

Open Position: PhD student

Help us map life at the single-nanometer scale.

Come and join us in beautiful Lausanne! In addition to breathtaking landscapes and an international environment, Switzerland offers exceptionally strong research funding. École Polytechnique Fédérale de Lausanne (EPFL) is one of the leading research institutions in Europe and among the top in the world.

About the Schueder Lab

The lab is interested in leveraging DNA nanotechnology to design, test, and apply smart probes that push the boundaries of fluorescence microscopy in terms of spatial resolution, throughput, quantitative imaging, and single nanometer proximity mapping (molecular connectomics). Furthermore, we aim to advance both conventional and super-resolution multiplexed imaging (DNA-PAINT, FLASH-PAINT) toward imaging-based spatial omics. We are interested in applying the technology to microbiology and microbiome research, but our focus is not limited to these areas.

The opportunity

The Schueder Lab (Molecular Spatial Omics Laboratory) at the Institute of Bioengineering, École Polytechnique Fédérale de Lausanne (EPFL), is looking for **up to two** passionate and driven **graduate students** to join the lab as early as **January 1st, 2026**, to contribute to interdisciplinary projects centered around the lab's focus as described above. The ideal candidate is passionate about multiple — ideally all — of the following areas of research:

- **Nanotechnology:** Design of new DNA-based imaging probes and the use of DNA origami nanotechnology to benchmark newly developed probes.
- **Biochemistry:** Design, construction, and validation of novel binders for labeling and imaging cellular proteins, RNA, and DNA.
- **Optics & Microfluidics:** Development of custom microscopy setups and microfluidic systems to leverage the full potential of smart probe microscopy.
- **Computation:** Development of new workflows to analyze, interpret, and model the high-dimensional spatial omics data we acquire.

If you are interested, please send your **CV**, a **brief statement of motivation**, and ideally **two references** to fschueder@ethz.ch

References:

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F. Schueder[†], J. Lara-Gutiérrez[†], D. Haas, K. Sandvold Beckwith, P. Yin, J. Ellenberg, R. Jungmann
Super-resolution spatial proximity detection with proximity-PAINT
Angewandte Chemie. (2020), **2**, 716-720 [[†]Co-first authors]

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Multiplexed 3D super-resolution imaging of whole cells using Spinning Disk Confocal Microscopy and DNA-PAINT.
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