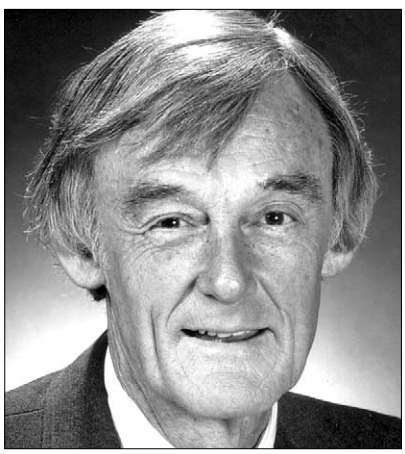

William Ross Adey

A leading and controversial figure on the effects of electromagnetic fields. Born on Jan 31, 1922, in Adelaide, Australia, he died on May 20, 2004, in Redlands, California, USA, of pneumonia; he was 82 years old.

For someone who would become a world-renowned expert on the potential health effects of electromagnetic fields, William Ross Adey certainly loved electronics and gadgets. He began building crystal sets at a young age, and by his teenage years had built several vacuum tube sets. As an adult, Adey's home in the foothills of the San Bernardino Mountains of southern California featured a tall mast with antennas, according to former colleague Asher Sheppard. A passionate ham radio operator since the age of 17, Adey used the antennas to bounce signals off the Moon, said John Hanley, a long-time colleague who is now an emeritus professor at the University of California, Los Angeles (UCLA). And he was doing his own brain-wave recordings long before he had a chance to talk to a professional encephalographer, according to Hanley.

Adey is probably most famous for discovering what has been called the "Adey window", according to Paul Rosch, president of the American Institute of Stress and a clinical professor of medicine and psychiatry at New York Medical College, Valhalla. The Adey window describes the confined parameters under which a very weak electromagnetic signal has a physiological effect, Rosch told *The Lancet*, and "helps to explain a variety of observed phenomena such as high-power electric lines' effect on cell growth". Adey's work showing that brain tissue is sensitive to electromagnetic field radiation at levels that are orders of magnitude lower than classical synaptic excitation has not been met with universal acceptance. Many argue that it is necessary to show a thermal effect before it is possible to show a physiological one. But, "I think that Adey is going to posthumously win that argument", Hanley told *The Lancet*.

However, "His work was very controversial", Kenneth Foster, a professor of bioengineering at the University of Pennsylvania, told *The Lancet*. "He reported experiments that purported to describe the effects of electromagnetic fields and used these to justify rather strange theories about how these fields might work." Adey's work on the effects of electromagnetic fields on the efflux of calcium from brain preparations could not be correlated with in-vivo physiological effects, Foster said. And many of his experiments could not be replicated. "His work, however, was widely applauded by those who study the biological effects of such fields", Foster said.

Adey's work caught the attention of Motorola, which hired him and Jerry Phillips to research the effects of cell-phone radiation on tissue. "Our relationship with Motorola began well enough", Phillips, now at Biological Science Curriculum Study in Colorado Springs, Colorado, told *The Lancet*. "Motorola indicated that they . . . didn't care what results we obtained as long as the research was of the highest quality." But when Adey and Phillips' first animal study produced an effect, the company's attitude changed, somewhat counterintuitively. The researchers had observed a decrease in CNS tumours in animals exposed to cell-phone frequencies. "This was evidence of an interaction between the radiofrequency fields and tissue in a living organism", Phillips said. There was pressure from Motorola, which ended the project, to play down the results, Phillips said, but Adey "held his ground and reported our data in a scientifically thorough and professional manner".

Adey earned his MB and BS in surgery from the University of Adelaide by the age of 21. He joined the Royal Australian Navy, where he had an early introduction to the effects of radio waves: "In rough seas on cold nights, we would go into the radar hut and warm ourselves with the stray emissions that drove the radar antennas", he once said. He moved to Los Angeles, where he became professor of anatomy and physiology at UCLA. His work there included developing biotelemetry techniques that allowed EEG recordings to be done on NASA astronauts in space.

Adey testified before Congress a number of times, telling a subcommittee in 1987 that the US Government should set federal standards for the non-ionising radiation created by video display terminals and household appliances, among other devices. In 1990, he recommended against using electric blankets and electrically heated waterbeds.

He was not afraid to be blunt. In a 2002 letter to the National Academy of Sciences, which was about to hold a meeting on the US Air Force's use of radar emissions, he wrote: "this is an incident that will live in infamy. How stupid does the USAF think that the American public must be?". "The sting of his words, which did not avoid attacks on one's personal intellectual attributes, was searing", Sheppard said. "Friends and foes alike can recall incidents from years and decades back. However, too few recognised that this intellectual combat—even when exercised in a manner that seemed to humiliate others—was done for the joy of putting ideas into contest rather than for the self-satisfaction of a momentary squelch."

Adey was married twice, and is survived by a son, Geoff, and a daughter, Susie.

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