Joyce T. Lin

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1. Educational Preparation

2009 **Doctorate of Philosophy in Mathematics**
University of North Carolina at Chapel Hill,
Carolina Center for Interdisciplinary Applied Mathematics,
Department of Mathematics, Chapel Hill, NC

2004 **Bachelor of Arts in Mathematics,** Minor in Computer Science
University of Virginia, Department of Mathematics, Charlottesville, VA
Distinguished Major and Echols Scholar

2. Employment

2019–present **Associate Professor,** *California Polytechnic State University, San Luis Obispo, CA*
Department of Mathematics

2013–2019 **Assistant Professor,** *California Polytechnic State University, San Luis Obispo, CA*
Department of Mathematics

2009–2013 **Postdoctoral Research,** *University of Utah, Salt Lake City, UT*
Department of Mathematics
Mentors: James Keener and Ken Golden

2005–2009 **Doctoral Dissertation Research,** *University of North Carolina at Chapel Hill*
Carolina Center for Interdisciplinary Applied Mathematics,
Department of Mathematics
Advisors: Roberto Camassa and Richard M. McLaughlin

Summer 2006 **Research Intern,** *Los Alamos National Laboratory, Los Alamos, NM*
Summer Workshop in Mathematical Modeling: development and analysis of solutions to various classes of linear and nonlinear evolution equations.

Summer 2003 **Intern,** *U.S. Federal Reserve, Board of Governors, Washington, D.C.*
Numerical implementation of automated data pick-up and analysis of mutual fund statistics

Summer 2002 **Intern,** *Food and Drug Administration, Bethesda, MD*
Oakridge Post-Graduate Research Program: development of new methods to create vaccines using polyacrylamide gels to separate lipopolysaccharides

1999–2000 **Research Intern,** *National Institute of Mental Health, Bethesda, MD*
Worked with laboratory scientists on a possible cause of schizophrenia, involving marking and imaging muscarinic cholinergic receptors in the brain.

3. SCHOLARSHIP

a. Publications:

R. Veeraraghavan, J. Lin, J. P. Keener, R. G. Gourdie, and S. Poelzing, *Potassium Channels in the Cx43 Gap Junction Perinexus Modulate Ephaptic Coupling: An Experimental and Modeling Study,* Pfluger's Archiv - European Journal of Physiology, Aug 11 (2016), 1651-1661.

S. A. George, K. J. Sciuto, J. Lin, M. E. Salama, J. P. Keener, R. G. Gourdie, and S. Poelzing, *Extracellular sodium and potassium levels modulate cardiac conduction in mice heterozygous null for the Connexin43 gene*, Pfluger's Archiv - European Journal of Physiology, Mar 14 (2015), 1 – 11.

A. Gully, J. Lin, E. Cherkaev, and K. M. Golden, *Bounds on the complex permittivity of polycrystalline materials by analytic continuation*, Proc. R. Soc. A, **471**(2015)

R. Veeraraghavan, J. Lin, G. S. Hoeker, J. P. Keener, R. G. Gourdie, and S. Poelzing, *Sodium channels in the Cx43 gap junction perinexus may constitute a cardiac ephapse: an experimental and modeling study*, Pfluger's Archiv - European Journal of Physiology, Jan 13 (2015), 1 – 13.

J. Lin and J. P. Keener, *Microdomain effects on transverse cardiac propagation,* Biophys. J. **106**(2014), 925 – 931. *(New and Notable)*

J. Lin and J. P. Keener, *Ephaptic coupling in cardiac myocytes,* IEEE Trans. Biomed. Eng. **60**(2012), 576 – 582.

J. Lin and J. P. Keener, *A model for electrical activity of myocardial cells incorporating the effects of ephaptic coupling*, PNAS **107**(2010), 20935—40.

R. Camassa, C. Falcon, J. Lin, R. M. McLaughlin, and N. Mykins, *A first principle predictive theory for a sphere falling through sharply stratified fluid at low Reynolds number*, J. Fluid Mech. **664**(2010), 436—465**.**

R. Camassa, C. Falcon, J. Lin, R. M. McLaughlin, and R. Parker, *Prolonged residence times for particles settling through stratified miscible fluids in the Stokes regime*, Phys. Fluids **21**(2009), 031702-1–4.

J. Lin, *An experimental and mathematical study on the prolonged residence time of a sphere falling through stratified fluids at low Reynolds number,* PhD thesis, University of North Carolina at Chapel Hill (2009).

b. Presentations

Jun. 2020 **SIAM Conference on the Life Sciences**, *Garden Grove, CA*

Feb. 2020 **Biophysical Society Annual Meeting**, *San Diego, CA*

Jan. 2020	**Workshop on Analysis and Its Applications in Biology and Physiology**, *Taipei, Taiwan*
Dec. 2019	**Academia Sinica**, *Taipei, Taiwan*
May 2019	**Ephaptic Coupling Conference**, *Roanoke, VA*
Jan. 2017	**Joint Mathematics Meetings**, *Atlanta, GA*
Oct. 2014	**International Symposium on Biomathematics and Ecology: Education and Research**, *Claremont Colleges, CA*
Jun. 2014	**Virginia Tech Carilion Research Institute**, *Roanoke, VA*
Aug. 2013	**South Eastern Atlantic Mathematical Sciences Workshop**, *Chapel Hill, NC*
Feb. 2013	**Georgia Tech**, *Atlanta, GA*
Jan. 2013	**University of South Carolina**, *Columbia, SC*
Nov. 2012	**Kansas State University**, *Manhattan, KS*
Feb. 2012	**Ocean Sciences Meeting**, *Salt Lake City, UT*
Nov. 2011	**SIAM Conference on Analysis of Partial Differential Equations,** *San Diego, CA*
Oct. 2011	**AMS 2011 Western Section Meeting**, *Salt Lake City, UT*
Jul. 2011	**ICIAM,** *Vancouver, Canada*
Jun. 2011	**MBI Workshop: Ocean Ecologies and their Physical Habitats in a Changing Climate**, *San Diego, CA*
May 2011	**Coalition for National Science Funding Annual Capitol Hill Exhibition,** *Washington D.C.*
Feb. 2011	**Gould Lecture**, *Salt Lake City, UT*
Sept. 2010	**Math and Climate Research Network Meeting**, Chapel Hill, NC
Feb. 2010	**Mathematics of Interacting Climate Processes**, National Center for Atmospheric Research, Boulder, CO
Sept. 2009	**University of Utah**, *Salt Lake City, UT*
Feb. 2009	**University of North Carolina at Chapel Hill**, *Chapel Hill, NC*
Jan. 2009	**George Mason University**, *Fairfax, VA*
Jan. 2009	**Joint Mathematics Meetings**, *Washington, D.C.*
Nov. 2008	**Meeting of the APS Division of Fluid Dynamics**, *San Antonio, TX*
Nov. 2008	**South Eastern Atlantic Mathematical Sciences Workshop**,

Chapel Hill, NC,

Nov. 2008 **Meeting of the APS Division of Fluids Dynamics**, *San Antonio, TX*

May 2007 **2007 SIAM Conference on Applications of Dynamical Systems**, *Snowbird, UT*,

Mar. 2007 **University Research Day,** *Chapel Hill, NC*

Oct. 2007 **South Eastern Atlantic Mathematical Sciences Workshop**, *Hampton, VA*
National Institute of Aerospace

Sept. 2006 **South Eastern Atlantic Mathematical Sciences Workshop**, *Charleston, SC*

Community Presentations:

2011 **Family Fun with Engineering: Fire and Ice: From Antarctica to the Arctic**
Demonstrations and a talk held at the city library.

2011 **Online Math-Climate Resource**, Created exercises

2010 **Antarctica Expedition Blog**, Contributor
http://redthread.utah.edu/tag/antarctica

2010 **Antarctica Expedition Radio Interviews**, Interviewee
http://redthread.utah.edu/live-from-Antarctica-weeks-2-and-3/4613

2009–2012 **Calculus Carnival**, Games organizer

2008 **American Physical Society** Gallery of Fluid Motion Virtual Press Room
http://www.aps.org/units/dfd/pressroom/gallery/2008/lin.cfm

c. Grants and Contracts

2016–2020 **National Institutes of Health**: 5R01HL102298-07

2016-2017 **Proven Practices Course Redesign – CSU Grant**

2015-2016 **Research, Scholarly, and Creative Activities Grant Program**

2015-2016 **Promising Practices Course Redesign – CSU Grant**

2012–2013 **National Institutes of Health**: 1R01HL102298-01

2009–2012 **NSF Vertical Integration of Research and Education Grant:** NSF-DMS-0602219

2010 **Collaborations in Mathematical Geosciences:** ARC-0934721

NSF Collaborative Research: Mathematics and Climate Change Research Network Grant: DMS-0940249

2005–2009 **NSF Research Training Grant**: RTG DMS-0502266

Grant Applications:

2015 **NIH R01 Grant**

2012 **Burroughs Wellcome Fund**

Internal:

2016-2017 **Proven Practices Course Redesign – CSU Grant**
Purpose: Redesigning Math 142 incorporating technology to improve student success.

2015-2016 **Research, Scholarly, and Creative Activities Grant Program**
Purpose: Development and analysis of multiscale model and simulations studying the interplay between tissue structure and localization of ion channels and its effect on conduction in myocardial tissue.

2015-2016 **Promising Practices Course Redesign – CSU Grant**
Purpose: Redesigning Math 244 incorporating technology to improve student success.

d. Professional Honors and Leadership Activities

JSM Mathematics & Statistics (editor)
Chaos: An Interdisciplinary Journal of Nonlinear Science (referee)
Mathematical Biosciences (referee)
Physical Review A (referee)
Multiscale Modeling and Simulation (referee)
Applications and Applied Mathematics: An International Journal (referee)
Meccanica (referee)
Nature Reviews (referee)
International Journal of Heat and Mass Transfer (referee)

2016 **Intersections Close Up: Algorithms and Wave Aqua-tions**

2016 **Herstory Month Feature**
Cal Poly Gender Equity Center

2011 **"Women of Note"**
President's Commission on the Status of Women award recognizing achievements of women in the local communities as well as on campus.

2007 **Lindau Nobel Laureates Meeting**
NSF sponsored participant, Physiology and Medicine

2004 **The Betty and Lee Smith Fund for Excellence in Mathematics**

4. SERVICE AND UNIVERSITY CITIZENSHIP

2018-present	**Applied Mathematics Graduate Program Developer**
2018-present	**Graduate Committee Member**
2019-present	**Assessment Committee Member**
2019-present	**APIFSA Planning Committee Member**
2018-2019	**Department Hiring Committee Member**
2016-2019	**Academic Senate Representative**
2019	**ASI Children's Center Hiring Committee Parent Rep**
2016-2018	**Graduate Steering Committee Member (ad-hoc)**
2015-present	**Annual Newsletter Co-Organizer**
2015-present	**Scholarship Committee Member**
2014-present	**Academic Advisor**
2018	**Cal Poly Gender Equity Center Women in STEM Panelist**
2018	**Graduate Funding Committee Member (ad-hoc)**
2018	**Graduate Mathematics Subgroup (ad-hoc)**
2018	**CTLT Creating Accessible Course Materials Workshop Participant**
2016, 2018, 2019	**Open House Participant**
2013, 2015-2016, 2018	**Attended Commencement**
2014-2016, 2018, 2019	**Attended Fall Conference and CSM College Meeting**
2015, 2017, 2018	**College Based Fee Committee Member**
2017	**Full-Time Lecturer Hiring Committee Member**
2016, 2017	**CSM Student Research Conference Supervisor**
2015	**Women in STEM Workshop Panelist**
2015	**Grant Academy Workshop Participant**
2014-2015	**Assessment Committee Member**