Curriculum vitae – Dr. Rike Stelkens January 2024

Full name **Dr. Rike Bahati Stelkens**
Date of birth 13 July 1978
Citizenship German
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Education, Work and Academic Positions

2021 – now	Associate Professor, Dept. of Zoology, Stockholm University (SU), Sweden
Feb 2020	Docent (Habilitation) in Population Genetics, Dept. of Zoology, SU
2017 – 2021	Assistant Professor, Wallenberg Academy Fellow, Dept. of Zoology, SU
2014 – 2016	Postdoctoral Fellow, Experimental Evolution Group, Max-Planck Institute for Evolutionary Biology, Plön, Germany: *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 in Biology, University of Bern and EAWAG (Swiss Federal Institute of Aquatic Science and Technology), Switzerland, Thesis: *Hybridization in adaptive evolution*
1998 – 2004	MSc Biology, Christian-Albrechts-University, Kiel, Germany

Parental Leave

05/2011 – 1/2012 Parental leave for first child
10/2013 – 05/2014 Parental leave for second child

Research Interests

I use the power of yeast genetics, experimental evolution and comparative genomics to answer fundamental questions in evolutionary biology. I study the selective and stochastic forces generating and maintaining biodiversity with a special focus on the effects of environmental change and hybridization on adaptation. For this, I use the microbial model system Baker's yeast and its wild relatives to understand the effects of genetic variation, recombination, trait architecture, and structural genetic variation on adaptation dynamics and population fitness in changing environments.

Funding and Grants

*I have received fellowships and competitive grants as main applicant (**MA**, where I conceived and wrote the application) totaling > **SEK 22M** since 2012.*

2023 SU Science Faculty Grant to develop new Population Genomics MSc program: 133 000 SEK (**MA**)
2023 Wenner Gren Stiftelese funding to host postdoc; 672 000 SEK (**MA**)
2022 VR Swedish Research Council Project Grant; 3 900 000 SEK (**MA**)
2022 Royal Physiographic Society of Lund Grant; 64 000 SEK (**MA**)
2022 Swedish Government Research Council (FORMAS) grant, 2 900 000 SEK (co-applicant)
2022 Swedish Arts Grant Committee grant for art-science interface project; 195 000 SEK (co-applicant)
2020 SU Faculty of Science, PhD student funding paired with Math Department (**MA**)
2018 Wenner Gren Stiftelese funding to host postdoc; 780 000 SEK (**MA**)
2017 Wallenberg Academy Fellowship Grant; 10 000 000 SEK (**MA**)
2017 VR Swedish Research Council Starting Grant; 4 200 000 SEK (**MA**)
2017 Carl Tryggers Stiftelese funding to host postdoc; 552 000 SEK (**MA**)
2017 Eric Philip Sörensen Stiftelse Project Grant; 240 000 SEK (**MA**)
2017 Swedish Science for Life Laboratories Project Grant; 272 000 SEK (**MA**)
2012 Marie Skłodowska-Curie FP7-intra-European fellowship; 2 000 000 SEK (**MA**)

Member of Expert Panels and Editorial Boards

- **Chair of the Swedish Research Council** review panel NT-C Evol Biol and Genetics 2024

- **SciLifeLab & Wallenberg National Program for Data-Driven Life Science recruitment committee member** for Assistant Professors 2024
- **Vice Chair of the Swedish Research Council** review panel NT-C Evol Biol and Genetics 2023
- Member of the Stockholm University Scholarship Committee (stipendieberedningen) 2024-2026
- Member of the Swedish Research Council review panel NT11 (2020-2021)
- Election Committee member of the **Swedish Microbiological Society** (2020-2022)
- Fellow of the **Young Academy of Europe** YAE (2021-now)
- Member of the Swiss National Science Foundation AcademiaNet (2023- now)
- **Associate Editor** for 3 journals (*Evolution*, *Genome Biology and Evolution*, and *Yeast*)
- External evaluator for 5 tenure applications (Uppsala and Lund University)
- **Opponent in PhD defense** (U Helsinki, Finland, 2024) and member of 14 PhD, and 18 Licentiate and MSc exam committees at Stockholm, Uppsala, Lund, and Gothenburg University
- Reviewer for UK Natural Environment Research Council (NERC), The Netherlands Organisation for Scientific Research (NWO)
- **Reviewer for >50 manuscripts** in peer reviewed journals including *Nature Microbiology, Nature Communications, PLOS Genetics, 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, Yeast, G3*

Invited talks (selection)

Regularly invited speaker (ca. 10 times per year) including plenary talks and keynotes at > 40 international conferences, departmental seminars and workshops in Sweden, Germany, Italy, Scotland, Spain, Portugal, UK, USA, and Chile.

2024 Max Planck Institute **Tübingen, Germany**: *A feast with yeast*
2024 **Plenary** Speaker, Speciation Symposium, **Linnean Society of London**, **UK**: Microbial Perspective
2024 University Pompeu Fabra, **Barcelona, Spain**: *Saccharomyces as a model for population genetics*
2023 **Plenary** speaker at the Chilean Society of Microbiology Conference, University of **Santiago, Chile:** *Evolution in simple vs. complex environments*
2023 University of **Vienna, Austria**: *Saccharomyces as a model system for population genetics*
2023 **Keynote** at **Gordon Research Conference** on Speciation, **Italy**: *Speciation Mechanisms in Yeast: Sequence Divergence and Meiotic Errors*
2022 University of **Konstanz, Germany**: *How do hybrids cope with environmental change?*
2021 University of **California Berkeley, USA**: *Introgression and speciation mechanisms in yeast*
2021 Vetenskapens hus, **Stockholm, Sweden**: Outreach talk for highschool teachers and students: *Hybrid yeasts teaching us new tricks to adapt to stress*
2020 University of **Edinburgh**, **Scotland:** *Understanding Adaptation using Experimental Evolution*
2020 University of **Munich**, **Germany:** *Studying Adaptation using Experimental Evolution*
2018 Gulbenkian Institute, **Lisbon, Portugal**: *Hybridization promotes colonization of new environments*
2018 European Society for Evolutionary Biology conference **Montpellier**, **France:** *Recombining your way out of trouble*

Teaching

I have **>20 weeks of pedagogical training** and **> 300 documented hours of lecturing and labs** to graduate and undergraduate students at Stockholm University, the UK, and Switzerland, including the University of Hull, Bern, and Lausanne

Undergraduate Courses, Department of Zoology, Stockholm University (2017 – now)
Undergraduate Courses, University of Lausanne, CH (2009-2011)
Undergraduate Courses, University of Bern, CH (2008-2009)
Undergraduate Courses, University of Hull, UK (2004)

Supervision (since 2017 at Stockholm University)

2 PhD students (main supervisor): Ciaran Gilchrist (graduated 2022), Alexandre Rêgo (graduated 2023)

3 PhD students (co-supervisor): Marianne Dehasque, Nik Tavakolian, Michael Mitschke
9 postdocs: Chloé Haberkorn, Jennifer Molinet, Javier Pinto, Devin Bendixsen, Noah Gettle, Lorena Ament-Velasquez, Dragan Stajiç, Zebin Zhang, Claire Brice
3 MSc students, 2 BSc students, 15 project students, 11 interns, and 4 lab technicians

Publication Summary (Google Scholar, 2. Feb 2024)

36 peer-reviewed papers (plus **3** preprints on bioRxiv), **17 as first author, 12 as senior author**
Total number of citations (Google Scholar): **4024**
h-index: **20** (number of publications with ≥20 citations)
i10-index = **28** (number of publications with ≥22 citations)
ORCHID iD: 0000-0002-8530-0656

Publications

1. Molinet J, JP Navarrete, CA Villarroel, P Villarreal, FI Sandoval, RF Nespolo, R **Stelkens**, FA Cubillos, Wild Patagonian yeast improve the evolutionary potential of novel interspecific hybrid strains for Lager brewing. Plos Genetics, 2024, (in press)
2. Rêgo A, D Stajic, C Bautista, S Rouot, M de la Paz Celorio-Mancera, R **Stelkens**, Adaptation to complex environments reveals pervasive trade-offs and genomic targets with large pleiotropic effects. **bioRxiv**, 2024, p. 2024.01.24.577006
3. Bautista C, I Gagnon-Arsenault, M Utrobina, A Fijarczyk, DP Bendixsen, R **Stelkens**, C Landry, Hybrid adaptation is hampered by Haldane's sieve, **bioRxiv**, 2023, doi.org:10.1101/cshperspect.a041440 (submitted to Nature Communications)
4. Pinto J, R **Stelkens**, The relationship between cell density and cell count differs among *Saccharomyces* yeast species, **microPublication Biology**, 2024, 10.17912/micropub.biology.001215
5. Thompson KA, Y Brandvain, JM Coughlan, KE Delmore, H Justen, C Linnen, D Ortiz-Barrientos, CA Rushworth, H Schneemann, M Schumer, R **Stelkens**, The Ecology of Hybrid Incompatibilities, **Cold Spring Harbour Perspectives in Biology**, 2023, a041438
6. Delmore K, H Justen, KM Kay, J Kitano, LC Moyle, R **Stelkens**, MA Streisfeld, YY Yamasaki, J Ross, Genomic approaches are improving taxonomic representation in genetic studies of speciation, **Cold Spring Harbour Perspectives in Biology**, 2023, *doi:10.1101/cshperspect.a041438*
7. Ament-Velásquez* L, C Gilchrist*, A Rêgo, DP Bendixsen, C Brice, J Grosse-Sommer, N Rafati, R **Stelkens**. The dynamics of adaptation to stress from standing genetic variation and *de novo* mutations. **Molecular Biology and Evolution**, 2022, https://doi.org/10.1093/molbev/msac242, *authors contributed equally
8. **Stelkens** R, DP Bendixsen: The evolutionary and ecological potential of yeast hybrids. **Current Opinion in Genetics & Development** 2022, 76:101958, doi.org/10.1016/j.gde.2022.101958
9. Tavakolian N, JG Frazão**,** DP Bendixsen**,** R **Stelkens,** CB Li: Shepherd: accurate clustering for correcting DNA barcode errors. **Bioinformatics** 2022, 38:3710-3716, doi.org/10.1093/bioinformatics/btac395
10. Gettle N, B Gallone, K Verstrepen, R **Stelkens**. 2022. Harnessing the power of technical and natural variation in 116 yeast datasets to benchmark long read assembly pipelines. **bioRxiv**, 2022, doi.org/10.1101/2022.03.17.484703
11. Boynton PJ, KR Patil, I Stefanini, R **Stelkens**, FA Cubillos, Yeast ecology and communities. **Yeast**, 2022, 39(1-2):3. DOI: 10.1002/yea.3691
12. Bendixsen DP, JG Frazão, R **Stelkens**, *Saccharomyces* yeast hybrids on the rise, **Yeast**, 2021, doi.org/10.1002/yea.3684
13. Bendixsen DP, D Peris, R **Stelkens**, Patterns of genomic instability in interspecific yeast hybrids with diverse ancestries, **Fungal Genomics and Evolution** (Frontiers) 2021 doi.org/10.3389/ffunb.2021.742894
14. Brice C, Z Zhang, DP Bendixsen, R **Stelkens**. 2021. Hybridization outcomes have strong genomic and environmental contingencies. **The American Naturalist**, 2021, doi.org/10.1086/715356
15. Bendixsen DP, N Gettle, C Gilchrist, Z Zhang, R **Stelkens**, Genomic evidence of an ancient East Asian divergence event in wild *Saccharomyces cerevisiae,* **Genome Biology and Evolution**, 2021, doi.org/10.1093/gbe/evab001

16. Meier, J, R **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, 10 (5391), doi.org/10.1038/s41467-019-13278-z
17. Gilchrist C, R **Stelkens**, Aneuploidy in Yeast: Segregation Error or Adaptation Mechanism? **Yeast**, 2019, doi:10.1002/yea.3427
18. Zhang Z*, DP Bendixsen*, T Janzen, AW Nolte, D Greig, R **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; *authors contributed equally
19. Bernardes J, R **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
20. **Stelkens** R, D Greig, Fungal evolution: On the origin of yeast species, **Nature Microbiology** 2016, 1 (1): 15017, doi: 10.1038/nmicrobiol2015.17
21. Boynton P, R **Stelkens**, V Kowallik, D Greig, Measuring microbial fitness in a field reciprocal transplant experiment, **Molecular Ecology Resources**, 2016, doi:10.1111/1755-0998.12562
22. **Stelkens** R, 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
23. **Stelkens** R*, K King*, 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, doi: 10.1371/journal.ppat.1005098 *authors contributed equally
24. **Stelkens** R, C. Schmid, O Seehausen, Hybrid breakdown in cichlid fish, **Plos ONE**, 2015, 10(5): e0127207, doi.org/10.1371/journal.pone.0127207
25. **Stelkens** R, 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, doi.org/10.1111/jeb.12494
26. **Stelkens** R, M Brockhurst, G Hurst, D Greig, Hybridization facilitates evolutionary rescue, **Evolutionary Applications,** 2014, 7(10): 1209-1217, doi: 10.1111/eva.12214
27. **Stelkens** R, 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, doi.org/10.1007/s10592-013-0545-0
28. **Stelkens** R, ES Clark, C Wedekind, Parental influences on pathogen resistance in brown trout embryos and effects of outcrossing within a river network, **Plos ONE**, 2013, 8: e57832, doi.org/10.1371/journal.pone.0057832
29. **Stelkens** R, M Pompini, C Wedekind, Testing for local adaptation in brown trout using reciprocal transplants. **BMC Evolutionary Biology,** 2012, 12: 247, doi.org/10.1186/1471-2148-12-247
30. Abbott R al. (incl. R **Stelkens**), Hybridization and speciation. **Journal of Evolutionary Biology,** 2012, 26: 229-246, doi.org/10.1111/j.1420-9101.2012.02599.x
31. **Stelkens** R, G Jaffuel, M Escher, C Wedekind, Genetic and phenotypic population divergence on a microgeographic scale in brown trout. **Molecular Ecology,** 2012, 21:2896-2915, doi.org/10.1111/j.1365-294X.2012.05581.x
32. **Stelkens** R, C Wedekind, Environmental sex reversal, Trojan sex genes, and sex ratio adjustment: conditions and population consequences. **Molecular Ecology,** 2010, 19: 627–646, doi: 10.1111/j.1365-294X.2010.04526.x
33. Wedekind C, R **Stelkens**, Tackling the diversity of sex determination. **Biology Letters,** 2010, 6: 7-9, doi.org/10.1098/rsbl.2009.0573
34. **Stelkens** R, KA Young, O Seehausen, The accumulation of reproductive incompatibilities in African cichlid fish. **Evolution,** 2010, 64:617-633, doi: 10.1111/j.1558-5646.2009.00849.x
35. **Stelkens** R, 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
36. **Stelkens** R, O Seehausen, Genetic distance between species predicts novel trait expression in their hybrids. **Evolution,** 2009, 63:884-897, doi: 10.1111/j.1558-5646.2008.00599.x

37. **Stelkens** R, 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, doi: 10.1111/j.1420-9101.2009.01777.x

38. **Stelkens** R, 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, doi.org/10.1098/rstb.2008.0049

39. van der Sluijs I, TJM Van Dooren, KD Hofker, JJM van Alphen, R **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, doi: 10.1098/rstb.2008.0045