



# A New Brain Research Agenda

*To raise new questions, new possibilities,  
to regard old problems from a new angle requires a creative  
imagination and marks the real advances in science.*

Albert Einstein

**THE EDMOND AND LILY SAFRA CENTER FOR BRAIN SCIENCES  
AT THE HEBREW UNIVERSITY OF JERUSALEM**

*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. The Hebrew University neuroscience community has a glorious history; many members of the current faculty are among the best in the world in their areas of interest. The remarkable students on all three campuses and the commitment to teaching are unsurpassed in our experience.*

Prof. Gerald Fischbach, Chair of International Neuroscience Review Committee  
for the Hebrew University, February 2007

## MODERN NEUROSCIENCE

The profound mysteries of the mind/brain continuum have captured the attention and imagination of the very best scholars and students worldwide. The questions – how the brain enables us to sense, create, move, feel, remember - have enticed physicists, chemists, mathematicians, psychologists, physicians, and philosophers alike. As we enter the 21<sup>st</sup> century, it is clear that with increased aging populations neurological diseases must become a major focus of research, and their cure will require a significant leap in our understanding of how detailed molecular and cellular mechanisms are linked to behavior through neuronal activity. Only then can we unlock the secrets of the brain and begin to ameliorate conditions ranging from Parkinson's and Alzheimer's diseases to psychiatric disorders, from learning disabilities in children to epilepsy. For all of these reasons, brain research is now at the forefront of the scientific agenda.

## NEUROSCIENCE AT THE HEBREW UNIVERSITY

The Hebrew University of Jerusalem is consistently rated as the top Israeli university and is among the leading universities worldwide in international surveys; its alumni and faculty have been awarded seven Nobel Prizes. Neuroscience research has been one of the most successful domains of activity at the Hebrew University, and our neuroscientists have achieved international recognition for their accomplishments in many areas, including cellular, molecular and circuit functions, learning and movement control, computational and theoretical neuroscience, and human perception and cognition.

Future neuroscience research at the Hebrew University will expand upon its record of excellence and innovation in its multidisciplinary approach to brain science. This approach was pioneered by the award-winning Interdisciplinary Center for Neural Computation (ICNC), the only brain research center in Israel and Europe to win recognition as a "Center of Excellence" by the European Commission. The Hebrew University's elite PhD program in Brain Sciences - Computation and Information Processing - is the largest and the most comprehensive program of its kind in the world.

Following the recommendation of the Fischbach international Neuroscience Review Committee, which included two Nobel Laureates, the Hebrew University of Jerusalem resolved to establish a new center for brain research with a focus on frontier areas identified by the committee as areas of opportunity for future growth.

## ELSC: SHAPING THE FUTURE OF BRAIN SCIENCES

The Edmond and Lily Safra Center for Brain Sciences (ELSC) will make Israel a leader in the study of neuroscience and will spearhead the drive for the Hebrew University to become one of the world's top centers for the study of the brain. At ELSC, the focus is on multi-level inquiry: research groups examining the brain at its molecular, cellular, circuit and behavioral levels all work in close proximity and share common goals. This groundbreaking mode of research – rarely found in other neuroscience institutes – is crucial to advancing our understanding of the brain.

ELSC will make it possible for interdisciplinary scientific teams to decipher the mysteries of the brain, with basic discoveries often leading to practical applications. Scientists will initiate original research that will yield effective new therapeutic approaches to a spectrum of brain disorders, and provide an increased understanding of the complex ways in which neuronal circuit activity generates human perception, thought, behavior and creativity. At ELSC, physicists, psychologists, engineers, educators, computer scientists, and philosophers will work side by side with neurobiologists and physicians to facilitate scientific breakthroughs and to cultivate the next generation of brain scientists in an integrated interdisciplinary environment.

With outstanding young faculty recruits, world-renowned experts, talented students, ample research funding, state-of-the-art equipment, and a new modern facility, the Center will serve as a home and a magnet for cutting-edge research and brain-related technologies. The research conducted at ELSC will have profound implications for our ability to understand and treat many neurological and psychiatric disorders, and will prove a significant contribution to worldwide progress in brain science.

*Philanthropic partners who share the dream of a new brain agenda are needed to help fund laboratories, equipment, fellowships, young faculty recruitment costs, a new state-of-the-art building and more.*