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**Prof. Dr. Hans-Christof Schober**

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**Prof. Dr. Paul A. Sieving**

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**Prof. Dr. rer. nat. Oliver Stachs**

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**Prof. Dr. Markus Tiedge**

*Universität Rostock, Institut für Medizinische Biochemie und Molekularbiologie*

**Prof. Dr. Peter Wiedemann ML**

*Universität Leipzig, Universitäts-Augenklinik*

**Prof. Dr. Andreas Wree**

*Universität Rostock, Institut für Anatomie*

**Prof. Dr. Dan Ziegler**

*Universität Düsseldorf, Institut für Klinische Diabetologie, Deutsches Diabeteszentrum*

**Dr. Andrey Zhivov**

*Universität Rostock, Klinik und Poliklinik für Augenheilkunde*



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Leopoldina Symposium

## Vision and Diabetes

March 15<sup>th</sup> – 16<sup>th</sup>, 2013

**Please register here:**

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**Congress Organisation**

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**Venue:**

Max Planck Institute for Demographic Research

Konrad-Zuse-Straße 1

18057 Rostock, Germany

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# Vision and Diabetes

Rostock, March 15<sup>th</sup> – 16<sup>th</sup>, 2013

## Deutsche Akademie der Naturforscher

in cooperation with

## University of Rostock

## University of Leipzig

under the auspices of

## German Ophthalmological Society (DOG)

**Scientific Coordination:** Prof. Dr. R. F. Guthoff ML (Rostock)

Prof. Dr. P. Wiedemann, ML (Leipzig)

**Information:** Universitäts-Augenklinik Rostock

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**Organisation:** targomed GmbH, www.targomed.de

Dear Colleagues and Friends,

It's our pleasure to invite you to the first Leopoldina-Symposium on "Vision and Diabetes" held in Rostock from 15<sup>th</sup> to 16<sup>th</sup> March 2013. Globally, as of 2010, an estimated 285 million people had diabetes, 90 % with type II. Its incidence is increasing rapidly and by 2020 this number is estimated to double with a special impact on Asia and Africa.

Ophthalmology plays a major role in the management of microangiopathic diabetic complications mainly addressing the retinal circulation. The main goal of the meeting is to show the scientific interface between endocrinology and ophthalmology. Recently, it could be demonstrated that diabetic small fibre neuropathy is also affecting corneal innervation at an early stage. Confocal in-vivo microscopy has shown its potential to non-invasively quantify corneal nerve fibre densities. Discussions are ongoing whether retinal nerve fibres assessable by high resolution OCT is also involved to evaluate retinal nerve fibre layers centrally as well as surrounding the optic disc. Unexpectedly, we could not yet demonstrate a close correlation between microangiopathy and small fibre neuropathy as demonstrated in corneal nerve density. Experts will highlight new insights in possible pathomechanisms of both aspects of the disease and will discuss preventive and therapeutic options for the First and Third World.

Prof. Dr. R. F. Guthoff ML

Prof. Dr. P. Wiedemann ML

# Program

Friday March 15<sup>th</sup>, 2013

## 15:00 Welcome address

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## 15:05 Opening remarks

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Rudolf F. Guthoff ML

## Session1: Advances in diabetes research

**Moderators:** Simone Baltrusch, Dan Ziegler

## 15:10-17:30

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### Neurodegeneration: Lessons for the diabetic retina

Hans Peter Hammes

### Neuropathy in diabetes and prediabetes – diagnostic and therapeutic considerations

Dan Ziegler

### Early detection of glial dysfunction

Andreas Reichenbach

### Obesity and vascular damage

Matthias Blüher

### Mitochondrial dysfunction and diabetes

Simone Baltrusch

### Dicarbonyl stress and diabetes

Peter Nawroth ML

### In vivo biomarkers of retinal neural and glial changes in diabetes

Edoardo Midena

## 17:30-18:00 Coffee break

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## Public Evening Lectures

## 18:00-19:00

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### Demography of diabetes mellitus in aging populations

Gabriele Doblhammer-Reiter

### Diabetic research – past, present and future

Paul A. Sieving

## 19:30 – 22:00 Maritime Event

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Saturday March 16<sup>th</sup>, 2013

## Session 2: Ophthalmic imaging: The eye as a biomarker for neuropathy

**Moderators:** Rayaz Malik, Andreas Wree

## 09:30-11:50

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### Novel imaging techniques

Jens Dawczynski

### Advances in in-vivo imaging of corneal nerves

Oliver Stachs

### Software-based imaging and quantitative analysis of the corneal sub-basal nerve plexus

Bernd Köhler

### Subbasal epithelial nerve plexus – its present role in the evaluation of diabetic neuropathy

Rayaz Malik

### Pathogenesis of corneal nerve damage

Marine Hovakimyan

### The subbasal nerve plexus and its relevance for clinical research

Andreas Wree

### OCT and diabetic maculopathy can it guide the management

Peter Wiedemann ML

## 17:30-18:00 Lunch break

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## Session 3: Diabetes care – today and tomorrow

**Moderators:** Gabriele Lang, Christof Schober

## 13:00-15:00

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### Early detection of neural dysfunction

Thomas Gardner

### In- and outpatient diabetes care – a practical approach

Hans-Christof Schober

### Risk Factors and Pathogenesis of Diabetic Retinopathy

Gabriele Lang

### Therapies on Retinopathy

Francesco Bandello

## Recent innovations for antidiabetic therapy

Peter Baumgart

## Diabetic neuropathy in Sub-Saharan Africa

Andrey Zhivov

## 15:00-15:30 Panel Discussion

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**Chairmen:** Guthoff, Wiedemann

**Panelists:** Ziegler, Gardner, Hammes, Malik, Tiedge

## 15:00-15:30 Closing remarks

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Peter Wiedemann ML

## Speakers:

### Prof. Dr. Francesco Bandello

University Vita-Salute Scientific Institute San Raffaele, Department of Ophthalmology, Milano, Italy

### Prof. Dr. Simone Baltrusch

Universität Rostock, Institut für Medizinische Biochemie und Molekularbiologie

### Prof. Dr. Matthias Blüher

Universität Leipzig, Klinik und Poliklinik für Endokrinologie und Nephrologie

### Prof. Dr. Peter Baumgart

Clemenshospital GmbH Münster, Klinik für Innere Medizin

### Prof. Dr. Jens Dawczynski

Universität Leipzig, Klinik und Poliklinik für Augenheilkunde

### Prof. Dr. Gabriele Doblhammer-Reiter

Universität Rostock, Wirtschafts- und Sozialwiss. Fakultät, Empirische Sozialforschung und Demographie

### Prof. Dr. Thomas W. Gardner

University of Michigan, Kellogg Eye Center, USA

### Prof. Dr. Rudolf F. Guthoff ML

Universität Rostock, Klinik und Poliklinik für Augenheilkunde

### Prof. Dr. Peter Hammes

Universität Mannheim, V. Medizinische Klinik – Nephrologie, Hypertensiologie, Endokrinologie, Diabetologie, Rheumatologie