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Gina Sosinsky - Excellence in Science, Scholarship, and Humanity

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Gina Sosinsky was one of those unique scientists whose human generosity at least matched her scientific excellence. She was a strong supporter and advocate for the Microscopy Society of America. Early in her career she was a recipient of the Presidential Scholar Award from the Electron Microscopy Society of America (1979) and since then she was always an active member of the Society. Gina organized and chaired numerous Symposia, was head of the biological tutorials, a member of the education committee, and an MSA council member (Biological Sciences Director, 2009-2011). Her enthusiasm and commitment to the Society were contagious and have inspired countless incoming members to the field. Her innumerable contributions to the Society were recognized when she was awarded the Morton D. Maser Distinguished Service Award in 2012. Her laboratory at the University of California, San Diego, was always represented at the Society Meetings as invited speakers, contributed speakers and/or poster presenters, and behind-the-scenes, she maintained the 3D cryoEM website in an outreach effort to promote and advance the field of electron microscopy.

Gina Sosinsky significantly advanced our understanding of cell-cell communications through extensive studies on the structure and function of gap junctions. She made important contributions to transmission electron microscopy and correlative light and electron microscopy (CLEM). Gina was not concerned about people's perceptions of a method being old-fashioned; if it was right for the job, she used it. And if it wasn't, she moved on to an emerging method that benefitted her ability to push forward scientific knowledge.

My first memory of Gina is as a magician, when she was a graduate student in Robert Glaeser's laboratory at the University of California, Berkeley: she pulled a vacuum on liquid nitrogen to make a slush in which she froze grids for cryoEM - these were the early days, when she was examining the yeast cell plasma membrane [1].

Gina's research on the structure and function of gap junctions began upon joining Donald Caspar's laboratory at Brandeis University as a postdoctoral fellow. She tested four negative stains with low electron dose and high dose imaging, showing that the gap junction channel is negatively charged, and that radiation damage allowed increased stain penetration, suggesting the presence of a labile channel gate [2]. In over 25 years of research, Gina contributed regularly to advances in understanding gap junctions, including defining differences in the connexin proteins that comprise junctions in different tissues and different organisms, uncovering the distinct cellular roles of the related pannexin proteins, which are channels open to the cell exterior, rather than forming the hemi-channels that allow gap junctions to provide cell-cell communication (e.g. [3]).

Methods development was an important constant in Gina's career. Using a creative combination of Fourier averaging and Real-space correlation methods, her work unveiled the polymorphisms inherent in the connexon lattice, while producing advances in methods development [4]. She collaborated with Roger Tsien in the development of CLEM markers [5], and was a significant contributor in the

development of genetic reporters for EM [6]. The precision with which she undertook testing of new ideas is a model of careful scientific rigor. Gina Sosinsky's career was marked by the scientific excellence with which she defined her research and used the methods best-suited for answering the scientific question at hand, and by her dedication to the scientific community, especially our EM community. Much of what she did was behind the scenes. She didn't expect credit for this work; she just dug in and got it done. And when the work was done, we would sit and talk, or watch a movie, or hike around a mountain (no; not up: around). Gina has left an indelible mark in many of us. Her personal kindness, generosity, and inspiration will be greatly missed.

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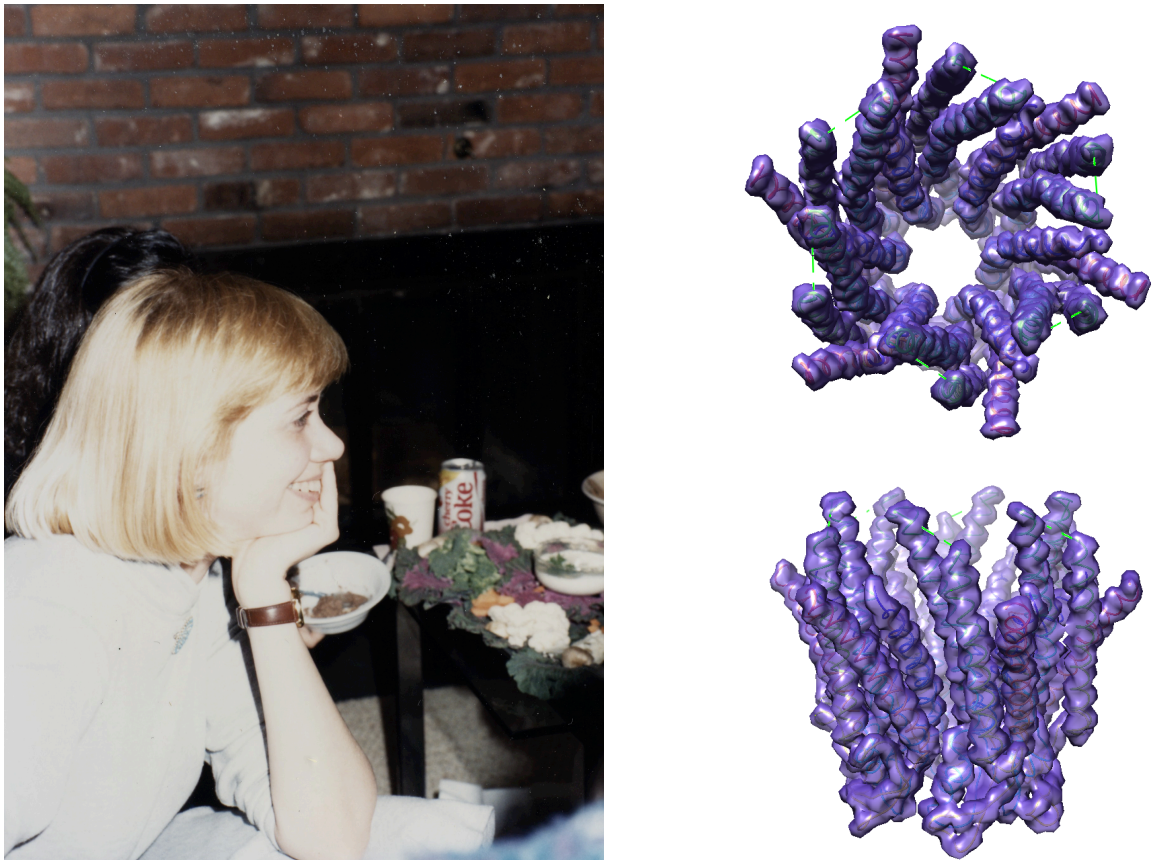

Figure 1. Left) Gina Sosinsky (1990). Right) CryoEM structure of a connexon comprised of Connexin C26, shown *en face* (top) and oriented such that the membrane would be perpendicular to the page (bottom) (pdb 3iz1, from a collaboration with Yoshi Fujiyoshi: [7])

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