

Curriculum Vitae

PERSONAL DATA

Name, Title: Heckenhauer, Jacqueline, PhD
Date, place of birth: 15.01.1989, Witten (Germany)
Office address: Section Entomologie III, Senckenberg Research Institute and Natural History Museum, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany
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CURRENT POSITION

2018 – present **Postdoctoral Researcher**, LOEWE Center for Translational Biodiversity Genomics, Senckenberg Research Institute and Natural History Museum, Frankfurt am Main, Germany

PROFESSIONAL APPOINTMENTS

2017 – 2018 **Postdoctoral Researcher**, Department of Botany and Biodiversity Research, University of Austria, University of Vienna, Austria

EDUCATION

2014 – 2017 **Ph. D. Thesis (with extinction)**
Department of Botany and Biodiversity Research, University of Austria, University of Vienna, A
Thesis title: “Phylogenetic community structure assessment of a mixed Dipterocarp forest using DNA barcoding and molecular phylogeny of the dominant tree family Dipterocarpaceae”, Supervisor: Prof. Dr. Samuel

2011 – 2014 **M. Sc. in Biology (Specialisation: Biodiversity)**
Department of Animal Evolutionary Ecology and Biodiversity, Ruhr University Bochum, D
Thesis title: “Development of microsatellite markers for detection of genetic variability in the hydrozoan *Millepora dichotoma*”, Supervisor: Dr. Lampert

2008 – 2011 **B. Sc. in Biology**
Department of Molecular Genetics and Physiology of Plants, Ruhr University Bochum, Germany
Thesis title: “Identification of β -thioglucosidase-coding sequences in *Capsella rubella* REUTER”, Supervisor: Dr. Piotrowski

2000 – 2008 **Abitur**, Albert-Martmüller-Gymnasium, Witten, Germany

TEACHING EXPERIENCE

WS 2019 – WS 2022 **Course Aquatic Ecology (M. Sc.)**
Lecturer and supervisor of field studies, with O. Schröder, Prof. Pauls, Institute for Insect Biotechnology, Justus-Liebig-University Gießen, Germany

SS 2011 **Course Plant physiology (B. Sc.)**
Teaching assistant, Department of Molecular Genetics and Physiology of Plants, Ruhr University Bochum, Germany

THIRD-PARTY FUNDING

06/2022 **German Research Foundation (DFG) Temporary Funding for PIs**
in the framework of Priority Program 2349 Genomic Basis of Evolutionary innovations
Project title: “Evolution of underwater silk in caddisflies (Insecta: Trichoptera) and other freshwater arthropods”
€334,288 plus €73,500 programme subsidy for 36 months

AWARDS

2017 Outstanding Student Award, Award committee of International Botanical 2017 Congress, registration fee

SERVICE TO THE SCIENTIFIC COMMUNITY

Peer review of Scientific Journals (e.g. Molecular Phylogenetics and Evolution, Annals of Botany, Taxon, Molecular Ecology Resources, American Journal of Botany, Insects, Forests, Ecology and Evolution, PeerJ)

PUBLIC OUTREACH

2021 Article: Heckenhauer J, Pauls SU, Faszinierende Unterwasserarchitekten. Natur Forschung Museum 151: 74-76

CONFERENCES AND SEMINARS

- 2021** Invited Seminar LOEWE TBG Seminar Series, online
Poster Presentation at Biodiversity Genomics Meeting, online
Poster Presentation at Senckenberg Biodiversity Genomics Symposium, online
- 2020** Invited Seminar at Systematic & Evolutionary Botany seminar, online
Conference Talk at Biodiversity Genomics Meeting, online
Poster Presentation at Senckenberg Conservation Genomics Symposium, Frankfurt, D
- 2019** Poster Presentation at Society for Freshwater Science Meeting, Salt Lake City, USA
- 2017** Poster Presentation at Austrian Barcode of Life Meeting, Natural History Museum Vienna, A
- 2017** Conference Talk at XIX International Botanical Congress, Shenzhen, CN
- 2016** Conference Talk at 10th International Flora Malesiana Symposium, Royal Botanic Garden Edinburgh, UK
- 2016** Conference Talk at 17th Meeting of the Austrian Botanists, BOKU, Vienna, A
- 2015** Poster Presentation at ABOL (Austrian Barcode of Life) Meeting, Schlossmuseum Linz, A
- 2015** Conference Talk at The Systematics Association Biennial, Oxford University Museum of Natural History, UK
- 2014** Talk at Systematics Association 16th Young Systematists' Forum, Natural History Museum London, UK

FIELD WORK EXPERIENCE

Austrian Alps (1 week), Brunei Darussalam (16 weeks), Costa Rica (4 weeks), Philippines (6 weeks)

INTERNATIONAL RESEARCH VISITS

Paul Frandsen (Brigham Young University, Utah, USA, 2 weeks), David Burslem (University of Aberdeen, Scotland, UK, 1.5 weeks)

PUBLICATIONS

10 Key publications

*equal contribution

Under review

1. Sproul JS, Hotaling S, **Heckenhauer J***, Powell A, Larracuente AM, Kelley JL, Pauls SU, Frandsen PB. Repetitive elements in the era of biodiversity genomics: insights from 600+ insect genomes. <https://doi.org/10.1101/2022.06.02.494618>
2. Xiling D, Frandsen PB, Dikow R, Favre A, Shah DN, Tachamo Shah RD, Schneider J, **Heckenhauer J***, Pauls SU. The impact of sequencing depth and relatedness of the reference genome in population genomic studies: a case study with two caddisfly species (Trichoptera, Rhyacophilidae, Himalopsyche).
3. Ashton PS, **Heckenhauer J**. Tribe Shoreae (Dipterocarpaceae subfamily Dipterocarpoidea) finally dissected.
4. Kawahara AY, Storer CG, Markee A, **Heckenhauer J**, Powell A, Plotkin D, Hotaling S, Cleland TP, Dikow RB, Dikow T, Kuranishi RB, Messcher R, Pauls SU, Stewart RJ, Tojo K, Frandsen PB. Long-read HiFi Sequencing Correctly Assembles Repetitive heavy fibroin Silk Genes in New Moth and Caddisfly Genomes. <https://doi.org/10.1101/2022.06.01.494423>

Published

5. **Heckenhauer J**, Frandsen PB, Sproul JS, Li Z, Paule J, Larracuenta AM, Maughan PJ, Barker MS, Schneider JV, Stewart RJ, Pauls SU. 2022. Genome size evolution in the diverse insect order Trichoptera 11: giac011, <https://doi.org/10.1093/gigascience/giac011>.
6. Ríos-Touma B, Holzenthal RW, Rázuri-Gonzales E, **Heckenhauer J**, Pauls SU, Storer CG, Frandsen PB. 2022. *De Novo* Genome Assembly and Annotation of an Andean Caddisfly, *Atopsyche davidsoni* Sykora, 1991, a model for genome research of high-elevation adaptations. *Genome Biology and Evolution* 14: evab286, <https://doi.org/10.1093/gbe/evab286>.
7. Li X, Ellis E, Plotkin D, Imada Y, Yago M, **Heckenhauer J**, Cleland TP, Dikow RB, Dikow T, Storer CG, Kawahara AY, Frandsen PB. 2021. First annotated genome of a mandibulate moth, *Neomicropteryx cornuta*, generated using PacBio HiFi sequencing. *Genome Biology and Evolution* 13, doi:10.1093/gbe/evab229
8. Hotaling S, Sproul JS, **Heckenhauer J**, Powell A, Larracuenta AM, Pauls SU, Kelley JL, Frandsen BP. 2021. Long-reads are revolutionizing 20 years of insect genome sequencing. *Genome Biology and Evolution* 13, doi:10.1093/gbe/evab138
9. Ashton PS, Morley RJ, **Heckenhauer J**, Prasad V. 2021. The magnificent Dipterocarps: precis for an Epitaph? *Kew Bulletin* 76: 87–125
10. Olsen LK, **Heckenhauer J***, Sproul JS, Dikow RB, Gonzalez VL, Kweskin MP, Taylor AM, Wilson SB, Stewart RJ, Zhou X, Holzenthal R, Pauls SU, Frandsen PB. 2021. Draft Genome Assemblies and Annotations of *Agrypnia vestita* Walker, and *Hesperophylax magnus* Banks Reveal Substantial Repetitive Element Expansion in Tube Case-Making Caddisflies (Insecta: Trichoptera). *Genome Biology and Evolution* 13, doi:10.1093/gbe/evab013
11. Favre A, Pringle JS, **Heckenhauer J**, Kozuharova E, Gao Q, Lemmon EM, Lemmon AR, Sun H, Tkach N, Gebauer S, Sun SS, Fu PC. 2020. Phylogenetic relationships and sectional delineation within *Gentiana* (Gentianaceae). *Taxon* 69:1221–1238.
12. Ariyaratne M, Yakandawala D, Barfuss MHJ, **Heckenhauer J**, Samuel R. 2020. Molecular phylogeny and chromosomal evolution of endemic species of Sri Lankan Anacardiaceae. *Journal of the National Science Foundation of Sri Lanka* 48: 289–303.
13. **Heckenhauer J**, Frandsen PB, Gupta DK, Paule J, Prost S, Schell T, Schneider JV, Stewart RJ, Pauls SU. 2019. Annotated Draft Genomes of Two Caddisfly Species *Plectrocnemia conspersa* CURTIS and *Hydropsyche tenuis* NAVAS (Insecta: Trichoptera). *Genome Biology and Evolution* 11:3445–3451.
14. **Heckenhauer J**, D Large D, R Samuel R, MHJ Barfuss MHJ, Prins PDH. 2019. Molecular phylogeny helps to delimit *Plectranthus hadiensis* from its related morph occurring in Sri Lanka. *Ceylon Journal of Science* 48: 133-141.
15. **Heckenhauer J**, Paun O, Chase MW, Ashton PS, Abu Salim K, Samuel R. 2019. Molecular phylogenomics of the tribe Shoreeae (Dipterocarpaceae) using whole plastid genomes. *Annals of Botany* 123:857–865.
16. **Heckenhauer J**, Samuel R, Ashton PS, Abu Salim K, Paun O. 2018. Phylogenomics resolves evolutionary relationships and provides insights into floral evolution in the tribe Shoreeae (Dipterocarpaceae). *Molecular Phylogenetics and Evolution* 127:1–13.
17. **Heckenhauer J**, Abu Salim K, Chase MW, Dexter KD, Pennington RT, Tan S, Kaye ME, Samuel R. 2017. Plant DNA barcodes and assessment of phylogenetic community structure of a tropical mixed dipterocarp forest in Brunei Darussalam (Borneo). *PLOS ONE* 12, doi:10.1371/journal.pone.0185861
18. **Heckenhauer J**, Samuel R, Ashton PS, Turner B, Barfuss MHJ, Jang TS, Temsch EM, McCann J, Abu Salim K, Attanayake AMAS, Chase MW. 2017. Phylogenetic analyses of plastid DNA suggest a different interpretation of morphological evolution than those used as the basis for previous classifications of Dipterocarpaceae (Malvales). *Botanical Journal of the Linnean Society* 185:1–26.
19. **Heckenhauer J**, Barfuss MHJ, Samuel R. 2016. Universal multiplexable *matK* primers for DNA barcoding of angiosperms. *Applications in Plant Sciences* 4, doi:10.3732/apps.1500137.
21. **Heckenhauer J**, Schweinsberg M, Elbrecht V, John U, Tollrian R, Lampert KP. 2015. Isolation, characterization and cross amplification of eleven novel microsatellite loci for the hydrozoan coral *Millepora*. *Conservation Genet Resources* 7: 215–217.