

**John Raymond Greening**  
**9 February 1922 - 7 March 2015**

John attended schools in Richmond. In 1940 he started work at the National Physical Laboratory, Teddington, Middlesex, which was heavily involved in the war effort. He was assigned to the Aeronautics Department, where met his future wife, Audrey.

Recognising the need for further qualifications, he enrolled for a course of evening classes at Battersea Polytechnic to study for a London University degree in physics. He and his friend, Peter Tothill cycled from Teddington to Battersea and back, sometimes to stand guard on the laboratory overnight with the Home Guard. The Blitz made life more difficult. At its height the nominal three evenings a week was cut to Saturday afternoons only. When it was threatened that the course would have to be extended to six years instead of five, due to insufficient practical work, John and Peter devised their own course of experiments, to be carried out during lunch hours at the NPL. This provided valuable experience and achieved the desired result. It also demonstrated to them that physics can be fun. John graduated in 1945 with first class honours, unprecedented for part-time study. His great regret during the war was that the Official Secrets Act precluded him telling his father, an army veteran of the Boer and First World Wars, what he was doing and his father took a dim view of John not joining the services.

After the war John decided that he wanted to apply his physics in a more peaceful and healing manner and entered Medical Physics, a newly developing field of science. He was appointed as an Assistant Physicist at Westminster Hospital in 1946 and in the same year married Audrey. John's enthusiasm for research led him to devise his own programme of research in radiation dosimetry, which often involved trips to Tottenham Court Road to buy materials to build his own research equipment. This led to a PhD of the University of London. Promotion then came with a post of senior physicist at St George's Hospital.

During this period John became active with the professional body, the Hospital Physicists Association. His role on the executive committee involved negotiating with the employers about salaries, a job that would be performed these days by a trade union official. He carried out this demanding job successfully. Later he was elected as President of the Association. During this period also, John and Audrey's two sons were born.

Medical physics had been slow to develop in Edinburgh, consisting of little more than a couple of physicists in Radiotherapy. It was decided to set up a new Department of Medical Physics, funded and administered jointly by the University of Edinburgh and the then South-East Scotland Regional Hospital Board. In 1957 John Greening was appointed to lead this venture and to expand its scope. The headquarters was initially a house in George Square, far from ideal when examining or treating patients from the nearby Royal Infirmary. Appointments were made to head new sections of electronics and radioisotope medicine. The Radiotherapy Department had recently moved from the basement of the Royal Infirmary to new premises at the Western General Hospital, and the physicists there were included in the new Department of Medical Physics. The first PhD student was recruited.

Much time was spent in planning the next development – a new building in the Royal Infirmary grounds, between ward blocks, to be shared with the University Department of Medicine. This opened in 1962 and allowed rapid expansion of the activities of the department, particularly in research. The building was intended to be rather temporary, as it was planned to rebuild the Infirmary on the same site, starting in 1972. Mercifully this did not happen and the department remained in place until long after John retired.

The University connection and the proximity of clinical departments fostered a commitment to research. It was not too difficult then to obtain funds for the appointment of PhD or MSc students, and many were supported. On completion, some joined the department as it expanded. Most of the others found medical physics jobs elsewhere, at least two becoming professors. John Greening's commitment to research was now applied to the supervision of students and the facilitation of research by staff. The University connection did not require any undergraduate teaching, but the department did run courses on radioisotopes and gave lectures for budding radiographers and radiologists. Other services to the University included radiation protection and applications of radioisotopes. The scope of the contributions to the Health Service also increased,

including ultrasound, nuclear medicine scanning, computing, and MRI. The responsibilities of the department extended to other hospitals in Edinburgh and also to Fife and the Borders.

The joint funding of the department was undoubtedly beneficial, but it did sometimes pose problems and needed John's skill and diplomacy, particularly in times of financial pressure. In the 29 years of John's leadership the Department grew from modest beginnings to become one of the leading departments of medical physics in the UK, with an impressive output of publications.

John Greening's standing was recognised locally by promotion from Reader to Professor and election as a Fellow of the Royal Society of Edinburgh. His skills were recognised internationally and he served for over 15 years on the International Commission on Radiation Units, contributing to its many important publications. He was invited to serve on the UK Radioactive Atomic Waste Advisory Committee, a role he engaged in from the inception of the committee in 1979 until 1989, including a period of chairmanship. Much later he spoke at a coffee morning at the RSE of these efforts and his frustration that after considerable deliberation and research the Committee made proposals that, if heeded, would have resulted in a solution long ago to the problems still faced today. Instead, the then Government just set up another committee!

John had been a keen cricketer as a fast bowler with a distinctive arm swinging action, but the age of 40 but switched to golf. He joined the Mortonhall Golf Club and made many friends there. He played until he was 88, applying his scientific approach in analysing his game so that he minimised wasted shots. His earlier engineering skills of making research equipment were also applied to designing and making his own putter.

John retired in 1986, but found his lecturing skills in demand, especially with a popular talk on the physics of golf, which left many wondering how it was possible to strike a ball down the fairway. He pursued other hobbies of photography, chess and the then new world of computing. He wrote many programs for his early BBC computer and made many friends through this medium.

John and Audrey had health problems from time to time, but these were faced with fortitude. When Audrey became very immobile John looked after her devotedly. Audrey died in April 2014. They had been married for 68 years.

John took much pleasure in his family, welcoming their news and visits and taking a keen interest in their activities and successes. In his 93rd year he achieved an ambition of playing football in his garden with his great-grandchildren, where he had similarly played with his sons and grandsons in earlier years.

John is survived by his sons Andrew and Richard, daughter-in-law Rosemary, grand-sons Neil and Robert and great-grand-children Esme, Oliver and Alastair.

**Peter Tothill**

**Professor John Raymond Greening, born 9 February 1922, Richmond, Surrey. Elected FRSE 1969. Died 7 March 2015, Edinburgh, aged 93.**