(updated March 24, 2019)

MELINDA LIU PERKINS
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EDUCATION

2015 - present	**University of California, Berkeley** (Berkeley, CA) **M.S./Ph.D. in Electrical Engineering**, emphasis in Signals and Systems (anticipated) **Advisor**: Dr. Murat Arcak (Professor, Electrical Engineering)
2011 - 2015	**Stanford University** (Stanford, CA) **B.S. in Electrical Engineering with Honors**, emphasis in Signal Processing (June 2015) **Minor in Biology**
2004 - 2011	Peak to Peak Charter School (Lafayette, CO)

AWARDS AND GRANTS

2015	**Berkeley Fellowship for Graduate Study**, *University of California, Berkeley*, graduate tuition and stipend support for two years of Ph.D. study
2015	**Berkeley EECS Excellence Award** ($5000), *University of California, Berkeley*
2015	**Frederick E. Terman Award for Scholastic Achievement in Engineering**, *Stanford University*, granted to the top five percent of seniors in the School of Engineering
2015	Hertz Fellowship Finalist, *Fannie and John Hertz Foundation*
2014	**Undergraduate Advising and Research Major Grant** ($6000) for research for honors thesis, *Stanford University* **Advisors**: Dr. John Pauly (Professor, Electrical Engineering) and Dr. Elizabeth Hadly (Professor, Biology)
2014	EE Department Design Class Project Award for best final project across all design courses in EE department
2012	**Undergraduate Advising and Research Small Grant** ($1500) for field research in Leipzig, Germany on Felix Mendelssohn, *Stanford University* **Advisors**: Dr. Thomas Grey (Professor, Music) and Marvin Diogenes (Associate Vice Provost for Undergraduate Education, Co-Director of Stanford Introductory Studies for the Program in Writing and Rhetoric)

PUBLICATIONS

	M. L. Perkins and M. Arcak (submitted) "A spatial filtering approach to biological patterning." (arXiv preprint: https://arxiv.org/abs/1902.04614)
2019	M. Tei, **M. L. Perkins***, J. Hsia, M. Arcak, and A. P. Arkin (2019) "Designing spatially distributed gene regulatory networks to elicit contrasting patterns." *ACS Synth. Biol.* 8(1): 119-126. doi:10.1021/acssynbio.8b00377 *co-first author
2018	**M. L. Perkins** and M. Arcak (2018, June) "Discrete spatial filtering by networks of cells facilitates biological pattern formation." *Proc. Am. Control Conf.*, Milwaukee, WI, USA. doi:10.23919/acc.2018.8431143
2017	**M. L. Perkins**, H. K. Frank, J. M. Pauly, and E. A. Hadly (2017) "Frequency shifting reduces but does not eliminate acoustic interference between echolocating bats: a theoretical analysis." *J. Acoust. Soc. Am.* 142(4): 2133-2142. doi:10.1121/1.5006928

PUBLISHED ABSTRACTS AND PRESENTATIONS

2019	**M. L. Perkins**, D. Benzinger, M. Rullan, M. Arcak, and M. Khammash (2019, March) "Optogenetically simulated lateral inhibition generates contrasting patterns of gene expression." Poster session and flash talk at *EMBO | EMBL Syposium: Synthetic Morphogenesis: From Gene Circuits to Tissue Architecture*, Heidelberg, Germany.
2017	M. Tei, **M. L. Perkins**†, J. Hsia, A. Arkin, and M. Arcak (2017, June) "A quorum sensing-based lateral inhibition system to generate contrasting patterns." Poster session and rapid-fire talk at *Synthetic Biology: Engineering, Evolution, and Design (SEED)*, Vancouver, BC, Canada. †presenting author

RESEARCH EXPERIENCE

2018 (summer, winter)	Visiting Ph.D. student in the Laboratory of Dr. Mustafa Khammash, Department of Biosystems Science and Engineering, ETH Zürich (Basel, Switzerland) **Activities**: conducted optogenetics experiments on yeast cells
2016 - present	**Laboratory of Dr. Murat Arcak, Department of Electrical Engineering, University of California, Berkeley** (Berkeley, CA) **Research focus**: developing and applying theory for biological patterning in natural and synthetic systems
2015 - 2016	Laboratory of Dr. Michael Yartsev, Department of Bioengineering and Helen Wills Neuroscience Institute, University of California, Berkeley (Berkeley, CA) **Activities**: conducted experiments to record neural responses to acoustic playback in the Egyptian fruit bat, *Rousettus aegyptiacus*
2013 - 2015	**Laboratory of Dr. Elizabeth Hadly, Department of Biology, Stanford University** (Stanford, CA) **Research focus**: signal processing and theoretical analysis of bat echolocation calls including field recordings of bats
2013	Bing Overseas Study Abroad Program in Australia, Stanford University and University of Queensland **Activities**: data collection in different ecosystems; group targeted research project on seed production in *Banksia serrata*

TEACHING EXPERIENCE

2019 (spring)	Graduate Student Instructor for *CS 195: Social Implications of Computer Technology* **Activities**: running weekly discussion sections, selecting weekly readings, performing administrative duties; prepared and delivered lecture on Free Speech

WORK EXPERIENCE

2012	Summer intern at Cardinal Peak, LLC (Lafayette, CO), contract engineering **Activities**: QA tested mobile app (both interface and algorithm) for identifying radio stations from recorded segments in real time

2017 - present	Science outreach volunteer with events including Bay Area Scientists in Schools, Golden Gate Science Olympiad, Expanding Your Horizons, Bay Area Teen Science
2016 - 2017	Social co-chair, Women in Computer Science and Engineering (WICSE), organizing mentoring and social events
2016	Violist in UC Berkeley Symphony Orchestra
2014 - 2015	Opinions Columnist for *The Stanford Daily*, writing about the impact of technology on society
2014	Winner, Stanford Electrical Engineering Department T-shirt Design Competition
2012 - 2015	Violist in chamber music quartet
2011 - 2015	Violist in Stanford Symphony Orchestra
2011 - 2012	Member of Stanford Dragonboat intermural sports team