

Graduate Student

Evolutionary genomics

jacob.steenwyk@vanderbilt.edu

<jlsteenwyk.github.io>

**Jacob L. Steenwyk**

**EDUCATION**

**Present** Graduate Student Biological Sciences **Vanderbilt University**

Advisor: Antonis Rokas

GPA: 3.97

**2016** M.S. Biochemistry and Molecular Biology **Clark University**

Advisor: John G. Gibbons

GPA: 3.98

**2015** B.A. Biochemistry and Molecular Biology **Clark University**

Advisor: Denis Larochelle

Cumulative GPA: 3.84

Science GPA: 3.84

**AWARDS**

**2018** *GENETICS* Peer Review Training Program, Genetics Society of America

**2018** Best poster award, Gordon Research Seminar, Holderness, NH

**2018** Best poster award, Gordon Research Conference, Holderness, NH

**2018** Best poster award, Department of Biological Sciences, Vanderbilt University

**2018** T-shirt design contest winner, Department of Biological Sciences, Vanderbilt University

**2017** Graduate student travel grant, Vanderbilt University

**2016** Graduate student council travel awards, Clark University

**2015** Summa cum laude, Clark University

**2014** Summer research scholar, Bridging the gaps, University of Southern California Keck School of Medicine

**2013** Global environmental microbiology scholar, Center for dark energy biosphere investigations, University of Southern California

**2011** Jonas Clark Scholar, Clark University

**RESEARCH INTERESTS**

**•**DNA damage and repair

**•** Gene and genome evolution

**•** Evolution and function of technologically and medically significant fungi

**•** Phylogenetics of phylogenomics of fungi and insects

**PUBLICATIONS**

Preprint: MeadM.E., S.L. Knowles, H.A. Raja, S. R. Beattie, C.H. Kowalski, **J.L. Steenwyk**, L.P. Silva, J. Chiaratto, L.N.A. Ries, G.H. Goldman, R.A. Cramer, N.H. Oberlies, & A. Rokas (2018). Characterizing the pathogenic, genomic, and chemical traits of *Aspergillus fischeri*, the closest sequenced relative of the major human fungal pathogen *Aspergillus fumigatus*. bioRxiv: doi: 10.1101/430728

Preprint: **Steenwyk, J.L.**, X.-X. Shen, A.L. Lind, G.G. Goldman, & A. Rokas (2018). A robust phylogenomic timetree for biotechnologically and medically important fungi from Aspergillaceae (Eurotiomycetes, Ascomycota). bioRxiv: doi: 10.1101/370429

Preprint: Eidem,H.R., **J.L. Steenwyk**, J. Wisecaver, J.A. Capra, P. Abbot, & A. Rokas (2018). integRATE: a desirability-based data integration framework for the prioritization of candidate genes across heterogeneous ‘omics and its application to preterm birth. bioRxiv: doi: 10.1101/302612

Preprint: **Steenwyk, J.**, J. St. Denis, J. Dresch, D. Larochelle, & R. Drewell (2017). Whole genome bisulfite sequencing reveals a sparse, but robust pattern of DNA methylation in the *Dictyostelium discoideum* genome. bioRxiv. doi: 10.1101/166033

(3) **Steenwyk, J.L.** & A. Rokas (2018). Copy number variation in fungi and its implications for wine yeast genetic diversity and adaptation. Frontiers in Microbiology. doi: 10.3389/fmicb.2018.00288

(2) **Steenwyk, J.** & A. Rokas (2017). Extensive Copy Number Variation in Fermentation-Related Genes among *Saccharomyces cerevisiae* Wine Strains. G3: Genes | Genomes | Genetics. doi: 10.1534/g3.117.040105

(1) **Steenwyk J.L.**, J.S. Soghigian, J.R. Perfect, & J.G. Gibbons (2016).Copy number variation contributes to cryptic genetic variation in outbreak lineages of *Cryptococcus gattii* from the North American Pacific Northwest.BMC Genomics. doi: [10.1186/s12864-016-3044-0](https://dx.doi.org/10.1186%2Fs12864-016-3044-0)

**INVITED TALKS**

**2019** The Phylogenomics and Evolution Group ofNorth Carolina State University, Raleigh, NC (scheduled)

**2015** TedXClarkUniversity,Clark University, Worcester, MA

**CONTRIBUTED TALKS**

**2017** Mycological Society of America, Univ. of Georgia, Athens, GA

**2016** Mycological Society of America, Univ. of California Berkeley, Berkeley, CA

**2016** Graduate Student Multidisciplinary Conference,Clark University, Worcester, MA

**INVITED WORKSHOP TEACHING**

**2018** Image approach, design and processing,ArtLab, Vanderbilt University, Nashville, TN (scheduled)

**POSTER PRESENTATIONS**

**2018** Cellular and Molecular Fungal Biology, Gordon Research Conference, Holderness, New Hampshire

**2018** Cellular and Molecular Fungal Biology, Gordon Research Seminar, Holderness, New Hampshire

**2018** Department of Biological Sciences Annual Retreat, Vanderbilt University, Nashville, TN

**2018** Exploring the intersection between Art and Science,ArtLab, Vanderbilt University, Nashville, TN

**2015** Bumpus Symposium,Clark University, Worcester, MA

Traina Scholars Presentation,Clark University, Worcester, MA

**2015** Summer Research Presentation,Clark University, Worcester, MA

**RESEARCH EXPERIENCE**

**2016-Pres.** Antonis Rokas Lab at Vanderbilt University, Nashville, TN.

**2015-2016** John Gibbons Lab at Clark University, Worcester, MA. Investigation of copy number variation in the human pathogen, *Cryptococcus gattii.*

**2015-2016** Robert Drewell Lab at Clark University, Worcester, MA. Investigation of genome-wide methylation patterns in *Dictyostelium discoideum.*

**2014** Ite A. Laird-Offringa Lab at University of Southern California, Los Angeles, CA. Bridging the Gaps Summer Scholar. Project aim was to map the autoimmune triggering epitope of *ELAVL4* in small cell lung cancer*.*

**2013** John Heidelberg and Eric Webb Labs at University of Southern California, Los Angeles, CA. Global Environmental Microbiology Summer Scholar. Investigation of fresh and marine water microbial diversity*.*

**TEACHING EXPERIENCE**

**2017-Pres.** Teaching Assistant, Introductory Biology Lab, Vanderbilt University, Nashville, TN

**2016** Teaching Assistant, Introduction to Biostatistics, Clark University, Worcester, MA

**2014-2015** Teaching Assistant, Cell Biology, Clark University, Worcester, MA

**SERVICE**

**2018-Pres.** Co-chair, MEGA*Microbe*, Vanderbilt Institute for Infections, Immunology and Inflammation, Nashville, TN

**2018-Pres.** Vice President, Graduate Student Association, Department of Biological Sciences, Vanderbilt University, Nashville, TN

**2018-Pres.** Member, American Society of Microbiology Tennessee Chapter

**2017-Pres.** Educational outreach booth design and execution,MEGA*Microbe*, Nashville, TN

**2017-Pres.** Communications chair, Inequalities in Biological Sciences Association, Vanderbilt University, Nashville, TN

**2017-Pres.** Member of the Dean of Graduate Student’s survey quantitative analysis subgroup, Graduate Diversity and Inclusion Committee, Vanderbilt University, Nashville, TN

**2017-Pres.** Judge, Middle Tennessee Science and Engineering Fair, Belmont University, Nashville, TN

**2017-2018** Secretary, Graduate Student Association, Department of Biological Sciences, Vanderbilt University, Nashville, TN

**2017-2018** Scientific consultant, Little Harpeth Brewing, Nashville, TN

**2017** Vanderbilt Student Volunteers for Science, Volunteer Science Teacher, West End Middle School, Nashville, TN

**2014-2015** Undergraduate Subcommittee for Department of Chemistry, Biochemistry and Molecular Biology Faculty Search Committee, Clark University, Worcester, MA

**2014-2015** Science Education Outreach Blogger, C-DEBI Sci-Curious Blog

**MANUSCRIPT REVIEWER**

*Systematic Biology, Molecular Genetics and Genomics, BMC Genomics, PLoS One, Young Scientists Journal, Scholarly Undergraduate Research Journal*