

Michele Wyler

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Professional Experience

Head of Bioinformatics

since December 2021

Puregene AG

- Contribute with bioinformatics expertise to experimental planning and data management strategies
- Analysis, design, implementation and documentation of solutions, training and project knowledge transfer to staff and clients

Bioinformatician

January 2020 - December 2021

MWSchmid GmbH

- Genomics data processing, analysis and documentation

IT support

March 2017 - March 2019

Molecular Plant Biology Group, University of Zurich

- Maintenance and update of Windows computers
- Technical support for lab members

Research assistant

Juli 2015 – March 2016

Martinoia Group, University of Zurich and Crop Science Group, ETH Zurich

- Performed experiments on mycorrhiza symbiosis with strigolactone overexpressing *Petunia* mutants as part of a team
- Analyzed root architecture using Computed Tomography

Teaching – Research Assistant

February 2015 – August 2015

Crop Science Group, ETH Zurich

- Correction of exams (lecture: *Plant Genetics*)
- Assistance to field experiments for a bachelor thesis about root phenotypes of historic Wheat cultivars

IFYE Exchange

June 2014 – September 2014

Kansas State University, Research and Extension

- Worked for diverse farm enterprises
- Attended different agricultural and extension events

Education

Plant Science Doctoral Student, PSC - Syngenta Research Fellow 2016 - 2022

University of Zurich, Institute of Plant Biology. Working on: *Impact of intra-specific TE variations on gene expression, local epigenetic states and spatial genome organization in Brachypodium distachyon.*

Supervision: Prof. Dr. Anne Roulin, PD Dr. Celia Baroux, Prof. Dr. Beat Keller

M.Sc. ETH in Agroecosystem Science 2014 - 2016

ETH Zürich and University of Zurich, Thesis: *The influence of natural UV-B on the gene expression and the protein accumulation of Arabidopsis thaliana* at Evolutionary and Ecological Genomics Group (Shimizu Lab), University of Zurich.

Major: Plant Sciences

B.Sc. ETH in Agricultural Science 2010 - 2014

ETH Zürich, Thesis: *Abundance of fluorescent pseudomonads in Swiss agricultural soils* at Plant Pathology Group

Teaching Experience

Advanced data management and manipulation using R, Plant Science Center Zurich June 2018
Teaching Assistant during two course days for doctoral students from ETH Zurich and University of Zurich

PLANT DEVELOPMENT AND EVOLUTION: from molecules to ecosystems 20-22 February 2018
Organizing Member of a Workshop for young researchers from Zurich, Kyoto, Bristol, and Heidelberg

Introduction to R, Plant Science Center Zurich June 2017
Teaching Assistant during two course days for doctoral students from ETH Zurich and University of Zurich

Rhizosphere ecology, ETH Zurich Fall Semester 2015
Teaching Assistant for 20 master students during molecular and bioinformatic exercises

Publications

12. Ivasic, F., Novo Matos, J., **Wyler, M.**, Glaus TM. (2023) *Effects of Breed, Exercise, and a Two-Month Training Period on NT-proBNP-Levels in Athletic Dogs* *Animals*, 13(1), 16; <https://doi.org/10.3390/ani13010016>
11. Ngou, BPM., Heal, R., **Wyler, M.**, Schmid, MW., Jones, JDG. (2022) *Concerted expansion and contraction of immune receptor gene repertoires in plant genomes*. *Nature Plants*, <https://doi.org/10.1038/s41477-022-01260-5>
10. Müller, MC., Kunz, L., Schudel, S., Kammerecker, S., Isaksson, J., **Wyler, M.**, Graf, J., Sotiropoulos AG., Praz, CR., Wicker, T., Bourras, S., Keller, B. (2022). *Ancient variation of the *AvrPm17* gene in powdery mildew limits the effectiveness of the introgressed rye *Pm17* resistance gene in wheat*. *PNAS*, <https://doi.org/10.1073/pnas.2108808119>
9. Rhodes, J., Roman, AO., Bjornson, M., Brandt, B., Derbyshire, P., **Wyler, M.**, Schmid, MW., Menke, F., Santiago, J., Zipfel, C. (2022) *Perception of a conserved family of plant signaling peptides by the receptor kinase *HSL3**. *Elife*, 11, e74687 <https://doi.org/10.7554/eLife.74687>
8. **Wyler, M.**, Keller, B., Roulin, AC. (2022). *Potential impact of TE-derived sRNA on gene regulation in the grass *Brachypodium distachyon**. *bioRxiv* <https://doi.org/10.1101/2022.04.05.487121>
7. Stockenhuber, R., Akiyama, R., Tissot, N., Yamazaki, M., **Wyler, M.**, Arongaus, AB., Podolec, R., Sato, Y., Milosavljevic, S., Widmer, A., Ulm, R., Shimizu, KK. (2021). *The UV RESISTANCE LOCUS 8-mediated UV-B response is required alongside CRYPTOCHROME1 for plant survival under sunlight in the field*. *bioRxiv* <https://doi.org/10.1101/2021.12.08.471623> under review *Plant Cell and Physiology*
6. Stritt, C., Gimmi, EL., **Wyler, M.**, Homrani Bakali, A., Skalska, A., Hasterok, R., Mur, AJL., Pecchioni, N., Roulin AC. (2021) *Migration without interbreeding: evolutionary history of a highly selfing Mediterranean grass inferred from whole genomes*. *Molecular Ecology* <https://doi.org/10.1111/mec.16207>
5. Betschart, A., Baron Toaldo, M., Dondi, F., Vannini, I., Kovacevic, A., Riond, B., Wenger, M., Burckhardt, S., **Wyler, M.**, Glaus, TM. (2020). *Assessment of iron deficiency as comorbidity in dogs with advanced myxomatous mitral valve disease*. <https://www.zora.uzh.ch/id/eprint/194704/1/194704.pdf> under review *The Veterinary Journal*
4. Skalska, A., Stritt, C., **Wyler, M.**, Williams, H., Vickers, M., Han, J., Tuna, M., Savas Tuna, G., Susek, K., Swain, M., Corke, F., Doonan, J., Roulin, AC., Hasterok, R., Mur, LAJ. (2020). *Genetic, epigenetic and transcriptomic analyses of Turkish *Brachypodium distachyon* accessions differentiates two geographically distinct subpopulations*. *Int. J. Mol. Sci.* 21, 6700; doi:10.3390/ijms21186700
3. **Wyler, M.**, Stritt, C., Walser, J.C., Baroux, C., Roulin, AC. (2020). *Impact of transposable elements on methylation and gene expression across natural accessions of *Brachypodium distachyon**. *Genome Biology & Evolution*, evaa180 <https://doi.org/10.1093/gbe/evaa180>
2. Stritt, C., **Wyler, M.**, Gimmi, EL., Pippel, M., Roulin, AC. (2020). *Diversity, dynamics and effects of long terminal repeat retrotransposons in the model grass *Brachypodium distachyon**. *New Phytologist*. DOI:10.1111/nph.16308

1. Imperiali, N., Dennert, F., Schneider, J., Laessle, T., Velatta, C., Fesselet, M., **Wyler, M.**, Mascher F., Mavrodi, O., Mavrodi, D., Maurhofer, M., Keel, C.J. (2017). *Relationships between root pathogen resistance, abundance and expression of Pseudomonas antimicrobial genes, and soil properties in representative Swiss agricultural soils*. *Frontiers in Plant Science* 8:427. DOI:10.3389/fpls.2017.00427
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Manuscripts In Preparation

Kunz, L., Poretti, M., Praz, CR., Müller, MC., **Wyler, M.**, Keller, B., Wicker, T., Bourras, S. (in preparation). *High-copy transposons from a pathogen give raise to a conserved small RNA family with a novel host immunity target*.

Skills

- **Languages:** Italian (native), German (native), English (fluent), French (eloquent)
 - **IT knowledge:** R (CRAN, Bioconductor), perl, bash, R Markdown, python (basic), Inkscape
NGS Data analysis (WGBS, RNA-Seq, ChIP-Seq, sRNA-Seq, GBS)
 - **Lab Techniques:** DNA – RNA – Protein extraction, PCR, Real Time qPCR, Gel electrophoresis, SDS-PAGE, Western Blotting, Computed Tomography data analysis, NGS Library Preparation
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Military Service

Master Sergeant (OR-8), pack animal mountaineer, chief staff logistic operations branch in a infantry battalion.

Extracurricular Activities

- Managing a small securities portfolio (stocks, commodities, derivatives)
 - Board member of GIUBIESPO, Intercantonal Dairy Livestock Show
 - Advanced military training and competitions
 - Working in the family vineyard
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