



NAOKO ISHIDA

Ira Herskowitz 1946–2003

Anita Sil

On April 28th, 2003, Ira Herskowitz died of pancreatic cancer at the age of 56. As Ira told one of his former students, “Life is not a dress rehearsal.” He lived by that philosophy, armed with a passion for biology and legendary clarity of thought.

As the son of geneticist Irwin Herskowitz and the identical twin brother of Joel Herskowitz, perhaps Ira’s destiny was intertwined with genetics from the start. After receiving an undergraduate degree in Biology from the California Institute of Technology in 1967, he received a Ph.D. in Microbiology with Ethan Signer at the Massachusetts Institute of Technology in 1971. After a six-month post-doctoral fellowship in the laboratory of David Botstein, Ira moved to the University of Oregon in Eugene to start his own lab at the age of 26. Over the next few years, he expanded his studies of gene regulation in lambda phage to explore mating-type switching and gene silencing in the budding yeast *Saccharomyces cerevisiae*. Each of his classic papers from those early days made striking advances in the understanding of gene regulation and cell-type specification. In the absence of molecular and genomics tools, Ira used simple genetic experiments to reach profound molecular conclusions. These papers are perhaps the best tribute to his logic and precision.

In 1981, Ira left Eugene to join the faculty in the Department of Biochemistry and Biophysics at the University of California, San Francisco, where he ultimately influenced research in many of the surrounding labs. Ira was the head of the Division of Genetics at UCSF for the next twenty years. During that time, his initial work on mating-type switching in yeast continued to branch out into other areas of yeast cell biology. He elucidated the transcriptional circuits that underlie cell-type specification. He studied how yeast cells choose a site of division, how they regulate progression through the cell cycle, how they are able to sense and respond to cells of the opposite mating type and how they regulate meiotic divisions, among other topics. Many of the fundamental discoveries in these fields originated either in his lab or in the labs of his former students and post-doctoral fellows. In more recent years, he became co-director of the Program in Human Genetics at UCSF and helped to launch experiments in pharmacogenomics, the study of how genetic variation influences the response to drugs.

Ira’s contributions to biology earned him numerous honors and awards, including a MacArthur Foundation Fellowship (or genius

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grant), membership in the National Academy of Sciences and, most recently, the prestigious Lewis S. Rosenstiel Award from Brandeis University. His work illuminated the fundamental processes that govern the biology of the eukaryotic cell. Ira lived in fearless pursuit of interesting questions, and his strength was in identifying those questions and using a series of simple experiments to dissect them.

Even more profound than the research itself was Ira’s ability to make its importance clear. He was a master of going to the heart of the matter, whether or not the research in question was his own work. The field of yeast cell biology was deeply influenced by Ira’s ability to distill the story behind the results. He made it easy for biologists to appreciate the big picture underlying the data, to understand, for example, how yeast mating-type switching is relevant to asymmetric cell division in higher eukaryotes. After reading Ira’s seminal papers and hearing his lectures, many scientists came away with their vision of biology transformed.

Ira had a particular generosity of spirit that made him as passionate about teaching as he was about research. Those of us who had the privilege of hearing his lectures in genetics will never forget the experience of sitting on the edge of our seats, as enthralled by the story he told as we might be by our favorite novel. And no tribute to Ira would be complete without mentioning his irreverent humor, his irrepressible guitar playing and his love of music, all of which went hand in hand when it came to song writing (see <http://derisilab.ucsf.edu/movies/returntosender.html>). Just as his research chronicled the important events in the life of the cell, his songs commemorated the trials and the joys of life as a scientist. The music of his science, both literal and figurative, will be sorely missed.

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