The Edmond and Lily Safra Center for Brain Sciences emerged from The Interdisciplinary Center for Neural Computation (ICNC). 20 years of computational neuroscience research.

Prof. Idan Segev, former ICNC director, described ICNC vision:

A Sense of Excitement

A sense of excitement is in the air - typical to times when a challenging enigma is the intense focus of research, when an intellectual breakthrough is near. The most formidable frontier at the cusp of the 21st century, is the exploration of how the brain works.

The faculty members of the Interdisciplinary Center for Neural Computation (ICNC) at the Hebrew University of Jerusalem are involved in creating a new and very exciting approach to solving the mysteries of the brain.

A Sense of Optimism:
Computational Neuroscience
Computational neuroscience is a new and ambitious research discipline, reflecting a deep conviction among scientists worldwide that (i) the brain enigma is clearly beyond the frame of any one research field. (ii) To fathom the mysteries of the brain, we need to develop a new theoretical framework that will enable us to associate the different levels of brain function - from molecules to neurons to networks to systems and to behavior. (iii) Understanding the multifaceted nature of the functioning brain requires close collaboration across experimental fields - biology, medicine and cognitive psychology, in addition to theoretical concepts and tools derived from physics, computer science and mathematics. Knowledge of hardware design and engineering is also crucial to constructing brain-inspired intelligent machines. Philosophical questions are also fundamental to this endeavor. New research centers in computational neuroscience have begun to flourish all over the world, advocating and practicing an integrated approach to the brain. It is this new intellectual endeavor that gives rise to new hopes and high expectations. The ICNC is one of the first of such centers; it is renowned the world over for its scientific achievements and its unique Ph.D. program. It is source for pride for its members as well as the Hebrew University.

A Sense of Adventure

The ICNC capitalizes on unusually intense scientific collaboration among its members (rare among eccentric scientists). We have perhaps learned from the brain itself that close interaction among component parts is essential to successful performance of the whole. The ICNC faculty takes great pleasure in educating the largest corps worldwide of a new breed of 60 enthusiastic Israeli students.
enrolled in the University's honors Ph.D. interdisciplinary program in Computational Neuroscience.

The Center supports cutting edge research projects on brain research; it organizes and sponsors international research workshops; promotes exchanges with representatives from industry towards the implementation of research findings to real-life applications, and hosts post-doctorate fellows from around the world who come to take part in research at the ICNC.

Understanding how the brain functions bears economic, social and medical implications at least as great as those of the industrial revolution and the current boom in information technology. Such future breakthroughs will enable us to understand the processes and mechanisms of storing and analyzing sensory information, and hence enable us to find cures for neurological diseases, replace parts of living brains, build artificial brains and use our own brains more efficiently.

Today such breakthroughs are within reach - through our grasp of the brain as a comprehensive system that performs specific computations. One thing is clear - a fantastic adventure lies ahead!

Prof. Idan Segev,

The ICNC.

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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.

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