Michel Moser

Postdoctoral researcher

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Education

University of Bern — *Bern, Switzerland*

PhD in Molecular Life Science (Cell Biology) — *Jun. 2013 - Jan. 2018*

- Thesis title: Speciation genomics in Petunia
- Main tasks: De novo genome assembly (PacBio, Illumina, Hi-C), genome annotation, RNA-seq workflows, genetic map construction (GBS)
- Grade: Insigni cum laude

University of Bern — *Bern, Switzerland*

MSc in Molecular Life Sciences — *Jun. 2011 - May 2013*

- Thesis title: RNA-seq analysis of floral tissue from Petunia
- Main tasks: De novo transcriptome assembly, differential gene/exon expression
- Grade: Summa cum laude

University of Bern — *Bern, Switzerland*

BSc in Molecular Life Sciences — *Sep. 2008 - May 2011*

- Thesis title: Test of interaction and localisation of AtPTR2 and AtWLIM2b
- Grade: Insigni cum laude

Berufsfachschule Bern — *Bern, Switzerland*

Federal Diploma of Higher Education in Landscape Gardening and Technical Berufsmaturitaet — *Aug. 2003 - Jun. 2006*

- landscape gardening apprenticeship at paradiesgaerten.ch

Working experience

Center for Integrative Genetics (CIGENE, NMBU) — *Ås, Norway*

Postdoctoral researcher — *Nov. 2018 - Present*

- Establish genomic resources for Salmonid species using long read de novo genome assembly
- Hi-C scaffolding and phasing using haplotagged reads
- Comparative genomics in Salmonids

Institute of Plant Sciences (UniBern) — *Bern, Switzerland*

Postdoctoral researcher — *Feb. 2018 - Oct. 2018*

- Computational research in plant genomics
- Comparative genomics
- population structure in wild Petunia species
- Allele-specific expression calling

w-hoch2 — *Bern, Switzerland*

Data Scientist — *Aug. 2017 - Present*

- Customizing Shiny applications
- Involved in data projects of varying size and complexity as external advisor (www.w-hoch2.ch)

Institute of Plant Sciences (UniBern) — *Bern, Switzerland*

Research assistant 50% — *Jun. 2013 - Dez. 2018*

- Completion of the first genome assembly of Petunia
- Contribute to the identification of genes responsible for UV aborbance in Petunia

paradiesgaerten — *Bern, Switzerland*

Landscape gardener — *Jul. 2006 - Sep. 2009*

- Construction of terraces, pools and walls and maintainance of gardens by trimming and cutting lawn/plants (www.paradiesgaerten.ch)

Teaching experience

Feedback about my teaching quality at University of Bern has been positive and students liked my enthusiastic and energetic way of teaching. I have co-supervised MSc and BSc-theses and am currently co-supervising a graduate student at CIGENE.

University of Bern *Bern, Switzerland*

Teaching associate *S1 2017 - S1 2018*

- Practical of Plant Physiology I
- Practical of Plant Physiology II

Relevant Skills

Genomics: long read basecalling, de novo genome assembly, genome polishing, Hi-C scaffolding, phasing
Transcriptomics: differential gene/exon expression analysis, allele-specific expression analysis, long read RNAseq
Epigenomics: bisulfite and long read methylation calling
Pangenomics: graph construction, graph complexity reduction and graph-based genotyping (vg, minigraph, seqwish, graphtyper2, seqwish, odgi)

High Performance Computing: SLURM, SGE
Programming: R, Python, bash, awk, SQL, Java, HTML/CSS
Data visualization: ggplot2, circos, circlizer, seaborn, matplotlib, hiveR
General Data Analysis: Data Cleaning, Modelling, Communication, Inference, Machine Learning, Web Scraping

Publications

- Pearse D, Barson N, Nome T, Gao G, Campbell M, Abadía-Cardoso A, Anderson E, Rundio David, Williams T, Naish K. Moen T, **Moser M**,… Lien S.
  Sex-dependent dominance maintains migration supergene in rainbow trout
  Nature Ecology & Evolution, 2019, doi:10.1038/s41559-019-1044-6
- Kent M, Kirubakaran T, Andersen Ø, **Moser M**, Árnyasi M, McGinnity P, Lien S.
  A nanopore based chromosome-level assembly representing Atlantic cod from the Celtic Sea
  bioRxiv, 2019, doi:10.1101/852145
- Esfeld K, Berardi E, **Moser M**, Bossolini E, Freitas L, Kuhlemeier C.
  Pseudogenization and resurrection of a speciation gene
  Current Biology, 2018, doi:10.1016/j.cub.2018.10.019
- Amrad A, **Moser M**, Mandel T, de Vries M, Schuurink R, Freitas L, Kuhlemeier C.
  Gain and loss of floral scent production through changes in structural genes during pollinator-mediated speciation
  Current Biology, 2016, doi:10.1016/j.cub.2016.10.023
- Sheehan H, **Moser M**, Klahre U, Esfeld K, Dell'Olivo A, Mandel T, Metzger S, Vandenbussche M, Freitas L, Kuhlemeier C.
  MYB-FL controls gain and loss of floral UV absorbance, a key trait affecting pollinator preference and reproductive isolation
  Nature genetics, 2016, doi:10.1038/ng.3462
- Bombarely A, **Moser M**, Amrad A, Bao M, Bapaume L,… Kuhlemeier C.
  Insight into the evolution of the Solanaceae from the parental genomes of Petunia hybrida
  Nature plants, 2016, doi:10.1038/nplants.2016.74
- Hermann K, Klahre U, **Moser M**, Sheehan H, Mandel T, Kuhlemeier C.
  Tight genetic linkage of prezygotic barrier loci creates a multifunctional speciation island in Petunia
  Current Biology, 2013, doi:10.1016/j.cub.2013.03.069