

<b>Contact</b>	Department of Integrative Biology University of California, Berkeley VLSB 5017 Berkeley, CA 94720 (310) - 498 - 8608, <a href="mailto:uricchio@berkeley.edu">uricchio@berkeley.edu</a>	<a href="https://scholar.google.com/citations?user=XyVUpZYAAAAJ">https://scholar.google.com/citations?user=XyVUpZYAAAAJ</a> <a href="https://uricchio.github.io/">https://uricchio.github.io/</a>
<b>Education</b>	2019 - <i>Postdoctoral Scholar</i> , Integrative Biology, University of California, Berkeley 2015 - 2018 <i>Postdoctoral Fellow</i> , Biology, Stanford University 2014 <i>PhD</i> , Bioinformatics, University of California, San Francisco 2011 <i>MS</i> , Computer Science, University of Chicago 2009 <i>MS</i> , Biophysical Sciences, University of Chicago 2005 <i>BA</i> , Physics, Carleton College	
<b>Honors &amp; Fellowships</b>	2016 - 2018 NIH IRACDA Postdoctoral Fellow, Stanford University & SJSU 2015 - 2016 CEHG Postdoctoral Fellow, Stanford University 2014 Discovery Fellow, UCSF 2014 ASHG trainee award for excellence in human genetics research, semi-finalist 2013 Teaching Assistant Excellence Award, UCSF 2012 - 2014 Achievement Rewards for College Scientists Fellow, UCSF 2005 Distinction in the physics major, Carleton College 2005 Phi Beta Kappa (academic honor society), Carleton College 2005 Sigma Xi (scientific research honor society), Carleton College 2005 Magna Cum Laude, Carleton College 2002 Dean's list, Carleton College	

## Publications

### Journal articles

- [1] SEVERSON AL<sup>‡</sup>, **URICCHIO LH<sup>‡</sup>**, ARBISSER IM<sup>‡</sup>, GLASSBERG EC, ROSENBERG NA. (2019) Analysis of author gender in TPB, 1991–2018. *Theoretical Population Biology*, **in press**, (<sup>‡</sup>*denotes equal contributions*).
- [2] **URICCHIO LH<sup>†</sup>**, PETROV DA, ENARD D<sup>†</sup>. (2019) Exploiting selection at linked sites to infer the rate and strength of adaptation. *Nature Ecology & Evolution*, **accepted**, (<sup>†</sup> *co-corresponding authors*).  
*preprint*: <https://www.biorxiv.org/content/early/2018/09/26/427633>.
- [3] GIGNOUX CR, TORGERSON DG, PINO-YANES M, **URICCHIO LH**, GALANTER J *et al.* (Mar, 2019) An admixture mapping meta-analysis implicates genetic variation at 18q21 with asthma susceptibility in Latinos. *Journal of Allergy and Clinical Immunology*, **143**(3), 957–969.
- [4] **URICCHIO LH<sup>‡</sup>**, KITANO HC<sup>‡</sup>, GUSEV A, ZAITLEN NA. (Feb, 2019) An evolutionary compass for detecting polygenic selection and mutational bias. *Evolution Letters*, **3**(1), 69–79. (<sup>‡</sup>*denotes equal contributions*).
- [5] **URICCHIO LH**, DAWS SC, SPEAR ER, MORDECAI EA. (Feb, 2019) Priority effects and non-hierarchical competition shape species composition in a complex grassland community. *The American Naturalist*, **193**(2), 213–226.
- [6] GOLDBERG A, **URICCHIO L**, ROSENBERG NA (Aug, 2018) Natural selection in human populations. *Oxford Bibliographies in Evolutionary Biology*, (available: <http://www.oxfordbibliographies.com/view/document/obo-9780199941728/obo-9780199941728-0112.xml>).
- [7] **URICCHIO LH**, WARNOW T, ROSENBERG NA (Nov, 2016) An analytical upper bound on the number of loci required for all splits of a species tree to appear in a set of gene trees. *BMC Bioinformatics*, **17**(14), 241–250.
- [8] **URICCHIO LH<sup>†</sup>**, ZAITLEN NA, YE CJ, WITTE JS, HERNANDEZ RD<sup>†</sup>. (July, 2016) Selection and explosive growth alter genetic architecture and hamper the detection of causal rare variants. *Genome Research*, **26**, 863–873. (<sup>†</sup> *co-corresponding authors*).
- [9] **URICCHIO LH**, TORRES R, WITTE JS, HERNANDEZ RD. (Jan, 2015) Population genetic simulations of complex phenotypes with implications for rare variant association tests. *Genetic Epidemiology*, **39**(1), 35–44.
- [10] **URICCHIO**, HERNANDEZ, RD. (May, 2014) Robust forward simulations of recurrent hitchhiking. *Genetics*, **197**(1), 221–236.
- [11] MAHER MC<sup>‡</sup>, **URICCHIO LH<sup>‡</sup>**, TORGERSON DG, HERNANDEZ RD. (Apr, 2013) Population genetics of rare variants and

complex diseases. *Human Heredity*, **74**(3-4), 118–128. (<sup>†</sup>*denotes equal contributions; recommended to the Faculty of 1000*).

- [12] URICCHIO LH, CHONG JX, ROSS KD, OBER C, NICOLAE DL. (May, 2012) Accurate imputation of rare and common variants in a founder population from a small number of sequenced individuals. *Genetic Epidemiology*, **36**(4), 312–319.
- [13] ÇALIŞKAN M, CHONG JX, URICCHIO L, ANDERSON R, CHEN P *et al.* (Apr, 2011) Exome sequencing reveals a novel mutation for autosomal recessive nonsyndromic mental retardation in the *TECR* gene on chromosome 19p13. *Human Molecular Genetics*, **20**(7), 1285–1289.
- [14] MILLER LS, PIETRAS EM, URICCHIO LH, HIRANO K, RAO S *et al.* (Nov, 2007) Inflammasome-mediated production of IL-1 $\beta$  is required for neutrophil recruitment against *Staphylococcus aureus* in vivo. *Journal of Immunology*, **179**(10), 6933–6942.
- [15] PATTANAYAK AK, BROOKS DWC, DE LA FUENTE A, URICCHIO L, HOLBY E *et al.* (Jul, 2005) Coarse-grained entropy decrease and phase-space focusing in Hamiltonian dynamics. *Physical Review A*, **72**(1), 013406.

#### *In progress*

- [1] CASTELLANO D, URICCHIO LH, MUNCH K, ENARD D. (2019) Viruses rule over adaptation in conserved human proteins. **to be submitted**, preprint: <https://www.biorxiv.org/content/10.1101/555060v1>.
- [2] URICCHIO, LH. (2018) Evolutionary perspectives on polygenic selection, missing heritability, and GWAS. **under review**.
- [3] HERNANDEZ RD, URICCHIO LH, HARTMAN K, YE J, DAHL A, ZAITLEN N. (2017) Singleton variants dominate the genetic architecture of human gene expression. **under review**, preprint: <https://www.biorxiv.org/content/early/2017/11/14/219238>.

#### *Dissertation*

- [1] URICCHIO LH. (2014) Models and forward simulations of selection, human demography, and complex traits. UNIVERSITY OF CALIFORNIA, SAN FRANCISCO.

<b>Teaching</b>	2018	Co-instructor, <i>Evolutionary genetics</i> (BIOL 118), San Jose State University*
	2017	Co-instructor, <i>Ecology</i> (BIOL 160), San Jose State University*
		*semester-long undergraduate courses for which I led 40-50% of instructional time.
	2017	Co-founder, <i>Stanford postdoc pedagogy miniseries</i> , Stanford University
	2015	Instructor, <i>Undergraduate Biology Exploration</i> , Stanford University
	2016-2017	Guest lecturer (twice), <i>Evolution</i> , Stanford University
	2014	Graduate teaching assistant, <i>Computational Evolutionary Genomics</i> , UCSF
	2013	Graduate student instructor, <i>Computational Biology</i> , UC Berkeley
	2009	Guest lecturer, <i>Genes, Networks, and Cells</i> , University of Chicago
<b>Mentoring</b>	2003-2004	Teaching assistant, tutor, & grader, <i>Introduction to Physics, Classical &amp; Computational Mechanics, Contemporary Experimental Physics</i> , Carleton College
	2016	Student research co-mentor to Alan Aw, Rosenberg Lab
	2013	Student research mentor to Isela Hernandez, Biological Health Sciences Internship Program
	2010	Student research mentor to Sam Neal, Summer Link High School Program
	2006-2007	Co-supervisor/trainer of undergraduate lab members, UCLA
<b>Service</b>	2013-	Invited reviewer for <i>Genetics</i> , <i>Nature Genetics</i> , <i>BMC Evolutionary Biology</i> , <i>PLoS Genetics</i> , <i>Nature Ecology &amp; Evolution</i> , <i>Molecular Biology &amp; Evolution</i> , <i>Molecular Ecology</i> , <i>Heredity</i> , <i>Theoretical Population Biology</i> , <i>PLoS ONE</i> , <i>G3: Genes, Genomes, Genetics</i> , and <i>IEEE/ACM Transactions on Computational Biology and Bioinformatics</i>
	2016	Committee member & session leader, Stanford Postdoc Pedagogy Journal Club
	2015-2016	Committee member, Stanford CEHG diversity outreach committee

<b>Competitive</b>	2016-2018	NIH IRACDA Fellow, Stanford & SJSU (\$53,600 per year)
<b>Funding</b>	2016-2017	Stanford Teaching & Mentoring Academy Award (\$6,870)
	2015-2016	Stanford CEHG Postdoctoral Fellowship (\$50,000)
	2012-2014	UCSF Achievement Rewards for College Scientists Fellow (\$12,000 per year)
	2014	UCSF Discovery Fellow (\$4,000 for travel & research over 2 years)

**Presentations**

- [1] Genome-scale inference of adaptive evolution: new approaches for answering old questions. *Boise State University, Boise, ID. Seminar* (2019).
- [2] Genome-scale inference of adaptive evolution: new approaches for answering old questions. *Chapman University, Orange, CA. Seminar* (2019).
- [3] Evolutionary processes shaping the human genome. *Linfield College, McMinnville, OR. Seminar* (2018).
- [4] Scientific teaching workshops for Stanford postdocs. *Stanford Education Day, Stanford, CA. Talk* (2018).
- [5] Modulation of adaptation rate by background selection in the human genome. *Bay Area Population Genomics Meeting, Santa Cruz, CA. Talk* (2018).
- [6] Modulation of adaptation rate by background selection in the human genome. *American Society of Naturalists Meeting, Monterey, CA. Talk* (2018).
- [7] Designing and implementing scientific teaching workshops for postdocs. *Stanford Teaching and Mentoring Academy seminar series, Stanford, CA. Talk.* (2018).
- [8] An analytical upper bound on the number of loci required for all splits of a species tree to appear in a set of gene trees. *RECOMB Comparative Genomics Meeting, Montreal, Canada. Talk* (2016).
- [9] Detecting causal genetic variation in populations with complex evolutionary histories. *Univeristy of Washington, Bothell, WA. Seminar* (2016).
- [10] Explosive growth and the genetic architecture of polygenic traits under selection. *American Society of Naturalists Meeting, Monterey, CA. Talk* (2016).
- [11] Selection and explosive growth may hamper the performance of rare variant association tests. *Bay Area Population Genomics Meeting, Stanford, CA. Talk* (2015).
- [12] Recent demography and natural selection hamper the power of rare variant association tests. *American Society of Human Genetics Meeting, San Diego, CA. Talk* (2014).
- [13] Model-based simulations of selection and demography with implications for heritable phenotypes and rare variant association tests. *UC Berkeley Center for Theoretical Evolutionary Genomics, Berkeley, CA. Talk* (2014).
- [14] Simulations and inference of simultaneous positive and negative selection. *Society of Molecular Biology and Evolution Meeting, San Juan, Puerto Rico. Poster* (2014).
- [15] Parameter rescaling for forward simulations of recurrent hitchhiking. *Bay Area Population Genomics Meeting, San Francisco, CA. Poster* (2013).
- [16] Forward simulations of recurrent selection and demographics with rescaled parameters. *American Society of Human Genetics Meeting, Boston, MA. Poster* (2013).
- [17] Accurate pedigree-based imputation. *Department of Human Genetics, University of Chicago, Chicago, IL. Seminar* (2011).
- [18] Simultaneous measurement of myosin-II kinetics and cellular traction forces. *HHMI Interfaces Scholars Meeting, Chevy Chase, MD. Poster* (2008).

**References**

Associate Professor Ryan Hernandez, PhD (*PhD advisor*)  
ryan.hernandez at mcgill.ca

Professor Noah Rosenberg, PhD (*Postdoc advisor*)  
noahr at stanford.edu

Assistant Professor Erin Mordecai, PhD (*Postdoc co-advisor*)  
emordeca at stanford.edu

Assistant Professor Noah Zaitlen, PhD (*Mentor*)  
noah.zaitlen at ucsf.edu

Assistant Professor David Enard, PhD (*Collaborator*)  
denard at email.arizona.edu

Professor Leslee Parr, PhD (*Teaching mentor*)  
leslee.parr at sjsu.edu