

Obituaries

Arrola DuBridge 1900–1995



Arrola Bush Cole DuBridge, the wife of Caltech's late president emeritus, Lee DuBridge, and an active and committed member of the Caltech community for more than 20 years, died on September 30 in Hingham, Massachusetts. She was 95.

Mrs. DuBridge had been associated with the Institute since 1974, when she and DuBridge, both widowed at the time, were married. The two had met many years earlier while attending Iowa's Cornell College, where they were classmates and friends. Dr. DuBridge, who served as Caltech's president from 1946 to 1969, died in January 1994.

Born on March 12, 1900, and raised in Iowa, the future Mrs. DuBridge—then Arrola Bush—earned degrees in psychology and English from Cornell College, where she met and married her first husband, Russell Cole. Cole served as president of Cornell College from 1943 to 1960, and, upon his retirement, the couple moved to Massachusetts. After his death, Arrola Cole became a social worker at the state's Correctional Institute for Women in Framingham. Later she spent five years as social director of Chapman College's "World Campus Afloat," a shipboard education program that travels around the world each semester.

For a time, Mrs. DuBridge was a scriptwriter for NBC radio and television. A talented violinist, she also taught violin and played in the symphony orchestra of Cedar Rapids, Iowa.

Arrola DuBridge gave generously of her time and support to a wide range of Institute activities, including the Caltech Women's Club, the Caltech Service League, the Caltech Associates,

and the Caltech Alumni Association, which named her an Honorary Alumna in 1992. That same year, the Price Charities in San Diego endowed the Arrola DuBridge Scholarship Fund in her honor at the Institute. The scholarship provides funding for undergraduate women. Arrola and Lee DuBridge were widely known for their interest in and dedication to young people in science, a commitment the ARCS (Achievement Awards for College Scientists) Foundation recognized in 1992 by establishing the Lee and Arrola DuBridge Endowed Scholarship Fund to support undergraduates at Caltech.

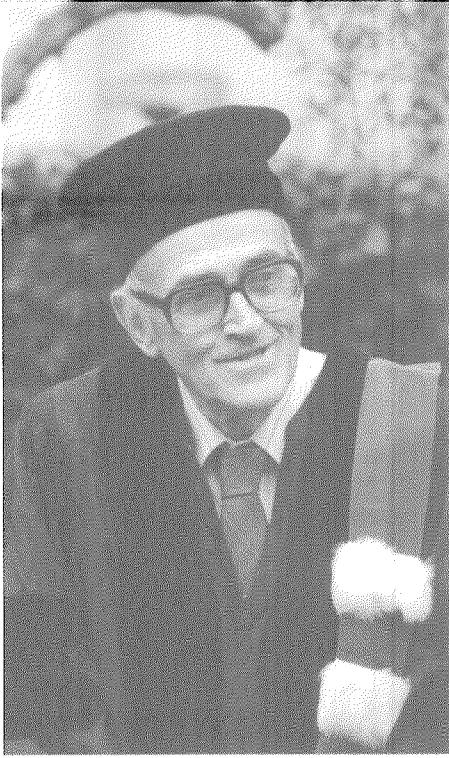
A memorial service was held on campus on November 15.

Clair C. Patterson 1922–1995

Clair C. "Pat" Patterson, professor of geochemistry, emeritus, died suddenly on December 5, at his home in The Sea Ranch, California, northwest of Santa Rosa. He was 73.

Patterson, who had a remarkable talent for finding the most important scientific problems and then solving them, is best known for his determination of the age of the earth and the solar system, and for his pioneering work on lead pollution in the modern world.

The passion that directed Patterson's research was his desire to better understand the geochemistry of metals in terrestrial rocks, waters, and atmospheres, in meteorites, and in the solar



system. Patterson was a pioneer in the study of lead in the earth's crust. He developed precise analytical techniques that enabled him to establish the true levels of preindustrial lead in the environment. His analysis of lead isotopes in meteorites and oceanic minerals led him in the early 1950s to conclude that the earth and solar system are 4.6 billion years old. This result is one of the most important measurements of time ever made. Current theories of stellar birth and evolution, and our very understanding of the history of the universe, are based in some measure on this important measurement.

While studying lead isotopes, Patterson found that human civilization had mined and dispersed an unprecedented amount of the metal around the world. Ice cores from the Greenland ice cap, dating back thousands of years, showed that the amount of lead in modern snow is much higher than in preindustrial times. This knowledge led Patterson to wonder whether this abundance of lead might affect humans. His studies of the bones and teeth of prehistoric people confirmed that modern humans contain up to 1,000 times more lead than did their ancient ancestors.

His message, that people were being contaminated by lead from water pipes,

from leaded gasoline, and from the solder used to seal canned foods, was not popular. But Patterson was a courageous and determined man, and he knew that he was right. He fought, against great odds and the money of powerful corporations, to discontinue the use of lead in these materials, and eventually, through his tenacity and his extremely thorough methods, his results and recommendations were accepted.

Patterson was born in Des Moines, Iowa, and earned his bachelor's degree in chemistry at Grinnell College in Grinnell, Iowa, in 1943. He continued to study chemistry at the University of Iowa, where he earned his master's degree in 1944, and at the University of Chicago, where he completed his doctorate in 1951 with Harrison Brown as his thesis advisor. He stayed on at the University of Chicago as a postdoctoral fellow for one year, and when Brown came to Caltech to establish the geochemistry program in 1952, Patterson came with him as a research fellow. He was a senior research associate from 1973 until 1989, when he was named professor of geochemistry.

Among his many honors, Patterson received the J. Lawrence Smith Medal from the National Academy of Sciences in 1975 and the Professional Achievement Award of the University of Chicago in 1981. He was elected to the National Academy of Sciences in 1987, and has also had a peak in Antarctica and an asteroid named for him. Most recently, he won the 1995 Tyler Prize for Environmental Achievement, the premier international environmental honor in the world.

A memorial service is being planned.

Olga Taussky-Todd 1906–1995

Olga Taussky-Todd, professor of mathematics, emeritus, and one of the world's leading experts on algebraic number theory and matrix theory, died at her home in Pasadena on October 7.

Taussky-Todd was born in Olomouc (Olmütz) in the Moravian part of Czechoslovakia. She attended the Koerner-schule in Linz, where her talent for mathematics was evident early. She later wrote in a personal memoir for the Caltech Archives: "Gradually it became clear to me that [mathematics] was to be my subject. However, I had no idea what that meant. First of all, I was fully conscious that the fact that I was doing well at school had nothing to do with it. The work at school was really not that difficult if one applied oneself to it, but it was so uninteresting that you could not wish to apply yourself. I felt there was another mathematics. I later found that the yearning for and the satisfaction gained from mathematical insight brings the subject near to art. While talent is undoubtedly needed by itself, it does not always make a person a mathematician."

Taussky-Todd clearly did have that yearning and that satisfaction from mathematical insight. She went on to study with the number theoretician Philip Furtwängler at the University of Vienna, where Kurt Gödel was a friend and fellow student ("Remembrances of Kurt Gödel," *E&S* Winter 1988). Taussky-Todd earned her PhD in 1930.

Obituaries

continued



Olga Taussky-Todd

At the University of Göttingen in 1931–32, she served as an assistant to Richard Courant and edited the collected works of David Hilbert. She spent 1934–35 with Emmy Noether, one of the founders of modern algebra, at Bryn Mawr College in Pennsylvania. Noether also taught at Princeton, where Taussky-Todd frequently accompanied her, and it was here that she became deeply interested in topological algebra. She became one of the first to point out connections between abstract algebra and topology.

She was appointed to a Yarrow Research Fellowship at Girton College, Cambridge, in 1936, and continued her work in topological algebra, which was new to Cambridge at the time. She was awarded, *ad eundem*, the degree of MA by the University of Cambridge in 1937, only after Parliament had changed the statutes that theretofore had permitted the degree to be awarded to men only. In 1937 she took up a position at the University of London, where she met her future husband, fellow mathematician John Todd. They were married in 1938.

Both Todds worked for the British Ministry of Aircraft Production during World War II. After the war they came to the United States, working for the National Bureau of Standards for 10 years, most of the time in Washington but with periods at the bureau's field station at UCLA. Olga and Jack Todd received appointments to Caltech in 1957. She wrote: "When the invitation to Caltech came, I felt very pleased and honored, and I knew that I had stayed at the bureau long enough. Coming from a civil service job back to academic life meant a tremendous change, almost as

much as the opposite change, which we had made years before. First of all, Caltech is a teaching institution, however high its research standards are. . . . I simply love to teach and feel that I have a good bit of natural talent for it." She was named professor of mathematics in 1971, having received tenure (the first woman to do so) in 1963. She became professor emeritus in 1977.

At a 1976 symposium at Caltech, Taussky-Todd was honored as one of the foremost living female mathematicians. She was elected to the Council of the American Mathematical Society in 1972 and elected vice president of the society in 1985; she was a fellow of the American Association for the Advancement of Science, a corresponding member of the Austrian Academy of Sciences and the Bavarian Academy of Sciences, and a recipient of the Golden Cross of Honor, First Class in Arts and Sciences, from the Austrian Government. The University of Southern California awarded her an honorary D.Sc. in 1988, and in 1963 she was selected as one of the 10 Women of the Year by the *Los Angeles Times*.

About this honor she later wrote: "Apart from the strain that the ceremonies and interviews inflicted on me, it gave me great pleasure. I knew that none of my colleagues could be jealous of it (since they were all men), and that it would strengthen my position at Caltech. My husband was delighted about it and enjoyed the ceremonies. Otherwise it did nothing to me. Recognition that has pleased me far more were those instances where a specific piece of my research or a lecture I had given were involved, or where something I had done for a student was involved." □