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Genome Center
 University of California, Davis
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EDUCATION

University of Lausanne, Switzerland **PhD in Life Sciences** **Oct 2010-
Nov 2014**
 Thesis: *Diversity of bacterial symbionts on salmonid eggs: genetic and environmental effects*
 supervised by Prof. Claus Wedekind & Dr. Luca Fumagalli (GPA = 4.0; *Summa cum laude*)

Stockholm University, Sweden **MSc in Evolutionary Genetics** **Sep 2008-
Jun 2010**
 Thesis: *Female mating preferences and the MHC in humpback whales*
 supervised by Prof. Per Palsbøll and Dr. Martine Bérubé (GPA = 4.0; *Summa cum laude*)

University of Bern, Switzerland **BSc in Population Genetics** **Sep 2005-
Jun 2008**
 Thesis: *Y-chromosomal phylogenies of *Microtus arvalis**
 supervised by Prof. Gerald Heckel & Prof. Laurent Excoffier (GPA = 3.7; *Cum laude*)

PROFESSIONAL APPOINTMENTS

Currently: University of California, Davis **since Sep 2018**
 Postdoctoral Research Scholar in Jonathan Eisen's lab investigating how the rise of the isthmus of Panama affected the evolution of symbiosis between marine animal hosts and their bacterial symbionts.
<https://istmobio.net/> Collaboration with the Smithsonian Tropical Research Institution

University of California, Berkeley **Sep 2016-
Aug 2018**
 Postdoctoral Research Scholar at UC Berkeley on host microbiome interactions in *O. mykiss*;
 demography of the endangered Sierra Nevada yellow legged frog at Kings Canyon National Park;
 and phylogenomic analyses of metagenome-assembled genomes from hot springs in Kamchatka, Russia.
 Awarded by Swiss NSF; hosted by Prof. Stephanie M. Carlson and Prof. Jonathan A. Eisen (UC Davis)

Canton Grisons, Switzerland: Fish & Wildlife Consultant Fishery Management **since Jun 2014**
 External consultant for the Department of Fish and Wildlife in my home canton Graubünden, Switzerland.
 Expertise: Population genetic informed management of wild fish populations; fishing regulations; hatchery practices.

Maternity leave November 19th 2015 – August 31st 2016

University of Lausanne, Switzerland **Postdoctoral Researcher & 1st Assistant** **Dec 2014-
Nov 2015**
 Project leader in Claus Wedekind's group on *Variance components of fitness-relevant traits:*
combining laboratory experiments with large-scale field studies on salmonids

Maternity leave September 15th 2012 – 30th January 2013

Novartis Basel, Switzerland **Internship/Statistician** **Aug-Dec 2011**
 Internship in the Department of Molecular Diagnostics (MDx) in Prof. Anthony Rossini's group. Statistical analysis of different gene expression (RNA-seq) datasets on lung cancer; review about reproducibility of analytical workflows during the collaboration among academic and non-academic institutions.

DISTINCTIONS

2018 Travel Award for National Postdoc Association Meeting in Cleveland #NPA2018 (\$2000)
2016-2018 Postdoc Mobility Fellowship from Swiss National Science Foundation (126,000 CHF)
2010-2014 PhD Fellowship in Life Sciences at University of Lausanne, Switzerland (140,000 CHF)
2013 Travel Award from CUSO Population Genomics Program – Evolution Conference at Snowbird, UT (\$2000)

COMPLETE PUBLICATION LIST

My ORCID ID: 0000-0003-3632-2063; <https://scholar.google.at/citations?user=OZHrP3kAAAAJ&hl=de>
10 published peer-reviewed articles with an h-index of 5

Wilkins*, L. G. E., Ettinger*, C. L., Jospin, G., and Eisen, J. A. Metagenome-assembled genomes provide new insight into the microbial diversity of two thermal pools in Kamchatka, Russia.

Scientific Reports (in press; *shared first authorship) Preprint:

<https://www.biorxiv.org/content/biorxiv/early/2018/08/15/392308.full.pdf>

Ettinger, C. L., **Wilkins**, L. G. E., Dahlhausen, K. E., Ghose, S. L., Oberbauer, D., Eisen, J. A., and Coil, D. A. 2018. Even superheroes need help sometimes: three incredible tales of microbial symbiosis. **Frontiers for Young Minds** 6(50). doi: 10.3389/frym.2018.00050

Marques da Cunha, L., **Wilkins**, L. G. E., Menin, L., Ortiz, D., Vocat-Mottier, V., and Wedekind, C. 2018. Consumption of carotenoids is not increased by bacterial infection in brown trout embryos (*Salmo trutta*). **PLoS One** 13(6): e0198834. doi: 10.1371/journal.pone.0198834

Maitre, D., Selmoni, O., Uppal, A., Marques da Cunha, L., **Wilkins**, L. G. E., Roux, J., Mobley K. B., Castro, I., Knörr, S., Robinson-Rechavi, M., and Wedekind, C. 2017. Sex differentiation in grayling (Salmonidae) goes through an all-male stage and is delayed in genetic males who instead grow faster. **Scientific Reports** 7: 15024. doi: 10.1038/s41598-017-14905-9

Wilkins, L. G. E., Marques da Cunha, L., Menin, L., Ortiz, D., Vocat-Mottier, V., Hobil, M., Nusbaumer, D., and Wedekind, C. 2017. Maternal allocation of carotenoids increases stress tolerance in brown trout (*Salmo trutta*), **Oecologia** 185(3): 351-363. doi:10.1007/s00442-017-3952-y

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*). **Ecology and Evolution** 7(14): 5082-5093. doi: 10.1002/ece3.3076

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(19): 388-394. doi: 10.1111/mec.13798

Wilkins, L. G. E., Rogivue, A., Schütz F., 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., 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., 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

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(20): 5256-5269. doi: 10.1111/mec.12457 (*shared first authorship)

In review:

Selmoni, O., Maitre, D., Roux, J., **Wilkins**, L. G. E., Marques da Cunha, L., Vemeirssen, E. L. M., Knörr, S., Robinson-Rechavi, M., and Wedekind, C. Sex-specific changes in gene expression and

delayed sex differentiation in response to estrogen pollution in grayling (Salmonidae). Preprint: <http://biorxiv.org/content/early/2017/05/09/135210>

Wilkins, L. G. E., Matthews, K. R., Steel Z. L., Nusslé, S. C., and Carlson, S. Population dynamics of the Sierra Nevada yellow-legged frog (*Rana sierrae*) at Dusy Basin, Kings Canyon National Park. (No preprint)

Non-peer reviewed publications:

Wilkins, L. G. E. Untersuchungsbericht – Unreife Rogner im Laichgebiet des Valser Rheins, Kanton Graubünden. (05/2017). *Interesse des Amtes 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).

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

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

TEACHING AND SUPERVISION

During summer 2018, I completed the online summer course in teaching for Bachelor students (undergraduates) *Scientists Teaching Science* at the New York Academy of Sciences. Emphasis on active learning; bias, discrimination and diversity; and teaching online courses (the future of education is online).

Courses I taught:

- ◇ *Zoology* 1st year BSc students (Teaching Assistant ‘TA’; University of Lausanne, 2010-2014)
- ◇ *Applied Microbiology* 1st year BSc students (TA; University of Lausanne, 2014)
- ◇ *Computational Population Genetics* 2nd year BSc students (co-organizer; University of Lausanne, 2010-2014)
- ◇ *Conservation biology* 3rd year BSc students (TA; University of Lausanne, 2014)
- ◇ *Molecular Population Genetics* graduate students (co-organizer; University of Lausanne, 2013 and 2014)
- ◇ *Freshwater Ecology* graduate students (TA; University of Lausanne, 2014)
- ◇ Guest lecturer in *Freshwater Ecology* Senior BSc students at UC Berkeley (2018), Title: ‘*Freshwater Microbiomes*’
- ◇ *Marine Microbial Ecology Seminar* for graduate students at UC Davis (winter 2019)

Mentoring:

Graduate students

- ◆ *Victor Ammann* University of Lausanne Switzerland (fall 2018)
- ◆ *David Zeugin* University of Lausanne Switzerland (spring 2016)
- ◆ *Oliver Selmoni* University of Lausanne Switzerland (2015/16 academic year)
- ◆ *Véronique Voccat-Mottier* University of Lausanne Switzerland (spring 2015)
- ◆ *Chloë Schmidt* and *Hanna Smith* University of Lausanne Switzerland (spring 2014)
- ◆ *Zoé Dauppen* University of Lausanne Switzerland (2013/14 academic year)
- ◆ *Dr. Aude Rogivue* University of Lausanne Switzerland (2012/13 academic year)

Undergraduate students

- ◆ *Ipec Yasmin Meric* University of California, Davis (spring 2019)
- ◆ *Helio Quintero Arrieta* University of Panama, Panama (fall 2018)

- ◆ *Kaylah Marcello* University of California, Davis (summer 2018)
- ◆ *Jolie Lobrutto* University of California, Davis (summer 2018)
- ◆ *Amy Wen* University of California, Davis (summer 2018)
- ◆ *Roger Faust* University of California, Santa Cruz (summer 2018; Doris Duke Conservation Scholar)
- ◆ *Emma Pereira* University of Lausanne Switzerland (2015/16 academic year)

PRESENTATIONS

- 2018 *Non-genetic paternal effects on early salmonid development* (poster) Lake Arrowhead Microbial Genomics Conference #LAMG2018, UCLA, USA
- 2018 *Non-genetic paternal effects on early salmonid development* (talk) UC Davis Postdoc Symposium, USA
- 2018 *Who lives in the guts of *O. mykiss* juveniles harboring different migratory genotypes* (poster and talk) Coastal Marine Science Symposium UC Davis, USA
- 2017 *Berkeley Spouses, Partners and Parents Association BSPPA* (poster) Postdoc appreciation week UC Berkeley, USA
- 2017 *Bacteria everywhere: on fish, inside fish, and in hot springs of Kamchatka* (talk) WSL Birmensdorf, Switzerland
- 2017 *Non-genetic paternal effects on early salmonid development* (talk) AFS National Meeting, Tampa FL, USA
- 2017 *Maternal allocation of carotenoids increases tolerance to bacterial infection in brown trout* (talk) AFS Cal-Neva, Eureka CA, USA
- 2015 *Embryo genetics affects composition of host-associated bacteria in brown trout* (poster) ESEB, Lausanne, Switzerland
- 2014 *Microbial communities on salmonid eggs* (talk) Population Genomics Symposium, University of Lausanne, Switzerland
- 2013 *Ergebnisse Äschenuntersuchungen im Engadin* (talk) Weiterbildungskurs Fischereiaufseher Pontresina, Switzerland
- 2013 *Immune gene expression in whitefish embryos* (poster and talk) Evolution, Snowbird UT, USA
- 2011 *Microbial communities on salmonid eggs* (talk) Metagenomics Symposium, University of Neuchâtel, Switzerland
- 2010 *Inbreeding at the MHC in humpback whales* (poster) Biennial Conference on the Biology of Marine Mammals, Québec City, Canada

Invited talks:

- 2018 *Microbial symbionts from Swiss alpine rivers to Oceans in Central America*, University of Vienna, AT
- 2018 *Berkeley Spouses, Partners and Parents Association BSPPA (keynote)* National Postdoc Association Annual Meeting, Cleveland OH, USA
- 2017 *Non-genetic paternal effects on early salmonid development* U.S. Fish and Wildlife Service, Red Bluff Fish and Wildlife Office, CA, USA
- 2017 *Diversity of bacterial symbionts on salmonid eggs - genetic and environmental effects* Microbiology Seminar UC Davis, USA
- 2017 *Salmonid embryos: a powerful system to study evolutionarily relevant questions in ecology* NOAA Southwest Fisheries, Santa Cruz CA, USA
- 2016 *16 Questions in Evolutionary Biology* WSL Birmensdorf, Switzerland
- 2010 *MHC and female mating preferences in humpback whales* ETH Zürich, Switzerland
- 2010 *MHC and female mating preferences in humpback whales* IFM Geomar Kiel, Germany
- 2010 *MHC and female mating preferences in humpback whales* AWI Wattenmeerstation Sylt, Germany

CONFERENCE ORGANIZATION

- ◇ **Marine Microbial Symbiosis Workshop**: organized together with Dr. Matthieu Leray and Dr. Jarrod Scott at Bocas del Toro, Smithsonian Tropical Research Institute, Panama (Dec 3-8 2018). Please find summary, discussion and participant list here: <https://rcn-ecs.github.io/2019-01-03-istmobiome/>
- ◇ **ESEB**: organizing committee - audiovisual systems, Lausanne, Switzerland (2015)
- ◇ **CUSO Population Genomics Conference**: head of organizing committee, Churwalden, Switzerland (2012)

SERVICE AND OUTREACH**Writing for scientists and the public**

I am a contributor to **The Molecular Ecologist** blog <https://www.molecularecologist.com/author/laetitiawilkins/>, to the Women Advance Program at UC Davis <http://ucd-advance.ucdavis.edu/blog>, to our project blog in Panama <https://istmobio.net/>, and on my private blog <https://laetitia.schmid.se/>, and twitter: [@M_helvetiae](https://twitter.com/M_helvetiae).

Co-founder and Co-Chair of the Berkeley Spouses, Partners and Parents Association BSPPA, UC Berkeley, USA. This is a volunteer organization for postdoctoral and visiting researchers, scholars and their families. We organized workshops on work-life balance and how to navigate your life in the US (health system, adult education for spouses, career counseling, housing, childcare, family-friendly STEM events)

Member of the **Vice Chancellor for Research Advisory Committee** at UC Berkeley, USA (February – September 2018). Advocating for better postdoc housing in the Bay Area.

Guest lectures for children: *Introduction to Evolutionary Biology* at elementary school (Ocean View, Albany CA, USA, spring 2018)

Guest lectures at high school level: *Introduction to Evolution and Genetics in the Ocean* at Gymnasium Kloster Disentis, Switzerland, 2011-2016; and *Freshwater biology* at Campolindo Highschool, Moraga, CA, USA, spring 2018.

Provincetown Center for Coastal Studies, Cape Cod, MA, USA Internship Jul-Sep 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 on humpback whales *Megaptera novaeangliea* in the Gulf of Maine; crossbow biopsy sampling and genetic analyses.

Alpine Environment, Switzerland Shepherd & Cheesemaker Jun-Sep 2004
Swiss alp summer job (Naustgel, Val Sumvitg, Grisons, Switzerland): producing 14 tons of cheese, caring for 120 dairy cows and retaining the alpine environment.

JOURNAL REVIEWING

for *BMC Research Notes*, *Conservation Genetics*, *Evolution*, *Frontiers in Marine Science*, *Genes*, *Hydrobiologia*, *International Journal of Molecular Sciences*, *Molecular Ecology*, *Journal of Fish Diseases*, *Microbial Ecology*, and *Scientific Reports*.

PROFESSIONAL SOCIETIES MEMBERSHIP

- Fischereiaufseher Verband Schweiz
- Society for the Study of Evolution SSE
- European Society for Evolutionary Biology ESEB
- Research Coordinated Network for Evolution in Changing Seas
- Society for Women in Marine Sciences SWMS
- UC Davis ADVANCE program

SKILLS AND INTERESTS**Skills**

- ◆ **Programming:** R Bioconductor, bash, Perl, Python, LaTeX
- ◆ **Data analysis:** Linear modeling (lme4), GLM, GLMM, QIIME 2, DADA2, Phyloseq, anvi'o
- ◆ **Wet lab:** Sequencing, cloning, (RT-)qPCR, library preparation for NGS (454 and illumina), FACS
- ◆ **Experimental design:** *In vitro* fertilization, rearing and experimental bacterial infections of salmonids
- ◆ **Writing:** Outreach, blogging, manuscripts, proposals
- ◆ **Project management, supervision** of students at various levels
- ◆ **Organization of international field expeditions** including permit acquisition

Interests

- ◇ Host-microbe interactions, their co-evolution, phylogenomics, life-history trade-offs, and fish biology
- ◇ I care about diversity, creativity and an **inclusive environment** in academia. I strongly support **reproducible research** (sharing of raw data, protocols, bioinformatic pipelines via GitHub: <https://github.com/megaptera-helvetiae>, Jupyter Notebooks, protocols.io, and figshare). I am also following the principles of the *Riffomonas Reproducible Research Tutorial* by Patrick Schloss (http://www.riffomonas.org/reproducible_research/).

REFERENCES

- Prof. Stephanie Carlson, UC Berkeley, USA, smcarlson@berkeley.edu, +1 510-643-9688
- Prof. Jonathan Eisen, UC Davis, USA, jonathan.eisen@gmail.com, +1 530-752-3498
- Dr. Luca Fumagalli, University of Lausanne, Switzerland, luca.fumagalli@unil.ch, +41 21 692 41 72
- Prof. Claus Wedekind, University of Lausanne, Switzerland, claus.wedekind@unil.ch, +41 21 692 42 50

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