

# Katya L. Mack

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## EDUCATION

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University of California, Berkeley, CA 2013-2018

Ph.D., Integrative Biology, GPA: 4.0/4.0

Advisor: Michael Nachman

Committee: Craig Miller, Rasmus Nielsen

University of Michigan, Ann Arbor, MI 2008-2012

Anthropology B.S., Ecology and Evolutionary Biology Minor, Highest Honors  
and Distinction, GPA: 3.8/4.0

## APPOINTMENTS/POSITIONS

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2019-Present Center for Computational, Evolutionary, and Human Genomics Post-  
doctoral Fellow, Stanford University, CA

2017 Jerry O. Wolff Fellow, Museum of Vertebrate Zoology, University of  
California, Berkeley, CA

2013-2017, 2018 Graduate Student Instructor, University of California, Berkeley,  
CA

2011, 2012 Research assistant, Wittkopp Lab, University of Michigan, Ann Arbor, MI

2009, 2010 Undergraduate Intern, Human Origins Department, Field Museum,  
Chicago IL

## PUBLICATIONS

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**Mack KL**, Phifer-Rixey M, Harr B, Nachman MW. Gene expression networks across  
multiple tissues are associated with rates of molecular evolution in wild house  
mice. *Genes*, *Accepted*.

**Mack KL**, Ballinger MA, Phifer-Rixey M, Nachman MW. Gene regulation underlies  
environmental adaptation in house mice. *Genome research* 28:1636-1645.

Phifer-Rixey M, Bi K, Ferris KG, Sheehan MJ, Lin D, **Mack KL**, Keeble SM, Suzuki  
TA, Good JM, and Nachman MW. The genomic basis of environmental  
adaptation in house mice. *PLoS genetics* 14:e1007672.

**Mack KL** and Nachman MW. 2017. Gene regulation and speciation. *Trends in  
Genetics* 33: 68–80.

**Mack KL**, Campbell P, Nachman MW. 2016. Gene regulation and speciation in house  
mice. *Genome research* 26: 451-461.

Holmes MW, Hammond TT, Wogan GO, Walsh RE, LaBarbera K, Wommack EA,  
Martins FM, Crawford JC, **Mack KL**, Bloch LM, Nachman MW. 2016. Natural  
history collections as windows on evolutionary processes. *Molecular ecology* 25:  
864-881.

Duveau F, Metzger BP, Gruber JD, **Mack K**, Sood N, Brooks TE, Wittkopp PJ. 2014. Mapping small effect mutations in *Saccharomyces cerevisiae*: impacts of experimental design and mutational properties. *G3: Genes | Genomes | Genetics*, g3-114.

Manuscripts in review

**Mack KL**, Ballinger MA, Phifer-Rixey M, Nachman MW. Copy number variation in natural populations of house mice along an environmental gradient. *In review*.  
Suzuki TA, Phifer-Rixey M, **Mack KL**, Sheehan M, Lin TT, Bi K, and Nachman MW. Host genetic determinants of the gut microbiota of wild mice. *In review*.

**PRESENTATIONS**

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- Mack KL**, Ballinger MA, Phifer-Rixey M, Nachman MW. Adaptive variation in gene regulation in mice. Society for Integrative and Comparative Biology, San Francisco, CA (Talk).
- Mack KL**, Ballinger MA, Phifer-Rixey M, Nachman MW. Environmental adaptation in house mice: the role of gene regulation along a latitudinal cline. Society for the Study of Evolution 2016, Portland, OR (Talk).
- Mack KL**, Campbell P, Bomhoff M, Nachman MW. A role for disrupted gene regulation in speciation in house mice. Society for the Study of Evolution 2016, Austin, TX (Talk).
- Mack KL**. Divergence in gene regulation associated with reproductive isolation in house mice. Genetics, Development & Evolution Symposium 2015, Berkeley CA (Talk).
- Mack K**, Campbell P, Bomhoff M, Nachman MW. Divergence in gene regulation associated with reproductive isolation in house mice. Society for the Study of Evolution 2014, Raleigh, NC (Talk).
- Mack K** and Gibbs B. Does the faster X effect influence the fate of duplicated genes in *Drosophila*? Genomics of Gene Expression Symposium 2013, University of Arizona, Tucson AZ (Poster).
- Mack K**, Goldberg A, Bigham A. Rates of Neandertal introgression in genic versus intergenic regions of the human genome. American Association of Physical Anthropologists 2012, Portland OR (Poster).
- Goldberg A, **Mack K**, Bigham A. A genetic perspective on the evolution of longevity at the Middle Paleolithic to Upper Paleolithic transition. American Association of Physical Anthropologists 2012, Portland OR (Poster).

**INVITED TALKS**

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- Mack KL**. 2017. Environmental adaptation in house mice: the role of gene regulation along a latitudinal cline. UC Berkeley, Berkeley, CA.
- Mack KL**. 2017. A role for regulatory evolution in House mouse adaptation and speciation. Center for Population Biology Seminar Series. UC Davis, Davis, CA.
- Mack KL**. 2015. Gene regulation and speciation in house mice. Integrative Biology Seminar Series. UC Berkeley, Berkeley, CA.

## **FELLOWSHIPS AND AWARDS**

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- 2019 Center for Computational, Evolutionary, and Human Genomics Post-doctoral Fellowship, Stanford University, CA
- 2017 Jerry O. Wolff Graduate Student Fellowship (\$11,000), Museum of Vertebrate Zoology, UC Berkeley, CA
- 2012-2013 IGERT Fellow, Program in Comparative Genomics, University of Arizona
- 2012 Awarded Highest Honors for Senior Honors Thesis, University of Michigan
- 2012 Phi Beta Kappa, University of Michigan
- 2010, 2011, 2012 James B. Angell Scholar, University of Michigan
- 2009 William J. Branstrom Freshman Prize, University of Michigan

## **RESEARCH FUNDING**

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- 2016 Doctorate Dissertation Improvement Grant (\$20,357), National Science Foundation
- 2015 Reshetko Family Scholarship Grant, UC Berkeley (\$2,061)
- 2015 Integrative Biology Research Grant, UC Berkeley (\$1,929)
- 2015 Museum of Vertebrate Zoology David and Marvalee Wake Fund grant, UC Berkeley (\$2,000)
- 2014 Museum of Vertebrate Zoology Louise Kellogg Fund grant, UC Berkeley (\$2,000)

## **TEACHING EXPERIENCE**

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- 2018 Graduate Student Instructor, Human Genetics (IB 164), University of California, Berkeley CA
- 2018 Population Genetics Instructor, Evolution Topics Course, Watson School of Biological Sciences, Cold Spring Harbor Laboratory
- 2015, 2017 Graduate Student Instructor, Evolutionary Medicine (IB 169), University of California, Berkeley CA
- 2016 Guest lecturer on the topic of speciation, Evolution and Earth History: From Genes to Fossils (IB167), University of California, Berkeley CA
- 2016 Graduate Student Instructor, Evolution and Earth History: From Genes to Fossils (IB167), University of California, Berkeley CA
- 2013, 2014, 2015, 2016, 2018 Graduate Student Instructor, General Biology (Bio 1B), University of California, Berkeley CA
- 2011-2012 Undergraduate Study Group Facilitator, Introductory Biology (Molecular, Cellular, and Developmental), Science Learning Center, University of Michigan, Ann Arbor MI

## **SERVICE AND OUTREACH**

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- 1. Mentoring undergraduates in research:** Undergraduate mentor at UC Berkeley through the Undergraduate Research Apprenticeship Program (URAP).
- 2. Science outreach & education:** Volunteer teacher for “Be A Scientist” program in Berkeley middle schools; Public tour guide for Museum of Vertebrate Zoology;

Volunteer and presenter at UC Berkeley's campus outreach event CalDay; interviewed for local radio and newsletters.

**3. Curriculum development:** Developed and presented 5 freely available and online accessible workshops for the UC Berkeley Computational Genomics Resource Laboratory; Developed course material for the graduate student evolution course at Cold Spring Harbor Laboratory; Created and presented guest lectures for courses at UC Berkeley and Monmouth University, NJ.

**4. Service to scientific community:** UC Berkeley Integrative Biology Graduate Student Association Representative; Student representative for Quantitative Systems Biology Search committee; Manuscript reviewer for Molecular Ecology, Animal Behavior, PLoS ONE, and Life Science Alliance.