

The Brain Circle

of

The Edmond and Lily Safra Center
for Brain Sciences



*Only circles of cooperating brains can provide the
breakthroughs for understanding, and repairing, the brain*

The Hebrew University of Jerusalem



It is widely accepted that the enigma of the brain is the most challenging intellectual endeavor of the 21st century, “The Century of the Brain.”

At the Hebrew University of Jerusalem’s new **Edmond and Lily Safra Center for Brain Sciences (ELSC)**, interdisciplinary research teams are expanding our understanding of the human brain and discovering the causal relationships between genes, brain circuits, cognition and behavior. Experts are developing new approaches to the treatment of devastating neurological diseases and injuries that impair normal brain function.



UNDERSTANDING THE MIND

The Edmond and Lily Safra Center for Brain Sciences is positioned to become one of the top neuroscience centers in the world. Join us as we strive to help Israel’s finest minds reach the highest levels of achievement and scientific inquiry.

The mission of the Edmond and Lily Safra Center for Brain Sciences is to:

- **Enable** interdisciplinary scientific teams to decipher the secrets of the brain, starting with fundamental discoveries and often leading to practical applications
- **Initiate** original research that yields effective new therapeutic approaches to a spectrum of brain disorders
- **Increase** understanding of the complex ways in which neuronal circuit activity generates human perception, thought, behavior and creativity
- **Educate** new generations of multidisciplinary scientists equipped to continue pioneering work involving brain function, renewal and repair

To realize this mission, a state-of-the-art facility will be constructed on the Edmond J. Safra Campus in Jerusalem, Israel, and will house 30 research labs, including 15 new faculty to be recruited in the coming years. This ideal combination of talented faculty, cutting-edge laboratories, a rigorous scientific program, and collaborations with colleagues at The Hebrew University-Hadassah Medical Center will ensure Israel’s global leadership in neuroscience.



OPEN NEW INTELLECTUAL FRONTIERS: JOIN THE BRAIN CIRCLE

The Hebrew University of Jerusalem invites you to participate in this visionary, integrated pursuit of pioneering research and new brain-related technologies. By becoming a member of the ELSC's Brain Circle (BC), you can support the work of eminent scientists while sharing in the latest information about brain research—knowledge you'll receive directly from some of the world's foremost experts. Brain Circle members become partners-in-progress with ELSC biologists, physicists, physiologists, psychologists, computer scientists and mathematicians who are pooling their knowledge in order to achieve scientific breakthroughs.

As a Brain Circle member, you'll enjoy open dialogues with researchers specializing in varied fields, including dysfunctions and illnesses such as Parkinson's and Alzheimer's diseases, autism, dyslexia, and memory and movement disorders. You'll learn about the complex operation of human senses such as vision and hearing, and delve into the intricate processes underlying memory, learning and artistic expression.

Your participation as a Brain Circle member will spur the acquisition of essential knowledge in neuroscience. Your partnership with Hebrew University will help to translate new findings into novel therapies vital to the quality of life and health for millions of people.



BUILDING UPON ESTABLISHED EXCELLENCE IN NEUROSCIENCE

The new Edmond and Lily Safra Center for Brain Sciences builds upon Hebrew University's record of achievement and innovation in neuroscience, which reflects a pioneering multidisciplinary approach. This commitment to interdisciplinary research has propelled the success of Hebrew University's award-winning Interdisciplinary Center for Neural Computation (ICNC) and its outstanding Ph.D. Program in Brain Sciences.

The ICNC is the only brain research center in Israel and Europe that has ever won recognition as a "Center of Excellence" by the European Commission. Hebrew University's elite Ph.D. program in "Brain Sciences: Computation and Information Processing" is the largest and most comprehensive program of its kind in the world.

ICNC faculty work with leading international universities and institutions such as Caltech, Pasadena; Max Planck Institute, Munich; Center for Neurobiology and Behavior, Columbia University; Centre National de la Recherche Scientifique, Paris; Harvard's Center for Brain Science; Brain and Mind Institute, Lausanne; Center for Neural Systems, New York University; Weill Cornell Medical College; MIT; the Gatsby Unit for Computational Neuroscience, UCL, London.



RECENT ACHIEVEMENTS IN BRAIN RESEARCH

Hebrew University researchers have made many important breakthroughs, among them:

- **Restoring** sight in blind and visually impaired individuals using artificial vision/sensory substitution
- **Developing** brain-machine interfaces that enable severely paralyzed patients to activate a robotic limb directly from their brains
- **Uncovering** the perceptual basis of dyslexia and other learning disabilities
- **Translating** basic research of the basal ganglia to treat Parkinson's patients with advanced Deep Brain Stimulation
- **Investigating** spatial attention and unconscious information processing after brain damage
- **Uniting** artists and brain scientists for an exploration of creativity and aesthetic expression
- **Creating** new and powerful theoretical and modeling approaches for understanding how the nervous system processes sensory information and generates movement



INVESTING IN THE FUTURE: EXPANDING THE HORIZONS

The establishment of the Edmond and Lily Safra Center for Brain Sciences marks the strategic decision of the Hebrew University to expand its current neuroscience expertise, invest in futurist experimental facilities and technological innovations, and ensure its world leadership in cutting-edge multidisciplinary neuroscience research. The launch of the ELSC was made possible by a generous donation from the Edmond J. Safra Philanthropic Foundation. The innovative research activities of the ICNC and its prestigious Ph.D. program will be incorporated into the ELSC and will be expanded to meet the new frontiers of brain science and brain-related technologies. The blueprints of ELSC have been laid out by an international review committee chaired by Prof. Gerald D. Fischbach and consisting of renowned neuroscientists, including Nobel Laureates Prof. Bert Sakmann (Max-Planck Institute) and Prof. Richard Axel (Columbia University).

“Great universities will be judged in the coming decades by what they contribute to our understanding of the human mind. Indeed, some believe that our survival as a species depends on a better understanding of human actions, perceptions, patterns of thought, and emotions. Fortunately, you have an excellent foundation on which to build. With proper recruitment, new space, a new administrative structure, and funds to support the research, Hebrew University neuroscience will be ranked among the top five in the world.”

Prof. Gerald D. Fischbach, Columbia University

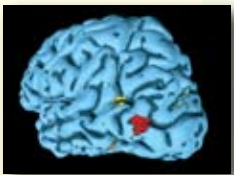
Report of the Neuroscience Review Committee, February 2007



BENEFITS OF BRAIN CIRCLE MEMBERSHIP

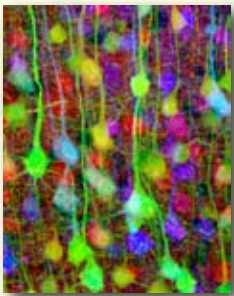


The Brain Circle is an international group of supporters whose donations foster cutting-edge brain science. The three annual Brain Circle meetings (in Jerusalem, Israel; Châteaux Lafite, France; and Saturnia, Italy) have been a highlight for both BC members and Hebrew University brain researchers. During the course of these unique events, Brain Circle members meet with top neuroscience researchers and discuss frontiers in brain research and new treatments for neurological diseases.



Brain Circle members make a five-year commitment to supporting ELSC activities through an annual contribution of \$10,000 or more.

This generous annual gift helps to fund doctoral student fellowships, brain research projects, the purchase of high-tech equipment, collaborative activities and exchange programs between The Hebrew University and other renowned neuroscience centers worldwide. Brain Circle members receive exclusive benefits:



- Invitations to meetings and annual conferences with leading brain researchers, held in Europe, the United States, and Israel
- Updates on recent scientific breakthroughs in brain research through the exclusive "Brain Book" website
- Invitation to participate in the annual Brain Circle meeting, which brings together Brain Circle members and Hebrew University researchers for a three-day event, consisting of cultural activities, lively debates, and exciting discussions
- Acknowledgement of your membership in Hebrew University publications such as *Gray Matters*, an annual magazine published exclusively for the Brain Circle members
- At the end of the third year of active membership, each Brain Circle member will have his or her name engraved on a special plaque, which will be placed prominently on-site at the Hebrew University



The Edmond and Lily Safra Center for Brain Sciences

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Professor Eilon Vaadia

Acting Director of the ELSC



Eilon Vaadia is the Jack H. Skirball Chair & Professor of Physiology, and former head of the prestigious Ph.D. program in Neural Computation. He earned his Ph.D. at the Hebrew University and conducted his post-doctoral training at John Hopkins University. His research focuses on the role of cortical microcircuits in sensorimotor learning and motor control, and on the cutting-edge field of Brain Machine Interfaces. Professor Vaadia serves on the advisory board for the Bernstein Center for Computational Neuroscience in Freiburg, Germany, and is the chief editor of *Frontiers in Neuroprosthetics*.

Professor Haim Sompolinsky

Director of the ICNC



Haim Sompolinsky is the William N. Skirball Professor of Neuroscience. He heads the Neurophysics Lab, which develops theories of brain functions such as memory, learning and perception, using methods and models from theoretical physics. Professor Sompolinsky maintains a long-term affiliation with Harvard Neuroscience where he is the Director of the Swartz Program for Theoretical Neuroscience. He is an Honorary Foreign Member of the American Academy of Arts and Sciences and a recipient of the 2007 Landau Prize for Brain Science. Professor Sompolinsky writes and lectures on the implications of neuroscience for human choice and moral identity.

Professor Merav Ahissar



Merav Ahissar is a Professor of Psychology and a member of the executive committee of the ICNC. She heads the prestigious Cognitive Studies Program. Professor Ahissar received her Ph.D. at the Hebrew University and conducted her postdoctoral research at the University of California, San Francisco. She develops theories of perception and learning, and explores the potential use of perceptual training techniques for ameliorating cognitive difficulties in dyslexia and other learning disabilities. Professor Ahissar is a recipient of the Rothchild Foundation's Bruno Award.

Professor Baruch Minke



Baruch Minke is a Professor of Physiology. He received his B.Sc. and Ph.D. at the Hebrew University and conducted his postdoctoral training at Purdue University. By using molecular genetics, biochemistry and electrophysiology, he identified and characterized a new type of membrane ion channel, the Transient Receptor Potential (TRP), which has become the "Rosetta Stone" for understanding how living organisms sense crucial components of their internal and external environment. Professor Minke is the director of the Kühne Minerva Center and serves on the editorial boards of two international journals.

Professor Idan Segev



Idan Segev is the David & Inez Myers Professor in Computational Neuroscience and former director of the Interdisciplinary Center for Neural Computation (ICNC). An alumnus of Hebrew University, he received his B.Sc. in Mathematics and Ph.D. in Experimental and Theoretical Neurobiology. He uses computational and theoretical tools to study how individual nerve cells and large networks of neurons compute and dynamically adapt to our ever-changing environment. Professor Segev is interested in the connection between art and the human brain, and facilitates conferences and publications that bring together artists and scientists.