

[<< back](#) 

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Sandra K. Masur

Sandra Kazahn Masur's first love was art, and she has carried this passion with her as a scientist.

Masur attended one of New York's specialized public high schools, the High School of Music and Art (not the Bronx School of Science as might have been expected). She explains that both her parents were "remarkably supportive of my sister and me," but since she didn't know any women scientists, she did not seriously consider developing her childhood interest in biology at the time.

Her father's medical school education was interrupted by World War I. He left Bialystok, Poland for the United States in 1921 and was never able to finish his degree. When Masur's mother was orphaned at three, she was sent to live and work in her grandparents' inn in Rava Ruska, Poland. Though formally uneducated, over time she learned to speak five languages. Masur's parents met as union organizers in New York; her father later went into business in the Bronx and her mother stayed home when their children were born, though husband and wife both remained committed to social issues their whole lives. But they internalized their lost education and sought to educate their children. Whenever Masur and her sister had a factual question, their mother would make them look it up in the Encyclopedia and read the answer aloud, thereby teaching all three of them. While Sandra ultimately moved from art to science, her sister, Kayla, moved in the opposite direction. Kayla started out like her father, wanting to be a doctor, but turned to theater and dance and is currently teaching dance at the Boston Conservatory.

Masur calls her experience at the High School of Music and Art "phenomenal." She reflects that, "as a teenager you feel different and awkward," but at that school everyone was "different". Each had a talent, Masur's being drawing. Furthermore, happily for Masur, the school did not expect that everyone would become an artist or musician, but rather that each would go to college.

With no money, but good grades, Masur enrolled at the City College of New York, where she studied "Esthetics: Art History and Criticism," taking some courses in biology. In her sophomore year, Masur was recruited by her boyfriend (whom she married in her junior year) to draw illustrations for a faculty member's research article. This was her first exposure to "real biology". The professor, William Etkin, adored science, and his lab was at the Albert Einstein Medical School. This placed Masur close for the first time to outstanding women scientists, such as Salome Waelsch, a founder of developmental genetics. Upon completing her B. A., she was invited to stay at City College as a biology lecturer: "that year clinched it -- I was in love with all aspects of biology."

Masur went on to earn a Master's in Zoology at Columbia. This period marked the dawn of the electron microscope. Masur found she could apply her imaging skills to microscopic investigation. She was intrigued by the aesthetics of science; recalling those early experiences, she remarks, "I could really see the beauty of the cells, I would almost become hypnotized by them under the microscope."

Masur completed her Ph. D. in cell biology at Columbia in Lee Peachey's lab where she used electron microscopy to demonstrate that prolactin secretion by the pituitary was under hypothalamic inhibition. After earning her doctorate, Masur directed her interests in cellular endocrinology to the toad urinary bladder as a model system for studies of hormone action. In collaboration with her good friend Eric Holtzman, using electron microscopy and cytochemistry, she developed the hypothesis that exocytosis and endocytosis of channel-containing intracellular membranes is the basis for rapid hormone induced changes in plasma membrane permeability. Holtzman later took his own life, a tragedy that changed Masur's personal and scientific world.

Masur moved on to the emerging area of cell- matrix interaction and was stimulated especially by the studies of Caroline Damsky. Masur recalls that Damsky, Zena Werb and Karen Knudsen were uncommonly generous in providing reagents and advice, a characteristic that Masur believes is highly developed in women scientists. Her current research explores the intersection of cell- cell and cell- matrix interaction in the regulation of the fibroblast and myofibroblast phenotypes in the cornea. Both being products of the Peachey lab and good friends, Damsky says she was happy to help Masur make the transition to cell- matrix and remarks about the "magnificent job she has done making the transition."

In 1968, Masur and her husband, who was establishing a medical practice, started their family. She was able to find a part- time appointment at the newly- formed Mount Sinai Medical School, where she has been ever since. Irving Schwartz, founding Chairman of the Physiology & Biophysics Department, noting her interest in working half- time, conceded that, "if I don't hire you, my wife will divorce me." Felice Schwartz went on to write "The Mommy Track," and founded "Catalyst", an organization that helps working women resolve their conflicting roles. Under Schwartz, Masur was able to work three days a week at Mt. Sinai, which allowed her to continue her research while raising two sons on Long Island. Both Schwartz and Masur feel they got the best out of the arrangement. After ten years, she increased her

commitment to full time. By this time Mt. Sinai had grown and attracted many talented scientists. And it "keeps getting better," Masur observes proudly.

Currently, Masur is the P. I. on two NIH grants. Her lab in the Department of Ophthalmology consists totally of women scientists, but she is looking forward to its becoming "integrated" again shortly with the eagerly- anticipated arrival of a new male postdoc.

Despite her successes and general satisfaction, Masur candidly admits that she regrets that the path she took put her out of step chronologically so that now, at a time in her career when it would be natural for Masur to become a chairperson and help mold others' careers, she may be too old. Masur's colleague at Mt. Sinai, Terry Ann Krulwich, says, "Sandy Masur is not only a super teacher and an individual who has developed an innovative and important scientific program, she has created a model for how to do so. She galvanizes other people in cooperative ways such as journal clubs or in bringing in new technology. She does it all selflessly. She has internalized old fashion values where she thinks of how she can help the next person."

Masur remembers nostalgically that she used to have interests outside of science before she came back to science full time. She was particularly involved in community activities in the racially diverse neighborhood where she raised her children. She invested significant effort in keeping the community racially balanced and the schools strong. She and her second husband, Victor Schuster, now live in Manhattan. Schuster is a physician- scientist at Albert Einstein College of Medicine, and her "best scientific and editorial critic and my soul- mate." Masur's older son, Josh, is a law student who is very conscious of protecting time for daily involvement with his one- yearold daughter. Josh is also responsible for the digital version of the WICB logo used in the ASCB Newsletter. Masur's other son, Ted, is a graduate student in conducting and composition at Indiana University and is currently trying his hand at composing film music.

Schuster has two daughters, Elise and Alexis, who live with their mother in Iowa City, but come to New York in the summers where they are exposed to a lot of art as well as science.

Masur has been attending the ASCB Annual Meeting since she was in graduate school. She says, "it's the meeting that gets my brain activated." The meeting is her "scientific home" because it inspires her on many levels: catching up with old friends and colleagues while learning new things about her field at the poster sessions. One of her fondest memories is of attending the 1968 ASCB Annual Meeting in Boston with three- month old Josh in tow. She left him in the capable hands of Ursula Goodenough while she gave her talk. It was Goodenough who later encouraged Masur to join the Women in Cell Biology. Masur is particularly impressed by WICB's first Chair after it became an "official" Society Committee, Sue Shafer. She credits Shafer with teaching her how to run a committee meeting. Masur values her experience on the WICB Committee because "it's by working with people that you develop real friendships." For Masur, the most important project she has worked on while serving on the WICB Committee is the Speaker's Bureau, in cooperation with Caroline Kane, which provides a mechanism to increase the visibility of emerging women scientists -- not just the few overexposed "superstars". Just last year, Masur was honored with the Outstanding Woman Scientists Award by the New York Chapter of the Association for Women in Science.