

# When the Future Can't Wait

The most dramatic constant in modern science is constant change and, to keep pace, scientists in small countries such as Israel need help in moving from today's areas of strength to tomorrow's "hot" fields. Unfortunately traditional, reactive grants competitions only reward excellence where it already exists. The idea of a proactive science funding mechanism for Israel was first raised at the 1994 *Conference on Strategies for the National Support of Basic Research*, cosponsored by the Israel Academy of Sciences and Humanities (IASH) and the C. H. Revson Foundation. In 1996 these ideas were embodied in a new **FIRST (Focal Initiatives for Research in Science and Technology)** program, cosponsored by both organizations.

FIRST seeks to proactively identify and promote priority interdisciplinary research areas which are not currently sufficiently represented in Israel. In June 1997 the FIRST Advisory Board selected its first three areas for in-depth study by specially appointed subcommittees. All three lie at the exciting interface between modern science and advanced technology. This should provide this first set of FIRST projects with a certain coherence, and help redirect existing resources into new areas which, if successful, could have almost immediate application in high-tech industry.

The **Applications of Theoretical Computer Science** initiative seeks to translate recent mathematical advances concerning the nature of computation into new solutions for long-standing problems in such fields as computational learning, linguistics, information retrieval and bio-informatics. Although the latter grew out of a need to organize and analyze the immense amounts of DNA sequencing data generated by the Human Genome Project, it now includes computational evolution ("artificial life"), biomolecular computation and computational neuroscience.

The **Nanoscience** initiative focuses on ultra-small devices in the nanometer (10 Angstrom) size range, in which small constructs of atoms and molecules are used to undertake measurements, manipulate motion or suggest new principles for realizing this futuristic technology. Such research could have important implications for directed catalysis, quantum computing and biomolecular scaffolding, and could also lead to the discovery of many new, unexpected, phenomena.

Both areas were approved at the FIRST Advisory Committee's third meeting in January 1998. A third potential priority area, Microelectrical-mechanical systems (MEMS) was deemed not yet ready for funding, and an international workshop and other preparatory activities were authorized. Functional Genomics, Evolution and Computational Biology are other topics being prepared for further consideration. The Committee's next task is to review specific research proposals in its two selected areas and to "separate the wheat from the chaff."



## A HISTORY IN PICTURES

The ideas leading to FIRST were first raised at a 1994 conference co-hosted by: (seated) C. H. Revson Foundation President, **Eli N. Evans**, and Chairman of the Board, **Prof. Matina Horner** and by (L to R) President **Prof. Joshua Jortner** and Senior Advisor **Prof. Alex Keynan** of the Israel Academy. The new mechanism was warmly supported by (L to R) current Israel Academy President **Prof. Jacob Ziv** and Executive Director **Dr. Meir Zadok**. By January 1998, the FIRST Advisory Board (including L to R, FIRST Chairman, **Prof. Joshua Jortner**, ISF Chairman, **Prof. Paul Singer** and **Prof. Hermona Soreq**), had already identified three fields which Israel should proactively stimulate to remain competitive in the decades ahead.