TOBIAS HOCH

Culmanstrasse 36 | 8006 Zürich· +41 79 567 90 34
tobias.hoch@bluewin.ch · www.tobiashoch.ch

PERSONAL INFORMATION

Birth date   23.12.1992
Nationality   Swiss
Marital status   Unmarried

WORK EXPERIENCE

MARCH 2021 – PRESENT
TEMPORARY ONE-YEAR CONTRACT
RESEARCH ASSOCIATE, EMPA ST. GALLEN (PARTICLES-BIOLOGY INTERACTIONS)

I am part of an industrial collaboration evaluating and comparing various nanoparticle-based drugs. We are characterizing the biological activity of these compounds using complex *in vitro* models. Furthermore, I am involved in an early-stage research project aimed at incorporating patient-derived tumor biopsies into an organ-on-a-chip platform.

MARCH 2020 – FEBRUARY 2021
RESEARCH ASSISTANT, UNIVERSITY OF ZURICH (BODENMILLER LAB)

I implemented spatial image analysis algorithms to relate high-dimensional single-cell data, that I generated during my time as a master student, to clinical patient data. I am also writing a manuscript together with a senior scientist to publish these findings (currently under revision). I regularly convened with collaborators from clinics to discuss the relevance of this data to patients.

JANUARY 2019 – FEBRUARY 2020
THESIS PROJECT, UNIVERSITY OF ZURICH (BODENMILLER LAB)

I did an extensive experimental validation of RNA in situ hybridization targets for Imaging Mass Cytometry (IMC). I then integrated these targets with an antibody panel to investigate the immune landscape and the corresponding chemokine profile in melanoma patients. I also spearheaded a side project to investigate counter staining methods for IMC. I frequently initiated testing of published computational methods on IMC datasets, improved lab protocols, and volunteered to organize group events.

2017 – 2020
ASSISTANT TO THE DIRECTOR, FREUNDE DER GALAPAGOS INSELN SCHWEIZ

I maintained the website with up-to-date information, thus I initiated communication and liaised between team members to gather relevant content.

JULY 2017 – SEPTEMBER 2017

RESEARCH INTERNSHIP, EXPERIMENTAL ONCOLOGY KSSG

I investigated the effect of newly synthetized proteasome inhibitors on different Multiple Myeloma cell lines and compared the effect of these new inhibitors with approved drugs using various techniques such as MTS assays, ABP labelling, and Flow Cytometry.

JUNE 2012 – MAY 2013

HEAD OF ACCOUNTING, SWISS ARMED FORCES INF RS 12

I was responsible for the accounting of an army training center in Chur. I also trained several quartermaster sergeant candidates in accounting and food supply.

JULY 2011 – MAY 2012

MANDATORY ARMY SERVICE, SWISS ARMED FORCES

AUGUST 2008 – JUNE 2011

COMMERCIAL APPRENTICESHIP, LISTA OFFICE AG

I gained experience in different departments in the company including customer service, marketing and accounting. I regularly authored reports, mentored junior apprentices and had the opportunity to interact with customers.

EDUCATION

SEPTEMBER 2018 – FEBRUARY 2020

MASTER OF SCIENCE IN QUANTITATIVE BIOLOGY AND SYSTEMS BIOLOGY, UNIVERSITY OF ZURICH, DEPARTMENT FOR QUANTITATIVE BIOMEDICINE

Supervision	Prof. Dr. Bernd Bodenmiller and Dr. Daniel Schulz
Thesis	Characterization of Chemokine Expression in Metastatic Melanoma using Simultaneous Multiplexed mRNA and Protein Imaging by Mass Cytometry (Find the abstract on www.tobiashoch.ch)
GPA	5.9

SEPTEMBER 2015 – AUGUST 2018

BACHELOR OF SCIENCE IN BIOMEDICINE, UNIVERSITY OF ZURICH

GPA	5.3

AUGUST 2013 – JULY 2015

BERUFSMATURITÄTSSCHULE KBZ AND PASSERELLEN-LEHRGANG ISME, SG

Attainment of university entrance qualifications

AUGUST 2008 – JUNE 2011

KAUFMÄNNISCHE BERUFSSCHULE, HERISAU

Kaufmann EFZ

LANGUAGES

- German – mother tongue
- English - fluent
- French and Italian - basics

PROGRAMMING LANGUAGES AND COMPUTATIONAL TOOLS

- Data Analysis | R (*RStudio*) and Python (*jupyter notebook*)
- Image Processing/Analysis | Ilastik, CellProfiler, Fiji
- Web design | html5 and CSS, basic JavaScript
- Software Development | Shiny Applications in R, GitHub
- Systems | Cloud Computing (*Ubuntu VM*), MacOS, Windows
- Various | LaTeX, MS Products

LIFE SCIENCE TOOLS

- Imaging Mass Cytometry
- Flow Cytometry
- Fluorescent Microscopy
- Cell Culture (2D and 3D)
- Optical Emission Spectroscopy

- RNA *in situ* hybridization (RNAScope)
- Gateway Cloning
- PCR / WB
- Dynamic Light Scattering

PUBLICATIONS

cytomapper: an R/Bioconductor package for visualisation of highly multiplexed imaging data
Eling N, Damond N, **Hoch T**, Bodenmiller B
Bioinformatics (2020, doi.org/10.1093/bioinformatics/btaa1061)

Multiplexed Imaging Mass Cytometry of Chemokine Milieus in Metastatic Melanoma Characterizes Features of Response to Immunotherapy
Hoch T, Schulz D, Eling N, Martínez Gómez J, Levesque M, Bodenmiller B
Science Immunology (2021, under review, BioRxiv pre-print doi.org/10.1101/2021.07.29.454093)

INTERESTS

I like to organize events where family and friends meet. I like to combine this passion with other interests like music. One of the results is an annual music festival that I organize with some childhood friends. I also enjoy traveling and learning about other cultures and their history. My favorite destination is Tuscany in Italy with its historical villages and excellent cuisine.

REFERENCES

Upon request