

SUSANNE RAFELSKI, PH.D., DEPUTY DIRECTOR

Susanne Rafelski, Ph.D. is the Deputy Director at the Allen Institute for Cell Science and was named to this position in December, 2020.

Prior to joining the Institute in 2016, Susanne was an Assistant Professor in the Department of Developmental and Cell Biology, the Department of Biomedical Engineering, and the Center for Complex Biological Systems at UC Irvine. Susanne began imaging live cells and visualizing intracellular dynamics in 3D when she was 17 and hasn't been able to stop since. Her life-long scientific goal is to decipher the patterns and rules that transform the overwhelming complexity found inside cells into functioning units of life. She believes that to do this we must understand the organization of the structures within the cell in space and time. Susanne takes an interdisciplinary, quantitative approach to cell biology, combining live-cell image-based assays, molecular genetics, and computational methods.

Susanne obtained her B.S. in Biochemistry and Molecular & Cellular Biology with an additional emphasis in Mathematics from the University of Arizona. Susanne then completed her Ph.D. in Biochemistry at Stanford University, followed by a postdoc at the Center for Cell Dynamics at the Friday Harbor Labs, University of Washington, where she learned computational modeling approaches. Her research focused on integrating bacterial polarity with host-cell cytoskeletal dynamics to understand *Listeria* actin-based motility. Susanne then initiated her current research program on mitochondrial structure-function as a postdoc at UCSF, where she developed 3D microscopy and image analysis methods to quantify mitochondrial morphology and applied these to investigate mitochondrial size control regulation. As a model system for intracellular organization the Rafelski lab extended this work to studying the size, topology, and function of mitochondrial networks in budding yeast and mammalian cells.