# CV Laetitia GE Wilkins

Born February 11th 1985 in Chur, Switzerland. Married to Donny Joe Wilkins. Two children (4.5y and 16mos).

## Academic curriculum

Languages — Fluent in Swiss-German, German, English, Swedish, Rätoromontsch, and basics in French (Matura/High school diploma).

### Postdoc

Current position — Swiss National Science Foundation postdoc fellow at UC Berkeley and Davis with Stephanie Carlson and Jonathan Eisen (since Sept. 2016). Vice president Berkeley Association for Postdoc Parents.

12/2014-4/2016 — Postdoctoral researcher and first assistant in Claus Wedekind's group at Lausanne University, Switzerland.

### Doctoral Thesis in Life Sciences

9/2010-11/2014 — University of Lausanne, Switzerland, *Average Grade: 6 (scale: 1-6)*

PhD thesis title — 'Diversity of bacterial symbionts on salmonid eggs: genetic and environmental effects'
My PhD project included identifying and characterizing typical bacterial communities on different salmonid species; testing the roles of specific bacterial taxa and of particular host factors on the interaction between bacterial communities and their host; and analyzing the effects of temperature. I am a recipient of the FBM fellowship 2010 and a certified member of the StarOmics and the Population Genomics program - two programs with the aim of dealing with large-scale genomic and transcriptomic data.

Supervisors — Prof. Claus Wedekind and Dr. Luca Fumagalli

### MSc in Evolutionary Genetics

9/2008 - 6/2010 — Stockholm University, Sweden, *Average Grade: A (scale: A-F)*

MSc thesis title — 'Female mating preferences and the MHC in humpback whales'
Cloning and sequencing of MHC genes in humpback whales for data generation. Applied simulation study of mating scenarios using R, ms and seq-gen.

Supervisors — Prof. Per J. Palsbøll

### BSc in Biology - majoring in Population Genetics

8/2005 - 6/2008 — University of Berne, Switzerland, *Durchschnittsnote: 5.6 (scale: 1-6)*

BSc thesis title — 'Y-chromosomal phylogenies of *Microtus arvalis*'
Investigation of Y- and X-chromosomal phylogeography using my own sequencing data (Sanger) together with existing data.

Supervisors — Prof. Laurent Excoffer and Dr. Gerald Heckel

## Working Experience

Alpine environment 6-9/2004
Swiss alp summer job (Naustgel, Val Sumvitg, Grisons, Switzerland): producing 14 tons of cheese, caring for 120 cows and retaining the alpine environment.

SEFALO 6-8/2008
"Saving the Endangered Fennoscandinavian Alopex Lagopus" - internship under supervision of Prof. Anders Angerbjörn, Stockholm University, Sweden. Collection of behavioral and demographic data about Arctic foxes in the Swedish tundra, including scat and blood sampling and genetic analyses.

Biopsies 6/2010
Internship at the Provincetown Center for Coastal Studies, Cape Cod MA, USA under supervision of Dr. Jooke Robbins and David Mattila. Collection of behavioral and demographic data about humpback whales, *Megaptera novaeangliae*, in the Gulf of Maine, including crossbow biopsy sampling and genetic analyses.

Novartis 8-12/2011
Internship at the Department of Molecular Diagnostics (MDx) in Anthony Rossini's group, Basel, Switzerland. Statistical analysis of different gene expression (RNA-seq) datasets on lung cancer and review about what is absolutely important for a successful collaboration among different institutions.

Amt für Jagd und Fischerei Graubünden, since 2014
Consulting: The combined results of my grayling studies in the upper river Inn, Engadin valley, led to an adjustment of fishing regulations; *i.e.*, protection time and catch size limit, in the canton of Grisons. Current work includes population genetic analyses of Brown trout.

## Teaching Experience

Courses
Biology at high school level at Gymnasium Kloster Disentis (in 2009).
At the University level my teaching includes 'zoology' and 'applied microbiology' for first year BSc students, 'computational population genetics' for second year BSc students, 'conservation biology' for third year BSc students, and 'molecular population genetics' for MSc students.

Supervision of Master students
- Aude Rogivue: 'Factors influencing the spawning success of grayling *Thymallus thymallus* in a Swiss alpine river' (2012/13).
- Zoé Daeppen: 'Spawn fast, die early - reproductive strategies of grayling *Thymallus thymallus* in the river Inn' (2013/14).
- Chloë Schmidt and Hanna Smith: 'Comparing phenotypic sex and sdY genotypes in a population of grayling *Thymallus thymallus*' (2014).
- Véronique Voccat-Mottier, MSc: Internship under my supervision as a lab technician in molecular genetic techniques (2015).
- Emma Pereira Alvarez, MSc: Internship under my supervision as a lab technician in molecular genetic techniques (2015/16).
- Oliver Selmoni: 'Sex-specific gene expression of grayling embryos under estrogen stress' (2015/16).
- David Zeugin: 'Sensitivity to pathogen infections at different levels of inbreeding in European grayling' (2015/16).

## Skills

**General** Applied programming and statistical skills in R (Bioconductor), basic skills in Perl. Sequencing, cloning, qPCR, and library preparation for NGS (454 and illumina), *in vitro* fertilization and rearing of salmonids, FACS, LM, GLM, GLMM, and QIIME data analysis, project management, supervision of students at various levels.

**Programing** R, Perl, bash-scripting, and LaTeX

**Reviewing activity** for *Conservation Genetics*, *Evolution*, *BMC Research Notes*, *Scientific Reports*, *International Journal of Molecular Sciences*, *Journal of Fish Diseases*, *Genes*, *Microbial Ecology.*

**Conference organization** Organization of a conference on 'Population Genomics' taking place in the Swiss Alps. The invited guests included John Pool, Emilia Huerta-Sanchez, Walter Jetz, Per Palsbøll, Jeff Jensen, and Walter Salzburger (3/2012). ESEB 2015 organizing committee - audiovisual systems (8/2015).

## Presentations and Collaborations

**Poster presentations** Biennial Conference on the Biology of Marine Mammals, Québec City, Québec, Canada, 2010: 'Inbreeding at the MHC in humpback whales'. Evolution conference 2013 in Snowbird, Utah, USA: 'Immune gene expression in whitefish embryos'. ESEB 2015, Lausanne, Switzerland: 'Embryo genetics affects composition of host-associated bacteria in brown trout'.

**Talks**
- 'MHC and female mating preferences in humpback whales' at AWI Wattenmeerstation Sylt, Germany (invited); at IFM Geomar in Kiel (invited), Germany; and at ETH in Zürich, Switzerland (invited; all in 5/2010).
- 'Microbial communities on salmonid eggs' at Metagenomics symposium at University of Neuchâtel, Switzerland (5/2011) and at Population Genomics symposium at University of Lausanne, Switzerland (1/2014).
- 'MHC class I expression in whitefish embryos' at Evolution conference in Snowbird, Utah, USA (7/2013)
- 'Ergebnisse Äschenuntersuchungen im Engadin' at Weiterbildungskurs Fischereiaufseher Pontresina, Switzerland (invited; 8/2014)
- '16 Questions in Evolutionary Biology' at ESPM, UC Berkeley and WSL Birmensdorf, Switzerland (invited; 10/2016)
- 'Salmonid embryos: a powerful system to study evolutionarily relevant questions in ecology' at NOAA, UC Santa Cruz (invited; 3/2017)
- 'Maternal allocation of carotenoids increases tolerance to bacterial infection in brown trout' at AFS Cal-Neva, Eureka (3/2017)
- 'Diversity of bacterial symbionts on salmonid eggs - genetic and environmental effects' at UC Davis (invited; 4/2017)

## References

**Claus Wedekind** Department of Ecology and Evolution, Biophore, University of Lausanne, 1015 Lausanne, Switzerland. phone: +41 (0)21 692 42 50, email: claus.wedekind@unil.ch

**Luca Fumagalli** Department of Ecology and Evolution, Biophore, University of Lausanne, 1015 Lausanne, Switzerland. phone: +41 (0)21 692 41 72, email: luca.fumagalli@unil.ch

**Anthony Rossini** Computable Statistical Research and Practice, Department of Molecular Diagnostics and Personalized Medicine (MDx), Novartis Pharma AG, CH-4056 Basel. phone: +41 (0)61 324 1111, email: anthony.rossini@novartis.com

## Publications

Published

Clark*, E. S., Wilkins*, L. G. E. and Wedekind, C. 2013. MHC class I expression dependent on bacterial infection and parental factors in whitefish embryos (Salmonidae). Molecular Ecology 22: 5256-5269. (*shared first authorship)
doi: 10.1111/mec.12457

Wilkins, L. G. E., Rogivue, A., Fumagalli, L. and Wedekind, C. 2015. Declining diversity of egg-associated bacteria during development of naturally spawned whitefish embryos (*Coregonus* spp.). Aquatic Sciences 77(3): 481-497.
doi: 10.1007/s00027-015-0392-9

Wilkins, L. G. E., Clark, E. S., Farinelli, L., Wedekind, C., and Fumagalli, L. 2015. Embryonic gene expression of *Coregonus palaea* (whitefish) under pathogen stress as analyzed by high-throughput RNA-sequencing. Fish and Shellfish Immunology 47(1): 130-140.
doi: 10.1016/j.fsi.2015.08.035

Wilkins, L. G. E., Rogivue, A., Schütz Frédéric, Fumagalli, L., and Wedekind, C. 2015. Increased diversity of egg-associated bacteria on brown trout (*Salmo trutta*) at elevated temperatures. Scientific Reports 5: 17084.
doi: 10.1038/srep17084

Wilkins, L. G. E., Fumagalli, L., and Wedekind, C. 2016. Effects of host genetics and environment on egg-associated microbiota in brown trout (*Salmo trutta*). Molecular Ecology 25: 388-394.
doi: 10.1111/mec.13798

In review

Wilkins, L. G. E., Marques da Cunha, L., Menin, L., Ortiz, D., Voccat-Mottier, V., Hobil, M., Nusbaumer, D., and Wedekind, C. 2016. Maternal allocation of carotenoids increases stress tolerance in brown trout (*Salmo trutta*).

Wilkins, L. G. E., Marques da Cunha, Glauser, G., Vallat, A., and Wedekind, C. 2016. Environmental stress linked to consumption of maternally derived carotenoids in brown trout embryos (*Salmo trutta*).

Other

Wilkins, L. G. E. Prognostic signature in the MDx lung cancer test (11/2011). Molecular Diagnostics MDx Novartis. Internship - Target Report.

Wilkins, L. G. E. Altersbestimmung und Wachstumsanalysen bei Äschen im Engadin, Kanton Graubünden. (10/2013). *Interesse des Amts für Jagd und Fischerei Graubünden (AJF) - Manual und Resultate.*

Wilkins, L. G. E. (11/2014). Diversity of salmonid eggs and their bacterial symbionts: genetic and environmental effects. Ph.D. thesis, 343p., University of Lausanne, Faculty of Biology and Medicine, Wedekind, C. (dir).

Berkeley, April 19, 2017