

## Curriculum vitae - Rike Stelkens

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### Education and Employment

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2021 - present Associate Professor, Wallenberg Academy Fellow, Population Genetics,  
 Department of Zoology, Stockholm University, Sweden  
 02/2020 Docent in Population Genetics at the Department of Zoology, Stockholm  
 University  
 2017 - 2021 Biträdande lector (Assistant Professor), Wallenberg Academy Fellow,  
 Population Genetics, Department of Zoology, Stockholm University, Sweden  
 2014 – 2016 Postdoctoral Fellow, Experimental Evolution Group, Max-Planck Institute for  
 Evolutionary Biology, Plön, Germany: *The genetics of adaptation with gene  
 flow in yeast*  
 2012 – 2014 Marie Skłodowska-Curie Fellow, Department of Evolution, Ecology and  
 Behaviour, University of Liverpool, UK: *Hybridization and adaptive evolution  
 in yeast*  
 2008 – 2011 Postdoctoral Fellow, Department of Ecology and Evolution, University of  
 Lausanne, Switzerland: *Population and quantitative genetics of salmonids*  
 2005 – 2009 PhD Biology, University of Bern and EAWAG (Swiss Federal Institute of  
 Aquatic Science and Technology), Switzerland, Thesis: *The role of  
 hybridization in adaptive evolution*  
 1998 – 2004 MSc Biology (Zoology, Ecology and Plant Pathology), Christian-Albrechts-  
 University, Kiel, Germany

### Parental Leave

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05/2011 – 12/2011 Parental leave for Freya Danko, born 2011-05-29  
 11/2013 – 05/2014 Parental leave for Ronda Danko, born 2013-10-30

### Funding, Grants and Awards

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*I have been awarded competitive grants, fellowships and awards totaling **SEK 18 190 000**  
 over the course of my career.*

2020 Faculty of Science, Stockholm University, 4-year funding for a PhD student in  
 my lab for a transdisciplinary project shared with the Mathematics  
 Department (Computational Statistics group led by Dr. Chun-Biu Li)  
 2018 Wenner Gren Stiftelse postdoctoral fellowship to host Dr. Devin Bendixsen  
 in my lab, 780 000 SEK  
 2017 Wallenberg Academy Fellowship Grant, 10 000 000 SEK  
 2017 Project grant from the Swedish Vetenskapsrådet, 4 200 000 SEK  
 2017 Carl Tryggers Stiftelse postdoctoral fellowship to host Dr. Zebin Zhang in  
 my lab, 552 000 SEK  
 2017 Project grant from the Eric Philip Sörensen Stiftelse, 240 000 SEK

2017	Project grant from the Swedish Science for Life Laboratories, 272 000 SEK
2012	Marie Skłodowska-Curie FP7-intra-European fellowship, 2 000 000 SEK
2016	Selected for Career Building Programme of the Max Planck Society
2009	Travel grant from equal opportunity agency of EAWAG, CH: 4 949 SEK
2006	Travel grant from EAWAG to conference in Vancouver: 14 846 SEK
2003	Subsistence and travel grants during undergraduate studies from the German Scholarship Foundation: 79 177 SEK

### Member of Expert Panels and Editorial Boards

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- Member of the Swedish Research Council (VR) NT11 review panel, 2020
- Section Editor of *Yeast* (Wiley), 2020 - present
- Editorial Board Member (Review Editor) of *Fungal Genomics and Evolution* (Frontiers in Fungal Biology), 2020 - present
- Election Committee member, Swedish Society for Microbiology (Svenska Föreningen för Mikrobiologi), 2020 - present
- Reviewer for UK Natural Environment Research Council (NERC),
- Reviewer for The Netherlands Organisation for Scientific Research (NWO)

### Invited/selected talks

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*I have presented my research as invited or selected speaker at over 50 conferences and departmental seminars (see a selection below). These include the following presentations:*

2021	Invited talk at the GRC Speciation Conference in <b>Tuscany, Italy</b> <i>Yeast as a Model System for Speciation Research</i> (postponed to 2023 due to COVID19)
2020	- Invited talk, hosted by Jochen Wolf, University of <b>Munich, Germany</b> <i>Merging and Diverging: Studying Adaptation using Experimental Evolution</i> - Invited talk, Infection Week & Microbiological Spring Meeting of the Swedish Association of Infectious Diseases and Clinical Microbiology, <b>Uppsala, Sweden</b> <i>Saccharomyces yeasts infectivity and the role of ploidy</i> - cancelled due to COVID19 - Invited talk, hosted by Dr. Simon Martin, University of <b>Edinburgh, Scotland</b> <i>Understanding Adaptation using Experimental Evolution</i>
2019	Selected talk at the Hybridization Conference in <b>Hamburg, Germany</b> <i>Experimental Evolution, Yeast, Stress, and Hybridization</i>
2018	- Selected talk at the European Society for Evolutionary Biology conference <b>Montpellier, France</b> <i>Recombining your way out of trouble</i> - Invited talk hosted by Dr. Urban Friberg, <b>Linköping University, Sweden</b> <i>Genetic exchange and adaptation</i> - Invited talk hosted by Dr. Claudia Bank, <b>Gulbenkian Institute, Lisbon, Portugal</b> <i>Hybridization promotes colonization of new environments</i> - Invited talk hosted by Dr. Ralph Bock at the <b>Max Planck Institute Golm, Germany</b> <i>Hybridization, adaptation and ecological opportunity</i>
2015	Selected talk at the Gordon Conference on Speciation in <b>Ventura, California, USA</b> <i>Hybridization facilitates evolutionary rescue</i>

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## Professional Service

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I have reviewed >50 manuscripts for the following journals:

*Nature Microbiology, Nature Communications, PLOS Genetics, G3, Evolution, Molecular Biology and Evolution, Molecular Ecology, Heredity, Biology Letters, Philosophical Transactions of the Royal Society, Proceedings of the Royal Society B, Science Advances, American Naturalist, Biology Letters, The ISME Journal, Royal Society Open Access, BMC Evolutionary Biology, Journal of Molecular Evolution, Yeast, Plant Biology, Plos One, Behav Ecology and Sociobiology, Evolutionary Ecology, Ethology, Current Zoology, Coral Reefs*

## Publication Summary

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Source: Google Scholar:

- 24 published journal articles (16 of which as first author, 2 as senior author)
- Total number of citations (Google Scholar): 2191
- *h*-index: 15 (number of publications with ≥15 citations)
- *i*10-index = 19 (number of publications with ≥10 citations)
- ORCID iD: 0000-0002-8530-0656

## Articles (published)

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1. Bendixsen DP<sup>∞</sup>, N Gettle<sup>∞</sup>, C Gilchrist, Z Zhang, RB Stelkens, Genomic evidence of an ancient East Asian divergence event in wild *Saccharomyces cerevisiae*, **Genome Biology and Evolution**, 2021 (accepted for publication), <sup>∞</sup> authors contributed equally
2. Meier, J, RB **Stelkens**, D Joyce, S Mwaiko, N Phiri, U Schliewen, OM Selz, C Katongo, CE Wagner, O Seehausen, The coincidence of ecological opportunity with hybridization explains rapid adaptive radiation in Lake Mweru cichlids, **Nature Communications**, 2019
3. Gilchrist C, RB Stelkens, Aneuploidy in Yeast: Segregation Error or Adaptation Mechanism? **Yeast**, 2019, doi:10.1002/yea.3427
4. Zhang Z<sup>∞</sup>, DP Bendixsen<sup>∞</sup>, T Janzen, AW Nolte, D Greig, RB **Stelkens**, Recombining your way out of trouble: The genetic architecture of hybrid fitness under environmental stress, **Molecular Biology and Evolution**, 2019, doi:10.1093/molbev/msz211 <sup>∞</sup> authors contributed equally
5. Bernardes J, RB **Stelkens**, D Greig, Heterosis in hybrids within and between yeast species, **Journal of Evolutionary Biology**, 2017, 30 (3): 538–548 doi: 10.1111/jeb.13023
6. **Stelkens** RB, D Greig, Fungal evolution: On the origin of yeast species, **NATURE Microbiology** 2016, 1 (1): 15017, doi: 10.1038/nmicrobiol2015.17
7. Boynton P, RB **Stelkens**, V Kowallik, D Greig, Measuring microbial fitness in a field reciprocal transplant experiment, **Molecular Ecology Resources**, 2016, doi: 10.1111/1755-0998.12562
8. **Stelkens** RB, EL Miller, D Greig, Asynchronous spore germination in isogenic, natural isolates of *Saccharomyces paradoxus*, **FEMS Yeast Research**, 2016, 16 (3) doi: 10.1093/femsyr/fow012
9. **Stelkens** RB<sup>∞</sup>, K King<sup>∞</sup>, J Webster, D Smith, M Brockhurst, Hybridization in parasites: Consequences for adaptive evolution, pathogenesis, and public health in a changing world, **PLOS Pathogens**, 2015, 11(9): e1005098; <sup>∞</sup> authors contributed equally

10. **Stelkens** RB, C. Schmid, O Seehausen, Hybrid breakdown in cichlid fish, **PLOS ONE**, 2015, 10(5): e0127207
  11. **Stelkens** RB, M Brockhurst, G Hurst, E Miller, D Greig, The effect of hybrid transgression on environmental tolerance in experimental yeast crosses. **Journal of Evolutionary Biology**, 2014, 27(11): 2507-2519
  12. **Stelkens** RB, M Brockhurst, G Hurst, D Greig, Hybridization facilitates evolutionary rescue, **Evolutionary Applications**, 2014, 7(10): 1209-1217
  13. **Stelkens** RB, M Pompini, C Wedekind, Testing the effects of genetic crossing distance on embryo survival within a metapopulation of brown trout (*Salmo trutta*). **Conservation Genetics**, 2014, 15: 375-386
  14. **Stelkens** RB<sup>∞</sup>, ES Clark<sup>∞</sup>, C Wedekind, Parental influences on pathogen resistance in brown trout embryos and effects of outcrossing within a river network, **PLOS ONE**, 2013, 8: e57832; <sup>∞</sup>authors contributed equally
  15. **Stelkens** RB, M Pompini, C Wedekind, Testing for local adaptation in brown trout using reciprocal transplants. **BMC Evolutionary Biology**, 2012, 12: 247
  16. Abbott R, D Albach, S Ansell, JW Arntzen, SJE Baird, N Bierne et al. (incl. RB **Stelkens**), Hybridization and speciation. **Journal of Evolutionary Biology**, 2012, 26: 229-246
  17. **Stelkens** RB, G Jaffuel, M Escher, C Wedekind, Genetic and phenotypic population divergence on a microgeographic scale in brown trout. **Molecular Ecology**, 2012, 21:2896-2915
  18. **Stelkens** RB, C Wedekind, Environmental sex reversal, Trojan sex genes, and sex ratio adjustment: conditions and population consequences. **Molecular Ecology**, 2010, 19: 627–646
  19. Wedekind C, RB **Stelkens**, Tackling the diversity of sex determination. **Biology Letters**, 2010, 6: 7-9
  20. **Stelkens** RB, KA Young, O Seehausen, The accumulation of reproductive incompatibilities in African cichlid fish. **Evolution**, 2010, 64:617-633
  21. **Stelkens** RB, C Schmid, O Selz, O Seehausen, Phenotypic novelty in experimental hybrids is predicted by the genetic distance between species of cichlid fish. **BMC Evolutionary Biology**, 2009, 9:283, doi: 10.1186/1471-2148-9-283
  22. **Stelkens** RB, O Seehausen, Genetic distance between species predicts novel trait expression in their hybrids. **Evolution**, 2009, 63:884-897
  23. **Stelkens** RB, O Seehausen, Phenotypic divergence but not genetic distance predicts assortative mating among species of a new cichlid fish radiation. **Journal of Evolutionary Biology**, 2009, 22:1679-1694
  24. **Stelkens** RB, MER Pierotti, DA Joyce, AM Smith, I van der Sluijs, O Seehausen, Disruptive sexual selection on male nuptial coloration in an experimental hybrid population of cichlid fish. **Philosophical Transactions of the Royal Society B-Biological Sciences**, 2008, 363:2861-2870
  25. van der Sluijs I, TJM Van Dooren, KD Hofker, JJM van Alphen, RB **Stelkens**, O Seehausen, Female mating preference functions predict sexual selection against hybrids between sibling species of cichlid fish. **Philosophical Transactions of the Royal Society B-Biological Sciences**, 2008, 363:2871-2877
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## Teaching

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I have delivered > **160 total hours of lecturing** to graduate and undergraduate students at Stockholm University and other universities in the UK and in Switzerland, including the University of Hull, Bern, and Lausanne.

### Undergraduate Courses, Department of Zoology, Stockholm University

- 2017-2019 *Evolutionary Biology* (28 lecture hours). I teach this course in the fall semester. My lectures focus on *heritability, quantitative genetics, the evolution of complex traits, and speciation mechanisms*.
- 2018-2020 *Analysis and Presentation of Biological Data* (55 lecture hours). After teaching on this course as a guest lecturer, I became the course leader in 2019. I lecture on *scientific writing and oral communication*, and developed entirely new course content, e.g. abstract writing exercises and peer-review games. I also created a new course website (see section 4.6)

### Undergraduate Courses, University of Lausanne, CH

- 2009 *Invertebrate and vertebrate morphology* (16 lecture hours)
- 2010 *Scientific writing* (16 lecture hours)
- 2011 *Conservation Biology* (16 lecture hours)
- 2011 *Tutorial group leader* for undergraduate students (2 hours/week)

### Undergraduate Courses, University of Bern, CH

- 2007 *The evolution and ecology of biodiversity* (4 lecture hours), I gave lectures on different evolutionary topics, e.g. *Genetic variation and genetic constraints*
- 2008 *The evolutionary ecology and morphology of sticklebacks* (2-week summer course). I was an assistant instructor on this course, including fieldwork and sampling, morphological data analysis, and writing up.

### Undergraduate Courses, University of Hull, UK

- 2004 Various undergraduate courses in Chemistry, Population Genetics, and Evolution (4 lecture hours). I was an assistant instructor on these courses.

## Supervision

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### Supervision of Postdoctoral Researchers

- 2020 – present: Dr. Dragan Stajić (Wallenberg Research Fellow)  
*Adaptation to complex environments and the origin of phenotypic switching*
- 2019 – present: Dr. Noah Gettle (Wallenberg Research Fellow)  
*Mutation-order speciation in action and the role of sex*
- 2019 – present: Dr. Devin Bendixsen (Wenner Gren Stiftelse Research Fellow)  
*Constructing empirical fitness landscapes with hybrids*
- 2018 – present: Dr. Zebin Zhang (Carl Tryggers Stiftelse Research Fellow)  
*Screening for environmental-dependent incompatibilities in yeast*
- 2018 - 2020 Dr. Claire Brice (SU faculty funded Research Fellow)  
*Phenotypic and genotypic profiles of transgressive segregants in divergent hybrid yeast crosses*

**Supervision of PhD Students**

- 2017 – present: Main supervisor of Ciaran Gilchrist (SU faculty funded position)  
*Experimental evolution of yeast to divergent environments and the role of gene flow in adaptation*
- 2018 – present: Main supervisor of Alexandre Rêgo (VR funded position)  
*Adaptive dynamics from different sources of genetic variation*
- 2018 – present: Co-supervisor of Marianne Dehasque (Systematics and Evolution)  
*Evolutionary change, adaptive evolution and genome erosion in the woolly mammoth*
- 2009 – 2014: Assistant supervisor of Sébastien Nusslé, University of Lausanne
- 2010 – 2014: Assistant supervisor of Manuel Pompini, University of Lausanne
- 2010 – 2014: Assistant supervisor of Emily Clark, University of Lausanne
- 2012 – 2017: Assistant supervisor of Vienna Kowallik, Max Planck Institute for Evolutionary Biology
- 2014 – 2018: Assistant supervisor of Joana Bernardes, Max Planck Institute for Evolutionary Biology

**Supervision of MSc Students/BSc Students/Interns/Project Students/Lab Technicians**

I have supervised 2 MSc students, 2 BSc student, 12 project students, 8 interns, and 4 technicians at the Universities of Lausanne, Bern and Stockholm.

6 projects with graduate students resulted in publication so far:

- with Emily Clark and Manuel Pompini (University of Lausanne)
- with Joana Bernardes and Vienna Kowallik (Max Planck Institute for Evol Biology)
- with Ciaran Gilchrist (Stockholm University)

3 projects with undergraduate student resulted in publication:

- with Corinne Schmid (University of Bern)
- with Geoffrey Jaffuel (University of Lausanne)