

## Obituary

# Norman Weiner

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Norm Weiner, a member of ACNP since 1976, died on 5 March 2009 at his home in Denver, Colorado. Best known for his pioneering work on catecholamine synthesis, storage, and release, Norm was equally committed to scientific research and to education, making enormous contributions to the development of leaders and to science policy.

Norm was born in Rochester, New York. His father was a tailor and a designer of men's clothing. His mother stayed at home with the children. It was she who always stressed the importance of education for Norm, his three brothers and his sister. Norm completed his undergraduate work in chemistry at the University of Michigan, graduating with a BS in 1949 and then entering Harvard Medical School. He graduated from Harvard in 1953 and then interned on the second and fourth Harvard Medical Service at Boston City Hospital. After serving as a Research Medical Officer and an Instructor in the Department of Pharmacology–Biochemistry at the School of Aviation Medicine in San Antonio, Texas, Norm returned to Harvard in 1956. He was appointed an assistant Professor of Pharmacology in 1961. In 1967, he was appointed Professor and Chairman of Pharmacology at the University of Colorado. He was interim Dean at the University of Colorado from 1983 to 1984 and was Divisional Vice-President for Pharmaceutical Discovery at Abbott Laboratories from 1985 to 1987. After suffering a stroke in 1987, Norm returned to his Professorship at the University of Colorado, a position he held until his death.

A personal anecdote describes his early commitment to education. I first met Norm in 1963 while a student at Harvard Medical School. I introduced myself to him and asked to borrow a piece of equipment. Rather than worrying about any possible impact on his research, he asked me

what I was doing and gave me an opportunity to explain and defend the research that I was carrying out. In short, he was educating a young student. We next met when I was a post-doctoral fellow at the NIH. Norm had come to Washington to present a seminar, and I was lucky enough to be his host at dinner. It was not clear whether I was more interested in getting a faculty position in his department or he was more interested in filling a faculty slot. Although details and formalities remained, we both believed, by the end of dinner that my wife and I would be moving to Colorado. The Department of Pharmacology at the University of Colorado was a wonderful place to work. Under Norm's leadership, science flourished. At the same time, the importance of education was never overlooked. Norm attended nearly all of the lectures to medical students and scored 100% on virtually all of the exams. This was a feat none of us could come close to matching. Most days after giving a lecture, you could anticipate a visit from Norm. He would usually start out with a compliment and would then proceed to tell you exactly how you could improve your lecture. Woe to the faculty member who got a fact wrong.

Development of the careers of the scientists in the department was always a priority for Norm. Some of the scientists who were recruited, people like Bob Murphy and Nancy Zahnisser, went on to have important scientific and administrative roles at the University of Colorado. Others, including Barry Hoffer, Chip Rutledge, John Perkins, and me, went on to senior administrative positions at universities, companies, or at the NIH. Norm's ability to encourage the success of those around him was not, of course, limited to his professional colleagues. He had five sons, three of whom became successful physicians, one who attained a degree in chemistry and was a research assistant, and one an accomplished architect.

Norm's scientific contributions were numerous and recognized around the world. His undergraduate interest in chemistry led to an early collaboration with Oleg Jardetsky. They investigated the stoichiometry of the interaction of catecholamines with ATP. In these experiments, they demonstrated that four molecules of epinephrine are complexed with a single molecule of ATP with the principal interactions involving ionic binding reinforced by hydrogen bonding between a phosphate oxygen of ATP and the  $\beta$  hydroxyl of epinephrine.

Through much of his career Norm's work focused on the autonomic nervous system. He and his collaborators demonstrated that stimulation of sympathetic nerves results in the activation of tyrosine hydroxylase. His team then went on to characterize the molecular basis for this activation, describing a process that involves phosphorylation at multiple sites on the enzyme.

Norm served on innumerable committees and boards, including many editorial boards, usually as chairman. He also served on multiple *ad hoc* committees to review schools and/or departments of pharmacology. He was President of the American Society for Pharmacology and Experimental

Therapeutics from 1986 to 1987 and was the first recipient of the Otto Kraye Award, given in 1985.

Norm was a compassionate and caring friend. He knew, respected, and encouraged quality and his loyalty to his friends was truly legendary. His patience and grace during more than 20 years that he lived with the consequences of a stroke that would have devastated others has served as a model of courage and persistence to his friends and family. He is survived by his devoted wife of 54 years, Diana Elaine

Weiner, by five sons, Steven, David, Jeffrey, Gareth, and Eric, and by nine grand children.

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