**Katya L. Mack**

Department of Biology, Stanford University, CA

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**EDUCATION**

University of California, Berkeley, CA 2013-2018

Ph.D., Integrative Biology

Advisor: Dr. Michael Nachman

Committee: Dr. Craig Miller, Dr. Rasmus Nielsen

University of Michigan, Ann Arbor, MI 2008-2012

Anthropology B.S., Ecology and Evolutionary Biology Minor, Highest Honors and Distinction

**PROFESSIONAL** **EXPERIENCE**

**Stanford University**, Department of Biology, Stanford CA 2019-Present

National Institute of Health NRSA Postdoctoral Fellow

Center for Computational, Evolutionary, and Human Genomics Postdoctoral Fellow

Supervisor: Dr. Hunter Fraser

**University of California, Berkeley**, Department of Integrative Biology & 2013-2018

Museum of Vertebrate Zoology, Berkeley, CA

PhD student, supervisor: Dr. Michael Nachman

**University of Michigan, Ann Arbor**, MI 2011-2012

Research assistant, supervisor: Dr. Patricia Wittkopp

**Field Museum**, Human Origins Department, Chicago IL 2009, 2010

Undergraduate Intern, supervisor: Dr. Robert Martin

**PUBLICATIONS**

1. Suzuki TA, Phifer-Rixey M, **Mack KL**, Sheehan MJ, Lin TT, Bi K, Nachman MW. 2019. Host genetic determinants of the gut microbiota of wild mice. *Molecular Ecology,* 00:1–11.

2. **MackKL**, Phifer-RixeyM, HarrB, NachmanMW. 2019. Gene expression networks across multiple tissues are associated with rates of molecular evolution in wild house mice. *Genes* 10(3): 225*.*

3. **Mack KL**, Ballinger MA, Phifer-Rixey M, Nachman MW. 2018. Gene regulation underlies environmental adaptation in house mice. *Genome research* 28:1636-1645.

4. Phifer-Rixey M, Bi K, Ferris KG, Sheehan MJ, Lin D, **Mack KL**, Keeble SM, Suzuki TA, Good JM, and Nachman MW.2018. The genomic basis of environmental adaptation in house mice. *PLoS genetics* 14:e1007672.

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

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

7. 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.*

8. 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 or revision*

Bittner NKJ, **Mack KL**, Nachman MW. Plasticity in gene expression facilitates invasion of the desert environment in house mice. *Submitted.* BioRxiv: <https://www.biorxiv.org/content/10.1101/2020.02.10.939231v1>

**Mack KL**, Jaggard JB, Persons JL, Passow CN, Stahl BA, Ferrufino E, Tsuchiya D, Smith SE, Slaughter B, Kowalko J, Rohner N, Keene AC, McGaugh SE.  Repeated evolution of circadian clock dysregulation in cavefish populations. *Submitted.* BioRxiv: <https://www.biorxiv.org/content/10.1101/2020.01.14.906628v1>

**MackKL**, Ballinger MA, Phifer-RixeyM, NachmanMW. Copy number variation in natural populations of house mice along an environmental gradient. *Submitted.*

**SELECTED PRESENTATIONS**

Conference presentations

1. **Mack KL**, Ballinger MA, Phifer-Rixey M, Nachman M. Divergent patterns of copy number variation in natural populations of house mice (*Mus musculus domesticus*) along an environmental gradient. Population, Evolutionary and Quantitative Genetics Conference, 2018, Madison, WI (Poster).

2. **Mack KL**,Ballinger MA, Phifer-Rixey M, Nachman MW. Adaptive variation in gene

regulation in mice. Society for Integrative and Comparative Biology, 2018, San Francisco, CA (Talk).

3. **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).

4. **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).

5. **Mack KL**. Divergence in gene regulation associated with reproductive isolation in house mice. Genetics, Development & Evolution Symposium 2015, Berkeley CA (Talk).

6. **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).

Invited talks

**Mack KL**. 2018. Gene regulation in speciation and adaption. Duke University.

**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**

National Institute of Health NRSA Postdoctoral Fellowship 2019

National Science Foundation Postdoctoral Fellowship in Biology 2019

($138,000) (*declined*)

Center for Computational, Evolutionary, and Human Genomics Postdoctoral Fellowship 2019 ($30,000), Stanford University, CA

Jerry O. Wolff Graduate Student Fellowship ($12,500) 2017

Museum of Vertebrate Zoology, UC Berkeley, CA

IGERT Fellow, Program in Comparative Genomics ($60,000), University of Arizona 2012

Awarded Highest Honors for Senior Honors Thesis, University of Michigan 2012

Phi Beta Kappa, University of Michigan

James B. Angell Scholar, University of Michigan, Ann Arbor, MI

William J. Branstrom Freshman Prize (top 5% of class) 2009

University of Michigan, Ann Arbor, MI

**RESEARCH FUNDING**

Doctorate Dissertation Improvement Grant ($20,357), National Science Foundation 2016

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 2015

UC Berkeley ($2,000)

Museum of Vertebrate Zoology Louise Kellogg Fund grant, UC Berkeley ($2,000) 2014

**TEACHING EXPERIENCE**

**Cold Spring Harbor Laboratory**, Watson School of Biological Sciences 2018

* Instructor, Population Genetics, Evolution Topics Course

**University of California, Berkeley**, Department of Integrative Biology 2013-2018

* Graduate Student Instructor for Human Genetics (2018), Evolutionary Medicine (2015, 2017), Evolution and Earth History: From Genes to Fossils (2016), General Biology (2013, 2014, 2015, 2016, 2018)
* Guest lecturer, Evolution and Earth History: From Genes to Fossils (IB167)

**Monmouth University**,Department of Biology 2018, 2019

* Guest lecturer, Evolution

**University of Michigan,** Ann Arbor 2011-2012

* Study Group Facilitator at Science Learning Center, Introductory Biology (Molecular, Cellular, and Developmental)

**SERVICE AND OUTREACH**

**1. Mentoring undergraduates in research**: Mentored undergraduates at UC Berkeley through the Undergraduate Research Apprenticeship Program (URAP).

**2. Science outreach & education**: Volunteer teacher in Berkeley middle schools through the “Be A Scientist” program; Public tour guide for Museum of Vertebrate Zoology; Volunteer and presenter at UC Berkeley’s campus outreach event CalDay; pen pal for Letters to a Pre-Scientist; interviewed for local radio and newsletters.

**3. Resource and 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 Genetics, Molecular Biology and Evolution, Biology Letters, Evolution Letters, Molecular Ecology, Animal Behavior, PLoS Genetics