

# Linnea Sandell Academic CV

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## Research interests

Testing theory with experimental data. Fitness effects of mutations. Life history. Evolutionary rescue. Sexual reproduction (meiosis, recombination).

## Education

**University of British Columbia**, Vancouver, Canada

PhD. in Zoology, Sep 2015 - present

- Supervised by Dr. Sarah P. Otto

**University of Groningen**, Groningen, the Netherlands

MSc. in Ecology and Evolution, Sep 2013 - Aug 2015

- Thesis title: Attempt at dating selective signatures in tetraploid *Arabidopsis arenosa*
- Supervised by Dr. Kirsten Bomblies, Dr. John Wakely, Dr. Franjo Weissing

**University of Montpellier II**, Montpellier, France

MSc. in Evolutionary Biology, Sep 2013 - Aug 2015

- Thesis title: The Evolution of sex in adaptive landscape models
- Supervised by Dr. Denis Roze

**University of Uppsala**, Uppsala, Sweden

BSc. in Biology, Sep 2010 - Aug 2013

- Independent work: Genetic methods to map the anatomically modern human migration (in Swedish)

## Other research experience

**University of British Columbia**, Vancouver, Canada, and

**University of Montpellier**, Montpellier, France,

Doctoral research assistant, May 2019 - present

- Modelling the effect of environmental change on the phenotypic optimum in a single cohort with a stage structured life cycle.
- Supervised by Dr. Ophélie Ronce

**University of Montpellier**, Montpellier, France

Independent project, April 2014 - June 2014

- Adaptation to Climate Change in a Stage-structured Population
- Supervised by Dr. Ophélie Ronce

**Uppsala University**, Uppsala, Sweden

Undergraduate research internship, June 2013

DNA-extraction and handling of greenhouses

Supervised by Dr. Karl Holm, in the Lascoux lab

## Papers

O. Cotto, L. Sandell, L.M. Chevin, O. Ronce. 2019. [Maladaptive Shifts in Life History in a Changing Environment](#). *The American Naturalist* 194 (2)

E. Vanhoenacker, L. Sandell, D. Roze. 2018. [Stabilizing selection, mutational bias, and the evolution of sex](#). *Evolution* 72 (9), 1740-1758

N. P. Sharp, L. Sandell, C. G. James, S. P. Otto 2018. [The genome-wide rate and spectrum of spontaneous mutations differ between haploid and diploid yeast](#). *Proceedings of the National Academy of Sciences*

L. Sandell, S. P. Otto 2016. [Probing the Depths of Biological Diversity During the Second Century of GENETICS](#). *GENETICS* vol. 204 no. 2 pp. 395-400

## **Papers in preparation**

L. Sandell, N. P. Sharp. Evaluating predicted functional effects of mutations to actual growth rates of mutation accumulation lines.

L. Sandell, N. P. Sharp, S. P. Otto. A suite of traits responds to an increase in the frequency of sexual reproduction in *S. cerevisiae*

L. Sandell, N. P. Sharp, S. Koenig, M. Stasiuk, S. P. Otto. Fitness effects of spontaneous mutations across ploidy levels.

## **Academic honours and awards**

- Travel grant holder, awarded by The American Genetics Association Symposium (USD 300), 2019
- Graduate Student Travel Award, awarded by UBC's Faculty of Graduate and Postdoctoral Studies (CAD 493.33), 2019
- St John's College George Shen Fellowship (CAD 600), 2017
- St John's College Charles C C & Sophia Wong Memorial Fellowship (CAD 3,400), 2017
- [Four Year Fellowship](#), awarded by UBC's Faculty of Graduate and Postdoctoral Studies (expected CAD 72,800), 2016 – 2020
- [Four Year Fellowship](#) Tuition award, awarded by UBC's Faculty of Graduate and Postdoctoral Studies (tuition costs), 2016 – 2020
- International Tuition Award, awarded by UBC's Faculty of Science (tuition costs), 2015 – 2020
- PhD Tuition Award, awarded by UBC's Faculty of Science (tuition costs), 2015 – 2020
- Erasmus Mundus Scholarship, awarded by the European Union (EUR 20 000), 2013 – 2015
- Travel grant holder, Vienna Biocentre PhD Symposium, 2014
- Adolf Lindgrens stiftelse (SEK 25 000), 2014
- Per Erikssons stiftelse (SEK 24 000), 2013
- Per Erikssons stiftelse (SEK 24 000), 2012
- Adolf Lindgrens stiftelse (SEK 22 000), 2012

## **Teaching**

### **Skills**

- Instructional Skills Workshop, UBC Centre for Teaching, Learning and Technology, 2016
- Alla Lika Alla Olika (All Different All Equal) Certified education in norm critical pedagogy, value based leadership, and interactive exercises. 2009

### **Teacher assistantships**

**University of British Columbia**, Vancouver, Canada, 2015 - 2019

- BIOL 337 Introductory Genetics Laboratory (two terms). Assisted during lab sessions, graded lab reports, weekly quizzes, lab skills, and oral presentations.
- BIOL 301 Biomathematics. Taught computer lab component in Mathematica, graded weekly homeworks and finals
- BIOL 336 Fundamentals of Evolutionary Biology. Held weekly tutorials with paper discussions. Graded papers, weekly homeworks, and finals.
- BIOL 234 Fundamentals of Genetics (two terms). Ran weekly tutorials with practical genetics questions. Graded weekly homeworks, and finals.

### **Other teaching and outreach experience**

- Beaty Biodiversity museum, Invited guest presentation to the EDCP 354 (302) class, 2016
- University of British Columbia, St John's College, Resident Fellow Speaker Series: Biodiversity, Bioliteracy, and Ecojustice — A Roundtable Discussion 2016
- Let's Talk Science, University of British Columbia, Volunteer, 2015

- Beaty Biodiversity Museum in Vancouver, Museum Educator (volunteer) 2015-2018

## Selected presentations

- Vancouver Yeast Meeting, presentation, *Sex, drugs, and mating efficiency in S. cerevisiae*, 2019
- The American Genetics Association Symposium (Sex and Asex: The Genetics of Complex Life Cycles): *Sex, drugs, and mating competition: effects of frequent outcrossing in Saccharomyces cerevisiae*, 2019
- Eco Evo retreat, Data blitz, *From function to fitness: comparing predicted functional effects to growth rates of mutation accumulation lines*, 2018
- University of British Columbia, 3 Minute Thesis competition (semi-finalist): [Role of Sociality in the Evolution of Recombination](#), 2016
- University of British Columbia, St John's College, Resident Fellow Speaker Series: *Why sex?* 2016
- Ludwig Maximilian University of Munich, Erasmus Mundus Summer school, presentation. *Meiotic evolution in autotetraploids, A case study of Arabidopsis arenosa*, 2015

## Selected posters

- Evolution meeting, Portland, poster, [Estimating growth rate from OD data in budding yeast](#), 2017
- Ecology and Evolution retreat, Squamish, poster. *Social structure and selection for recombination* 2015

## Languages

**Natural** English (advanced), Swedish (fluent), French (intermediate), Portuguese (intermediate)  
**Programming** R (advanced), Mathematica (intermediate), C++ (beginner)

## Service

- Let's assume discussion group, 2019. Coordinator.
- St John's College Dining Society, President 2017-2018
- St John's College Social Committee, Vice president 2016-2017
- St John's College Dining Society, Vice president 2016-2017
- St John's College Film Committee, Co-chair 2017
- Otto lab meetings, coordinator, 2016
- Biodiversity Research Seminar, Coffee organizer, 2016
- Biodiversity Lunchtime Internal Seminar Series, Coordinator, 2016
- Biology Education Centre in Uppsala, Blogger (<http://memebloggen.wordpress.com>) 2013-2015
- Dutch Royal Zoological Conference Individual Differences, Volunteer, 2013
- Student newspaper Bladet at Uppsala, Columnist, 2012-2013

## References

**Dr. Sarah P. Otto**  
 PhD supervisor  
 Department of Zoology  
 University of British Columbia  
 Email [otto@zoology.ubc.ca](mailto:otto@zoology.ubc.ca)

**Dr. Nathaniel Sharp**  
 Senior collaborator  
 Department of Evolutionary Genetics  
 University of Wisconsin-Madison  
 Email [nathaniel.sharp@wisc.edu](mailto:nathaniel.sharp@wisc.edu)