

# Haim Sompolinsky Biography

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Haim Yitzhak Sompolinsky (October 14, 1949—) was born in Copenhagen, Denmark, the son of David Bonim Sompolinsky, a veterinary researcher and later microbiology faculty at Bar-Ilan University, and Ilona (née Malik).

In 1950, his family moved to the vicinity of Tel Aviv, Israel, where he received an ultra-orthodox education at the Ponevezh Yeshiva and then the New Nishuv Yeshiva, before attending Bar-Ilan University. There, he obtained a BSc in mathematics and physics (1972), a MSc in physics (1973), and—along with completing his military service—a PhD (1980) for a thesis entitled “Dielectric properties of KDP-type proelectric crystals” under the joint supervision of Marshall Luban and Shlomo Havlin. With support from a Chaim Weizmann fellowship for postdoctoral studies (1979) and a Rothschild Fellowship for Postdoctoral Research (1980), he joined Bertrand Halperin’s group at Harvard University (1980-1982). He then joined the physics faculty at his alma mater (assistant professor, 1982; later associate professor), and in 1987 he moved to the Hebrew University of Jerusalem as professor of physics, where he was granted the William N. Skirball Chair in Neurophysics (2007) and is now emeritus. He was notably a founding member of the Interdisciplinary Center for Neural Computation (1992) and served on its executive board (1992-1999). In parallel, he long held a visiting research associate position at Bell Laboratories (1983-2000), and since 2006 is a visiting professor of Molecular and Cellular Biology at Harvard University, where he serves as director of the Swartz Theoretical Neuroscience Program (2007-).

Sompolinsky trained as a traditional condensed matter physicist at Bar-Ilan and discovered spin glasses through conversations with Amnon Aharony during his postdoc years. That notably led him to formulate—partly in collaboration with Annette Zippelius—the equilibrium dynamical mean-field counterpart to the static replica symmetry breaking description of the Sherrington-Kirkpatrick model. In a seminal collaboration with Hanoach Gutfreund and Daniel Amit, he further solved the Hopfield model using the replica method, which played a key role in opening the field of neuroscience to statistical physicists. He has since mostly remained interested in the theoretical study of neural networks.

Sompolinsky received the Spiers Prize for Best Undergraduate Student (1972), the Landau Prize for Outstanding M.Sc. Research (1973), the Bar-Ilan University Fellowship for Excellence (1974), the Sir Isaac Wolfson Prize for Excellence in Doctoral Research (1977), the Hebrew University Presidential Award for Outstanding Researcher (2005) and the Landau Prize for Brain Science (2008). He further received Swartz Prize for Theoretical and Computational Neuroscience (2011) “for producing a significant cumulative contribution to theoretical models or computational methods in neuroscience.” Since 2008, he is a Foreign Honorary Member of the American Academy of Arts and Sciences.