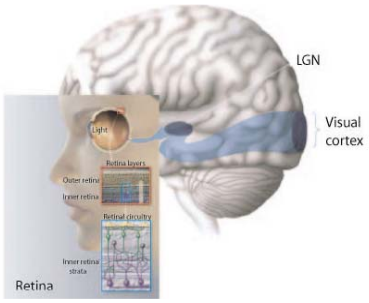
RETICIRC

"Circuit specific approaches to retinal diseases"



The RETICIR project focuses on neuronal mechanisms of vision from photoreceptor level to visual Cortex. Physiological knowledge of the visual System will be used to address pathophysiological neuronal mechanisms of diseases affecting vision. We bring together specialists on the mechanisms of vision and retinal circuitry to collaborate with researchers investigating the (patho-) physiological mechanisms of retinal diseases in order to design new therapeutic approaches and rehabilitation strategies.

The retina is our most complex sensory organ. Blindness in man often results from dysfunction of this complex neural network. Some retinal diseases depend only on malfunctioning of photoreceptors. However, for a number of retinal diseases, the retinal circuitry is a major part of the problem. For effective strategies for treatment of those diseases and for all attempts to restore vision, understanding of the retinal circuitries is essential.

Therefore, the core of our strategy is that understanding the structure and function of specific retinal circuits should be used to find rational therapies to retinal diseases. We will focus our efforts on specific circuits in the retina where system level description from basic science can be directly used to translational studies. The way we built our team reflects our strategy:

First	we have basic science teams that developed animals where specific retinal cell types of specific circuits are marked or modified.
Second	we have teams that are experts in optical and physiological recordings as well as behavioural readouts which will analyze these animals.
Third	we have teams that are experts in studying the retinal disease mechanisms in these animals.

By using the results of both animal systems, we will be able to study general mechanism in retinal circuitry, generate fundamental knowledge about general principles of retinal neural processing and increase the chance of successful translation to the human condition.

The European Commission has been selected the RETICIRC project for receiving a seventh framework grant of up to € 2.25 million for a period of 3 years, starting January 2009.

The members of the RETICIRC consortium are

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Germany	Reto Weiler, Dept. of Neurobiology, University of Oldenburg
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