



## **Assistant or Associate Professor, Stanford University**

Interdisciplinary Search for the:  
Basic Science and Engineering (BASE) Initiative  
Betty Irene Moore Children's Heart Center

### **Description:**

We are seeking up to two new faculty members in biological or engineering research to join the Basic Science and Engineering (BASE) Initiative at the Betty Irene Moore Children's Heart Center at Stanford University (<http://www.med.stanford.edu/base>).

Faculty members will have a primary appointment as Assistant or Associate Professors in the University Tenure Line in one of the basic sciences or engineering departments at Stanford University.

Applications will be open for receipt on October 10, 2021. To receive full consideration, please submit all materials by the initial review date December 1, 2021. However, these positions will remain open until filled.

### **About BASE:**

The BASE Initiative aims to make and apply discoveries in basic science and engineering to address the challenges we face in caring for children with heart disease. Our expectation is that fundamental and interdisciplinary advances in computer and data science, engineering, genetics, developmental biology, chemical and structural biology, cell physiology, imaging, metabolism, and biochemistry can ultimately be applied to understand the origins of, reverse damage, and regenerate young and developing heart tissue, valves, vessels, and lungs.

A detailed description of our new program and a link to the online application can be found on our website: <http://www.med.stanford.edu/base>.

Faculty candidates will join the inaugural BASE Initiative research team in the new Biomedical Innovations Building:

- Jesse Engreitz, PhD (Dept of Genetics; <https://www.engreitzlab.org>): The Engreitz Lab develops experimental and computational genomics technologies to reveal fundamental rules of gene regulation, map the regulatory wiring of the genome, and discover genetic mechanisms of heart development and disease.
- Casey Gifford, PhD (Dept of Pediatrics, Genetics; <https://www.caseygiffordlab.com>): The Gifford Lab works to identify the complex genetic and molecular mechanisms of cardiovascular development and disease, as well as shared genetic associations of co-morbidities, such as neurodevelopmental delay.
- Mark Skylar-Scott, PhD (Dept of Bioengineering; <https://med.stanford.edu/skylarscottlab>): The Skylar-Scott Lab focuses on cardiovascular tissue biomanufacturing, developing advanced 3D bioprinting technologies to push the scale and complexity at which tissue can be designed and manufactured on demand.
- Marlene Rabinovitch, MD (Dept of Pediatrics; <http://med.stanford.edu/rabinovitchbland>) BASE director, whose Lab leverages engineered disease models with genetics, epigenetics, and metabolism to identify mechanisms of cellular and molecular vascular dysregulation focusing on pulmonary arterial hypertension.

The BASE Initiative collaborates closely with world-class clinical programs in single ventricle disease, pulmonary artery reconstruction and pulmonary hypertension, cardiovascular connective tissue disorders, heart failure, and transplant at the Stanford Children's Heart Center (<https://www.stanfordchildrens.org/en/service/heart-center>). Collaborations between BASE faculty and the Heart Center include integrating genetic data with cardiac imaging to predict adverse cardiac outcomes (Gifford Lab), mapping the regulatory genome at single-cell resolution during heart development (Engreitz Lab), and genome engineering approaches to control cellular homeostasis of the bioprinted heart and blood vessels (Skylar-Scott Lab).

In building upon our current expertise, we are targeting four main areas of research interest to BASE that are shared by our partnering Departments. We are also interested in scientific pursuits that addresses the fetal maternal environment. Prior expertise in cardiovascular science is not a pre-requisite.

1. **Cellular or molecular Imaging:** live cell imaging and organogenesis to identify key events in heart and vascular development in real time.
2. **Molecular and Clinical Data Science:** designing novel algorithms across data platforms and disparate datasets.
3. **Molecular and Cellular Biology:** incorporating various functions of metabolites and biosensors and new strategies for reprogramming,
4. **Chemical Engineering and Synthetic Biology:** developing new tools to perturb or activate specific pathways in heart and vascular development.

### About Stanford:

Stanford University is a world-class research institution dedicated to driving innovative discoveries in areas vital to bettering our world and our health. Stanford's emphasis on collaborative research, interdisciplinary sciences, and technological innovation creates an outstanding intellectual environment. This appointment is in the School of Medicine (located on the main campus), which is highly diverse with experts from cardiovascular medicine to genetics, physiology, chemical biology, bioengineering and numerous other fields. Investigators have access to >30 shared facilities that house state-of-the-art scientific instruments and specialized services.

Stanford is an equal employment opportunity and affirmative action employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability, protected veteran status, or any other characteristic protected by law. Stanford welcomes applications from all who would bring additional dimensions to the University's research, teaching and clinical missions.

The Department, School of Medicine, and Stanford University value faculty who are committed to advancing diversity, equity, and inclusion. Candidates may optionally include as part of their research or teaching statement a brief discussion of how their work will further these ideals.

**Qualifications:**

The candidates are expected to establish high quality, independent research programs in the new Biomedical Innovations Building. In addition to evidence of prior research accomplishments commensurate with academic level, the successful applicant must have an MD, MD/PhD, or PhD degree.

The predominant criterion for appointment in the University Tenure Line is a major commitment to research and teaching. Faculty rank will be determined by the qualifications and experience of the successful candidate.

Successful candidates will be chosen based upon the quality and innovation of their fundamental or applied research, and their commitment to develop independent and interdisciplinary approaches that will improve our understanding and meet the challenges we face in children's heart disease.

Interested candidates should submit:

- Complete curriculum vitae
- 3-5-page summary of current and future research program, which includes a 1-page description of how you foresee your research contributing to our understanding of heart development and/or improving treatments for children's heart diseases over the next 5-10 years
- Names and contact information for 3 individuals (to be contacted later in the process)
- PDFs of 3 most important scientific publications

For more information on the program and how to apply, please visit <http://www.med.stanford.edu/base>

**Inquiries to:**

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