

Kate Bárány: a life of science, teaching, and service

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Abstract We celebrate the lives of Michael and Kate Bárány in this issue of the *Journal of Muscle Research and Cell Motility*. Kate and Michael died within weeks of each other in 2011. Joe Chalovich has written about Michael and we write about Kate. As emphasized by Joe, Kate, and Michael were remarkable individuals who survived the Holocaust, the Hungarian revolution, and emerged from as much adversity as one might imagine to become productive scientists, educators, citizens, and symbols of the durability of the human spirit. They present their own story in an essay (Bárány and Bárány 2000) published in a monograph “*Selected Topics in the History of Biochemistry*.” Rather than repeating much of the list of scientific achievements chronicled in these papers, we focus here on Kate, especially in her role as an individual and partner in science, while at the same time being an accomplished teacher, and a champion of women in science.

Keywords Muscle contraction · Myosin light chain · Phosphorylation · Smooth muscle

Kate Bárány’s major scientific contributions were focused strongly on the integrated biology of muscle contraction, and the biochemistry of actin and myosin. Seminal contributions, in which she was the lead investigator, centered on the role of myosin light chain phosphorylation, and are well documented in studies of skeletal, cardiac, and smooth

muscle (Bárány and Bárány 1977; Bárány and Bárány 1982; Erdödi et al. 1987). Careful analytical approaches typified the approaches and Kate’s work stood out by the use of two-dimensional gels using homemade gear applied to well controlled sample preparations. This attention to detail in the lab resulted in important findings regarding the plasticity and control of light chain phosphorylation especially in smooth muscle. A methods paper published in the *Journal of Chromatography A* (Bárány et al. 1995) describes in detail the elegance of her approaches to electrophoresis. Along with her training in Physical Chemistry and Biochemistry, Kate recognized the value of being in a Department of Physiology and Biophysics and published her work with an eye toward integration of molecular mechanisms with dynamics of muscle contraction. Kate and Michael’s preference was to determine post-translational modification of the light chains in intact preparations. These studies were among the first to translate and understand molecular modifications in myosin light chain phosphorylation in terms of the dynamics of contraction and relaxation (Bárány et al. 1979; Sayers and Bárány 1983).

Dr. Kate Bárány was born in Békéscsaba Hungary on April 29, 1929, the younger child of a prominent Jewish physician Mihaly Foti and his wife Adel. She excelled in school, including being an accomplished pianist and had aspirations for a career as a concert pianist. Her love for music never left her and she and Michael were avid fans of the Chicago Lyric Opera. They attended the operas and listened faithfully to the Texaco broadcasts on Saturday afternoon, which was not a good time to try to speak with Kate. Young Kate’s hopes were brutally dashed, when in 1944, she and her family were deported to Auschwitz. After its liberation on January 27, 1945, Kate spent a further 8 months in a Soviet prisoner camp in Belorussia.

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Fig. 1 The authors with Kate Bárány



Returning to Hungary after the war, Kate supported herself by washing dishes and tutoring, often going hungry. She finished her high school education. At age 20, after a whirlwind 4 day (August 1–4, 1949) courtship leading to a 62 year romance, Kate married Michael, a medical student and fellow Holocaust survivor. At Eotvos University of Budapest, she studied physics, physical chemistry, and mathematics obtaining an M.Sc in Physics in 1952. Yet, the vicissitudes of politics and life did not leave them alone and Michael and Kate, now with a 2-year-old George in tow and 5 months pregnant with Francis, had to flee in the wake of the Hungarian revolution. Unable to get access to most Western nations, they passed through Yugoslavia and took refuge in Israel for a few months. Caring and sensitive colleagues around the world, ironically, especially in Germany, persuaded them to take the next step to move to Heidelberg. In 1959 Kate completed her doctorate in physical chemistry at Goethe University in Frankfurt am Main. Eventually in 1960, Kate and Michael immigrated to New York, NY, and worked at the new Institute for Muscle Disease until its 1974 closing, when they both joined the faculty at the University of Illinois at Chicago (UIC), Kate in Physiology and Biophysics, and Michael in Biochemistry.

At UIC, Kate continued her scientific accomplishments, while at the same time displaying a unique and avid dedication to classroom teaching, and to helping women students and faculty cope with the special issues facing their pursuit of careers in science, medicine, and education. She received the coveted Golden Apple Award from medical students and University wide teaching recognitions. As an active member of the UIC Committee on the Status of Women, she saw no barrier too big to overcome. Kate was

instrumental in establishing the UIC Children's Center and fought for flexible tenure and career guidance for women in science. Equally important, Kate and Michael took on the behemoth of the insurance industry to end the practice of paying lower pensions to women who had invested the same rate as men. This change benefitted thousands of women not only at the University of Illinois but nationwide. In recognition of her active efforts as well as her history as a role model going back to a period when very few women chose a scientific profession, Kate was named Woman of the Year at UIC in 1996. Impaired vision forced her to retire in 1998 and she was named professor emerita (Fig. 1).

Kate and Michael epitomized the strength of the human spirit. They were simply amazing as colleagues and educators with the highest standards and accomplishments in teaching excellence, in world-renowned research, and in exceptional service at all levels.

Kate and Michael are survived by a remarkable and accomplished family including her sons George (Barbara) and Francis (Rachel), and grandchildren Michael, Deborah, Isabelle, and Lilly.

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