

# Wen-Juan Ma

Postdoctoral Research Associate  
Department of Molecular Biosciences | University of Kansas

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## Education

- 10.2009-12.2014 **Ph.D. Evolutionary Genetics**, University of Groningen, The Netherlands  
**Major advisor:** Leo W. Beukeboom  
**Dissertation:** Genetic and evolutionary consequences of *Wolbachia*-induced parthenogenesis in the parasitoid wasp *Asobara*: sex determination and sexual decay
- 09.2006-07.2009 **M.S. Evolutionary Ecology**, *Summa cum laude*  
Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences  
Dissertation: Coevolution between fig and fig wasps and reproductive success in three dioecious *Ficus* species in Xishuangbanna
- 09.2002-07.2006 **B.S. Biological Science**, *Summa cum laude*  
Nanyang Normal University, China

## Academic Employment

- 08.2020- **Postdoctoral research associate**, Department of Molecular Biosciences,  
The University of Kansas, Lawrence, KS, USA  
Advisor: Robert Unckless  
Project: Evolution and genomics of sex chromosome meiotic drive in *Drosophila affinis*
- 06.2018-07.2020 **NIH Postdoctoral research associate**, Department of Biology, Amherst College, MA, USA  
Advisor: Michael Hood  
Project: Comparative genomics and degeneration of mating-type chromosomes in the anther smut fungi
- 08.2018-10.2018 **Visiting scholar**, Department Ecologie Systematics and Evolution,  
Université of Paris-Sud, Orsay, France  
Host: Tatiana Giraud
- 03.2018-05.2018 (Informal) **visiting scholar**, Department of Biology, University of Indiana, IN, USA  
Host: Lynda Delph, Curt Lively
- 08.2014-02.2018 **SNSF Postdoctoral fellow**, Department of Ecology and Evolution,  
University of Lausanne, Switzerland  
Advisors: Nicolas Perrin, John Pannell  
Project: Evolutionary genomics of homomorphic sex chromosomes in *Ranidae* frogs and *Mercurialis* plants
- 08.2014-01.2018 **Teaching assistant**, Department of Ecology and Evolution  
University of Lausanne, Switzerland  
Assistant in courses 'Molecular Genetics', 'Zoology', master thesis evaluation committee
- 01.2010-01.2014 **Graduate teaching assistant**, University of Groningen, the Netherlands  
Teaching assistant in course 'Evolutionary Genetics', supervising students' projects
- 07.2009-08.2009 **Research associate**, Chinese Academy of Science, Xishuangbanna, China  
In charge of laboratory sections and field work of Ecology and Evolution Group
- 09.2003-08.2005 **Undergraduate teaching assistant**, Nanyang Normal University, China

Teaching assistant in 'Cell Biology', 'Biochemistry', 'Zoology', 'Plant Biology',  
in charge of practicals: preparing, illustration of experiments and evaluation of exams

## Honors, Awards, Fellowships and grants experience

08.2021	€1,000	Organizing <b>ESEB satellite symposium</b> , 'The remarkable diversity in the rate and mechanisms of sex chromosome evolution'.
04.2021	€1,499,950	<b>ERC (European Research Council) Starting Grant</b> . I wrote the proposal <b>by myself</b> . <b>Invited for interview</b>
10.2020	£839,098	<b>NERC Independent Research Fellowship</b> . I wrote the proposal <b>by myself</b> . Not funded.
09.2019	£725,397	<b>Royal Society University Research Fellowship</b> , shortlisted but not funded. I wrote the proposal <b>by myself</b> .
05.2018	\$500	<b>Travel award</b> , Society for the Study of Evolution.
03.2018	€195,455	<b>Postdoc fellowship proposal</b> 'Guppy Young Y' was awarded the 'Marie Skłodowska-Curie Actions Seal of Excellence' (not made it for funding). I wrote the proposal <b>by myself</b> .
06.2016	¥1,000	<b>Team award</b> to fig-fig wasp coevolution, Chinese Academy of Sciences, China
2013	€500	<b>Travel award</b> , Dutch Uyttenboogaart-Eliassen Foundation.
2009-2014	€80,000	<b>PhD Ubbo Emmius faculty fellowship</b> , University of Groningen, The Netherlands
2009	¥2,000,	<b>Best master thesis award of DiAo</b> , Chinese Academy of Sciences, China
2009	Top 4%	<b>Outstanding Graduate</b> in Xishuangbanna Tropical Botanical Garden, CAS, Chinese Academy of Sciences, China
2002-2006	¥4,000	<b>First-Class Departmental Scholarship</b> for 4 years, Nanyang Normal University, China
2006	Top 1%	<b>Outstanding Graduate</b> , Nanyang Normal University, China
2004	¥5,000,	<b>National Scholarship for Excellent Study</b> (Top 0.1%), Nanyang Normal University, China

## In preparation (available upon request)

26. **W-J Ma\***, RC Rodríguez de la Vega\*, F Carpentier, ME Hood, FE Hartmann, T Giraud, ME Hood. Hemizygous genes in the non-recombining regions of sex-related chromosomes arose mostly by gene gains rather than allelic copy loss. Target journal: **Proceedings of the National Academy of Sciences (IF=9.580)**

25. **W-J Ma**, P Veltsos, R Sermier, M Toups, N Rodrigues, N Perrin. Y chromosome differentiation masculinizes gene expression on sex chromosomes and correlates with faster male development. Target journal: **Nature Ecology and Evolution (IF=10.969)**

## Publications

**total citations until 08.2021: 375, h-index: 10, i10-index: 10**

24. **W-J Ma**, P Veltsos (2021). The diversity and evolution of sex chromosomes in frogs. **Genes** 12: 483. **(IF=3.600)**
23. **W-J Ma**, BA Pannebakker, X Li, E Geyverink, SY Anvar, P Veltsos, T Schwander, L van de Zande, LW Beukeboom. (2021). A single QTL with large effect is associated with decay of female functional virginity in an asexual parasitoid wasp. **Molecular Ecology** 30: 1979-1992. **(IF=6.131)** doi: 10.1111/mec.15863.
22. **W-J Ma**, F Carpentier, T Giraud, M Hood. (2020). Differential gene expression between fungal mating types is associated with sequence degeneration. **Genome Biology and Evolution** 12: 234-258. **(IF=3.726, citations=3)** doi: <https://doi.org/10.1093/gbe/evaa028>
21. FE Hartmann\*, **W-J Ma**\*. (2020). Digest: Climate plays marginal role for homomorphic sex chromosome differentiation in common frogs. \*Equal contribution. **Evolution** 74: 690-693. **(IF=4.201, citation=1)**. doi: <https://onlinelibrary.wiley.com/doi/10.1111/evo.13936>
20. P Veltsos, N Rodrigues, T Studer, **W-J Ma**, S Sermier, N Perrin. (2020). No evidence that Y-chromosome differentiation affects male fitness in a Swiss population of common frogs. **Journal of Evolutionary Biology** 33: 401-409. **(IF=2.792, citations=7)** doi: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jeb.13573>
19. FE Hartmann, RC Rodríguez de la Vega, P Gladieux, **W-J Ma**, J Antonovics, ME Hood, T Giraud. (2019). Higher gene flow in sex-related chromosomes than in autosomes during fungal divergence. **Molecular Biology and Evolution** 37: 668-682. **(IF=14.797, citations=8)** doi: <https://doi.org/10.1093/molbev/msz252>
18. **W-J Ma**, L Santos Del Blanco, JR Pannell. (2019). A new biological species in the *Mercurialis annua* polyploidy complex: functional divergence in inflorescence morphology and hybrid sterility. **Annals of Botany** 124: 165-178. **(IF=4.041, citations=1)** doi: <https://doi.org/10.1093/aob/mcz058>
17. **W-J Ma**, R Sermier, P Veltsos, DJ Parker, N Perrin. (2018). Evolutionary and developmental dynamics of sex-biased gene expression in common frogs with proto-Y chromosomes. **Genome Biology** 19: 156. **(IF=13.214, citation=20)** doi: <https://doi.org/10.1186/s13059-018-1548-4>
16. DL Jeffries, G Lavanchy, R Sermier, MJ Sredl, I Miura, A Borzée, LN Barrow, D Canestrelli, P-A Crochet, C Dufresnes, J Fu, **W-J Ma**, C Macías Garcia, K Ghali, AG Niecieza, RP O'Donnell, N Rodrigues, A Romano, Í Martínez-Solano, I Stepanyan, S Zumbach, A Bresfold, N Perrin. (2018). A rapid rate of sex-chromosome turnover and non-random transitions in true frogs. **Nature Communications** 9: 4088. **(IF=11.880, citation=74)** doi : <https://doi.org/10.1038/s41467-018-06517-2>
15. **W-J Ma**, P Veltsos, MA Touns, N Rodrigues, R Sermier, DL Jeffries, N Perrin. (2018). Tissue specificity and dynamics of sex-biased gene expression in a common frog population with differentiated, yet homomorphic, sex chromosomes. **Genes** 9: 294. **(IF=3.600, citation=18)** doi: <https://doi.org/10.3390/genes9060294>
14. N Rodrigues, T Studer, C Dufresnes, **W-J Ma**, P Veltsos, N Perrin. (2017). *Dmrt1* polymorphism and sex chromosome differentiation in *Rana temporaria*. **Molecular Ecology** 26: 4897-4905. **(IF=6.131, citation=23)** doi: <https://doi.org/10.1111/mec.14222>
13. **W-J Ma**, T Schwander. (2017). Patterns and mechanisms in instances of endosymbiont-induced parthenogenesis. **Journal of Evolutionary Biology** 30: 868-888. **(IF=2.792, citation=59)** doi: <https://doi.org/10.1111/jeb.13069>
12. **W-J Ma**, N Rodrigues, R Sermier, A Brelsford, N Perrin. (2016) *Dmrt1* polymorphism covaries with sex-determination patterns in *Rana temporaria*. **Ecology and Evolution** 6: 5107-5117. **(IF=2.537, citation=18)** doi: <https://doi.org/10.1002/ece3.2209>

11. **W-J Ma**, JR Pannell. (2016). Sex determination: separate sexes are a double turnoff in melons. **Current Biology** 26: R171-R174. (IF=9.193, citation=8) doi: <https://doi.org/10.1016/j.cub.2015.12.026>
10. **W-J Ma**, BA Pannebakker, L van de Zande, T Schwander, B Wertheim, LW Beukeboom. (2015). Diploid males support a two-step mechanism for endosymbiont-induced thelytoky in a parasitoid wasp. **BMC Evolutionary Biology** 15: 84. (IF=3.027, citation=34) doi: <https://doi.org/10.1186/s12862-015-0370-9>
9. **W-J Ma**, BA Pannebakker, LW Beukeboom, T Schwander, L van de Zande (2014). Genetics of decayed sexual traits in a parasitoid wasp with endosymbiont-induced parthenogenesis. **Heredity** 113: 424-431. (IF=3.801, citation=14) doi: <https://doi.org/10.1038/hdy.2014.43>
8. **W-J Ma**, F Vavre, LW Beukeboom (2014). Manipulation of arthropod sex determination by endosymbionts: diversity and molecular mechanisms. **Sexual Development** 8: 59-73. (IF=2.250, citation=41) doi: <https://doi.org/10.1159/000357024>
7. **W-J Ma**, B Kuijper, JG de Boer, L van de Zande, LW Beukeboom, B Wertheim, BA Pannebakker (2013). Absence of complementary sex determination in the parasitoid wasp genus *Asobara* (Hymenoptera: Braconidae). **PLoS ONE** 8: e60458. (IF=2.776, citation=17) doi: <https://doi.org/10.1371/journal.pone.0060459>
6. **W-J Ma**, D-R Yang, Y-Q Peng (2009). Disturbance effects on community structure of *Ficus tinctoria* fig wasp in Xishuangbanna, China: implication for the fig/fig wasp mutualism. **Insect Science** 16: 417-424. (IF=2.71, citation=8) doi: <https://doi.org/10.1111/j.1744-7917.2009.01265.x>
5. **W-J Ma**, Y-Q Peng, D-R Yang, J-M Guan (2009). Coevolution of reproductive characteristics in three dioecious fig species and their pollinator wasps. **Symbiosis** 49: 87-94. (IF=2.009, citation=9) doi: <https://doi.org/10.1007/s13199-009-0018-x>
4. **W-J Ma**, F-P Zhang, Y-Q Peng, D-R Yang (2009). Comparison of style length and reproduction success in *Ficus* of different breeding systems. **Chinese Journal of Plant Ecology** 33: 911-918. (IF=2.541, citation=5)
3. **W-J Ma**, Y-Q Peng, D-R Yang (2009). Variation of reproduction success in *Ficus tinctoria* and the implication in fig evolution. **Zoological Research Suppl.**: 139-145.

## PhD thesis and thesis chapter

2. E Geuverink, M van Leussen, **W-J Ma**, LW Beukeboom, L van de Zande. (2017). Identification, sex-specific splicing and maternal provision of *transformer* and *transformer-2* in arrhenotokous and *Wolbachia*-infected thelytokous *Asobara japonica*. Chapter 6. *Parental and Endosymbiont Effects on Sex Determination in Haplodiploid Wasps-Who is in Control?* **PhD thesis** of E. Geuverink. University of Groningen, The Netherlands.
1. **W-J Ma**. 2014. Evolutionary genetics of *Wolbachia*-induced parthenogenesis in the parasitoid *Asobara japonica*: sex determination and sexual decay. **PhD thesis**, University of Groningen, The Netherlands (citation=2)

## Invited talks

- |         |   |
|---------|---|
| 07.2021 | <b>Departmental seminar.</b> School of Life Sciences, University of Essex, Colchester, UK   |
| 02.2021 | <b>Departmental seminar.</b> "The evolution and genomics of sex chromosomes and sex determination", Department of Biology, Southeast Missouri State University, Cape Girardeau, MO, USA |

- 09.2020 **EEB Genetics seminar.** “The evolution and genomics of sex chromosomes and sex determination”, Department of Ecology & Evolutionary Biology and Department of Molecular Bioscience, University of Kansas, Lawrence, KS, USA
- 06.2020 **Evolutionary Biology Group seminar.** “The evolution and genomics of sex chromosomes and sex determination”, Department of Biology, University of Konstanz, Konstanz, Germany
- 02.2020 **Departmental seminar.** “The evolution and genomics of sex chromosomes and sex determination”, Department of Biology, George Mason University, Fairfax, VA, USA
- 02.2020 **Departmental seminar.** “The evolution and genomics of sex chromosomes and sex determination”, Department of Biological Sciences, University of Arkansas, Fayetteville, AR, USA
- 01.2020 **Departmental seminar.** “The evolution and genomics of sex chromosomes and sex determination”, School of Biological Sciences, Illinois State University, Normal, IL, USA
- 01.2020 **Conference speaker.** Invited but declined. Symposium ‘Emerging frontiers in sex chromosome evolution’, 9th World Congress of Herpetology, Dunedin, New Zealand.
- 01.2020 **Conference speaker.** ‘The International Plant and Animal Genome (PAG) conference’, ‘Sex Chromosome and Sex Determination’ workshop, San Diego, CA, USA.
- 08.2019 **Departmental seminar.** “The evolution and genomics of sex chromosomes and sex determination”, School of Biological Sciences, University of Aberdeen, UK
- 06.2019 **Conference speaker.** ‘Y-chromosome differentiation is associated with developmental transcriptome masculinization and earlier male gonad completion in common frogs’, Evolution 2019, Providence, Rhode Island
- 05.2019 **Departmental seminar.** “The evolution and genomics of sex chromosomes and sex determination”, Institute of Integrative Biology, University of Liverpool, UK
- 04.2019 **Departmental seminar.** “The evolution and genomics of sex chromosomes and sex determination”, Milner Center for Evolution, University of Bath, UK
- 01.2019 **Conference speaker.** Invited but declined. ‘The International Plant and Animal Genome (PAG) Conference’, San Diego, CA, USA.
- 12.2018 **Departmental seminar.** “Evolution of homomorphic sex chromosomes, sex-biased gene expression in the common frogs”, Seminar for Department of Biology, Amherst College, MA, USA
- 09.2018 **Departmental seminar.** “Evolution of homomorphic sex chromosomes, sex-biased gene expression in the common frogs”, Seminar for Department of Genetic and Ecology Evolution, Université Paris-Sud, Orsay, France
- 06.2016 **Departmental seminar.** “Evolution of sex determination and sex chromosome”, Institutional external seminar, Chinese Academy of Sciences, Xishuangbanna, China
- 08.2015 **Conference speaker.** “Sex determination and sexual decay in a parasitoid with *Wolbachia*-induced parthenogenesis”, ‘Nöthiger insect sex determination’ workshop, University of Lausanne, Lausanne, Switzerland
- 07.2014 **Workshop speaker.** “Evolutionary and genetic consequences of *Wolbachia*-induced parthenogenesis in the parasitoid *Asobara*”, ‘Evolution of asexual genome’ workshop, University of Lausanne, Lausanne, Switzerland
- 10.2013 **Departmental seminar.** “Genetic basis of decayed sexual traits in a parasitoid wasp”, Laboratory of Genetics seminar, Wageningen University, Wageningen, the Netherlands
- 02.2010 **Departmental seminar.** “Sex determining mechanisms and the ecological consequences in the *Asobara* genus (Hymenoptera: Braconidae)”, seminar, Leiden, The Netherlands

## Conference presentations

- 06.2021 **Talk** “A single QTL with large effect is associated with female functional virginity in an asexual wasp”, virtual Evolution meeting 2021
- 06.2021 **Talk** “A single QTL with large effect is associated with female functional virginity in an asexual parasitoid wasp”, ESEB satellite symposium 2021, ‘Genomic signatures and consequences of sex and asexuality’

- 01.2021 **Talk** “A single QTL with large effect is associated with female functional virginity in an asexual parasitoid wasp”, the virtual 54<sup>th</sup> PopGroup meeting, University of Liverpool, Liverpool, UK
- 01.2020 **Talk** “Differential gene expression between fungal mating types is associated with sequence degeneration”, PAG XVIII, San Diego, CA, USA
- 08.2019 **Poster** “Differential gene expression between mating types is associated with sequence degeneration in the absence of sexual antagonism”, ESEB, Turku, Finland
- 06.2019 **Poster** “Differential gene expression is associated with degeneration of mating-type chromosomes in the absence of sexual antagonism”, Evolution, Providence, USA
- 06.2019 **Talk** “Y-chromosome differentiation is associated with developmental transcriptome masculinization and earlier male gonad completion in common frogs”, Evolution 2019, Providence, Rhode Island, USA
- 08.2018 **Poster** “Y chromosome differentiation masculinises gene expression on sex chromosomes and correlates with faster male development”, Joint meeting of ESEB and Evolution, Montpellier, France
- 08.2017 **Poster** “Evolution and temporal dynamics of sex-biased gene expressions in the common frog with a proto-sex chromosome”, European Society for Evolutionary Biology, Groningen, The Netherlands
- 01.2017 **Talk** "Is a novel reproductive trait conferring high siring success associated with postzygotic isolation in an annual plant", PopGroup meeting, Cambridge, UK
- 06.2016 **Talk** "Characterization of Y chromosomes of varying differentiation levels by haploid genome sequencing in the common frog", Evolution of sex det. workshop, La Sage, Switzerland
- 02.2016 **Poster** “Sex-chromosome differentiation covaries with polymorphism at the candidate sex-determination gene *Dmrt1* in common frogs”, Swiss Biology Meeting, Lausanne, Switzerland
- 12.2015 **Talk** “*Dmrt1* polymorphism covaries with sex-differentiation patterns in the common frog”, PopGroup 49 meeting, University of Edinburgh, Edinburgh, Scotland
- 08.2015 **Poster** “Polymorphism in the candidate sex determination gene *Dmrt1* covaries with sex-chromosome differentiation patterns in the common frog”, European Society for Evolutionary Biology, Lausanne, Switzerland
- 07.2014 **Talk** “Evolutionary and genetic consequences of *Wolbachia*-induced parthenogenesis in the parasitoid wasp *Asobara*, ‘Evolution of asexual genome’ workshop, University of Lausanne, Lausanne, Switzerland
- 08.2013 **Poster** “Genetic basis of sexual traits decay in a parasitoid wasp with endosymbiont-induced parthenogenesis”, European Society for Evolutionary Biology, Lisbon, Portugal
- 06.2013 **Talk** “Genetics of decayed sexual traits in a parasitoid wasp with endosymbiont-induced parthenogenesis”, Insect sex determination workshop, Gif-sur-Yvette, Paris, France
- 02.2013 **Talk** “Genetics of vestigialized sexual traits in an asexual wasp”, Netherlands Annual Ecology meeting, Lunteren, The Netherlands
- 12.2012 **Talk** “Genetics of decayed sexual traits in an asexual wasp”, Entomologen Dag, Ede, The Netherlands
- 12.2011 **Talk** “How is sex determined in the parasitoid wasp genus *Asobara*”, Entomologen Dag,

Ede, the Netherlands

- 11.2011 **Talk** “Experimental test of sex determination in solitary parasitoid genus *Asobara*”, NEV herfstvergadering, Groningen, The Netherlands
- 10.2011 **Poster** “*Absence of complementary sex determination in the parasitoid wasp genus Asobara*”, Sixth International Symposium on Molecular Insect Science, Amsterdam, The Netherlands
- 10.2011 **Poster** “No Complementary Sex Determination in the parasitoid wasp genus *Asobara* (Hymenoptera: Braconidae)”, European workshop on sex determination in insects, Amsterdam, The Netherlands
- 06.2011 **Poster** “Sex determining mechanisms in the *Asobara* genus”, Genetics, Epigenetics and Evolution of Sex Chromosomes, Paris, France
- 11.2010 **Talk** “Sex determining mechanisms in the *Asobara* genus (Hymenoptera: Braconidae)”, Meeting of the Insect Parasitoid Special Interest Group of the Royal Entomological Society, University of York, York, UK
- 11.2010 **Poster** “Sex determining mechanisms in the *Asobara* genus (Hymenoptera: Braconidae)”, Plant-Insect interaction workshop, Wageningen, The Netherlands
- 11.2007 **Talk** “Strategy of female flower resource consumption in dioecious fig species by fig wasps”, conference of “Biodiversity--Challenges to the New Century”, Jinghong, China

## Workshops

- 04.2018 “**De novo transcriptome assembly**”, University of Indiana, USA
- 06.2016 “**Evolution of sex determination**”, La Sage, Switzerland
- 08.2015 “**Nöthiger insect sex determination**”, University of Lausanne, Lausanne, Switzerland
- 07.2014 “**Evolution of asexual genome**”, University of Lausanne, Lausanne, Switzerland
- 06.2014 “**NGS genome & transcriptome assembly and analysis**”, University of Fribourg, Fribourg, Switzerland
- 11.2013 “**Writing a Grant Proposal**”, University of Groningen, Groningen, The Netherlands
- 10.2013 “**RNAseq data analysis workshop**”, University of Groningen, Groningen, The Netherlands
- 08.2013 “**MGC Next Generation Sequencing data analysis**”, Medical Genetics Centre South-West Netherlands, Leiden, The Netherlands
- 06.2013 “**Nöthiger Insect sex determination**”, Gif-sur-Yvette, Paris, France
- 10.2011 “**Nöthiger Insect sex determination**”, Amsterdam, The Netherlands

## Service as reviewer and guest editor

**Grant Agencies:** Czech Science Foundation (CSF, 2)

**Scientific Journals:** (until 08.2021, total = 34)

- PLoS Biology (1)
- PLoS Genetics (1)
- Molecular Biology and Evolution (1)
- Molecular Ecology (1)
- Genome Biology and Evolution (2)
- Evolution (1)
- Journal of Evolutionary Biology (1)
- Heredity (3)
- Genes (5)
- Sexual Development (1)
- Cells (2)
- Axios (1)
- Entomologia Experimentalis et Applicata (1)
- Biological Journal of the Linnean Society (2)
- General and Comparative Endocrinology (1)
- Frontier in Zoology (1)

- International Journal of Molecular Sciences (4)
- PLoS ONE (3)

**Guest editor for Journal of Evolutionary Biology:**

Special issue on ‘Sex Chromosome Evolution’, scheduled (12.2021)

## **Teaching and mentoring activities**

**Instructor experience:**

- Fall 2021     **Instructor of Genetics and Genomics of Sex Course (BIOL599)**, University of Kansas, Lawrence, KS, USA
- Design the entire course syllabus, including lecture content, paper reading materials, exam and grading, etc.;
  - Write the DEI statement in the course syllabus;
  - Grading for all students’ presentations, final exam essays.

**Teaching assistant experience:**

- 09-10.2017     **Teaching assistant, ‘Molecular Genetics’, Master course**, University of Lausanne, Switzerland
- Involve in organizing and preparing the course related web lab reagents;
  - Attend the web lab practical and help students troubleshooting for DNA extraction, gel running, PCR, PCR purification, send out for Sanger sequencing and interpret results;
  - Prepare R codes for Population Genetics analysis and attend the practical dry lab course with students and troubleshoot with R codes running
- 09-10.2016     **Teaching assistant, ‘Molecular Genetics’, Master course**, University of Lausanne, Switzerland
- Involve in organizing and preparing the course related web lab reagents;
  - Attend the web lab practical and help students troubleshooting for DNA extraction, gel running, PCR, PCR purification, send out for Sanger sequencing and interpret results;
  - Prepare R codes for Population Genetics analysis and attend the practical dry lab course with students and troubleshoot with R codes running
- 02-06.2016     **Teaching assistant, ‘Zoology’, Undergraduate course**, University of Lausanne, Switzerland
- Prepare section ‘Aquatic Insects’ lab setting, taking students to the close by creek in the field to collect aquatic insects and back to the lab to dissect and understand the biological traits;
  - Prepare section ‘Bird’ lab setting and practiced bird dissection and anatomy, attend the Practical with students and help students troubleshoot bird dissection and bird anatomy/physiological traits;
  - Prepare section ‘Fish’ lab setting and practiced fish dissection and anatomy, attend the practical with students and help students troubleshoot fish dissection and fish anatomy/physiological traits.
- 09-10.2015     **Teaching assistant, ‘Molecular Genetics’, Master course**, University of Lausanne, Switzerland
- Involve in organizing and preparing the course related web lab reagents;
  - Attend the web lab practical and help students troubleshooting for DNA extraction, gel running, PCR, PCR purification, send out for Sanger sequencing and interpret results;
  - Prepare R codes for Population Genetics analysis and attend the practical dry lab course with students and troubleshoot with R codes running
- 02-06.2015     **Teaching assistant, ‘Zoology’, Undergraduate course**, University of Lausanne, Switzerland
- Prepare section ‘Aquatic Invertebrate’ lab setting, taking students to the close by creek in the field to collect aquatic insects and back to the lab to dissect and understand the biological traits;
  - Prepare section ‘Crustacean’ lab setting, taking students to the close by creek in the field to collect crustaceans and back to the lab to dissect and understand the biological traits;
  - Prepare section ‘Fish’ lab setting and practiced fish dissection and anatomy, attend the Practical with students and help them troubleshoot fish dissection, fish anatomy/physiological traits.



- 09-10.2014 **Teaching assistant, “Molecular Genetics”, Master course**, University of Lausanne, Switzerland
- Involve in organizing and preparing the course related web lab reagents;
  - Attend the web lab practical and help students troubleshooting for DNA extraction, gel running, PCR, PCR purification, send out for Sanger sequencing and interpret results;
  - Prepare R codes for Population Genetics analysis and attend the practical dry lab course with students and troubleshoot with R codes running

### **Supervising and mentoring experience:**

- 07.2021- **Supervisor of an undergraduate student project**, University of Kansas, KS, USA
- Supervise the student project on ‘Cryptic female choice and X and Y chromosome epistasis effects on fitness in *Drosophila affinis* between standard and sex-ratio meiotic drive lines’, fly culturing, crosses, sexing flies, data analysis and interpretation, lab techniques like DNA extraction and PCR, interpret the results, etc.
- 07.2021- **Supervisor of an undergraduate student project**, University of Kansas, KS, USA
- Supervise the student project on ‘Investigation of autosomal resistance on sex-ratio meiotic drive in *Drosophila affinis*’, fly culturing, crosses, sexing flies, data analysis and interpretation, lab techniques like DNA extraction, PCR, interpret the results, etc.
- 09.2018 **PhD mid-thesis evaluation, ‘Evolution of mating-type chromosomes in the anther-smut fungi’**, University of Paris-Sud, Orsay, France
- Read and comment on the PhD mid-thesis document;
  - Meet with the PhD candidate to discuss the comments for improvement;
  - Attend the thesis talk and give feedbacks
- 08-09.2015 **Supervisor of internship undergraduate student, 6 weeks**, University of Lausanne, Switzerland
- Supervise the student project on ‘Time series of sex determination gene expression along frog development’, lab techniques like RNA extraction and qPCR, interpret the results, comments on the report.
- 07-08.2015 **Supervisor of internship undergraduate student, 8 weeks**, University of Lausanne, Switzerland
- Supervise the student project on ‘Common garden experiment on polymorphism of male flower inflorescence among various hexaploidy populations of *Mercurialis annua*’, common garden growing plants, measure various plant phenotypical traits, lab techniques like DNA extraction and PCR, running gels, and comment on the report.
- 10.2014- **Co-supervisor of master project, 1.5 year**, University of Lausanne, Switzerland
- 03.2016
- Design the master project together with two other co-supervisors on ‘Sex chromosome turnovers among various Ranidea frog species using RAD-seq approach’, lab technique extraction of DNA, RAD library preparation, data analysis and comments on the master report. This leads to a high impact publication, see publication list #7.
- 02-06.2014 **Supervisor of undergraduate student from NHL Hogeschool**, 4 months, Leeuwarden, The Netherlands
- Design the project on ‘Investigation of splicing variants of *doubtlesex* in *Asobara japonica* wasp with sexual and asexual populations’, teach web lab DNA and RNA extraction, PCR, RT-PCR, running gels, purification of PCR products, Sanger sequencing results analysis, comment on report.
- 02.2014 **Supervisor of two Masters students** during the course ‘Animals meet Microbes’, The Netherlands
- Pick up several papers related to the course topic, meet with students to discuss the key results, present the papers and join the group discussions during the course.
- 09.2013- **Supervisor of one Undergraduate student** from NHL Hogeschool, 5 months, Leeuwarden, The Netherlands
- 01.2014
- Design the project on ‘Evaluate the SNP markers and remove false positive markers’, teach web lab, DNA extraction, PCR, running gels, purification of PCR products, Sanger sequencing results analysis, comment on the report.
- 02-03.2013 **Supervisor of two Undergraduate students**, ‘Evolutionary Genetic research’ course, 6 weeks, University of Groningen, The Netherlands
- Design a small student project ‘Investigation on mating success of introgressed sex-asex

wasp offspring', setting up the wasp cultures, supervise the students to perform the experiment, Supervise students on presenting the results and comment on their report.

- 02-03.2011 **Supervisor of two Undergraduate students**, 'Evolutionary Genetic research' course, 6 weeks, University of Groningen, The Netherlands
- Design a small student project 'How do founder number and competition affect their offspring sex, ratio allocation', setting up the wasp cultures, supervise the students to perform the experiment, supervise students on presenting the results and comment on their report.

## Academic organization/leadership services

### Symposium organization:

- 08.2021 **Virtual symposium** "Evolutionary genetics and genomics of sex determination and sex chromosomes", AsiaEvo conference 2021
- 08.2021 **ESEB satellite symposium** 'The remarkable diversity in the rate and mechanisms of sex chromosome evolution', ESEB satellite symposia 2021
- 08.2019 **ESEB Open Symposium** sub-theme 'Genome Evolution', ESEB 2019, University of Turku, Turku, Finland
- 08.2015 **ESEB 2015 organizing staff**, ESEB 2015, University of Lausanne, Switzerland
- 02.2013 **Conference symposium**, "Evolutionary Ecology: Genetics of Adaptation to Environmental Shift & Species interactions", Netherlands Annual Ecology meeting (NAEM), Lunteren, The Netherlands
- 07.2006 **Member of organizing staff**, 'the 7th international fig-fig wasp symposium', Chinese Academy of Sciences, Xishuangbanna, China

### Departmental seminar/journal club organization:

- 09.2020-02.2021 **Journal club discussion founder and organizer**, University of Kansas, KS, USA
- 06.2020-04.2021 **Member of Journal of Evolutionary Biology Advisory Group**, European Society of Evolutionary Biology
- 10.2014-07.2016 **Journal club discussion founder and organizer**, University of Lausanne, Switzerland
- 10.2014-09.2016 **Topic group seminar organizer**, '*Reproductive System Dynamics*', University of Lausanne, Switzerland
- 10.2012-10.2013 **Institute PhD colloquia committee member**, organizing monthly-based institute colloquia in Evolution and Ecology, University of Groningen, The Netherlands

### Service on faculty search as postdoc representative:

- 03.2017 **Member of PhD-Postdoc search committee** for an Assistant/Associate Professor hire, University of Lausanne, Department of Ecology and Evolution, Switzerland

## Professional membership

European Society for Evolutionary Biology (ESEB): 2013 - present  
 Society for the Study of Evolution (SSE): 2017 - present  
 American Society of Naturalists (ASN): 2017 - present

## References

### **Prof. Dr. Leo W. Beukeboom**

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