

## Methodology

At the core of our research, we utilize two central methods:

**Proteomics** allows us to quantitatively analyze proteomes from various sources like cell lines or tissue from animals and patients. Targeted mass spectrometry further enables the detection and quantitative analysis of specific proteins in complex mixtures.

Our **metabolomics** services include extraction, separation and targeted detection of metabolites in a variety of body fluids and tissues. More recently, we have started to expand our analytical platform towards lipid analysis (lipidomics).

For all methodologies, we have established standardized, SOP-guided sample preparation and analysis work flows, which allow us to use the identical sample for both, metabolomic and proteomic investigation.

### Major Core Facility Projects:

- Prof. Bernd Pichler: Multiscale HCC, Image-Link
- Prof. Lars Zender: CholangioConcept
- Dr. Johannes Gloeckner: LRRK2 in Parkinsons disease
- Prof. Thomas Gasser, Prof. Marius Ueffing, Dr. Johannes Gloeckner: MitoPD
- Prof. Dr. Dr. Ghazaleh Tabatabai: ZNS-Met
- Prof. Marius Ueffing: EYE-RISK, CURETINA

## Contact

### Institute for Ophthalmic Research Core Facility for Medical Bioanalytics

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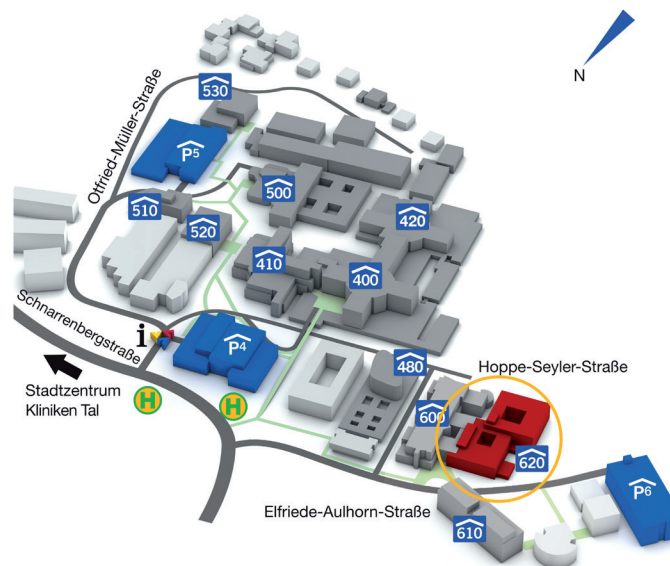
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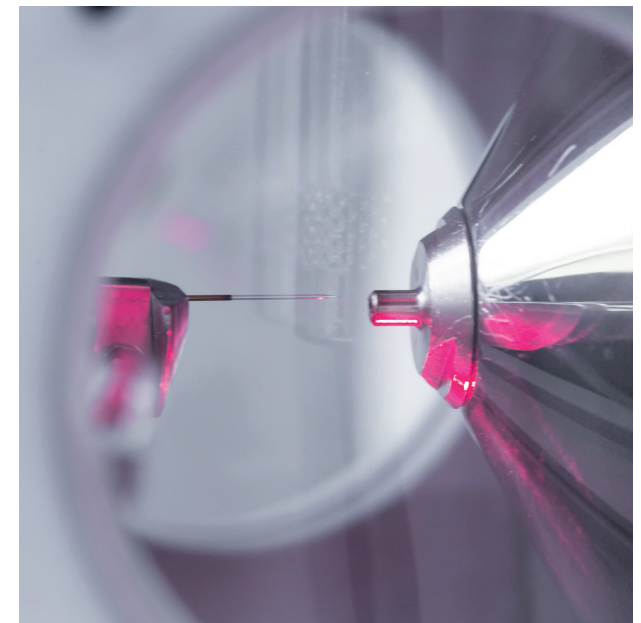
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### How to find us:



## Ueffing Lab Medical Bioanalytics in the Institute for Ophthalmic Research





Multi-omic oriented bioanalytics is currently revolutionizing the life sciences.

The core facility for Medical Bioanalytics (CFMB) at the Medical Faculty of Tübingen University focuses on mass spectrometry-driven approaches for analysis of proteins, metabolites and lipids.

As an integral part of the Quantitative Biology Center (QBiC - [www.qbic.uni-tuebingen.de](http://www.qbic.uni-tuebingen.de)), CFMB links these approaches towards multi-omics analysis as well as advanced imaging techniques and functional assays.

CFMB provides its expertise to groups within the university as well as to external partners from academia and industry.

A focus of CFMB analytical approaches is affinity proteomics, analyzing protein interactions, protein signal transduction and protein networks. Changes in interaction patterns upon activity or disease are the basis for modeling approaches towards deciphering physiological processes and disease mechanisms on the molecular level.



Another focus is mass-spectrometry-based monitoring of proteomic and metabolomics marker signatures to guide and assist the development of diagnosis and therapy.



**Marius Ueffing**

- Professor, Dr. rer. nat.
- Director of the Institute for Ophthalmic Research
- Head of Molecular Biology of Retinal Degenerations



**Karsten Boldt**

- Dr. rer. nat.
- Senior Staff Scientist, Proteomics



**Sascha Dammeier**

- Dr. rer. nat.
- Senior Staff Scientist, Metabolomics

## Research to See

### The Institute for Ophthalmic Research

Seeing is an essential part of human life. As a leading centre for vision research we conduct rigorous research in order to break new ground in understanding the principles of vision and the mechanisms of blinding diseases. We are confident that this research will enable us to rationally develop effective treatments that ultimately retain or restore vision.

Within the Center for Ophthalmology at the University of Tübingen Medical Centre, we and our colleagues at the University Eye Hospital jointly strive for scientific excellence, for speed in translating the advancements into patient's benefit, and for training and mentoring the next generation of leaders in our field.

As leaders and partners in multi-national collaborations, we work for continuous strengthening our ties to fellow international scientists in the public and private sector and to foundations, industry and patient organizations.

As an integral part of Tübingen's biomedical and neuroscience campus, we offer a scientific environment that favors creativity for generating ground-breaking ideas, their transfer into reality and their translation into diagnostics and therapy to help those that suffer from vision loss.