



# David Haberthür

## Vita

- Birthday** 12. September 1976
- Marital status** Married, two kids
- Nationality** Swiss
- Profile** Senior Scientific Engineer and IT Leader with 15+ years of expertise in high-resolution 3D imaging and microCT workflows. I bridge the gap between complex hardware operations, custom Python-based image analysis, and institutional IT infrastructure. Certified Radiation Safety Officer dedicated to operational excellence and mentoring the next generation of researchers.

## Education & Work experience

**2021** **Scientific Engineer for microCT applications**, *Institute of Anatomy, University of Bern*, Bern, Switzerland, Ongoing

Driving biomedical research through high-resolution 3D imaging. I manage the full lifecycle of microCT projects, from experimental design and hardware operation to developing custom Python-based image processing pipelines for quantitative tissue analysis.

**2021** **Co-leader of the IT team**, *Institute of Anatomy, University of Bern*, Bern, Switzerland, Ongoing

Managing the institute's digital backbone. I coordinate long-term data strategy, high-volume storage solutions, and infrastructure security in partnership with University IT, while preparing to fully lead the team by 2027.

**2021** **Radiation Safety Officer**, *Institute of Anatomy, University of Bern*, Bern, Switzerland, Ongoing

After finishing the *K420 - Anerkannte Ausbildung zu Strahlenschutz-Sachverständigen für die Arbeitsbereiche B und C (II)* on 27.10.2023, I have taken on the role of Radiation Safety Officer at the Institute of Anatomy. I am legally responsible for the safe operation of X-ray systems and handling of radioactive isotopes. I ensure full compliance with Swiss Radiation Protection Ordinances (StSV) and serve as the primary liaison for the Federal Office of Public Health.

**2016**  
**2021** **Postdoctoral Researcher**, *MicroCT research group, Institute of Anatomy, University of Bern*, Bern, Switzerland, June 2016–February 2021

As a Post-Doc in the MicroCT research group of PD Dr. medRuslan Hlushchuk I conduct biomedical research using three high-resolution micro-tomography machines. We are focusing on the quantitative assessment of different tissue parameters which can only be accessed through non-destructive three-dimensional imaging. Recent work was performed to assess the details of fish gills in regards to training, automatically characterizing large batches of human teeth, assessment of tumor load in murine lungs and analysis of vascular structure in hind-limbs of mice.

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- 2015  
2016
- Industry Liaison Officer**, *X-Ray Tomography Group, Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland, October 2015–May 2106*
- The industry contact position I partially fulfilled during my Post-Doc at TOMCAT was been fleshed out to a 80% position. As Industry Liaison Officer I was the person responsible for proprietary research at the TOMCAT beamline. The fixed-term contract was aimed at developing the proprietary research into a self-sufficient company, covering the needs of industry customers regarding micro-tomographic insight into their samples.
- 2011  
2015
- Postdoctoral Researcher**, *X-Ray Tomography Group, Swiss Light Source, Paul Scherrer Institute, Villigen, Switzerland, October 2011–September 2015*
- As a member of the GlobalDiagnostiX-Alliance I worked on the concept and component evaluation for an X-ray detector for a human medicine X-ray system to be deployed to hospitals in developing countries. As a member of the TOMCAT group under Prof. Dr. Marco Stampanoni I was helping industry customers perform proprietary research at the beamline, from first contact to performing the experiments and reporting the results.
- 2010  
2011
- Postdoctoral Researcher**, *Group Schittny, Institute of Anatomy, University of Bern, Bern, Switzerland, July 2010–September 2011*
- As a Post-Doc in the group of Prof. Dr. Johannes C. Schittny I was using the methods I developed during my PhD to help understand the development of the three-dimensional lung structure.
- 2006  
2010
- Dissertation**, *Group Schittny, Institute of Anatomy, University of Bern, Bern, Switzerland, September 2006–June 2010*
- During my PhD thesis I generated high-resolution tomographic images from mammalian lungs, and analyzed as well as visualized the obtained results. The results helped to gain new insights into the lung development of mice, rats and primates.
- 2006  
2008
- Master of Advanced Studies ETH in Medical Physics**, *Swiss Federal Institute of Technology, Department of Physics, Zürich, Switzerland, October 2006–August 2008*
- This two-year program designed for MSc- or PhD-students helped me to acquire knowledge in medical physics and to specialize in different fields of medical physics, namely in bio-compatible materials, radiotherapy, medical optics and acoustics.
- 2003  
2004
- Physics teacher**, *Gymnasium Köniz-Lerbermatt, Köniz, Switzerland, August 2003–January 2004*
- I have been teaching 6 lessons of physics per week as a substitute teacher for pupils one year before graduating academic high school.
- 2000  
2006
- Messenger and dispatcher**, *Velokurier Bern, Bern, Switzerland, November 2000–September 2006*
- I worked as both messenger and dispatcher during and after my degree course. And won the Swiss Messenger Championships in 2007.
- 2001  
2002
- Master of Science**, *Biomedical Photonics, Institute of applied Physics, University of Bern, Bern, Switzerland, Mai 2001–October 2002*
- During my master thesis I studied laser applications in medicine and performed studies on joint cartilage soldering and heart tissue cutting.
- 2000  
2001
- Exchange Student**, *Department of Physics, Strathclyde University, Glasgow, Scotland, United Kingdom, January 2000–July 2000*
- During my exchange term in the United Kingdom I attended lectures in Software Design, Imaging and Laser physics and brushed up my English skills.
- 1997  
1999
- Bachelor of Science**, *Institute of Applied Physics, University of Bern, Bern, Switzerland, September 1996–December 1999*
- In my undergraduate studies I learned the intricate details of Physics.
- 1993  
1996
- Higher education**, *Gymnasium Köniz-Lerbermatt, Köniz, Switzerland, August 1993–July 1996*
- I did the Matura Typus C with a focus on STEM topics.

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## Outreach & Academic Engagement

- 2024 **Graduate Mentoring, Supervision and Support**, University of Bern  
Directly supporting and advising Master and PhD students on their research projects, specifically regarding 3D data acquisition strategies and image analysis workflows.
- 2025/8 **COMULIS Training School Imaging Across Scales, Co-organization**, Institute of Anatomy  
Helping to organize and host the workshop and train participants.
- 2023/9 **COMULIS Training School Imaging Across Scales, Co-organization**, Institute of Anatomy  
Helping to organize and host the workshop and train participants.
- 2022/3 **Best Image Award, Recognition of Excellence**, ToScA International Conference  
Awarded for exceptional visualization and technical quality in microtomographic imaging.

## Recent Publications (2021–2026)

### Journal Articles

- Cristian Fernandez-Palomo et al. "Synchrotron Microbeam Radiotherapy in Combination with Gold Nanoparticles Improves Control of Mouse Melanoma". *International Journal of Radiation Oncology\*Biology\*Physics* (July 2025). DOI: 10.1016/j.ijrobp.2025.07.1427.
- David Haberthür et al. "MicroCT-based Vascular Imaging in Bone and Peri-Implant Tissues". *Tomography of Materials and Structures* (Sept. 2025). DOI: 10.1016/j.tmater.2025.100074.
- Yannis Pflieger et al. "Location-Specific Pathology Analysis of Monopodial Airways in a Rabbit Model of Bronchopulmonary Dysplasia: A Proof of Principle Study". *BMC Medical Imaging* 1 (Apr. 2025). DOI: 10.1186/s12880-025-01657-6.
- Carolina García-Poyatos et al. "Cox7a1 Controls Skeletal Muscle Physiology and Heart Regeneration through Complex IV Dimerization". *Developmental Cell* 14 (July 2024). DOI: nh26.
- Parastoo Ghaznavi et al. "Is  $\mu$ CT Irradiation Nondestructive? A Noble Gas Study on Matrix Samples from the CV3 Chondrite Allende". *Meteoritics & Planetary Science* (June 2023). DOI: 10.1111/maps.13996.
- Yogita Kadlag et al. "Physical Properties and Average Atomic Numbers of Chondrules Using Computed Tomography". *Planetary and Space Science* (Nov. 2023). DOI: 10.1016/j.pss.2023.105799.
- Elis Newham et al. "Reply to: Revisiting Life History and Morphological Proxies for Early Mammaliaform Metabolic Rates". *Nature Communications* 1 (Sept. 2022). DOI: 10.1038/s41467-022-32716-z.
- Verdiana Trappetti et al. "Microbeam Radiation Therapy Controls Local Growth of Radioresistant Melanoma and Treats Out-of-Field Locoregional Metastasis". *International Journal of Radiation Oncology\*Biology\*Physics* (2022). DOI: 10.1016/j.ijrobp.2022.06.090.
- Estée Bochud et al. "A New Diancta Species of the Family Diplommatinidae (Cyclophoroidea) from Vanua Levu Island, Fiji". *ZooKeys* (Nov. 2021). DOI: 10.3897/zookeys.1073.73241.
- Roman Grothausmann et al. "Combination of  $\mu$ CT and Light Microscopy for Generation-Specific Stereological Analysis of Pulmonary Arterial Branches: A Proof-of-Concept Study". *Histochemistry and Cell Biology* 2 (Feb. 2021). DOI: 10.1007/s00418-020-01946-x.
- David Haberthür et al. "Pulmonary Acini Exhibit Complex Changes during Postnatal Rat Lung Development". *PLOS ONE* 11 (Nov. 2021). DOI: 10.1371/journal.pone.0257349.

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- Sebastian Halm et al. "Micro-CT Imaging of Thiel-embalmed and Iodine-Stained Human Temporal Bone for 3D Modeling". *Journal of Otolaryngology - Head & Neck Surgery* 1 (2021). DOI: 10.1186/s40463-021-00522-0.
- Jean Albert Laissue et al. "Tolerance of Normal Rabbit Facial Bones and Teeth to Synchrotron X-Ray Microbeam Irradiation". *Radiation Research* (Nov. 2021). DOI: 10.1667/RADE-21-00032.1.
- Oleg Lobachev et al. "Evaluating Registrations of Serial Sections with Distortions of the Ground Truths". *IEEE Access* (2021). DOI: 10.1109/ACCESS.2021.3124341.
- Henry Nording et al. "The C5a/C5a Receptor 1 Axis Controls Tissue Neovascularization through CXCL4 Release from Platelets". *Nature Communications* 1 (Dec. 2021). DOI: 10.1038/s41467-021-23499-w.
- Verdiana Trappetti et al. "Synchrotron Microbeam Radiotherapy for the Treatment of Lung Carcinoma: A Pre-Clinical Study". *International Journal of Radiation Oncology\*Biophysics* (Aug. 2021). DOI: 10.1016/j.ijrobp.2021.07.1717.
- Thomas Gerhard Wolf et al. "Internal Morphology of 101 Mandibular Canines of a Swiss-German Population by Means of Micro-CT: An Ex Vivo Study". *Scientific Reports* 1 (2021). DOI: g7r8.
- Cédric Zubler et al. "The Anatomical Reliability of the Superficial Circumflex Iliac Artery Perforator (SCIP) Flap". *Annals of Anatomy - Anatomischer Anzeiger* (Mar. 2021). DOI: 10.1016/j.aanat.2020.151624.

## Book Chapters

- Maria Gomez-Lazaro, David Haberthür, and Ruslan Hlushchuk. "Computed Tomography". *Imaging Modalities for Biological and Preclinical Research: A Compendium, Volume 2*. IOP Publishing, May 2021. ISBN: 978-0-7503-3747-2. DOI: 10.1088/978-0-7503-3747-2ch13.