

Luca Witte

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EDUCATION

ETH Zürich (D-BSSE)

2021 - 2023

Master of Science - Biotechnology (141 ECTS)

Basel, Switzerland

- **GPA: 5.86/6**; “*Summa cum laude*” (Swiss grading scale)
- **Lab courses:** Laboratory automation, Cellular engineering, Microsystems & Microfluidics, NGS, Gene Circuits
- **Lectures:** Advanced Bioengineering, Single Cell Technologies, Mathematical and computational methods
- **Extracurricular:** Vice-president and Industry representative of the Student’s association, Student Representative for selection of a new professor, Organization team member of the PharmaCamp hackathon

BTU Cottbus-Senftenberg

2017 - 2021

Bachelor of Science - Biotechnology (210 ECTS)

Senftenberg, Germany

- **GPA: 1.2/6**; “*Summa cum laude*” (German grading scale)
- **Lab courses:** Physics, Chemistry, Microbiology, Biochemistry, Industrial Microbiology, Gene Technology
- **Courses:** Focus on scientific fundamentals (chemistry, cell- and microbiology, biochemistry, molecular biology)
- **Extracurricular:** President of the Student’s association, Student representative in the Lausitzer Biotech e.V.

RESEARCH & WORK EXPERIENCE

F. Hoffmann-La Roche

Oct 2023 – Oct 2024

Junior Project Manager Knowledge Management

Basel, Switzerland

- Building a data analysis and visualization platform: ETL pipelines and statistical analysis (R, Python, SQL).
- Project management: Independently managed multiple projects and engaged in client communication.

ETH Zürich (D-BSSE)

Aug 2022 – Sep 2023

Master’s Thesis - Transcriptomic Analysis of Integrin-Mediated Mechanotransduction (9 months)

Basel, Switzerland

- Developed a new cell culture method enabling cellular compression and subsequent sequencing (Illumina, 10x).
- Analyzed bulk and single cell transcriptomics data (R, Python, Unix); results are being prepared for publication.

Research Project - Nonlinear mixed-effects Models of Cell-to-Cell Variability in Synthetic Gene Circuits (4 months)

- Established ODE models of gene circuits to simulate noise reduction in heterogeneous cell populations.
- Simulations (R, C) and statistical data analysis to guide future in-vitro implementations.

Wacker Chemie AG

Jun 2021 – Sep 2021

Summer Rotation Student - Manufacturing Operations

Jena, Germany

- Handled high-purity silicon deposition for semiconductors, preparing and operating industrial machinery.

Max Planck Institute of Biophysics

Oct 2020 – Jun 2021

Bachelor’s Thesis - A novel spectroscopic assay for drug candidate binding to E. coli bd oxidases

Frankfurt, Germany

- Developed and optimized a thermal shift assay, implemented automated statistical data analysis pipeline in R.
- Performed protein expression and purification, biophysical characterizations, hands-on insights into Cryo-EM.

ETH Zürich (D-BIOL)

Sep 2019 – Mar 2020

Research project - Investigating the promiscuity of omphalotin biosynthesis via Site directed mutagenesis

Zürich, Switzerland

- Performed plasmid library construction and heterologous expression in *P. pastoris*.
- Peptide identification via high-performance liquid chromatography, coupled with tandem mass spectrometry.

BTU Cottbus-Senftenberg

Oct 2018 – Jul 2019

Research assistant in Biochemistry (5 months)

Senftenberg, Germany

- Cultivation of different immortalized and primary cell lines, Cell viability assays, Molecular biology.
- Lab course preparation: Protein, RNA and DNA purification, Protein activity measurements, Molecular cloning

Teaching assistant in Chemistry (5 months)

- Led weekly tutorials with exercises and Q&A helped first-year students understand complex topics in chemistry.

SKILLS & INTERESTS

Technical Skills

- **Laboratory Techniques:** Microbiology, Cell biology, Protein biochemistry, Cloning, Cellular engineering, NGS.
- **Computational:** R, Python, SQL, C, Unix, Git; Data visualization, Statistical analysis, Modeling.
- **Automation & Microsystems:** Microfluidics, High-throughput techniques, Laboratory automation.

Research Skills

- **Experimental Design:** Proven ability to develop and optimize experimental protocols.
- **Scientific Writing & Communication:** Experienced in scientific reporting, publication preparation and presenting data to academic and industry audiences from diverse fields.
- **Analytical Problem Solving:** Adept at troubleshooting experiments and developing innovative solutions.
- **Laboratory Automation:** Experience with microsystems, microfluidics, and high-throughput techniques.

Transferable Skills

- **Project Management:** Courses and practical experience with PM methodologies (Scrum) and tools (Kanban).
- **Team Collaboration:** Strong interpersonal skills; Proactive and self-motivated, with a team-oriented mindset.
- **Attention to Detail:** Ensures accuracy and reproducibility in lab work and data analysis.

Interests

- **Technical Pursuits:** Currently exploring building single-board computers (Arduino, ESP32) and 3D printing.
- **Hobbies:** Brazilian Jiu-Jitsu and Kickboxing, Meditation, Reading, Playing guitar.

ACTIVITIES & AWARDS

PharmaCamp Hackathon (organization team) 2023

“Drug Discovery in the era of Precision Medicine and digitalization”: Organization, marketing and securing funding.

Biotechnology Students association at D-BSSE 2022 – 2023

Vice President and Student Representative. Established a student internship platform, organized company visits and industry talks, and participated in university politics and event planning.

PharmaCamp Hackathon (participant) 2022

“Personalised Medicine in Pharma Industry”: Our team conceptualized the path for an early-stage natural antimicrobial spin-off, outlining scientific development, regulatory processes, and a market entry strategy.

Award for excellent degree - German Association of Engineers (VDI) 2021

Lausitzer Biotech e.V. 2018 – 2022

Non-profit association to support local facilities and networks in life sciences. Student representative, organizing alumni meetings, graduation ceremonies and mentoring high school students.

Two-time awardee of the *Deutschlandstipendium* 2018 – 2020

BMBF Scholarship for high-achieving and committed students

Students association Biotechnology at BTU Senftenberg 2018 – 2019

President, organizing events, student representative, university politics.

PUBLICATIONS

Matabaro E., Luca Witte, Gherlone F., Vogt E., Kaspar H., Künzler M. "Promiscuity of Omphalotin A Biosynthetic Enzymes Allows de novo Production of Non-Natural Multiply Backbone N-Methylated Peptide Macrocycles in Yeast." *ChemBioChem*, e202300626, 2024. [DOI](#)

Matabaro E., Song H., Chepkirui C., Kaspar H., Luca Witte, Naismith J.H., Freeman M.F., Künzler M. "Enzyme-mediated Backbone N-methylation in Ribosomally Encoded Peptides." *Methods in Enzymology*, 656: 429-458, 2021. [DOI](#)

Grund T.N., Radloff M., Wu D., Luca Witte, Safarian S. "Mechanistic and Structural Diversity between Cytochrome bd Isoforms of *Escherichia coli*." *PNAS*, e2114013118, 2021. [DOI](#)

Radloff M., Elamri I., Grund T.N., Luca Witte, Hohmann K.F., et al. "Short-chain Aurachin D Derivatives as Selective Inhibitors of *E. coli* Cytochrome bd-I and bd-II Oxidases." *Scientific Reports*, 11: 23852, 2021. [DOI](#)

Currently preparing my Master's thesis results for publication