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In Memory of Robert E. Kalaba

Robert Kalaba was a man of unusual qualities: honesty and sincerity, a sense of grace and dignity, and a brilliant and unassuming mind.

He was a scholar's scholar. He loved teaching and research with a passion unequaled in anyone I know. He contributed 12 books (Refs. 1–12) and over 600 journal articles to the scientific community. He was inventor or coinventor of numerous areas in applied mathematics like quasilinearization, invariant imbedding, aspects of dynamic programming, of system identification, of inverse scattering, of radiative heat transfer, of analytical dynamics … the list goes on and on, and I must desist for fear of boring even the most patient readers. But what marked him most of all was that rare mix of wisdom, maturity, and internal self-confidence that prevented him from talking about his own accomplishments.

Robert Kalaba received a double bachelor's degree from CUNY, in New York, in Electrical Engineering and Mathematics. He completed his undergraduate work in a record time of 2 years. He received his PhD in 1957 from the NYU Courant Institute for Mathematical Sciences. Among his professors were Richard Courant, Fritz John, J. J. Stoker, and Peter Lax. After a 2 year stint with the US Navy, he came to California and worked with Richard Bellman at the RAND Corporation in Santa Monica. In 1974, he joined the University of Southern California (USC) as Professor of Electrical Engineering and Economics. He was one of the founders of the Department of Biomedical Engineering at USC and was active in research and teaching up until the week before his death. He

received both the Outstanding Senior Research Award and the Outstanding Teaching Award from the Viterbi School of Engineering of USC for his contributions to the School.

He was a delightful person to be around, an inspiration and role model for many. I worked with him for the last 18 years, and we would see one another about once a week, and sometimes twice and thrice. He was my colleague, my mentor, and my friend. His keen sense of curiosity, his brilliance, his calm and measured manner, and his congeniality will be cherished in the memory of everyone he touched.

Above all, he was a kind man: an introspective and thoughtful person, with an exceedingly high sense of integrity. He once told me during one of our weekly meetings that the first step to wisdom was recognizing that kindness was above it. This stands out in my mind, because it was a rare occurrence; in fact, the only one of its kind. Because his advice was given purely by example.

I have often thought about the reasons for his incredible accomplishments: Robert's high standards, his happy and kindly personality, and the irrepressible optimism which he spread all around him. One can find many. I am sure that his teachers at NYU influenced him; he often talked about them. They were among the greatest applied mathematicians of the last century. Another reason might be his colleagues and friends; for he was the wingman in Dick Bellman's team—bright enough to interact with him and not be overshadowded, mature enough to smooth over things that Bellman would leave rough-edged in his personal interactions. At the RAND Corporation, he worked with Harry Markowitz, Kenneth Arrow, Stewart Dreyfus, Herbert Simon, John von Neumann, and Lotfi Zadeh, a veritable Who's Who that includes 3 Nobel Laureates and 3 others of commensurate stature. But I think the real reason, the wind beneath his wings as it were, was the unstinting love of his family, which he richly reciprocated.

Robert Kalaba distinguished himself equally by the purity and nobility of his character and by a rare modesty which made his person cherished to the same degree as was his brilliance. He will live in the memory of many: the scientific community, for his seminal contributions; the thousands of students who he thought, nurtured, and inspired; and the hundreds of colleagues who he touched with his grace, kindness, and genius.

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