Professor Dame Julia Polak DBE

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Dame Julia Polak, who has died at age 75, pioneered work on histochemistry and then on tissue engineering of the lung. She developed idiopathic pulmonary arterial hypertension, underwent lung transplantation in 1995, and was one of the world's longest-living lung transplant survivors. We remember Julia as a charismatic, inspiring colleague and teacher, strong and feisty but with a very courageous, kind, and gentle heart.

Julia Margaret Polak was born on June 26, 1939, in Buenos Aires, Argentina, where her Jewish grandparents had emigrated from Eastern Europe. Her father was a lawyer and her mother a writer. She studied medicine at the University of Buenos Aires. There she met her future husband, Daniel Catovsky, while they were dissecting a corpse. Julia qualified in 1961 and decided to specialize in pathology. Their first child was born in 1963, and the family came to London in 1967, when Daniel was awarded a traveling scholarship. Daniel eventually became an eminent professor of hematology and a world authority on chronic adult leukemias. Julia did her postgraduate studies at the Royal Postgraduate Medical School, Hammersmith Hospital (now part of Imperial College London), and eventually became head of the Histochemistry Department, then Professor of Endocrine Pathology. Julia initially focused on the localization of then-novel peptides, discovered the existence of a hormone system in the gut, and showed that the nervous system is regulated by peptides. Aware of the close relationship between the gut and the lung, Julia began studying the lung in the mid-1980s. She began by localizing various peptides during normal development and in disease and then worked on the nitric oxide pathway.

Julia built a strong, very productive research team. Her laboratory meetings were legendary. The team would assemble around the perimeter of her very large office at Hammersmith Hospital, and Julia would ask for updates one by one, senior and junior members alike. Heaven help the researcher who had nothing to report. You knew when she was impressed because her face would light up, and she would say "Fantastic!" wonderfully drawn out and congratulatory. Julia was enjoying a

brilliant career when she realized that she was unwell. Initially thought to have asthma, she was in extremis when diagnosed with idiopathic pulmonary arterial hypertension. Professor Sir Magdi Yacoub performed her heart and lung transplant. Julia took the best possible care of her transplant and continued to live life to the full. Memorably, she presented her own case, including the histology of her old lungs, at one of the formidable Hammersmith Grand Rounds. She described in detail the plexiform lesions and vascular pathology. Energized by her own experience, Julia went on to establish the Imperial College Tissue Engineering and Regenerative Medicine Centre and became its professor in 1997. The declared aim of her research was the restoration of normal lung function by the delivery and engraftment of pluripotent stem cells, both exogenous and mobilized endogenous cells, and the creation of a 3-dimensional lung structure that could be implanted into the thorax. These studies necessitated investigation of biomaterials, configured in 3 dimensions with nanomodified surfaces for cell recruitment and differentiation. Dame Julia served on several national and international tissue engineering and stem cell advisory panels.

Julia Polak published almost a thousand original papers and made a huge contribution to medical science. She was one of the most highly cited authors of her generation. She received many honors and awards in the United Kingdom and other countries and was appointed DBE (Dame Commander of the Most Excellent Order of the British Empire) by the Queen in 2003.

Julia and Daniel Catovsky had 3 children, Marina, Sebastian, and Michael. Marina was tragically killed by a motorcyclist in 2011.

Professor Dame Julia Polak DBE was an inspiration to all who knew her. We extend our heartfelt sympathy to her family.

Professor Dame Julia Margaret Polak: born June 26, 1939; died August 11, 2014.

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