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## Post-Doctoral Position: Cellular Mechanics and Mechanobiology

Under the advisement of Prof. Megan T. Valentine, Department of Mechanical Engineering, Materials Research Laboratory and Center for Bioengineering; <https://me.ucsb.edu/valentinelab/>

**Location:** University of California, Santa Barbara, CA 93106

**Start Date:** February 1, 2018 (there is some flexibility)

**Term of appointment:** 1 year initial appointment, renewal upon mutual agreement for an additional 1-2 years

**Project Overview:** This collaborative project aims to understand how vascular cells sense and respond to mechanical signals in *Botryllus schlosseri*, a marine basal chordate possessing a large, transparent extracorporeal vascular network. This unique anatomy provides unprecedented opportunities for imaging and direct manipulation of individual blood vessels *within a living organism*. We recently discovered that disruption of cellular force-sensing triggers systemic tissue collapse in the *Botryllus* vasculature (Rodriguez, *et al.* MBoC 2017; [doi: 10.1091/mbc.E17-01-0009](https://doi.org/10.1091/mbc.E17-01-0009)). This regression occurs by the extrusion and phagocytosis of individual cells from the vessel wall, and occurs without pathology and without impeding blood flow. This project aims to investigate the mechanical process of extrusion, as well as the interplay between mechanical and chemical signaling in epithelial tissue growth and homeostasis. The results of these studies will provide new insight into the role of force sensing in organogenesis and cancer metastasis, and will lay the foundation for developing *Botryllus* as a new model system for cellular studies of mechanobiology.

The ideal applicant is a trained experimentalist with a strong record of collaborative, interdisciplinary research in the mechanics of biological or soft materials or in the biophysics of living systems. A Ph.D. in Engineering, Physics, Biology, or a related discipline is required. Prior experience with biological materials handling, confocal microscopy, force-based microscopy, image analysis, and/or design of experimental instruments is desirable. Candidates who can contribute to the diversity and excellence of the academic community are especially encouraged to apply\*

**Training environment:** UCSB is one of the highest-impact research universities in the world, and is characterized by its highly collaborative and dynamic research environment. The successful candidate will work with Prof. Valentine to develop a personalized training plan that includes the development of technical and professional skills, including skills in networking, communication, and fundraising. In addition to contributing to this project, the postdoctoral scholar will gain exposure to the broader research activities of the Valentine Laboratory, including studies of force impacts on neural cells and tissues, development of novel methods to study cell mechanics, and bio-inspired materials research.

**To apply:** Interested candidates should apply directly to Prof. Valentine at [valentine@engineering.ucsb.edu](mailto:valentine@engineering.ucsb.edu), and provide the following:

- Curriculum vitae
- Brief summary of research accomplishments (no more than 2 pages)
- Names and contact information for at least three references
- *Optional, but encouraged:* Description of contributions furthering diversity (no more than 1 page)

\*The University of California is an Equal Opportunity/Affirmative Action Employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability status, protected veteran status, or any other characteristic protected by law.

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