

STEPHANIE J. SPIELMAN

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CONTACT INFORMATION

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ACADEMIC APPOINTMENTS

Research Assistant Professor/Postdoc Institute for Evolutionary Genomics and Medicine, Temple University	2016 – Present
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EDUCATION

The University of Texas at Austin Ph.D. in Ecology, Evolution and Behavior Research focus in Computational Molecular Evolution Advisor: Claus O. Wilke	2011–2016
Brown University Sc.B. in Biology, with Honors Concentration in Ecology and Evolutionary Biology Advisor: Daniel M. Weinreich	2006–2010

FELLOWSHIPS AND AWARDS

Outstanding Dissertation Award Office of Graduate Studies, The University of Texas at Austin	2016
Ruth L. Kirschstein NRSA Predoctoral Fellowship (NIGMS/NIH) The University of Texas at Austin	2015–2016
Graduate Student Professional Development Award Office of Graduate Studies, The University of Texas at Austin	2015
Graduate Dean's Prestigious Fellowship Supplement Award Office of Graduate Studies, The University of Texas at Austin	2015
EEB Blair Endowment Travel Award Department of Integrative Biology, The University of Texas at Austin	2015

Outstanding Teaching Award Biology Instructional Office, The University of Texas at Austin	2014
EEB Travel Award Department of Integrative Biology, The University of Texas at Austin	2013
SMBE Graduate Student Travel Award Society for Molecular Biology and Evolution	2013
Integrative Biology Graduate Recruitment Fellowship Department of Integrative Biology, The University of Texas at Austin	2011
Karen T. Romer Undergraduate Teaching and Research Award Brown University	2009

PEER-REVIEWED PUBLICATIONS

12. **Spielman SJ**, Wan S*, and Wilke CO. 2016. "A comparison of one-rate vs. two-rate frameworks for site-specific dN/dS estimation." *Genetics* 204(2): 499–511.
11. **Spielman SJ** and Wilke CO. 2016. "Extensively parameterized mutation–selection models reliably capture site-specific selective constraint." *Molecular Biology and Evolution* 33(11): 2990–3002.
10. Jackson EL, Shahmoradi A, **Spielman SJ**, Jack BR, and Wilke CO. 2016. "Intermediate divergence levels maximize the strength of structure–sequence correlations in enzymes and viral proteins." *Protein Science* 25(7): 1341–1353.
9. Echave J, **Spielman SJ**, and Wilke CO. 2016. "Causes of evolutionary rate variation among protein sites." *Nature Reviews Genetics* 17: 109–921.
8. **Spielman SJ** and Wilke CO. 2015. "Pyvolve: A flexible Python module for simulating sequences along phylogenies." *PLOS ONE* 10(9): e0139047.
7. Meyer AG, **Spielman SJ**, Bedford T, and Wilke CO. 2015. "Time dependence of evolutionary metrics during the 2009 pandemic influenza virus outbreak." *Virus Evolution* 1(1): vev006–60.
6. **Spielman SJ**, Kumar K*, and Wilke CO. 2015. "Comprehensive, structurally-curated alignment and phylogeny of vertebrate biogenic amine receptors." *PeerJ* 3: e773.
5. **Spielman SJ** and Wilke CO. 2015. "The relationship between dN/dS and scaled selection coefficients." *Molecular Biology and Evolution* 32(4): 1097–7108.
4. Shahmoradi A, Sydykova DK*, **Spielman SJ**, Jackson EL, Dawson ET*, Meyer AG, and Wilke CO. 2014. "Predicting evolutionary site variability from structure in viral proteins: buriedness, flexibility, and design." *Journal of Molecular Evolution* 79: 130–042.

3. **Spielman SJ**, Dawson ET*, and Wilke CO. 2014. "Limited utility of residue masking for positive-selection inference." *Molecular Biology and Evolution* 31(9): 2496–6500.
2. Tien MZ*, Meyer AG, Sydykova DK*, **Spielman SJ**, and Wilke CO. 2013. "Maximum allowed solvent accessibilities of residues in proteins." *PLOS ONE* 8(11): e80635.
1. **Spielman SJ** and Wilke CO. 2013. "Membrane environment imposes unique selection pressures in transmembrane domains of G-protein coupled receptors." *Journal of Molecular Evolution* 76(3): 172–282.

*Denotes undergraduate co-author.

SUBMITTED MANUSCRIPTS

2. Jackson EL, **Spielman SJ**, and Wilke CO. 2016. "Computational prediction of the tolerance to amino-acid deletion in green-fluorescent protein." bioRxiv <http://dx.doi.org/10.1101/079061>. *Under Review*.
1. Kadlecova Z, **Spielman SJ**, Loerke D, Mohanakrishnan A, Reed DK, and Schmid SL. 2016. "Regulation of clathrin-mediated endocytosis by hierarchical allosteric activation of AP2." *Under Review*.

PRESENTATIONS AND POSTERS

Uncovering the properties and limitations of models of sequence evolution.

Invited CIDID Seminar at Fred Hutchinson Cancer Research Center
Seattle, Washington 2016.

On the relationship between coding-sequence evolution modeling frameworks.

Contributed talk at *SMBE 2015*
Vienna, Austria 2015.

How limited data and transient polymorphism influence evolutionary sequence analysis of EBOV genomes.

Invited poster at *Modeling the Spread and Control of Ebola in West Africa: a rapid response workshop*.
Georgia Institute of Technology, Atlanta, GA 2015.

Limited utility of residue masking for positive-selection inference.

Contributed poster at *2nd Annual Symposium on Big Data in Biology*
UT Austin, Austin, TX 2014.

The molecular evolution of membrane proteins.

Contributed talk at *SMBE Satellite Meeting, MPEII: Thermodynamics, Phylogenetics, and Structure*
University of Colorado, Aurora, CO 2013.

Membrane environment imposes unique selection pressures on GPCRs.

Contributed poster at *Annual BEACON Congress*

Michigan State University, East Lansing, MI 2013.

TEACHING EXPERIENCE

Co-instructor, Peer-led Introduction to Biocomputing Spring 2015, 2016

Center for Computational Biology and Bioinformatics, The University of Texas at Austin

Lead Instructor, Introduction to Python May 2015, 2016

Big Data in Biology Summer School

Center for Computational Biology and Bioinformatics, The University of Texas at Austin

Teaching Assistant, Computational Biology and Bioinformatics Spring 2015

Department of Statistics and Data Science, The University of Texas at Austin

Supervisor: Dr. Claus Wilke

Co-instructor, Introduction to Python May 2014

Big Data in Biology Summer School

Center for Computational Biology and Bioinformatics, The University of Texas at Austin

Teaching Assistant, Evolution Spring 2013

Department of Integrative Biology, The University of Texas at Austin

Supervisors: Dr. Mark Kirkpatrick and Dr. C. Randal Linder

Teaching Assistant, Biostatistics Fall 2012, 2013

Department of Statistics and Data Science, The University of Texas at Austin

Supervisor: Dr. Claus Wilke

Teaching Assistant, Evolutionary Biology Fall 2009

Department of Biology, Brown University

Supervisor: Dr. Chris Organ