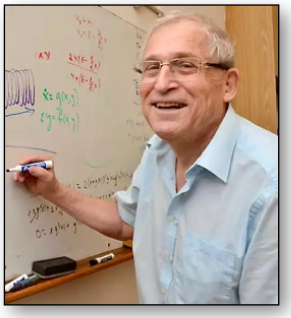
Professor Zvi Artstein
1943–2025



Zvi (Zvika, to his friends) Artstein was born in Tel Aviv, Israel. In 1968 he received his B.Sc. in mathematics and physics from the Hebrew University of Jerusalem, and continued his graduate studies there, in mathematics, under the guidance of Prof. Yisrael (Robert John) Aumann. The title of his Ph.D. thesis, submitted in 1973, is "On the integral of set-valued functions".

Following a post-doctoral position with the Division of Applied Mathematics at Brown University, in 1975 he joined the department of Theoretical Mathematics at the Weizmann Institute of Science, in Rehovot, Israel, and stayed there throughout his career. He was promoted to Associate Professor in 1979 and to Professor in 1985, holding the Hettie Heineman Chair of Mathematics. He served as Dean of the Faculty of Mathematics and Computer Science between 1989–1998 and, again, between 2005–2010. In 1998, he was Chair of the Council of Professors at the Weizmann Institute. From 1999 to 2002 he served as the Institute's Vice President for Technology Transfer and Chair of Yeda, the technology transfer company of the Weizmann Institute, including a six-months period as Yeda's CEO. From 2001 until his death he served on the International Board of the Weizmann Institute. He transitioned to Emeritus status in 2016, continuing his research work. Zvika was also active within the Israeli Association for Automatic Control, serving on its Extended Management team until 2022.

His broad research interests ranged from theoretical to applied mathematics, and included seminal results in dynamical systems and control, including variational limits, relaxation, singular perturbations, probabilistic approaches and hybrid systems, issues in decision theory and optimization, evolution and mathematical education. Just a few examples include Artstein's Theorem for the existence of a smooth stabilizing feedback control, Artstein's Circles of Lyapunov-stabilizable systems where a stabilizing feedback is inherently non-smooth (and other important studies of Bang-Bang control and convexity), Artstein's Reduction of the stabilization of a system with input delay to a system without delay, Artstein Inequalities concerning probabilistic investigations of geometric bodies and measurement errors, Artstein-Vitale SLLN concerning random sets in linear spaces, Artstein–Prikry Selections concerning temporally discontinuous differential inclusions, Artstein's Hybrid Feedback Algorithm, and Artstein's Gauge for the existence of an averaging property of time-varying equations.

One notable thread in his work is the observation that the properties of the limit behavior of solutions of a differential equation can be different from those of the solutions themselves. Hence, his leaning towards the Platonist approach, viewing nature as a good approximation of mathematics, and theoretical mathematical research, as the starting point.

Artstein was deeply interested in mathematics and science education, as well as in the way humans evolved to understand mathematics. This interest led him to write his 2014 book "Mathematics and the Real World: The Remarkable Role of Evolution in the Making of Mathematics", which was published in Hebrew, with English, Japanese, and Italian translations. It also motivated his activity in the Rothchild–Weizmann

teachers education program, the Weizmann's Feinberg Graduate School's enrichment program in business administration, and the research fund of the Israel Internet Association.

Artstein's keen intellect, broad interests, energy, friendly engagement, and an overflow of cheerful curiosity characterized his work as a researcher, a teacher, an academic mentor, and a colleague. They made interactions with him, by classroom students, advisees, and peers, worldwide, such a pleasure, so interesting and enriching. He is sorely missed by all who knew him.