

# CMRR Professor Jack K. Wolf Elected to National Academy of Sciences



April 27, 2010

On April 27, the [National Academy of Sciences](#) (NAS) announced the election of CMRR Professor [Jack K. Wolf](#) to membership in that prestigious institution, one of the highest honors that can be bestowed on U.S. scientists and engineers.

A professor in Electrical and Computer Engineering in the [Jacobs School of Engineering](#), Jack was among the 72 new members and 18 foreign associates elected to the academy this year “in recognition of their distinguished and continuing achievements in original research”.

Jack joins 86 other UC San Diego faculty members who have previously been named to membership in the academy, which was signed into being by President Abraham Lincoln in 1863 to serve as an official adviser to the federal government on matters of science and technology.

“Jack Wolf works in the area of information theory, and UCSD has one of the strongest – if not the strongest – academic information theory groups in the country,” said Larry Larson, professor and chair of the ECE Department in the Jacobs School. “Jack played a big role in building this up; he is at the heart of our historical strength in this field, which now includes the UCSD Information Theory and Applications Center.”

In the field of information theory, Jack is probably best known for the Slepian-Wolf theorem, which is a fundamental result that addresses efficient compression of correlated streams of data. The Slepian-Wolf theorem was published in 1973, but it has experienced an explosion of renewed interest because of its applicability to new technologies such as distributed sensor networks. With the advent of new and powerful channel coding schemes such as turbo codes and LDPC codes, practical systems implementing “Slepian-Wolf coding” now can approach the efficiency promised by the famous theorem.

Jack is also widely recognized as an expert in signal processing and coding techniques for digital recording. He was an early proponent of applying information theory and communications theory in the design of high-capacity storage devices using magnetic and optical recording. Ideas that originated in the research of Jack’s “Signal Processing” group at CMRR – known as the “WolfPack” – have found their way into several commercial magnetic tape and disk drives.

Election to the NAS is just the latest of numerous honors that Jack has received. He is also a member of the National Academy of Engineering and the American Academy of Arts and Sciences, and he is the recipient of the 2004 IEEE Richard W. Hamming Medal, the 2001 Claude E. Shannon Award of the IEEE Information Theory Society, the 1998 IEEE Koji Kobayashi Computers and Communications Award, and the 1990 E. H. Armstrong Achievement Award of the IEEE Communications Society. Also known for being an outstanding teacher, Jack received a UCSD Distinguished Teaching Award in 2000.

Congratulations, Jack!