

Princeton University

Honors Faculty Members
Receiving Emeritus Status



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The biographical sketches were written by
colleagues in the departments of those honored.

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Faculty Members Receiving Emeritus Status

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Stuart Schwartz



Stu Schwartz joined the faculty as an assistant professor in 1966 after receiving his Ph.D. from the University of Michigan. For more than four decades, Stu has served the University, the School of Engineering and Applied Science, and the Department of Electrical Engineering as a committed teacher, adviser, and mentor. In his research, he has made important contributions to statistical signal processing and communication theory, specifically in the areas of detection and estimation, channel equalization, and adaptive and wireless communications.

Born in New York City on July 12, 1939, Stu received his B.S. and M.S. degrees in aeronautical engineering in 1961 from the Massachusetts Institute of Technology. While at MIT, he was associated with the Naval Supersonic Laboratory working on the design of high-speed wind tunnels, and the Instrumentation Laboratory (now the Draper Laboratories), working in the area of nonlinear, sampled-data systems. After graduation, he worked at the Jet Propulsion Laboratory in Pasadena, California, on the “man to the moon” project, focusing on problems in orbit estimation and spacecraft telemetry for the Ranger series of launches. He returned to school and received a Ph.D. in information and control engineering from the University of Michigan in 1966. He wrote his thesis, “An Empirical Bayes Technique in Communication Theory,” under the supervision of William Root.

After joining the electrical engineering department in 1966, he was promoted to associate professor in 1970 and full professor in 1976. In 1977, he assumed the additional position of associate dean for the School of Engineering and Applied Science and served in that position until 1980. He was responsible for the overall academic program of the school, with particular focus on

interdepartmental programs and freshman-year academic activities. He has, in the past, also served on a number of major University committees. He served as chair of the department from 1985 to 1994. During that period, the department grew from 13 to 24 faculty members. He instituted a computer engineering activity on both the undergraduate and graduate levels, an optical and opto-electronic teaching and research program, and established an advanced technology center (ATC) in photonics and opto-electronics materials (POEM). The POEM/ATC has received substantial capital funding from the New Jersey Commission on Science and Technology.

During the academic year 1972–73, he was a John S. Guggenheim Fellow and visiting associate professor at the electrical engineering department of the Technion in Haifa, Israel. During the academic year 1980–81, he was a visiting member of the technical staff of the Radio Research Laboratory at Bell Telephone Laboratories in Crawford Hill, New Jersey, working in the area of mobile telephony (wireless communications). He was a visiting professor at Dartmouth College and the University of California–Berkeley during the academic year 1989–90, and a visiting professor in the Image Sciences Laboratory at ETH, Zurich, Switzerland, from February to July, 1995.

In his research, Stu has been supported mainly by the National Science Foundation, Office of Naval Research, and the Army, and has supervised 34 Ph.D. theses since joining the faculty. He was one of the first researchers to use Fourier series methods in probability density estimation and related problems. With his first graduate student R. D. Martin, he introduced robust statistical procedures to signal detection problems in the engineering literature. He was one of the first to derive an estimator-correlator structure for an important class of digital communication problems. With a colleague at Bell Laboratories, Y. S. Yeh, he developed a very efficient technique to evaluate

sums of log-normal random variables. This has proved central for performance evaluations and probability of outage calculations in wireless communications under the realistic assumption of both fading and shadowing. In the area of wireless, he has worked on equalization of multi-user receivers in high-speed CDMA networks, adaptive and robust detection procedures, application of game theory to wireless communication networks, and radio source location. Stu is a fellow of the IEEE and served as president of the IEEE Information Theory Society.