



## A CLEAR VIEW OF THE FUTURE



Bringing researchers and clinicians together to create innovative therapies for visually impaired people with currently untreatable eye diseases.

BY HENDRIK P.N. SCHOLL, MD, MA, FARVO

The Institute of Molecular and Clinical Ophthalmology Basel (IOB) was founded 5 years ago to shed light on eye diseases and develop treatments for affected patients. IOB is a nonprofit foundation that gives researchers independence and emphasizes the public benefit. The organization invests substantially in basic research and translating therapeutic candidates into clinical applications.

The prevalence of vision loss and blindness from eye disease is growing in Switzerland and worldwide. The most important contributing factors are an increase in life expectancy and associated aging of the population. In response, Botond Roska, MD, PhD, IOB's scientific codirector, and I sought to connect an array of research groups and technology platforms to develop treatments for diseases that are currently untreatable.

### FUNDING

IOB relies on different sources of funding. The founding members—Novartis, the University of Basel, and the University Hospital Basel—each committed to funding the institute, allowing our operations to run smoothly. It is important to note that Novartis' contributions do not constitute more than 50% of the foundation's support. As one of three members of the Foundation Board,

Novartis has priority in the negotiation of intellectual property that arises from the IOB's research work but not sole decision-making rights. The IOB is thus an independent research institute. A scientific advisory board evaluates our scientific performance independently of the foundation members.

The Canton of Basel-Stadt also helps to fund the IOB, an acknowledgement of our contribution to the excellent research environment in Basel. Some of the other institutes here are the Friedrich Miescher Institute for Biomedical Research, the Biozentrum, and the Department of Biosystems Science and Engineering.

### OUR WORK SO FAR

The IOB employs roughly 140 people from more than 30 countries. Our 11 research groups and six technology platforms are dedicated to advancing knowledge of eye diseases and developing new therapies for vision loss.

Basic researchers, physicians, and clinical researchers at our Molecular and Clinical Research Centers test biologic research results in preclinical and clinical settings and evaluate their usability. Findings from everyday clinical practice stimulate projects in basic research. The development of technologies for clinically testing the safety and efficacy of new therapies and the establishment of specific patient cohorts facilitates the translation of basic research

findings into clinical development with proof-of-concept and first-in-human studies.

In the past year, these joint efforts produced roughly 140 publications in the field. In 2021, an international team of researchers showed that optogenetic therapy helped a patient with retinitis pigmentosa partially regain visual function.<sup>1</sup> In 2022, the first ophthalmic gene therapy for the treatment of a specific form of retinitis pigmentosa in Switzerland was performed at the Eye Clinic of the University Hospital Basel.

To promote the efficiency of cooperation and scientific exchange between researchers, we will integrate the IOB and the Eye Clinic in a joint building. We view this integration as integral to success. Not only will it allow our researchers and clinicians to work closely together, but it will also permit visually impaired patients to receive care on-site. ■

1. Sahel JA, Boulanger-Scemama E, Pagot C, et al. Partial recovery of visual function in a blind patient after optogenetic therapy. *Nat Med.* 2021;27(7):1223-1229.

### HENDRIK P.N. SCHOLL, MD, MA, FARVO

- Professor of Ophthalmology and Head, Department of Ophthalmology, University Hospital Basel, Switzerland
- Director, Institute of Molecular and Clinical Ophthalmology Basel, Switzerland
- hendrik.scholl@iob.ch
- Financial disclosure: None