

## Memorial of Douglas G. Brookins 1936–1991

WOLFGANG E. ELSTON

Department of Geology, University of New Mexico, Albuquerque, New Mexico 87131-1116, U.S.A.

On April 30, 1991, a heart attack unexpectedly cut short the versatile and prolific career of Douglas G. Brookins at its peak of productivity. Doug was a native Californian, born at Healdsburg in 1936, the son of Rex and Ellyn (Hitt) Brookins. He began his geological and geochemical studies at Santa Rosa Junior College and then transferred to the University of California at Berkeley, where he played baseball and graduated *summa cum laude* in 1958. Graduate studies took him to the Massachusetts Institute of Technology, where he earned his Ph.D. in 1963. His academic career began at Kansas State University, where he advanced from Assistant Professor to Associate Professor between 1963 and 1970. In 1971, Doug came to the University of New Mexico as a full Professor and remained there for the rest of his life. His many contributions to university affairs included service as a department chairman (1976–1979), a faculty senator for three terms, and a member of the Water Management Interdisciplinary Program from 1987. He held many other consultancies and staff appointments and was a part-time research scientist at the Argonne and Oak Ridge National Laboratories at the time of his death.

Doug's approach to geochemistry was eclectic. Throughout his career, he continued to develop new interests and new specialties, all of them based on a thorough understanding of isotope systematics and chemical equilibria. Thus equipped, he would apply his knowledge to whatever problem was prominent at a given time. A lifelong interest in Rb-Sr isotope systematics began at MIT, where he studied under the pioneers, P. M. Hurley, H. W. Fairbairn, and W. H. Pinson. His Ph.D. dissertation dealt with Rb-Sr geochronological investigations in the Middle Haddam and Glastonbury quadrangles of Connecticut; in subsequent years he applied Rb-Sr chronology and Sr-isotope variations to geologic problems in New England, Montana, northern Michigan, Israel, Alaska, and New Mexico.

Although Doug Brookins's research interests were worldwide, he concentrated on the three geographical areas most closely connected with his professional career: New England, Kansas, and New Mexico. Prior to his arrival in Kansas, his work had mainly been in igneous and metamorphic rocks. Finding them scarce in Kansas, he turned his interests to kimberlites and related carbonates, meteorites, and (with S. Chaudhuri) the Rb-Sr systematics of sedimentary rocks. Even before moving to New Mexico, he had begun studies of young basalts of the Southwest, with A. M. Kudo and A. W. Laughlin.



By 1972, Doug's interests in sedimentary rocks directed him to sandstone-hosted uranium deposits of the Colorado Plateau. His work included radiometric dating and Eh-pH constraints on the stability of uranium minerals. This led to studies of uranium resources, including active participation in NURI, the National Uranium Resources Inventory. This, in turn, opened several other broad areas of interest, including mineral, energy, and water resources and the management of radioactive wastes. He remained a fervent advocate of nuclear energy but was well aware of its potential hazards. He became an international authority on methods to contain radioactive wastes from mine dumps and reactors. From studies of the dispersal of radioactive elements under natural geologic conditions, he derived predictions as to their behavior in mine dumps and other disposal sites, including the Waste Isolation Pilot Project (WIPP) site in Permian salt deposits near Carlsbad, New Mexico. This approach led him to a study of the Oklo phenomenon in Gabon, central Africa, where a natural uranium deposit had become critical in Precambrian time. He was among the first to recognize

that natural radon emissions could pose health hazards under special conditions. Because of his varied interests, Doug's name appears on over 500 publications, including several books. Many of his graduate students became his coauthors.

Much of his work necessarily involved Doug in controversies, ranging from the safety of nuclear energy and the nonhazards of asbestos to the extent of Paleozoic magmatism in New Mexico.

Regardless of whether his stands were popular, he defended them with passion and conviction. He was a superb teacher to students on all levels, from freshmen to Ph.D. candidates. In 1971, Kansas State University honored him as the outstanding graduate teacher and researcher of the year. A large and loyal following of graduate students was launched by Doug into successful professional careers. To support his students, his mass spectrometer laboratory, and his varied research interests, he raised over \$3 million in grant funds.

Doug Brookins was a Fellow of the Geological Society of America, the American Institute of Chemists, the Mineralogical Society of America, and the Explorer's Club and was an active member of numerous national and regional societies. He served as President of the Albuquerque Geological Society in 1973 and as Councillor in the New Mexico Section, American Institute of Chemists, in 1974–1975. His many achievements won him listings in *Who's Who in the World* and *Who's Who in America*. He was a member of Phi Beta Kappa (President of Alpha Section, Kansas, 1967–1968) and Sigma Xi.

In all his work, Doug Brookins displayed impressive scholarship. At meetings, he would amuse himself by taking notes in Cyrillic script, to the amazement of onlookers. He was always willing to share his knowledge with others, from beginning students to faculty colleagues. Doug cared deeply about education at all levels. From 1980 to 1983, he served on a Science Advisory Curriculum Committee, established jointly by the Albuquerque Public Schools and the University of New Mexico. For ten years he participated in a tutorial program for high school students holding summer internships, sponsored by the Albuquerque Public Schools Career Enrichment Program. Only a few days before his death he chaired a symposium on geoscience education for teachers at a meeting of the Rocky Mountain and South-Central Sections, Geological Society of America, in Albuquerque.

In spite of heavy professional obligations, Doug still found time for civic affairs and sports. He served on the Board of Temple Albert, a reform Jewish congregation, for 15 years and as its president from 1985–1987. His deep concern about human relations was reflected by service on the Jewish Community Council of Albuquerque (1974) and a Secretary of B'nai B'rith (1974–1975). A friend wrote that "his passion for softball far exceeded his common sense, so that every season found him playing with cracked ribs, a bad back, or injured knees." He lived life to the fullest and will be sorely missed by his daughters, Rachel Brookins and Laura Johnson, his

friends, his colleagues, and his present and former students. A Douglas G. Brookins Memorial Scholarship has been established by the University of New Mexico Foundation.

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<sup>1</sup> A copy of the complete bibliography of Douglas Brookins can be obtained by ordering Document AM-92-507 from the Business Office, Mineralogical Society of America, 1130 Seventeenth Street NW, Suite 330, Washington, DC 20036, U.S.A. Please remit \$5.00 in advance for the microfiche.

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