



## FORUM PROFILE

### Professor Jacob Ziv

The new President of the Israel Academy of Sciences and Humanities, Professor Jacob Ziv, is a world-recognized expert in the fields of information theory, data compression and statistical communication. Born in Tiberias in 1931, he received his B.Sc. (1954), Dipl. Ing. (1955) and M.Sc. (1957) degrees in Electrical Engineering from the Technion, and his Sc.D. (1962) degree from the Massachusetts Institute of Technology. He is a Distinguished Professor and H. Gross Professor of Electrical Engineering at the Technion, where he has also served as Dean of the Faculty and as Vice President for Academic Affairs. His Sabbaticals include several appointments (1977, 1983, 1991) at Bell Laboratories (USA).

Professor Ziv's pioneering work in information theory provided the fundamental basis for the coding techniques used in space communications and exploration. His work in multiple-user source coding help free informatics from the single-user paradigm. He is best known, however, for his series of landmark scientific papers, co-authored with Abraham Lempel, on the limits of universal

data compression. These breakthroughs led to the famous Lempel-Ziv (LZ) algorithm, which has subsequently formed the basis of simple, but powerful, computer programs that can compress (remove redundancy from) data streams by building dictionaries of past sequences.

Millions of people unwittingly use the Lempel-Ziv algorithm every day. It is an essential component of our basic technological culture. It is an important part, for example, of the Microsoft Windows operating system, where it compresses files by a factor of two. It is built into literally millions of modems, where it cuts transmission times into half. It is used throughout the Internet and World Wide Web and on CD-ROM's to compress data and speed its transmission. Prof. Ziv's insightful discoveries have indeed helped change the world in which we live.

Professor Ziv's recent awards include the Israel Prize (1993), Israel's highest honor, the Marconi International Fellowship Award (1995) and IEEE R.W. Hamming Medal (1995). During 1985-91, he served as the Chairman of the Planning and Budgeting Committee (VATAT) of Israel's Council for Higher Education, which is responsible for allocating the Israeli Government's funds for education and research among all Israeli institutions of higher education. Professor Ziv served as Head of the Sciences Section of the Israel Section of the Israel Academy, before becoming its President in October 1995, succeeding Professor Joshua Jortner.

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### Forum :

How do you propose to do this?

**KEYNAN:** *The Israel Academy seeks to establish a permanent, Israel Center for Science Policy to perform these tasks. The great respect of Israel's scientific community for the Academy, its objectivity and its independence, will be important to this initiative's success. The Israel Academy is currently seeking international donors to help it establish such a Center.*

### Forum :

How can the AFBRI help?

**KEYNAN:** *The AFBRI can, and does, serve as a clearinghouse, providing additional information to potential donors on these and other opportunities to join forces with the Israeli scientific community in assuring the future of Israel's basic research. It also facilitates the participation of potential donors in such initiatives.*