Welcome to Ehud Zohary’s Lab. Our research is focused on how our brain generates a representation of the world around us, combining incoming perceptual information with memory-based expectations (of what it should be), to act on it. Consider the demo you’ve just seen, showing a visual scene, typical scanning patterns, and the image generated on your retina. The visual image is heavily blurred in the periphery. We therefore constantly scan the visual scene with our eyes, thereby generating a novel retinal image with every new eye movement. Incredibly, our brain seamlessly generates a stable representation of the visual scene in spite of this jerky and incomplete visual information. This perceptual stability is so robust that we live in an illusion that we see everything at the highest precision all at once. In our laboratory we conduct experiments trying to gain further understanding of the phenomenon.

We are also interested in understanding changes in cortical representations. For example: how do the blind construct a world image? What happens to their ‘visual’ cortex? How does our brain generate a body image? how does it change following amputation? Learn more about this and other projects.

Project Eye-Opener

Click here to enter the project’s website

Project eye opener is a unique program with a dual purpose: First and foremost to identify children that suffer from congenital blindness due to cataract, and surgically treat them. Second, and no less critical, to rigorously follow the development of various aspects of functional vision in time. Cataract removal, resulting in a clear image projection on the retina, is obviously a necessary condition for acquiring functional vision.
must learn to interpret the image on the retina, through development of the visual cortical pathways. We are convinced that a rigorous scientific inquiry is essential for a deeper understanding of the processes involved in vision acquisition, mapping the possible obstacles that may limit performance.

The ultimate goal of this study is to utilize this acquired information to develop optimal perceptual learning paradigms suited for the newly sighted. This would allow acquisition of a larger repertoire of visual skills, leading to a better quality of life for the treated children.

We are always looking for bright and motivated students, who have keen interest in Systems Neuroscience. Computational/analytical background is a major advantage. Please email Ehud Zohary if you qualify.

We thank the following agencies and private foundations for their generous support in the past & present: Israel-US Binational foundation (BSF); Israel Science Foundation, The McDonell Foundation, The Dana Foundation, & Israel National Institute for Psychobiology.

UPCOMING EVENTS

Learn more about our exciting upcoming events!

read more

Studying at ELSC

Our Int'l Ph.D. program provides outstanding students with top-notch courses in computational neuroscience.
The Jerusalem Brain Sciences Building will provide a state-of-the-art research and teaching facility for the Edmond and Lily Safra Center for Brain Sciences.

ELSC Media Channel

Get into our media channel and investigate ELSC's latest videos: seminars, public lectures, courses and video articles.

Source URL: http://elsc.huji.ac.il/zohary/pages/about-us