

Miriam (Mika) Salpeter

April 8, 1929 — October 24, 2000

Miriam (Mika) Salpeter was born in Riga, Latvia, on April 8, 1929, and died on October 24, 2000, in Ithaca, New York. She was born into a family of scholars and businessmen. Her father was a teacher and scholar of Yiddish, and Mika, who remained fluent in Yiddish, retained a lifelong interest in the history and culture of the Jewish people. Under threat from Nazi persecution, her family emigrated from Latvia in 1938, first to Canada, and then in 1945, to the United States. She completed her high school education in New York City, where she went on to attend Hunter College, was elected to Phi Beta Kappa, and graduated summa cum laude. Subsequently, in recognition of her professional accomplishments, she was named to the Hunter College Hall of Fame.

Mika received her Ph.D. degree in Psychology at Cornell University in 1953, in the record time of three years. Her dissertation, under the sponsorship of the distinguished behaviorist, Howard S. Liddell, was on stress-induced maladaptive behavior in goats. At the time, the Psychology Department had intrinsic strength in diverse experimental areas, with both neuroanatomists and physiologists in prominence. Although her research interests were later to undergo a major shift, her training in psychology provided her with a lifelong interest in the brain, and for many years she taught a successful course on the anatomy of the brain.

In 1950, Mika married Edwin Salpeter, then a Research Associate in Physics. There followed a year's study at the Australian National University in Canberra, and the birth of two daughters, Judy in 1953, and Shelly in 1955. The family remained in Ithaca, where Mika and Ed pursued their parallel careers in biology and physics.

Upon her return from Australia, Mika obtained a postdoctoral position in Marcus Singer's laboratory in Cornell's Zoology Department. Singer gave her complete freedom and she was soon to discover the virtues of the electron microscope, the instrument that would remain her research tool for life. Mika fell in love with cells and was quick to realize that biological exploration at the ultrastructural level was an immense frontier. Intrigued by the expanding field of neurobiology, she eventually settled on the study of the vertebrate neuromuscular junction, the connection between neurons and muscles that controls all voluntary movement. Mika became an acknowledged authority on this synapse, and many of her papers on the structure and function of the junction stand as classics of the literature.

Mika had a strong sense of right and wrong, which could find expression in her advocacy of women's rights. In the mid-fifties, women were not readily accepted into faculty ranks, and although Marc Singer championed her, she

was soon to lose him as an ally. Having found Cornell's biological establishment too conservative for his liking, Singer had accepted an offer from Case Western Reserve University. Mika was isolated, and without support from either the chair of the Zoology Department or the dean of Arts and Sciences. Her chances for an academic post at Cornell were reduced to nil. There was downright disbelief at the time that academic performance could be combined with motherhood and Mika did not initially escape the consequences of such misjudgment. It was not until 1967, after the Division of Biological Sciences had been created at Cornell, that Mika was appointed to the newly established Section of Neurobiology and Behavior, thereby finally receiving the professorship she deserved. Her talents had clearly been underestimated. Professionally she rose to the challenge in every respect, just as she succeeded as parent. Judy and Shelly are now themselves established as professionals with families of their own. And Mika's friendship with Marc Singer continued through life. Upon Marc's death, Mika organized a highly successful scientific meeting in his memory at Cornell.

Mika became a strong role model and rights advocate both at Cornell, and nationally within her professional community. The Miriam Salpeter Award was established in her honor by Women in Neuroscience to recognize outstanding women in the profession, and in the year 2000 she was herself honored by WIN for her achievements.

Prior to her appointment as Professor, Mika had been given a home in the laboratory of Professor Benjamin Siegel in Cornell's Department of Applied and Engineering Physics. She received a Career Development Award from the National Institutes of Health, and also spent a year in Cambridge, England, in the laboratory of the distinguished insect physiologist V.B. Wigglesworth. Those were productive years, during which she developed a technique, quantitative electron microscopic autoradiography that established her international reputation. The technique was put to use, both by her and others, to answer many a question pertaining to the function of the neuromuscular junction, in both health and disease.

While her appointment to a professorship had been late in coming, it was acclaimed by her immediate colleagues. Dale Corson, Provost at the time of her appointment, and former Dean of the Engineering College, openly welcomed her to the ranks, and Richard O'Brien, chairman of Mika's new department, let it be known that Mika's outside letters of support were the strongest ever received by his office on behalf of a candidate. Mika was promoted to full Professor in 1973, and in 1982 began serving a five-year stint as Chair of the Section of Neurobiology and Behavior.

In her new post, Mika was enabled to put together a strong research team, and her work flourished. She quantified the density of important molecules, such as the acetylcholine receptor and acetylcholinesterase at the

neuromuscular junction. She made major discoveries in developmental neurobiology, looking at the mechanisms by which the neuromuscular junction is formed, and studying the molecules that regulate the density and turnover of critical signal-transducing molecules, both during development and after peripheral nerve injury. She embarked on a long collaboration with her husband, Ed, to formulate mathematical models of the actions of the neurotransmitter acetylcholine at the neuromuscular junction, using the data that she obtained with quantitative electronmicroscopic autoradiography. These models are among the most detailed and sophisticated ever put forth to explain synaptic function.

Mika's legacy at Cornell extended beyond her achievements in the sciences. She was a veritable presence on campus, and will long be remembered for her strong views, loyalty to friend and cause, compassion, love of children, contempt for arrogance, and liberal politics. She sparkled when triumphant and did not easily yield to contrary views, although she was singularly reluctant to hold grudges. In dealing with Mika, you took one issue at a time. Total disagreement on one matter in no way prejudiced the debate over another. She could be wrong, but never uninteresting.

Humor was all-important to Mika, who viewed jokes as being curative. She remembered jokes, told them well, and was quick to make the departmental rounds whenever she heard a new one. Everyone benefited. When we ourselves were initiators of a joke, we always waited in eager anticipation, wondering when and in what form the joke would come back to us via Mika. She was a master raconteur, who told stories to diffuse tension, or simply to bring joy, and she used this talent with enormous success as chair, colleague, and friend.

Ed played a crucial role in Mika's life, not least in her professional activities. She could always count on Ed's support, and their collaboration was exemplary. To work with them was to experience a successful venture firsthand. Always inquisitive, Mika held herself and her collaborators, Ed included, to the highest standards. Whether over the kitchen table or on the ski lifts, she never hesitated to bring up science. The intellectual exchanges between her and Ed were exciting and memorable to participants.

In the course of her career, Mika received recognition for her achievements both in teaching and research. The National Institutes of Health awarded her a Jacob Javits Research Grant, an honor reserved for those judged to be in the top ranks of the neurobiological research community. She was invited to serve on the Council of the National Institutes of Health, being enabled thereby to help formulate policy for that most important of grant-giving institutions. Mika was, at age 71, still at the peak of her academic life, surrounded by a buzzing entourage of graduate and undergraduate research students. When she fell victim to the devastatingly quick-spreading thyroid

cancer that was to be her last illness, she came to her lab daily, to work, discuss ideas, and mingle—and, yes, to hear jokes—until almost the day she died.

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