

IN MEMORIAM
PETER ROMAN ANTONIEWICZ

Pete Antoniewicz died June 14, 2015, after a heroic three-year battle with cancer.

Peter Roman Antoniewicz was born on February 5, 1936, in Tarnow, a city in southeastern Poland, about fifty miles east of Krakow. Peter was born to Michal Antoniewicz (-Woysum) and Sophie Brengoz Antoniewicz. Michal won a silver and a bronze medal in Equestrianism in the 1928 Summer Olympic Games.

Germany invaded Poland on September 1, 1939. That day, Pete and his brother, Jan, were standing on a small balcony at their house when they heard planes approaching. Despite their tender ages, three and two, the loud explosions from the bombing of the rail yards left a lasting impression and began an amazing survival story.

The Antoniewicz family and other refugees were interned in a number of different camps around Budapest. During 1940-41, they resided in southern Hungary. They remember skating and simple skiing. They were moved to Rakoscsaba, a small village about twelve miles due east of the Budapest center which had a military camp. They lived in old barracks. While there, Peter and his brother contracted scarlet fever. They were sent to an isolation ward at a hospital in Budapest. Lab tests revealed that Pete had an associated kidney infection and was moved to a special ward. Pete's condition became chronic and life threatening. When asked if there was anything they could do, the doctor remarked, "Well, some believe a diet limited to apples and no water will help." Desperate, Pete's parents put him on that regimen for weeks and, to their delighted surprise, he recovered. Contrary to most others on severely restricted diets, Pete loved apples for the remainder of his life.

The German invasion of Hungary, in March of 1944, brought about a complete change in the situation of the Polish refugees. Peter's father was taken away and placed in a Prisoner of War camp for officers, south of Berlin. His mother and the two boys were moved south to a forced labor camp in Austria until liberation in 1945. After the war they were returned to Poland. Following a remarkable chain of events, the family was eventually reunited in the American sector.

With the support of Catholic War Relief Services, they were able to immigrate to Salisbury, North Carolina, where Peter attended high school, participating in many sports. Following graduation, Pete attended North Carolina State University in Raleigh. He studied engineering physics. He graduated in 1959 and remained there for a Master's degree. He was there for two years before transferring to Purdue University where he received his Ph.D. in physics in 1965.

Pete married Susan Sanderlin in 1961, in Dare, North Carolina.

Pete was very prolific during his graduate school days at Purdue. He produced a number of papers with his supervisor, Professor Sergio Rodriguez. These included their paper, "Nuclear Magnetic Resonance in Metals Using Helicons," in 1965. That same year they also published, "Interaction of Helicons with Longitudinal Plasma Waves in Solids."

Pete Antoniewicz had always been an exceptionally dedicated member of the UT Austin Department of Physics. During his early period on the faculty, he was a productive researcher in the Condensed Matter Group, providing support for a number of the experimentalists. In 1969, Pete was awarded a Fulbright Fellowship to spend a year in Sao Carlos, Brazil. A few papers illustrate Pete's research interests:

- A solo authored paper in Phys. Rev. B21, 381 (1980) entitled "A Model for Electron and Photon Stimulate Desorption." This paper was cited three hundred eighty-seven times.
- "Resonant Tunneling Through Adsorbates in Scanning Tunneling Microscopy," M. A.

Gata and P. R. Antoniewicz. Phys. Rev. B47, 13797; published May15, 1993.

Gata and Antoniewicz were among the first theorists to address the question of whether the scanning tunneling microscope (STM) could distinguish different types of atoms on a surface. Gata and Antoniewicz approached this problem by adapting a theoretical model used in chemisorption studies and by thinking that the unknown atom is chemisorbed both on the sample surface as well as on the end of the STM tip. An electron can then tunnel from the tip to an orbital on the atom, which then has some probability of exciting a characteristic vibrational frequency of the atom-surface system, or even a molecular vibration within the adsorbate. Since different adsorbates have different characteristic vibrational frequencies, it becomes possible to distinguish between different atomic or molecular species. This was confirmed experimentally in 1998 by Ho's group who clearly observed the vibrational frequency of acetylene molecules adsorbed on a copper (100) surface, with the ability to distinguish the normal from the deuterated form of these molecules.

Pete served as chair of the Undergraduate Committee and as the undergraduate advisor for many years. In this role, he organized course offerings, chaired meetings to assign faculty to classes and worked with the graduate secretary to assign teaching assistants (TAs) to laboratories, classes and grading positions. He was always in his office and willing to see students. Pete agreed to be responsible for the physical science courses. These classes involved TA's in laboratory situations; however, they were required to lecture regularly. Every semester he fought hard to assign the appropriate students to this important task.

Pete was also part of a group that established and administered the Saturday Physics Workshop. This was a program that invited high school physics teachers and the best of their physics students to visit the physics department on the UT Austin campus. The program received

a College of Natural Sciences Outreach Award.

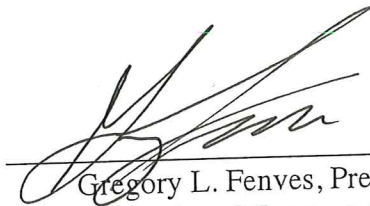
Pete took his teaching seriously and spent much time preparing his lectures. His quiet and subdued personality did not make it easy for him to be in front of a large class. However, his students did appreciate his knowledge of the material, his preparation, his availability, his fairness, his promptness in returning tests and his problem sessions. Students knew he wished them to succeed.

The Scholarship Committee required faculty who had knowledge of our students. Pete was a long-time member because of his position as undergraduate advisor, and his interest in helping our students and even students before they came to UT. Pete and Chris Sneden, an astronomy professor, taught a physics course at McCallum High School during the academic year 1990-91.

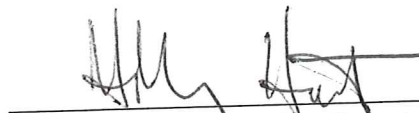
Pete Antoniewicz loved to teach and educate students on the beauty of understanding the world in terms of physics. He did so in many ways, including working with the UIL (University Interscholastic League) academic science for many, many years (1972-2001) and serving as the physics director of the Science Contest. The purpose of the Science Contest is to challenge high school students to do a wide range of reading in biology, chemistry and physics in order to gain an understanding of the basic principles as well as knowledge of the history and philosophy of science, and to foster a sense of enthusiasm about science and how it affects our daily lives. Pete was a legendary science director, admired and respected by the many high school teachers and students who were challenged by his questions, yet awed by his clear and seemingly simple explanations.

Pete and Susan's family included son, Andrew; daughter, Anna and her husband, Alphonso and their two children, Arianna and Aiden; and son, Adam and his wife, Yi. More detailed information with photographs is available at:

[https://web2.ph.utexas.edu/utphysicshistory/UTexas_Physics_History/Peter_R._Antoniewicz.ht](https://web2.ph.utexas.edu/utphysicshistory/UTexas_Physics_History/Peter_R._Antoniewicz.html)
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Hillary Hart, Secretary
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This memorial resolution was prepared by a special committee consisting of Professors Austin M. Gleeson (Chair), Alex de Lozanne, and Professor Emeritus M. E. L. Oakes.