Stanford

Jessica Feldman

Associate Professor of Biology

Bio

BIO

As a graduate student at University of California, San Francisco, I studied the genetic regulation of centrosome structure, function, and positioning and the mechanisms dictating internal cellular organization using the unicellular alga Chlamydomonas. I went on to characterize the role of the centrosome during epithelial polarization in C. elegans, working as a postdoctoral fellow at the Fred Hutchinson Cancer Research Center. I started my lab in the Biology Department in 2014. In my lab, we study structural changes that occur at the cellular level during normal development and in disease. In particular, we are interested in understanding how microtubules become spatially organized in different cell types during cell differentiation.

ACADEMIC APPOINTMENTS

- Associate Professor, Biology
- Member, Bio-X
- Faculty Fellow, Sarafan ChEM-H

HONORS AND AWARDS

- New Innovator Award, NIH (2015-2020)
- Basil O'Connor Starter Scholar Research Award, March of Dimes Foundation (2015-2017)
- Postdoctoral Fellowship, American Heart Association (2013)
- Postdoctoral Fellowship, Helen Hay Whitney Foundation (2010-2013)
- Predoctoral Fellowship, National Science Foundation

PROFESSIONAL EDUCATION

- Ph.D., University of California, San Francisco , Cell Biology (2008)
- B.A., Columbia University , Biology (2000)

LINKS

- Feldman Lab Website: http://web.stanford.edu/group/jfeldman_lab

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

We are interested in understanding design principles within cells that contribute to the diversification of cellular form and function. Using a combination of genetic, biochemical, and live imaging approaches, we are investigating how the microtubule cytoskeleton is spatially organized and the mechanisms underlying organizational changes during development.

Teaching

COURSES

2022-23

- Cell Biology: BIO 86 (Spr)
- Mini-course on big cells: BIOS 222 (Sum)

2021-22

- Cell Biology: BIO 86 (Spr)
- Pattern Formation: BIO 139 (Win)

2020-21

- Cell Biology: BIO 86 (Spr)

2019-20

- Apico-basolateral Epithelial Cell Polarity: BIOS 280 (Win)
- Cell Biology: BIO 86 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Zhainib Amir, Devin Bradburn, Dane Kawano, Lindsey Meservey, Jessica Zhang

Postdoctoral Faculty Sponsor

Lauren Cote, Caitlin Devitt, Lucian Tomaz

Doctoral Dissertation Advisor (AC)

Ayaka Kasamatsu, Alex Lessenger, Victor Naturale, Rachel Ng, Michael Tran, Nabor Vazquez Martinez

Doctoral (Program)

Alex Lessenger, Victor Naturale, Rachel Ng, Michael Tran

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biology (School of Humanities and Sciences) (Phd Program)

Publications

PUBLICATIONS

- **SPD-2/CEP192 and CDK Are Limiting for Microtubule-Organizing Center Function at the Centrosome** *CURRENT BIOLOGY*
  Yang, R., Feldman, J. L.
  2015; 25 (14): 1924-1931
- **Quantitative analysis and modeling of katanin function in flagellar length control** *MOLECULAR BIOLOGY OF THE CELL*
  Kannegaard, E., Rego, E. H., Schuck, S., Feldman, J. L., Marshall, W. F.
  2014; 25 (22): 3686-3698
- **The Kinase Regulator Mob1 Acts as a Patterning Protein for Stentor Morphogenesis** *PLOS BIOLOGY*
  Slabodnick, M. M., Ruby, J. G., Dunn, J. G., Feldman, J. L., DeRisi, J. L., Marshall, W. F.
  2014; 12 (5)
- **Cell Interactions and Patterned Intercalations Shape and Link Epithelial Tubes in C. elegans** *PLOS GENETICS*
  Rasmussen, J. P., Feldman, J. L., Reddy, S. S., Priess, J. R.

2013; 9 (9)

- **A Role for the Centrosome and PAR-3 in the Hand-Off of MTOC Function during Epithelial Polarization** *CURRENT BIOLOGY*
  Feldman, J. L., Priess, J. R.
  2012; 22 (7): 575-582

- **C. elegans Germ Cells Show Temperature and Age-Dependent Expression of Cer1, a Gypsy/Ty3-Related Retrotransposon** *PLOS PATHOGENS*
  Dennis, S., Sheth, U., Feldman, J. L., English, K. A., Priess, J. R.
  2012; 8 (3)

- **A Cell-Based Screen for Inhibitors of Flagella-Driven Motility in Chlamydomonas Reveals a Novel Modulator of Ciliary Length and Retrograde Actin Flow** *CYTOSKELETON*
  Engel, B. D., Ishikawa, H., Feldman, J. L., Wilson, C. W., Chuang, P., Snedecor, J., Williams, J., Sun, Z., Marshall, W. F.
  2011; 68 (3): 188-203

- **ASQ2 Encodes a TBCC-like Protein Required for Mother-Daughter Centriole Linkage and Mitotic Spindle Orientation** *CURRENT BIOLOGY*
  Feldman, J. L., Marshall, W. F.
  2009; 19 (14): 1238-1243

- **Katanin Knockdown Supports a Role for Microtubule Severing in Release of Basal Bodies before Mitosis in Chlamydomonas** *MOLECULAR BIOLOGY OF THE CELL*
  Rasi, M. Q., Parker, J. D., Feldman, J. L., Marshall, W. F., Quarmby, L. M.
  2009; 20 (1): 379-388

- **The mother centriole plays an instructive role in defining cell geometry** *PLOS BIOLOGY*
  Feldman, J. L., Geimer, S., Marshall, W. F.
  2007; 5 (6): 1284-1297

- **Retinoic acid signaling restricts the cardiac progenitor pool** *SCIENCE*
  Keegan, B. R., Feldman, J. L., Begemann, G., Ingham, P. W., Yelon, D.
  2005; 307 (5707): 247-249

- **PCR-based assay for mating type and diploidy in Chlamydomonas** *BIOTECHNIQUES*
  Zamora, I., Feldman, J. L., Marshall, W. F.
  2004; 37 (4): 534-536

- **Centrioles: Bad to be bald?** *CURRENT BIOLOGY*
  Feldman, J. L., Marshall, W. F.
  2004; 14 (16): R659-R660

- **The elongation factors Pandora/Spt6 and Foggy/Spt5 promote transcription in the zebrafish embryo** *DEVELOPMENT*
  Keegan, B. R., Feldman, J. L., Lee, D. H., Koos, D. S., Ho, R. K., Stainier, D. Y., Yelon, D.
  2002; 129 (7): 1623-1632

- **Genetic regulation of cardiac patterning in zebrafish** *Cold Spring Harbor Symposium on Quantitative Biology*
  Yelon, D., Feldman, J. L., Keegan, B. R.
  COLD SPRING HARBOR LAB PRESS, PUBLICATIONS DEPT.2002: 19–25