



# Jacob L. Steenwyk

Howard Hughes Medical Institute  
Gilliam Fellow, Vanderbilt University  
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<http://jlsteenwyk.com/>

## CURRENT POSITIONS

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- Since 2022** Postdoctoral Scholar, Laboratory of Dr. Nicole King (starting Sept.)  
Dept. of Molecular & Cell Biology, University of California, Berkeley
- Since 2022** Scientific consultant  
Latch AI Inc., San Francisco, California

## EDUCATION

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|-------------|--|------------------------------|
| <b>2022</b> | Ph.D., Biological Sciences<br>Advisor: Dr. Antonis Rokas<br>GPA: 3.97  | <b>Vanderbilt University</b> |
| <b>2016</b> | M.S., Biochemistry and Molecular Biology<br>Advisor: Dr. John G. Gibbons<br>GPA: 3.98                                | <b>Clark University</b>      |
| <b>2015</b> | B.A., Biochemistry and Molecular Biology<br>Advisor: Dr. Denis Larochelle<br>Cumulative GPA: 3.84; Science GPA: 3.84 | <b>Clark University</b>      |

## AWARDS

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| <b>2022</b> | James F. Crow Early Career Researcher Award Finalist, Genetics Society of America        |
| <b>2022</b> | Harold M. Weintraub Graduate Student Award, Fred Hutchinson Cancer Research Center       |
| <b>2021</b> | Sandler Fellows Finalist, University of California, San Francisco                        |
| <b>2021</b> | Honorable mention, Next Generation Faculty Symposium, Stanford.Berkeley.UCSF             |
| <b>2021</b> | Presentation award, Canadian Fungal Research Network and Great Lakes Mycology Conference |
| <b>2021</b> | Graduate Research Excellence Award in Biological Sciences, Vanderbilt University         |
| <b>2021</b> | Smriti Bardhan Scholarship, Vanderbilt University  |
| <b>2021</b> | Registration award, Science Talk '21   |
| <b>2020</b> | Favorite Artist Award, Catalyst: A Virtual Sci-Art Exhibition                            |
| <b>2020</b> | Oral presentation award, SACNAS – The National Diversity in STEM Virtual Conference      |
| <b>2020</b> | Registration scholarship, SACNAS – The National Diversity in STEM Virtual Conference     |
| <b>2020</b> | Best Talk Honorable Mention, Canadian Fungal Research Network Meeting                    |
| <b>2020</b> | Trainee-of-the-Year, Vanderbilt Institute for Infection, Immunology and Inflammation     |
| <b>2019</b> | Gilliam Predoctoral Fellowship, Howard Hughes Medical Institute                          |
| <b>2019</b> | Ann Bernard Martin Award for Excellence in Graduate Research, Vanderbilt University      |
| <b>2019</b> | Ruth L. Kirschstein National Research Service Award, National Institutes of Health       |
| <b>2019</b> | Ford Foundation Predoctoral Fellowship, Ford Foundation                                  |
| <b>2019</b> | Graduate student travel grant, Vanderbilt University                                     |
| <b>2019</b> | Curb Center Fellow, ArtLab, Vanderbilt University  |
| <b>2018</b> | <i>GENETICS</i> Peer Review Training Program, Genetics Society of America                |
| <b>2018</b> | Best poster award, Cellular and Molecular Fungal Biology, Gordon Research Seminar        |
| <b>2018</b> | Best poster award, Cellular and Molecular Fungal Biology, Gordon Research Conference     |
| <b>2018</b> | Best poster award, Department of Biological Sciences, Vanderbilt University              |

<b>2018</b>	T-shirt design contest winner, Department of Biological Sciences, Vanderbilt University
<b>2017</b>	Graduate student travel grant, Vanderbilt University
<b>2016</b>	Graduate student council travel awards, Clark University
<b>2015</b>	Summa cum laude, Clark University
<b>2014</b>	Summer research scholar, Bridging the gaps, University of Southern California Keck School of Medicine
<b>2013</b>	Global environmental microbiology scholar, Center for dark energy biosphere investigations, University of Southern California
<b>2011</b>	Jonas Clark Scholar, Clark University

## RESEARCH INTERESTS

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- Evolution of technologically and medically significant fungi
- Evolution and function of DNA repair
- Genome and gene evolution
- Phylogenomics and phylogenetics
- Software development

## TEN HIGHLIGHTED FIRST AUTHOR PUBLICATIONS

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- (1) **Steenwyk, J.L.**, M.A. Phillips, F. Yang, S.S. Date, T. Graham, J. Berman, C.T. Hittinger, & A. Rokas (2022). An orthologous gene coevolution network provides insight into eukaryotic cellular and genomic structure and function. *Science Advances*: *in press*.
- (2) **Steenwyk, J.L.**<sup>^</sup>, D.C. Goltz, T.J. Buida III, Y. Li, X.-X. Shen, & A. Rokas<sup>^</sup> (2021). orthoSNAP: a tree splitting and pruning algorithm for retrieving single-copy orthologs from gene family trees. <sup>^</sup>Corresponding authors. *bioRxiv*. DOI: 10.1101/2021.10.30.466607
- (3) **Steenwyk, J.L.**<sup>^</sup>, T.J. Buida III, C. Gonçalves, D.C. Goltz, G. Morales, M. Mead, A.L. LaBella, C.M. Chavez, J.E. Schmitz, M. Hadjifrangiskou, Y. Li, & A. Rokas<sup>^</sup> (2021). BioKIT: a versatile toolkit for processing and analyzing diverse types of sequence data. <sup>^</sup>Corresponding authors. *bioRxiv*. DOI: 10.1101/2021.10.02.462868
- (4) **Steenwyk, J.L.**<sup>^</sup>, T.J. Buida III, A.L. LaBella, Y. Li, X.-X. Shen, & A. Rokas<sup>^</sup> (2021). PhyKIT: a UNIX shell toolkit for processing and analyzing phylogenomic data. <sup>^</sup>Corresponding authors. *Bioinformatics*. PMID: 33560364; PMCID: PMC8388027; DOI: 10.1093/bioinformatics/btab096
- (5) **Steenwyk, J.L.**<sup>^</sup>, T.J. Buida III, Y. Li, X.-X. Shen, & A. Rokas<sup>^</sup> (2020). ClipKIT: a multiple sequence alignment-trimming software for accurate phylogenomic inference. <sup>^</sup>Corresponding authors. *PLOS Biology*. PMID: 33264284; PMCID: PMC7735675; DOI: 10.1371/journal.pbio.3001007
- (6) **Steenwyk, J.L.**<sup>\*</sup>, A.L. Lind<sup>\*</sup>, L.N.A. Ries, T.F. dos Reis, L.P. Silva, F. Almeida, R.W. Bastos, T.F. de Campos Fraga da Silva, V.L.D. Bonato, A.M. Pessoni, F. Rodrigues, H.A. Raja, S.L. Knowles, N.H. Oberlies, K. Lagrou, G.H. Goldman<sup>^</sup>, A. Rokas<sup>^</sup> (2020). Pathogenic allodiploid hybrids of *Aspergillus* fungi. <sup>\*</sup>Equal contributors; <sup>^</sup>Corresponding authors. *Current Biology*. PMID: 32502407; PMCID: PMC7343619; DOI: 10.1016/j.cub.2020.04.071
- (7) **Steenwyk, J.L.**, M.E. Mead<sup>\*</sup>, S.L. Knowles<sup>\*</sup>, H.A. Raja, C.D. Roberts, O. Bader, J. houbroken, G.H. Goldman, N.H. Oberlies, & A. Rokas (2020). Biosynthetic gene clusters, secondary metabolite profiles, and cards of virulence in the closest nonpathogenic relatives of *Aspergillus fumigatus*. <sup>\*</sup>Equal contributors. *Genetics*. PMID: 32817009; PMCID: PMC7536862; DOI: 10.1534/genetics.120.303549
- (8) **Steenwyk, J.L.**, D. Opulente, J. Kominek, X.-X. Shen, X. Zhou, A.L. LaBella, N.P. Bradley, B.F.

Eichman, N. Čadež, D. Libkind, J. DeVirgilio, A.B. Hulfachor, C.P. Kurtzman, C.T. Hittinger<sup>^</sup>, & A. Rokas<sup>^</sup> (2019). Extensive loss of cell cycle and DNA repair genes in an ancient lineage of bipolar budding yeasts. <sup>^</sup>Corresponding authors. *PLOS Biology*. PMID: 31112549; PMCID: PMC6528967; DOI: 10.1371/journal.pbio.3000255

- (9) **Steenwyk, J.L.**, X.-X. Shen, A.L. Lind, G.H. Goldman, & A. Rokas (2019). A robust phylogenomic timetree for biotechnologically and medically important fungi in the genera *Aspergillus* and *Penicillium*. *mBio*. PMID: 31289177; PMCID: PMC6747717; DOI: 10.1128/mBio.00925-19
- (10) **Steenwyk, J.L.** & A. Rokas (2018). Copy number variation in fungi and its implications for wine yeast genetic diversity and adaptation. *Frontiers in Microbiology*. PMID: 29520259; PMCID: PMC5826948; DOI: 10.3389/fmicb.2018.00288

## FUNDING

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<b>Howard Hughes Medical Institute</b>	Principal co-investigator (shared with Antonis Rokas), 09/19-09/22, Examining the loss of diverse DNA repair genes and long-term hypermutation in a lineage of budding yeasts, Gilliam Fellowship, Individual Predoctoral Fellowship, \$150,000
<b>National Institutes of Health</b>	Principal investigator, 08/19-08/22, Examining the loss of diverse DNA repair genes and long-term hypermutation in a lineage of budding yeasts, Ruth L. Kirschstein National Research Service Award, Individual Predoctoral Fellowship (Parent F31), \$88,128 (declined)
<b>Ford Foundation Predoctoral Fellow</b>	Principal investigator, 08/19-08/22, The consequences of aberrant cell cycle and DNA repair processes in budding yeast, Individual Predoctoral Fellowship, \$72,000 (declined)
<b>Curb Center ArtLab Fellow</b>	Principal investigator, 12/18-04/19, Bridging the gap between artist and scientist, ArtLab, Vanderbilt University, \$300

## SOFTWARE

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ClipKIT: a multiple sequence alignment-trimming software for accurate phylogenomic inference. [Publication PDF](#); [Documentation](#); [Source code](#)

PhyKIT: a UNIX shell toolkit for processing and analyzing phylogenomic data. [Publication PDF](#); [Documentation](#); [Source code](#)

BioKIT: a versatile toolkit for processing and analyzing diverse types of sequence data. [Publication PDF](#); [Documentation](#); [Source code](#)

orthoSNAP: a tree splitting and pruning algorithm for retrieving single-copy orthologs from gene family trees. [Publication PDF](#); [Documentation](#); [Source code](#)

orthofisher: a broadly applicable tool for automated gene identification and retrieval. [Publication PDF](#); [Documentation](#); [Source code](#)

treehouse: a user-friendly application to obtain subtrees from large phylogenies. [Publication PDF](#); [Documentation & source code](#)

ggpubfigs: an R package for creating color blind friendly figures with ggplot2. [Publication PDF](#); [Documentation & source code](#)

## INVITED TALKS

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- 2022** Evolution, Am. Soc. of Naturalists, Soc. for the Study of Evo., and the Soc. of Sys. Biologists, Cleveland, OH
- 2022** James F. Crow Early Career Researcher Award Finalist, Genetics Society of America
- 2022** Harold M. Weintraub Award Seminar, Fred Hutchinson Cancer Research Center
- 2022** Department of Biological Sciences, George Washington University
- 2022** 31<sup>st</sup> Fungal Genetics Conference at Asilomar, Pacific Grove, CA
- 2021** Artist-in-Residence program, Vanderbilt Institute for Infection, Immunology and Inflammation
- 2021** CanFunNet and Great Lakes Mycology Conference
- 2021** Sandler Fellows Finalists Seminar, University of California, San Francisco
- 2021** Department of Ecology, Evolution, and Organismal Biology, Iowa State University
- 2021** Medical Mycology Trainee Seminar Series, University of Utah ([Link](#))
- 2021** Mycology Graduate Student Organization, University of Georgia
- 2021** MicroSeminar, International Society for Microbial Ecology ([Link](#))
- 2021** Alliance for Diversity in Science and Engineering, Young Researchers Conference
- 2021** Andrew Murray Lab seminar, Harvard University, Cambridge
- 2020** Institute of Insect Sciences, Zhejiang University
- 2020** Evan Eichler Lab seminar, University of Washington, Seattle
- 2020** Genetics Society of America, Early Career Scientist Seminar Series
- 2020** Nicole King Lab seminar, University of California Berkeley
- 2020** The National Diversity in STEM Conference, SACNAS
- 2020** Canadian Fungal Research Network Meeting
- 2020** Trainee-of-the-year talk, Vanderbilt Institute for Infection, Immunology and Inflammation
- 2020** Day of Wond'ry, Vanderbilt University, Nashville, TN
- 2019** Genetics Society of America, Early Career Scientist Seminar Series
- 2019** Gordon Research Conference, Molecular Mechanisms in Evolution, Easton, MA
- 2019** Gordon Research Seminar, Molecular Mechanisms in Evolution, Easton, MA (declined)
- 2019** Focal Point, ArtLab, Vanderbilt University, Nashville, TN
- 2019** 30<sup>th</sup> Fungal Genetics Conference at Asilomar, Pacific Grove, CA
- 2019** Phylogenomics and Evolution Group, North Carolina State University, Raleigh, NC
- 2018** ArtLab Seminar Series, Vanderbilt University, Nashville, TN
- 2015** TedXClarkUniversity, Clark University, Worcester, MA

## CONTRIBUTED TALKS

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- 2021** Students' Mycology Colloquium, Mycological Society of America
- 2020** Evolution Seminar Series, Vanderbilt University ([Link](#))
- 2019** DNA Damage and Response Journal Club, Vanderbilt University, Nashville, TN
- 2019** Research in Progress Seminar, Vanderbilt University, Nashville, TN
- 2019** Biological Sciences Annual Retreat, Vanderbilt University, Nashville, TN
- 2019** Science club at the library, Nashville Public Library, Nashville, TN
- 2018** Nashville Science Club, Jackalope Brewing Company, Nashville, TN
- 2017** Mycological Society of America, University of Georgia, Athens, GA
- 2016** Mycological Society of America, University of California Berkeley, Berkeley, CA
- 2016** Graduate Student Multidisciplinary Conference, Clark University, Worcester, MA

## ADVISING

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### Undergraduates

**2022-Pres.** Charu Balamurugan

**2019-2022** Qianhui (Olivia) Zheng  
**2018-2021** Megan A. Phillips

## **WORKSHOP TEACHING**

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**2019** Organizer and instructor, Values-based leadership, Vanderbilt University, Nashville, TN  
**2019** Founder and instructor, ‘A beginner’s guide to making figures in R’, Vanderbilt University, Nashville, TN  
**2019** Instructor, Workshop on Phylogenomics, Evolution and Genomics, Český Krumlov, Czech Republic  
**2019** Instructor, Workshop on Genomics, Evolution and Genomics, Český Krumlov, Czech Republic

## **TEACHING EXPERIENCE**

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**2020** Guest lecture, Science Communication Tools and Techniques, Vanderbilt University, Nashville, TN  
**2017-2019** 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

## **POSTER PRESENTATIONS**

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**2021** HHMI Gilliam Fellows Meeting, Howard Hughes Medical Institute  
**2021** Biology of Genomes, Cold Spring Harbor Laboratories  
**2021** Science Talk '21, Science Talk  
**2020** HHMI Gilliam Fellows Meeting, Howard Hughes Medical Institute  
**2020** Vanderbilt Institute for Infection, Immunology and Inflammation Annual Symposium, Virtual Conference  
**2020** The Allied Genetics Conference, Virtual Conference  
**2019** HHMI Investigators Science Meeting, Howard Hughes Medical Institute, Bethesda, MD  
**2019** Gilliam Fellows Annual Meeting, Howard Hughes Medical Institute, Bethesda, MD  
**2019** Molecular Mechanisms in Evolution, Gordon Research Conference, Easton, MA  
**2019** Molecular Mechanisms in Evolution, Gordon Research Seminar, Easton, MA  
**2019** 30<sup>th</sup> Fungal Genetics Conference at Asilomar, Pacific Grove, CA  
**2019** Asperfest pre-meeting at 30<sup>th</sup> Fungal Genetics Conference at Asilomar, Pacific Grove, CA  
**2018** Cellular and Molecular Fungal Biology, Gordon Research Conference, Holderness, NH  
**2018** Cellular and Molecular Fungal Biology, Gordon Research Seminar, Holderness, NH  
**2018** Department of Biological Sciences Annual Retreat, Vanderbilt University, Nashville, TN  
**2015** Bumpus Symposium, Clark University, Worcester, MA  
**2015** Traina Scholars Presentation, Clark University, Worcester, MA  
**2015** Summer Research Presentation, Clark University, Worcester, MA

## **RESEARCH EXPERIENCE**

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**2016-Pres.** Antonis Rokas Lab at Vanderbilt University, Nashville, TN. Doctoral Research. Evolution of medically and technologically significant fungi.  
**2015-2016** John Gibbons Lab at Clark University, Worcester, MA. Undergraduate and Master’s Research. Copy number variation in the human pathogen, *Cryptococcus gattii*.  
**2015-2016** Robert Drewell Lab at Clark University, Worcester, MA. Undergraduate and Master’s Research. Genome-wide methylation patterns in the social amoeba, *Dictyostelium discoideum*.

- 2014** Ite A. Laird-Offringa Lab at University of Southern California, Los Angeles, CA. Bridging the Gaps Summer Scholar. Mapping 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. Fresh and marine water microbial diversity.

## SERVICE

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- 2020-Pres.** Founder and Chief Officer, SciArt with Purpose, <https://jlsteenwyk.com/sciart.html>
- 2019-Pres.** Member, Steering Committee, Early Career Leadership Program, Genetics Society of America
- 2019-Pres.** Inclusion Coordinator, The Evolutionary Studies Initiative at Vanderbilt, Vanderbilt University, Nashville, TN
- 2019-Pres.** Graphic Illustrator, The Evolutionary Studies Initiative at Vanderbilt, Vanderbilt University, Nashville, TN
- 2017-Pres.** Educational outreach booth design and execution, MEGAMicrobe, 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
- 2019-2021** Co-chair, Communication and Outreach Subcommittee, Genetics Society of America
- 2018-2021** Volunteer Deputy, American Society of Microbiology Vanderbilt University Chapter, Nashville, TN
- 2017-2021** Communications chair, Inclusivity in Biosciences Association, Vanderbilt University, Nashville, TN
- 2020** Panelist at the Communication and Outreach Workshop, The Allied Genetics Conference, Genetics Society of America
- 2019-2020** President, Inclusivity in Biosciences Association, Vanderbilt University, Nashville, TN
- 2019-2020** Co-chair, MEGAMicrobe, Vanderbilt Institute for Infections, Immunology and Inflammation, Nashville, TN
- 2018-2019** Vice President, Inclusivity in Biosciences Association, Vanderbilt University, Nashville, TN
- 2013-2019** Administrator and Owner, Molecular Biology and Biochemistry for Researchers and Students Group, LinkedIn
- 2019** Peer review workshop leader, 30<sup>th</sup> Fungal Genetics Conference at Asilomar, Pacific Grove, CA
- 2018-2019** Vice President, Graduate Student Association, Department of Biological Sciences, Vanderbilt University, Nashville, TN
- 2018-2019** Vice co-chair, MEGAMicrobe, Vanderbilt Institute for Infections, Immunology and Inflammation, 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

## SOCIETIES

*Genetics Society of America, American Society for Microbiology, Mycological Society of America, Society for the Advancement of Chicanos/Hispanics and Native Americans in Science*

## MANUSCRIPT REVIEWER

*Nature Communications; Molecular Biology and Evolution; Systematic Biology; Methods in Ecology and Evolution; Genome Biology and Evolution; Genetics; Microbial Genomics; G3 Genes/Genomes/Genetics; FEMS Yeast Research; Fungal Biology and Biotechnology; BMC Genomics; Nature Communications Biology; PLOS One; Molecular Genetics and Genomics; and others*

## ART SHOWS

<b>2021</b>	Science Talk '21, Science Talk
<b>2020</b>	Catalyst: A Virtual Sci-Art Exhibition, Michigan State University
<b>2020</b>	Day of Wond'ry, Vanderbilt University, Nashville, TN
<b>2020</b>	Fire-Exhibition, Kefi Collective at Vanderbilt University, Nashville, TN
<b>2019</b>	Biomedical Sciences Winter Show, Vanderbilt University, Nashville, TN
<b>2019</b>	Focal point, ArtLab, Vanderbilt University, Nashville, TN
<b>2019</b>	Connecting the Dots, ArtLab, Vanderbilt University, Nashville, TN
<b>2018</b>	ArtLab opening reception, ArtLab, Vanderbilt University, Nashville, TN
<b>2018</b>	The Intersection between Art and Science, ArtLab, Vanderbilt University, Nashville, TN

## POPULAR SCIENCE ARTICLES

- (5) Simopoulos, M.A.C., A.F. Cisneros, A.D. Mendoza, C. Bautista, **J.L. Steenwyk**, N. Ahmad. Hurdles and advances to making science gender-neutral, *ecrLife*. November 26, 2020
- (4) Mendoza, A.D., C. Bautista, E.A. Marnik, C.M.A. Simopoulos, & **J.L. Steenwyk**. Navigating fake news as a scientist, *ecrLife*. October 8, 2020
- (3) **Steenwyk, J.L.** & M. Jonika. How to get started in science communication, *ecrLife*. August 21, 2020
- (2) **Steenwyk, J.L.** & A. Rokas. A new hybrid fungus is found in hospitals and linked to lung disease, *The Conversation*. June 4, 2020
- (1) **Steenwyk, J.L.** & A. Rokas. An outlaw yeast thrives with genetic chaos – and could provide clues for understanding cancer growth, *The Conversation*. May 21, 2019

## PUBLICATIONS

### Preprints/Submitted

- (7) Li, Y., **J.L. Steenwyk**, A.L. LaBella, M.C. Harrison, M. Groenewald, X. Zhou, X.-X. Shen, T. Zhao, C.T. Hittinger, & A. Rokas (2022). Contrasting modes of macro- and micro-synteny evolution in a eukaryotic subphylum. Submitted.
- (6) Zheng, Q., **J.L. Steenwyk**<sup>^</sup>, & A. Rokas<sup>^</sup> (2022). Lack of universal mutational biases in a fungal phylum. <sup>^</sup>Corresponding authors. bioRxiv. DOI: 10.1101/2022.03.29.486229
- (5) Horta, M.A., **J.L. Steenwyk**, M.E. Mead, L.H.B. dos Santos, S. Zhao, J.G. Gibbons, M. Marcet-Houben, T. Gabaldón, A. Rokas<sup>^</sup>, & G.H. Goldman<sup>^</sup> (2022). Examination of genome-wide ortholog variation in clinical and environmental isolates of the fungal pathogen *Aspergillus fumigatus*. <sup>^</sup>Corresponding authors. bioRxiv. DOI: 10.1101/2022.03.23.485522.



- (4) **Steenwyk, J.L.**<sup>^</sup>, D.C. Goltz, T.J. Buida III, Y. Li, X.-X. Shen, & A. Rokas<sup>^</sup> (2021). orthoSNAP: a tree splitting and pruning algorithm for retrieving single-copy orthologs from gene family trees. <sup>^</sup>Corresponding authors. bioRxiv. DOI: 10.1101/2021.10.30.466607
- (3) Brown, A., M.E. Mead, **J.L. Steenwyk**, G.H. Goldman, & A. Rokas (2021). Extensive sequence divergence of non-coding regions between *Aspergillus fumigatus*, a major fungal pathogen of humans, and its relatives. bioRxiv. DOI: 10.1101/2021.10.26.465918
- (2) **Steenwyk, J.L.**<sup>^</sup>, T.J. Buida III, C. Gonçalves, D.C. Goltz, G. Morales, M. Mead, A.L. LaBella, C.M. Chavez, J.E. Schmitz, M. Hadjifrangiskou, Y. Li, & A. Rokas<sup>^</sup> (2021). BioKIT: a versatile toolkit for processing and analyzing diverse types of sequence data. <sup>^</sup>Corresponding authors. bioRxiv. DOI: 10.1101/2021.10.02.462868
- (1) **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

### Peer Review Published

- (46) **Steenwyk, J.L.**, M.A. Phillips, F. Yang, S.S. Date, T. Graham, J. Berman, C.T. Hittinger, & A. Rokas (2022). An orthologous gene coevolution network provides insight into eukaryotic cellular and genomic structure and function. Science Advances: *in press*
- (45) Bradley, N.P.\* , K.L. Wahl\*, **J.L. Steenwyk**, A. Rokas, & B.F. Eichman (2022). Resistance-guided mining of bacterial genotoxins defines a family of DNA glycosylases. \*Equal contributors. mBio. DOI: 10.1128/mbio.03297-21
- (44) de Castro, P.A., A. Moraes, A.C. Colabardini, M.A.C. Horta, S.L. Knowles, H.A. Raja, N.H. Oberlies, Y. Koyama, M. Ogawa, K. Gomi, **J.L. Steenwyk**, A. Rokas, L.N.A. Ries, & G.H. Goldman (2022). Regulation of gliotoxin biosynthesis and protection in *Aspergillus* species. PLOS Genetics. PMID: 35041649; DOI: 10.1371/journal.pgen.1009965
- (43) **Steenwyk, J.L.**<sup>^</sup> & A. Rokas<sup>^</sup> (2021). ggpubfigs: colorblind friendly color palettes and ggplot2 graphic system extensions for publication-quality scientific figures. <sup>^</sup>Corresponding authors. Microbiology Resource Announcements. PMID: 34734767; PMCID: PMC8567791; DOI: 10.1128/MRA.00871-21
- (42) Phillips, M.A., **J.L. Steenwyk**<sup>^</sup>, X.-X. Shen, & A. Rokas<sup>^</sup> (2021). Examination of gene loss in the DNA mismatch repair pathway and its mutational consequences in a fungal phylum. <sup>^</sup>Corresponding authors. Genome Biology and Evolution. PMID: 34554246; PMCID: PMC8597960; DOI: 10.1093/gbe/evab219
- (41) Santos, R.A.C., M.E. Mead, **J.L. Steenwyk**, O. Rivero-Menéndez, A. Alastruey-Izquierdo, G.H. Goldman<sup>^</sup>, & A. Rokas<sup>^</sup> (2021). Examining signatures of natural selection in antifungal resistance genes across *Aspergillus* fungi. <sup>^</sup>Corresponding authors. Frontiers in Fungal Biology. DOI: 10.3389/ffunb.2021.723051
- (40) **Steenwyk, J.L.** & A. Rokas (2021). orthofisher: a broadly applicable tool for automated gene identification and retrieval. G3 Genes|Genomes|Genetics. PMID: 34544141; PMCID: PMC8496211; DOI: 10.1093/g3journal/jkab250
- (39) Ries, L., P. de Castro, L. Silva, C. Valero, T. dos Reis, R. Saborano, I. Duarte, G. Persinoti, **J.L. Steenwyk**, A. Rokas, F. Almeida, J. Costa, T. Fill, S.S.W. Wong, V. Aimaniananda, F. Rodrigues, R. Gonçalves, C. Duarte-Oliveira, A. Carvalho, & G.H. Goldman (2021). *Aspergillus fumigatus* acetate utilization impacts virulence traits and pathogenicity. mBio. PMID: 34311583; PMCID: PMC8406206; DOI: 10.1128/mBio.01682-21



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