

**Title:**           **The Information Theoretic Roots of Digital Communication**

**Speaker:**       Robert G. Gallager, Professor Emeritus, M.I.T.

**When:**           Wednesday, May 2, 2007, 3:30 – 4.30 PM

**Where:**          Ball Building, Room 326

**Abstract:** Information theory started as an elegant academic theory, but gradually came to dominate the basic architecture and the major system components of modern digital communication. We discuss this transition from theory to practice using personal anecdotes, various landmark events, and a fair amount of speculation. What can this history tell us about the appropriate role of research in guiding future technological advances?

**Biography:** Bob Gallager received the BS degree from the University of Pennsylvania, the SM and ScD degrees from MIT, all in electrical engineering. He has been a faculty member in the department of Electrical Engineering and Computer Science at MIT since 1960. He has worked primarily on information theory, digital communication, and networks. He is the author of the textbooks *Information Theory and Reliable Communication* (Wiley, 1968), *Data Networks* (Prentice-Hall, 2<sup>nd</sup> edition, 1992, co-authored with Dimitri Bertsekas), and *Discrete Stochastic Processes* (Kluwer, 1995). He is a life Fellow of the IEEE, a member of the National Academy of Engineering (1979), a member of the National Academy of Sciences (1992), and a Fellow of the American Academy of Arts and Sciences (1999). He received the IEEE Medal of Honor in 1990, the Technion Harvey Prize in Science and Technology in 1999, the Eduard Rhein Prize for basic research in 2002, and the Marconi Award in 2003. He is currently an emeritus professor of electrical engineering at MIT.