, E., Sugahara, M., Nakane, T., Ito, K., Aquila, A., Bhowmick, A., Biel, J. T., Carbajo, et al  
2020; 7 (Pt 2): 306–23
- **XFEL structures of the influenza M2 proton channel: Room temperature water networks and insights into proton conduction** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Thomaston, J. L., Woldeyes, R. A., Nakane, T., Yamashita, A., Tanaka, T., Koizumi, K., Brewster, A. S., Barad, B. A., Chen, Y., Lemmin, T., Uervirojnangkoorn, M., Arima, T., Kobayashi, et al  
2017; 114 (51): 13357–62
- **CryptoSite: Expanding the Druggable Proteome by Characterization and Prediction of Cryptic Binding Sites** *JOURNAL OF MOLECULAR BIOLOGY*  
Cimermancic, P., Weinkam, P., Rettenmaier, T., Bichmann, L., Keedy, D. A., Woldeyes, R. A., Schneidman-Duhovny, D., Demerdash, O. N., Mitchell, J. C., Wells, J. A., Fraser, J. S., Sali, A.  
2016; 428 (4): 709-719
- **High-density grids for efficient data collection from multiple crystals.** *Acta crystallographica. Section D, Structural biology*

Baxter, E. L., Aguila, L., Alonso-Mori, R., Barnes, C. O., Bonagura, C. A., Brehmer, W., Brunger, A. T., Calero, G., Caradoc-Davies, T. T., Chatterjee, R., DeGrado, W. F., Fraser, J. S., Ibrahim, et al  
2016; 72: 2-11

- **High-resolution structures of the M2 channel from influenza A virus reveal dynamic pathways for proton stabilization and transduction** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*

Thomaston, J. L., Alfonso-Prieto, M., Woldeyes, R. A., Fraser, J. S., Klein, M. L., Fiorin, G., DeGrado, W. F.  
2015; 112 (46): 14260-14265

- **Mapping the conformational landscape of a dynamic enzyme by multitemperature and XFEL crystallography.** *eLife*

Keedy, D. A., Kenner, L. R., Warkentin, M., Woldeyes, R. A., Hopkins, J. B., Thompson, M. C., Brewster, A. S., Van Benschoten, A. H., Baxter, E. L., Uervirojnangkoom, M., McPhillips, S. E., Song, J., Alonso-Mori, et al  
2015; 4

- **E pluribus unum, no more: from one crystal, many conformations** *CURRENT OPINION IN STRUCTURAL BIOLOGY*

Woldeyes, R. A., Sivak, D. A., Fraser, J. S.  
2014; 28: 56-62