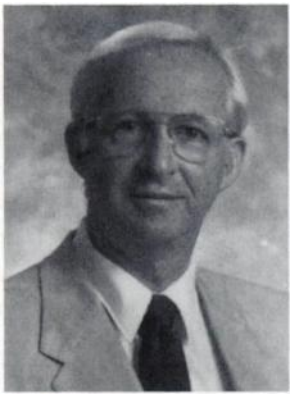
HISTORY CORNER

Emilio Segrè, 1905–1989, A Personal Reminiscence



Dennis Patton, MD

As a physics major in the 1950s, I took nuclear physics from Professor Emilio Segrè at the University of California Berkeley. I had never seen an instructor like him. He was a most enthusiastic and animated speaker, pacing back and forth around the room and waving his hands as he made his points in his distinctive Italian accent. He would shout out his lectures in a strong voice, sometimes aimed at the floor, sometimes at the ceiling—rarely directly at his students. His hand expressions were so articulate that nuclei, magnetic fields, and energy levels took on not only lives, but vibrant personalities of their own.

Segrè's lectures had an exciting freshness and he was quite concerned that each student understood the points. He took a personal interest in his students, though he knew few by name. His warm concern earned him the students' respect and the nickname "Uncle Emily." It was he who first imparted to me a fascination with the nucleus and radioactivity. I sometimes wondered how the nucleus could have existed before Segrè. He became my undergraduate advisor.

Once he shared with us a mystery that had baffled him since he first studied physics: why is it that a radioactive nucleus remains stable from the day of creation until some moment when it suddenly and mysteriously decides to change into something else? Why at that particular moment? His eyes glistened and he looked at the far corner of the room, as if expecting to find the answer there. He was quite fascinated with the question, and his enthusiasm was contagious.

When I was considering what to do for graduate study, Professor Segrè took me one day to ride the bus from the Berkeley campus up to "The Hill," where the 184-in. cyclotron was located. He wanted to interest me in working on high-yield fission. I sensed that the project would have something to do with nuclear weapons, and, although I am not and was not then a pacifist, the prospect of being involved in research—especially weapons—that I could not discuss freely with colleagues seemed sort of gamy. But Segrè said, in his distinct accent, "We are scientists! We do not think on these things!" We rode the bus up and down the hill at least twice, as I recall, talking about what role I might play in his research. Although we couldn't reach an agreement, we parted amicably.

I wound up working first at Donner Lab, and with Joseph Hamilton at the Crocker Radiation Lab on the metabolism of fission products in rats. When Segrè won the 1959 Nobel Prize for discovering the antiproton (not for discovering technetium), all of us working in the fledgling field were encouraged. It was a special high point for me, as I knew from experience the enthusiasm and intensity he brought to his work.

In 1976, at the Western Regional Meeting of the Society of Nuclear Medicine in San Francisco, Segrè was scheduled to speak on the discovery of technetium. In the hotel lobby he was surrounded by admirers. You can imagine my delight when he spotted me in the crowd and said loudly, "Ah! At last, a familiar face!" We had not seen each other in more than 20 years. I saw him on many occasions after that, and he never expressed a trace of ill will that I had not signed up with him.

In 1982 I invited Professor Segrè to be the featured speaker at the American College of Nuclear Physicians meeting in Tucson, AZ. He gave an unforgettable presentation on the discovery of technetium. (An audio transcript of this talk and of the 1976 talk are available in the SNM Archives in Reston, VA.) A reception was held for him in my home. I treasure a photograph of Segrè explaining the fine points of the computer (an Apple II) to my 2 sons, then ages 11 and 12.

Seven years later, Professor Segrè died, and I felt deeply the loss of this ebullient, extremely productive man, who had turned me on to the magic of the nucleus and the mystery of radioactivity. No doubt there are countless students to whom he imparted a fascination with the nucleus, but this one will always remember the lively, animated scientist who gave it the gift of life.

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