



## Ronglih Liao

Professor of Medicine (Cardiovascular Medicine)

Medicine - Cardiovascular Medicine

### Bio

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#### BIO

Dr. Liao is a Professor of Medicine and co-Director of Stanford Cardiac Amyloid Center. The major goal of her research program focuses on understanding the mechanisms that underlie the pathophysiology of heart failure and developing novel treatments to combat this process. Her laboratory has played an international leading role in the study of amyloid light chain (AL) cardiomyopathy, a rare and fatal form of cardiovascular disease. We have described the underlying pathophysiologic basis for amyloid cardiomyopathy and found that the circulating amyloidogenic light chain proteins that characterize this disease directly result in a specific cardiotoxic response. Consequently, our research work has redefined AL cardiomyopathy and has raised new treatment approaches. More recently, her research efforts have expanded to include transthyretin (ATTR) cardiac amyloidosis.

In line with her goal of revealing novel therapeutic strategies for patients with cardiovascular disease, our efforts have also focused on characterizing and harnessing endogenous cardiac regenerative mechanisms. Her laboratory initially demonstrated the therapeutic potential of exogenous primitive muscle cells delivered to the injured heart. This work was among the earliest milestones in the field and served as the basis for an international trial of cell-based therapy. Subsequently, Liao lab identified and characterized a population of cardiac progenitor cells and its relationship and dynamic activity following cardiac injury in the adult heart. Her laboratory aims to reveal the molecular mechanisms regulating the endogenous regenerative capacity of the heart and to harness such repair mechanisms for the treatment of cardiovascular disease. Dr. Liao has lectured extensively on both amyloid cardiomyopathy and stem cell biology, and have maintained a history of independent NIH funding in these areas for more than two decades.

Over the course of her academic career, she has taken the greatest pride in mentoring the next generation of scientists. Dr. Liao has had the privilege to supervise several dozen students, postdoctoral fellows, and junior faculty, many of whom have gone on to independent academic careers at the highest institutions. Her contribution to the advancement of scientific knowledge also includes lecturing at various university and academic institutions as well as at scores of conferences and symposia locally, nationally, and internationally.

#### ACADEMIC APPOINTMENTS

- Professor, Medicine - Cardiovascular Medicine
- Member, Cardiovascular Institute

#### ADMINISTRATIVE APPOINTMENTS

- Co-Director, Stanford Amyloid Center, (2017- present)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Director, Cardiac Muscle Research Laboratory, Boston University School of Medicine (1997 - 2003)

- Co-Director, Cardiac Muscle Research Laboratory, Boston University School of Medicine (2003 - 2005)
- Director, Integrated Cardiovascular Physiology Laboratory, Department of Medicine, Boston University School of Medicine (2004 - 2005)
- Director, Cardiac Muscle Research Laboratory, Department of Medicine, Brigham and Women's Hospital (2005 - present)
- Director, Brigham and Women's Hospital Cardiovascular Physiology Core (2010 - present)
- Vice Chair, Basic Cardiovascular Sciences Council, American Heart Association (2014 - 2016)
- Chair, Basic Cardiovascular Sciences Council, American Heart Association (2016 - 2018)
- Director, Brigham and Women's Hospital Physiological NMR Core (2017 - present)

## PROFESSIONAL EDUCATION

- Postdoc, Brigham and Women's Hospital and Harvard Medical School , Myocardial energetics (1991)
- Postdoc, Beth Israel Hospital and Harvard Medical School , Cardiac physiology (1990)
- M.A. (hon), Harvard University , Biomedical Science (2015)
- PhD, University of Alabama at Birmingham , Biophysics (1990)

## LINKS

- Liao Lab Website: <http://med.stanford.edu/liaocmrl.html>
- Stanford Amyloid Center: <http://med.stanford.edu/amyloidcenter.html>
- Stanford Cardiovascular Institute: <https://med.stanford.edu/cvi.html>

## Teaching

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### STANFORD ADVISEES

#### Postdoctoral Faculty Sponsor

Katharina Schimmel, Cheng-Yu Tsai

#### Postdoctoral Research Mentor

Katharina Schimmel, Cheng-Yu Tsai

## Publications

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### PUBLICATIONS

- **Zebrafish model of amyloid light chain cardiotoxicity: regeneration vs degeneration.** *American journal of physiology. Heart and circulatory physiology*  
Mishra, S., Joshi, S., Ward, J. E., Buys, E. P., Mishra, D., Mishra, D., Morgado, I., Fisch, S., Lavatelli, F., Merlini, G., Dorbala, S., MacRae, C. A., Liao, et al  
2019
- **Convergences of Life Sciences and Engineering in Understanding and Treating Heart Failure.** *Circulation research*  
Berry, J. L., Zhu, W., Tang, Y. L., Krishnamurthy, P., Ge, Y., Cooke, J. P., Chen, Y., Garry, D. J., Yang, H., Rajasekaran, N. S., Koch, W. J., Li, S., Domae, et al  
2019; 124 (1): 161-69