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Robert H.G. Helleman

The physicist specialized in nonlinear dynamics and chaos and organized Dynamics Days.

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Robert H.G. Helleman was a retired professor in the department of physics of the University of Houston when he died peacefully in his apartment in Houston on 13 November 2017, at age 76. I was very fortunate to be his student and to obtain my PhD under his supervision from the department of physics at the University of Rochester in 1978. Robert was born in

Dordrecht, the Netherlands, and became interested in physics very early in his life. At age 29 he obtained a PhD in statistical mechanics from the University of Utrecht, working closely with such famous Dutch physicists as Nico van Kampen. Then he came to New York to get a second doctorate near another one of the greats, Joel Lebowitz, then professor of physics at Yeshiva University in New York City.

In 1972 Robert joined the research group of Einstein Professor Elliott W. Montroll, famous for his work in many areas of Mathematical Physics, at the University of Rochester. In late 1974 I began working on my PhD thesis with Robert, who taught me everything he knew in classical and statistical mechanics to help me take my first steps in research. By that time, the field of Hamiltonian chaos began to bloom, and together with a handful of others, we jumped on the bandwagon to conquer new territories under the leadership of such pioneers as Joe Ford from Atlanta, John Greene from Princeton, Boris Chirikov from Novosibirsk, and Giulio Casati from Milan. Those were the days.

As a teacher and researcher, Robert touched my scientific career in a most significant way. He showed how the first steps in a period-doubling sequence can be used to derive accurate estimates of the Feigenbaum-Coullet-Tresser constants, and he guided me in developing convergent schemes to construct and study periodic orbits of non-integrable conservative systems. Both advances were later mentioned in well-known books on nonlinear dynamical systems. More importantly, however, Robert influenced the lives of many young scientists by organizing the first few Dynamics Days, which began in 1980 and continues to this day annually all over the world, from the US to Asia Pacific and from Latin America and the Caribbean to Central Asia. In these meetings, young researchers have a chance to present their work in a series of 15-minute talks. All aspects of nonlinear dynamics and chaos, theoretical and experimental, are addressed: strange attractors and fractal sets, Hamiltonian lattice dynamics,

discrete maps, continuous flows, classical and quantum chaos, and topics beyond physics. These meetings are bringing about an explosive revolution and a new era in science that is here to stay.

Those that were privileged to meet Robert will always remember him not only for his scientific wisdom, but also for his caustic humor and poignant remarks. He was a lone wolf, an independent spirit, a little like his illustrious ancestor, for whom Don McLean wrote, “I could have told you, Vincent, this world was never meant for one as beautiful as you.”

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