

## Current Research

### Preclinical

- SysRetPro (BMBF)  
Dr. D. Rathbun
- Carbo Chip (Hector Foundation)  
Dr. W. Haq

### Clinical

#### Function Testing and Imaging

- Accommodation (Kerstan Foundation)  
Dr. T. Strasser
- Electrophysiology of Vision  
PD Dr. K. Stingl, Dr. T. Strasser, M. Kempf
- Color Vision psychophysics  
Dr. A. Werner
- Adaptive Optics

#### Clinical Research

- RD-Cure (Gene Therapy)  
Dr. D. Zobor, Dr. L. Kuehlewein
- QLT (Retinoid Substitution)
- Autosomal dominant Retinitis pigmentosa  
Prof. E. Zrenner, Dr. L. Kuehlewein
- CURETINA  
PD Dr. K. Stingl
- RUSH2A (Usher Syndrome and Retinitis pigmentosa with USH2A mutations)  
PD Dr. K. Stingl
- PROGSTAR /RETROSTAR (Morbus Stargardt)  
Prof. Zrenner, Dr. F. Nasser, Dr. G. Hahn
- Retina Implant  
Prof. E. Zrenner, PD Dr. K. Stingl, Dr. L. Kuehlewein
- SFB Robust Vision (Project 14)  
Prof. E. Zrenner, PD Dr. K. Stingl

### Collaborations

- European Reference Network ERN-EYE
- SFB Robust Vision
- RD-CURE Consortium
- Foundation Fighting Blindness (FFB):  
PROG-STAR / RETROSTAR, RUSH2A
- STZ eyetrial

## Institute for Ophthalmic Research Clinic for Hereditary Retinal Degeneration

Head: Prof. Dr. Eberhart Zrenner

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Centre for Ophthalmology

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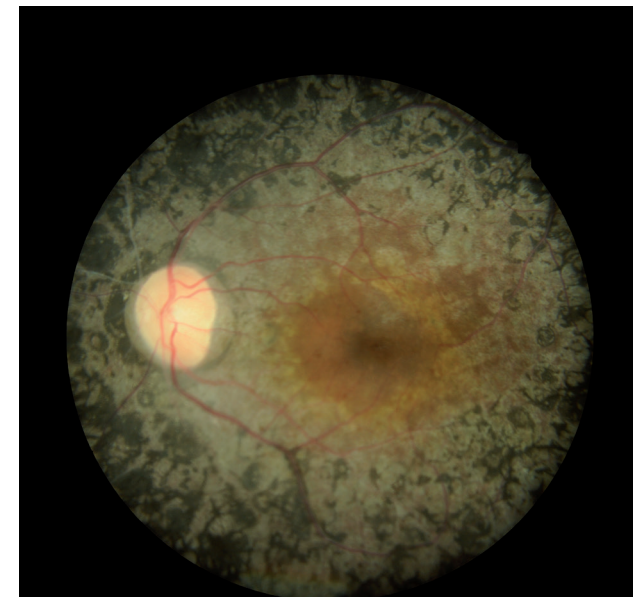
Web: [www.eye-tuebingen.de/zrennerlab](http://www.eye-tuebingen.de/zrennerlab)

### How to find us:



## Zrenner Lab

Pathophysiology of Vision and  
Clinic for Hereditary Retinal Degeneration





The professorship of Pathophysiology of Vision is dedicated to understand hereditary retinal disease mechanisms and subsequently to develop new treatments.

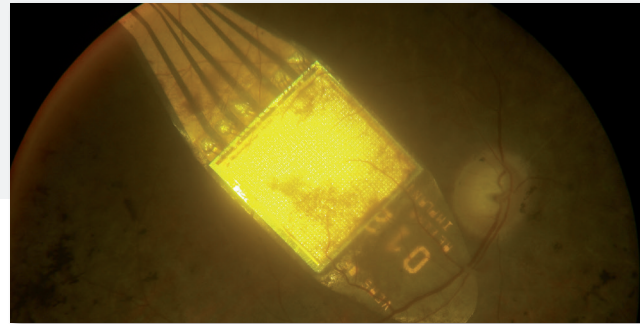
The clinic for hereditary retinal degeneration, founded in 1989, examines and counsels every year more than 600 patients with hereditary diseases of the retina (e.g. retinitis pigmentosa).

Our aim is to differentiate the various clinical forms of hereditary retinal diseases by specific functional tests and imaging, as well as developing and testing of novel therapeutic approaches.

The development of novel functional testing (electrophysiology of vision, psychophysics and low vision

tests) in combination with novel imaging techniques (e.g. adaptive optics) helps to improve the sensitivity and specificity of differential diagnoses and phenotype/genotype correlation in these hundreds of retinal diseases.

Basic research on electrostimulation of retinal neurons by multielectrode arrays (MEA) and calcium imaging is performed, as well as psychophysics of color vision for extended functional testing.



“Pioneering the development of electric subretinal implants.”

In close cooperation with the molecular genetics laboratory (Prof. Bernd Wissinger), as well as the Steinbeis center eyetrial for clinical studies (Prof. Barbara Wilhelm) and the University Eye Hospital (Prof. Karl Ulrich Bartz-Schmidt), many preclinical and clinical trials are conducted to investigate novel therapies for hereditary retinal degenerations. These include:

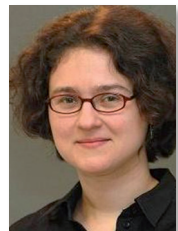
- Retinal prosthetics (Retina Implant Alpha AMS)
- Electrostimulation of the retina
- Pharmacotherapy and neuroprotection
- Gene therapy
- Cell-based therapy (stem cell research) together with Prof. Liebau

This work is supported by numerous research grants of the DFG, EU, BMBF, Hector- and Kerstan Foundation.



## Eberhart Zrenner

- Head
- Professor, Dr. med. Dr.h.c. mult.
- CIN Senior Professor of Ophthalmology



## Katarina Stingl

- PD Dr. med.
- Deputy Head

## Group Members

**Lab 1:** Dr. D. Rathbun, Dr. Z. Hosseinzadeh

**Lab 2:** Dr. W. Haq

**Lab 3:** Dr. A. Werner

**Lab 4:** PD Dr. A. Kurtenbach, Dr. T. Strasser

**Clinic:** Prof. Dr. E. Zrenner, PD Dr. K. Stingl (managing senior physician), Dr. L. Kuehlewein (FEBO), F. Nasser, MD Oph, Dr. D. Zobor (FEBO), S. Kramer, U.Fuchs, G. Haerer and M. Kempf

# Research toSee

## 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 groundbreaking ideas, their transfer into reality and their translation into diagnostics and therapy to help those that suffer from vision loss.