

Physiological Society obituary

Gertrude Falk 1925-2008

Gertrude came on a Guggenheim Fellowship from a position at the University of Washington in Seattle to work with Paul Fatt in the Biophysics Department at UCL in 1961. Although her PhD work at Rochester was on diuresis in the rat, she then became one of the early microelectrode electrophysiologists. She had worked as a postdoc with Gerrard in Chicago and studied a wide range of smooth and striated muscle types. She and Paul Fatt tackled the question of the puzzlingly high capacitance of muscle - this was before it was established that the membranes of the transverse tubules were continuous with the surface membrane. They used two electrode recording techniques that required an in-depth understanding of the electrical properties involved ('real' biophysics). They reached the conclusion that the 'internal' membranes accounted for the high capacitance (Proc R Soc Lond B Biol Sci. (1964)160:69-123; 54 pp.) about the same time as the electron microscopy revealed the structure.

Gertrude continued to collaborate with Paul for some years, turning their techniques to electrical studies of rod outer segments (chosen as a tissue that did not move). It is worth remembering that when they started to work on retina very little was known about phototransduction. They were among the first to look at the cellular biophysics of the problem.

Gertrude's interests in the synaptic connections and function of the retina started with a theoretical paper (as well as two extensive and scholarly Handbook chapters) that she and Paul wrote in 1974. Jonathan Ashmore began working with her as a post-doc at that time and claims that he only got the job because he could solve cable equations analytically – which must have struck a chord, as Gertrude recounted that in her student days in the USA she was well-nigh a national champion at doing integrations in her head. The joint work became a lively collaboration and produced a small clutch of Nature papers. This was then carried forward over many years by Gertrude and Richard Shiells: shortly before she retired, they discovered that the rod-ON-bipolar cell synapse depended upon a metabotropic glutamate (mGLUR6) receptor cascade. It was a critical scientific combination, with Richard's experimental skills complementing Gertrude's encyclopaedic knowledge of the literature, old and new.

She continued to teach occasionally for many years beyond her retirement, and to come to the Starling Room to indulge her great conversational skills and challenging opinions until just a couple of months ago. [Her great sense of humour and ready amusement at the oddities of life and people was always tempered by her warm and generous spirit.](#)

Gertrude had a fierce sense of justice and ready sympathy for the underdog. She was a loyal and kind friend to anyone in need; typically this was shown not in mere words of protest, but was translated into action. Her indifference to conventions is well illustrated by the occasion when, drinking coffee in the men's staff common room, [at that time still segregated](#), she responded calmly to the Beadle summoned to escort her out, “well, I am certainly going to finish my coffee first”, and did so at her leisure.

Gertrude and Paul Fatt were married for a period, and had one daughter. Although they later divorced, their relationship remained amicable. Her illness was sudden and perhaps

mercifully quite short, since the thing that saddened her most during this, aside from the prospect of not seeing her two grandchildren grow up, was the likely loss of her memory and her intellect.

Jonathan Ashmore

Lynn Bindman

Tony Gardner-Medwin

Sally Page