CHRISTOPHER K. WEINGARTEN

Researcher Biotechnology

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SUMMARY -

Recently completed my master's thesis on the design of photocatalytic proteins in the group of Prof. Sven Panke at the Biosystems Science and Engineering (D-BSSE) department at ETH in Basel, I would like to continue working in protein sciences and computational biology, preferably in biocatalysis or material development. With a strong background in biology plus computational methods in applied biosciences, I believe I could quickly contribute to a research team working in structural biology or protein engineering, for example.

SKILLS -

Protein Expression & Purification, Cloning, Laboratory Experience

DNA & RNA Sequencing, Activity & Binding Assays, Bacterial & Mammalian cell culture, Flow Cytometry, Light & Fluorescence Microscopy, Spectroscopy (NIR, IR,

UV/VIS, CD), ITC, cryo-EM, XRPD

Languages Python, Matlab, R, Julia, SQL, Unix

Software Rosetta, AlphaFold2, ProteinMPNN, AmberMD, GROMACS, SimBiology, PyTorch

EDUCATION

09/2021-04/2024 Masters in Biotechnology — Swiss Federal Institute of Technology, Basel

GPA: 5.6/6.0

Specialized Master's program in biotechnology and synthetic biology. Relevant Courses:

- Master Thesis: 6.0/6.0
- Scientific Computing: 5.75/6.0
- Machine Learning: 5.0/6.0
- Microbial Biotechnology: 5.5/6.0

09/2018-09/2021 Bachelors in Biology — Swiss Federal Institute of Technology, Zurich

GPA: 5.4/6.0

Studies in biology with a focus in biological chemistry. Relevant Courses:

- Macromolecular Structure Determination: 6.0/6.0
- Intro to Bioinformatics: 5.5/6.0
- Applied Machine Learning: 6.0/6.0
- Proteins and Lipids: 5.25/6.0

EXPERIENCE -

11/2022-05/2023 Intern Pharmaceutical Development — Novartis AG

- · Extensive stability testing on oral drug products in development.
- · Development of a method for early risk assessment of salt disproportionation in oral drug products.

09/2022-11/2022 Histology Technician Assistant — University Hospital Basel

- Preparation, staining, and analysis of tissue samples in the histopathology department.
- · Organization of histological samples in the university hospital archive.

06/2021-08/2021 Research Assistant — Swiss Federal Institute for Forest, Snow and Landscape Research (WSL)

- · Characterization of insect samples for overall insect biomass estimation.
- · Assisting in field projects for insect sample collection.

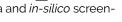
07/2018-09/2018 Research Assistant — University Hospital Zurich

· Study of the absorption spectra of bilirubin in swine bile samples for correction in NIR-based medical measurement devices.

PROJECTS

Master Thesis

Computational Design of Functional 2D and 3D Assemblies for Photovoltaic Enzymes 📑



- Computational design of 2D protein arrays for protein-based solar cells in Rosetta and in-silico screening with molecular dynamics simulations in AmberMD.
- Computational design of protein scaffolds using AlphaFold2 and ProteinMPNN for structural determination of small proteins using cryo-EM.
- Expression and biophysical characterization of designed variants for small molecule binding as well as nanostructure assembly.

Course Work

Mammalian Gene Circuits

- · Implementation of a positive feedback-loop sensor gene circuit in a HEK293 cell line with fluorescent readout.
- · Fluorescent analysis of the positive feedback-loop through flow cytometry and comparison to an openloop system and simulation data.

Course Work

Structural Analysis of β -Galactosidase with Single Particle Cryo-EM

- Single-particle cryo-EM sample preparation and data processing in RELION of β -Galactosidase.
- Model building in COOT and PHENIX and structural analysis of the produced model.

COMMUNITY INVOLVEMENT

04/2022-10/2023 Board Member for Events — Biotechnology Student Association at ETH (BSA)

- · Organization and hosting of events in the department, including a bi-weekly after-work pint.
- · Management of student organization's inventory and event budget.

09/2019-09/2021 Spokesperson & Board Member for Student Affairs — Biology Student Association at ETH (VeBiS)

- · Maintaining communication between students and professors by organizing feedback and representing student interests in department-wide meetings.
- · Organization of exam preparation courses for students.

REFERENCES

Dr. Adrian Bunzel: adrian.bunzel@bsse.ethz.ch



Aliénor Hagenmuller: alienor.hagenmuller@novartis.com

ADDITIONAL

Languages: English (native), German (native), French (B1)

Citizenship: USA, Switzerland

Last updated: July 11, 2024