

Curriculum Vitae

Dr. R. Axel W. Wiberg

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Educational History

<i>University of St Andrews, School of Biology</i> <i>PhD, Advisor: Prof. Michael G. Ritchie</i> <i>Defense: 20.09.2017</i>	<i>27.09.2013 – 12.07.2017</i>
<i>University of Edinburgh, School of Biological Sciences</i> <i>MSc Quantitative Genetics and Genome Analysis (Distinction)</i>	<i>01.09.2012 – 28.11.2013</i>
<i>University of Stirling, School of Biological and Environmental Sciences</i> <i>BSc (Hons) Animal Biology (1st Class)</i>	<i>15.09.2008 – 14.06.2012</i>
<i>Mattlidens Gymnasium (International Baccalaureate (IB) –Diploma)</i>	<i>01.09.2003 – 01.09.2006</i>

Research Experience

<i>Post-Doc, University of Basel</i> <i>Research group of Dr. Lukas Schärer</i>	<i>01.10.2017 - Present</i>
<i>Scanning Electron Microscope assistant technician, University of Stirling</i> <i>Protocol development for animal tissue microscopy</i>	<i>26.02. 2012 – 08.2012</i>
<i>Field Assistant, University of Stirling</i> <i>Nuffield Undergraduate Research Scholarship: URB/39500</i>	<i>30.05 – 22.07.2011</i>
<i>Volunteer field assistant, University of Stirling</i>	<i>31.05 – 23.07.2010</i>

Teaching Experience

<i>Supervisor Role for Undergraduate Projects, University of Basel</i>	<i>2020</i>
<i>Biology Tutor for (1st year Undergraduate level)</i>	<i>2019</i>
<i>Supervisor Role for Undergraduate Projects, University of Basel</i>	<i>2019</i>
<i>Supervisor Role for Undergraduate Projects, University of Basel</i>	<i>2018</i>
<i>Demonstrating, Lecturing and Tutoring, University of St Andrews</i> <i>Bioinformatics (1st, and 2nd year Undergraduate level)</i> <i>Statistics (2nd, 3rd and 4th year Undergraduate level)</i> <i>Evolution (3rd year Undergraduate level)</i> <i>Philosophy/History of Science</i>	<i>27.09.2013 – 12.07.2017</i>

Conference oral presentations

<i>13th Intenational Macrostomum Meeting</i> <i>Innsbruck, Austria (online)</i>	<i>November 2020</i>
<i>Sequential and Simultaneous Hermaphroditic Organisms Workshop</i> <i>Montpellier, France</i>	<i>March 2020</i>
<i>Biology20</i> <i>Fribourg, Switzerland</i>	<i>February 2020</i>
<i>12th Intenational Macrostomum Meeting</i> <i>Lund, Sweden</i>	<i>November 2019</i>
<i>ESEB 2019</i> <i>Turku, Finland</i>	<i>August 2019</i>

<i>Sequential and Simultaneous Hermaphroditic Organisms Workshop</i> <i>University of Salford, Manchester</i>	<i>April 2019</i>
<i>Bioinformatics Seminar</i> <i>University of St Andrews</i>	<i>January 2016</i>
<i>PopGroup49</i> <i>49th Population Genetics Group Meeting</i> <i>University of Edinburgh</i>	<i>December 2015</i>
<i>EMPSEB 21</i> <i>21st European Meeting of PhD Students in Evolutionary Biology</i> <i>University of Stirling</i>	<i>September 2015</i>

Professional Affiliations and Memberships

The Genetics Society
The European Society for the Study of Evolution (ESEB)

Awarded Funding

<i>SULSA Technology Seed Funding Grant</i> <i>(Co-Investigator)</i>	£9,600	2019
<i>ESEB Travel Grant</i> <i>To attend and present at the DrosEU meeting in Barcelona 2019</i>	300€	2019
<i>ESEB Travel Grant</i> <i>To attend and present at the DrosEU meeting in Lisbon 2015</i>	300€	2015
<i>ESEB Travel Grant</i> <i>To attend and present at the DrosEU meeting in Barcelona 2014</i>	300€	2014
<i>University of St Andrews Russel Trust Award</i> <i>To study as visiting PhD student at University of Uppsala</i> <i>Supervisor: Dr. Jochen Wolf</i>	£900	2015
<i>Nuffield Undergraduate Summer Scholarship</i> <i>To conduct a field and lab study of variation in dance fly eye morphology</i> <i>Supervisor: Dr. Luc Bussière</i>	<i>[URB/39500]</i>	30.05 – 22.07.2011

Academic Positions and Responsibilities

<i>Lead Organizer of Simultaneous and Sequential Hermaphroditic Organisms Workshop</i>	2021
<i>Reviewer for: Ecology and Evolution, Molecular Ecology, Molecular Biology and Evolution, Journal of Insect Science, Molecular Ecology Resources</i>	
<i>Lead Organizer of Scottish Conference on Animal Behaviour</i>	2015
<i>MSc Class Representative at the University of Edinburgh</i>	2012 - 2013

Publications (* corresponding author; ¹ joint first author)

[in prep] **R. Axel W. Wiberg***, Jeremias N Brand & Lukas Schärer. Faster rates of molecular evolution at reproduction-related genes are associated with shifts to sperm morphology in a group of flatworms.

[in prep] **R. Axel W. Wiberg***, Rosalind L. Murray, Elizabeth Herridge, Darryl T. Gwynne & Luc F. Bussière. Deceptive female display signals drive coevolution of remarkable eye dimorphism among dance flies (Diptera: Empididae).

- 2021

[preprint/submitted] Jeremias N. Brand, Gudrun Viktorin, **R. Axel W. Wiberg**, Christian Beisel & Lukas Schärer. Large-scale phylogenomics of the genus *Macrostomum* (Platyhelminthes) reveals cryptic diversity and novel sexual traits. *bioRxiv*. doi:

[preprint] **R. Axel W. Wiberg***, Tom A. R. Price, Nina Wedell & Michael G. Ritchie. Identifying genomic markers associated with female re-mating rate in *Drosophila pseudoobscura* by replicated bulk segregant analysis. *bioRxiv*. doi: <https://doi.org/10.1101/2020.04.20.049940>

[preprint/submitted] **R. Axel W. Wiberg***, Venera, Tyukmaeva, Anneli Hoikkala, Michael G. Ritchie, & Maaria Kankare. Cold adaptation drives population genomic divergence in the ecological specialist, *Drosophila montana*. *bioRxiv*. doi: <https://doi.org/10.1101/2020.04.20.050450>

R. Axel W. Wiberg*, Paris Veltsos, Rhonda R. Snook & Michael G. Ritchie. Experimental evolution confirms signatures of sexual selection in genomic divergence. *Evolution Letters*. **XX**:XX-XX doi: <https://doi.org/10.1002/evl3.220>

Nicolas Dussex¹, Verena E. Kutschera¹, **R. Axel W. Wiberg¹**, Darren Parker, Gavin R. Hunt, Russell D. Gray, Kim Rutherford, Hideaki Abe, Rob Fleischer, Christian Rutz, Michael G. Ritchie, Jochen B.W. Wolf, Neil J. Gemmell. 2020. A genome-wide investigation of adaptations related to tool use behaviour in New Caledonian and Hawaiian crows. *Molecular Ecology*. **30**: 973-986. doi: <https://doi.org/10.1111/mec.15775>

- 2020

Rosalind L. Murray, Elizabeth J. Herridge, Rob W. Ness, **R. Axel W. Wiberg** & Luc F. Bussière. (2020). Competition for access to mates predicts female-specific ornamentation and male investment in relative testis size. *Evolution*. **74**:1741-1754.

Martin Kapun, Maite G. Barrón, Fabian Staubach, Darren J. Obbard, **R. Axel W. Wiberg**, Jorge Vieira, Clément Goubert, Omar Rota-Stabelli, Maaria Kankare, María Bogaerts-Márquez, Annabelle Haudry, Lena Waidele, Iryna Kozeretska, Elena G. Pasyukova, Volker Loeschcke, Marta Pascual, Cristina P. Vieira, Svitlana Serga, Catherine Montchamp-Moreau, Jessica Abbott, Patricia Gibert, Damiano Porcelli, Nico Posnien, Alejandro Sánchez-Gracia, Sonja Grath, Élio Sucena, Alan O. Bergland, Maria Pilar Garcia Guerreiro, Banu Sebnem Onder, Eliza Argyridou, Lain Guio, Mads, Fristrup Schou, Bart Deplancke, Cristina Vieira, Michael G. Ritchie, Bas J. Zwaan, Eran Tauber, Dorcas J. Orengo, Eva Puerma, Montserrat Aguadé, Paul S. Schmidt, John Parsch, Andrea J. Betancourt, Thomas Flatt & Josefa González. (2020). Genomic analysis of European *Drosophila melanogaster* populations reveals longitudinal structure, continent-wide selection, and previously unknown DNA viruses. *Molecular Biology and Evolution*. **37**: 2661–2678.

Jeremias N. Brand, **R. Axel W. Wiberg**, Robert Pjeta, Philip Bertemes, Christian Beisel, Peter Ladurner & Lukas Schärer. (2020). RNA-Seq of three free-living flatworm species suggests rapid evolution of reproduction-related genes. *BMC Genomics* **21**: 462.

- 2019

Verena E. Kutschera, Jelmer W. Poelstra, Nicolas Dussex, Neil Gemmell, Gavin R. Hunt, Michael G. Ritchie, Christian Rutz, **R. Axel W. Wiberg** & Jochen B. W. Wolf. (2019). Purifying selection in corvids is less efficient on islands. *Molecular Biology and Evolution*. **37**: 469-474.

Hannele Kauranen, Johanna Kinnunen, Anna-Lotta Hiillos, Pekka Lankinen, David Hopkins, **R. Axel W. Wiberg**, Michael G. Ritchie & Anneli Hoikkala. (2019). Selection for reproduction under short photoperiods changes diapause-associated traits and induces widespread genomic divergence. *Journal of Experimental Biology* **222**: jeb205831.

- 2018

Darren J. Parker, **R. Axel W. Wiberg**, Urmi Trivedi, Venera I. Tyukmaeva, Karim Gharbi, Roger K. Butlin, Anneli Hoikkala, Maaria Kankare & Michael G. Ritchie. (2018). Inter- and intra-specific genomic divergence in *Drosophila montana* shows evidence for cold adaptation. *Genome Biology and Evolution*. **10**: 2086-2101.

- 2017

R. Axel W. Wiberg*, Michael B. Morrissey, Oscar E. Gaggiotti, Michael G. Ritchie. (2017). Identifying consistent allele frequency differences in studies of stratified populations. *Methods in Ecology and Evolution* **8**: 1899-1909.

- 2016

R. Axel W. Wiberg, Andrew R. Scobie, Stuart W. A'Hara, Richard A. Ennos, Joan E. Cottrell (2016). The genetic consequences of long term habitat fragmentation on a self-incompatible clonal plant, *Linnaea borealis* L. *Biological Conservation* **201**:405-413.

- 2015

Christopher B. Cunningham, Lexiang Ji, **R. Axel W. Wiberg**, Jennifer Shelton, Elizabeth C. McKinney, Darren J. Parker, Richard B. Meagher, Kyle M. Benowitz, Eileen M. Roy-Zokan, Michael G. Ritchie, Susan J. Brown, Robert J. Schmitz, Allen J. Moore. (2015). The genome and methylome of a beetle with complex social behavior, *Nicrophorus vespilloides* (Coleoptera: Silphidae). *Genome Biology and Evolution* **7**:3383-3396.

R. Axel W. Wiberg*, Daniel L. Halligan, Rob W. Ness, Anamaria Necsulea, Henrik Kaessmann, Peter D. Keightley. (2015). Assessing Recent Selection and Functionality at Long Non-Coding RNA Loci in the Mouse Genome. *Genome Biology and Evolution* **7**:2432-2444.