

MEMORIAL TO RANDALL LEE GRESENS
1935-1982¹

by
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Randall Lee Gresens, his wife, Miriam Turley Gresens, and their friend E. Bates McKee were killed in a light plane crash near Wenatchee, Washington, on July 17, 1982. Randy was 47 years old. He will be remembered for his innovative and controversial contributions to metasomatism and to stratigraphic and structural interpretations in the Wenatchee area and in the Precambrian rocks of New Mexico. He was a quiet, informal, open man with an overwhelming penchant for fairness.

Randy was born on May 11, 1935, in Harvey, Illinois, the son of Harold F. G. and Helen E. Gresens. The family lived in Midlothian, Illinois, where his father owned and operated a neighborhood drug store and where Randy attended grade school and high school. Although he was an honor student at Northern Illinois University, he volunteered to be drafted in the Army. His experience as an Army clerk-typist (1954-1956) taught him (1) typing (which was the source of voluminous single-spaced memos throughout his life), (2) not to be intimidated by authority, and (3) that education is the key to escaping mindless drudgery.

His interest in geology followed his discharge from the Army when he and a friend visited some gold mines in Ontario. This must have been a continuing fascination, because some of his last papers described the setting of the epithermal gold deposit near Wenatchee (1980) and the geochemistry of the greenstone gold deposits in the nearby Blewett district (1982).

To return to college he trekked to New Mexico Institute of Mining and Technology in Socorro. This ignited his lifelong love of the American Southwest. He transferred to the University of New Mexico in 1958, where he earned his B.S. degree in geology in 1960. While at UNM he met Mimi; they were married in November of 1960.

At Florida State University Randy worked on his doctorate under George W. Devore, whom he greatly admired. His dissertation was on the genesis of zoned pegmatites in the Petaca district of northern New

Mexico. Using emission spectrographic analyses and adapting the concepts of Hemley and Jones on silicate equilibria in alkali chloride solutions, Randy concluded (1967b, 1967c) that the pegmatites probably had formed hydrothermally in low-pressure zones in the schists. This was not a popular concept at a time when most petrologists favored crystallization from a silicate melt.

Leaving Florida State with the first of three daughters, the Gresens spent a postdoctoral year (1964-65) at the University of Southern California. Here their second daughter was born. Los Angeles seemed great until those nights they put their deck chairs on the roof and watched riot-torn Watts burn. The Gresens were ecstatic to move in 1965 to the climatic antithesis of the Southwest—Seattle. There, Randy became the geochemist in a rapidly expanding department at the University of Washington that was well known for its "hard-rock" petrology. The Gresens family also expanded to include a third daughter.

At the University of Washington, Randy became adept at X-ray diffraction and emission spectroscopy, atomic absorption, neutron activation, mass spectrometry, and the electron microprobe. For several years he supervised the departmental X-ray facilities; he established the atomic absorption facilities and, in the year before his death, helped to acquire and bring into operation an inductively coupled-plasma-atomic emission-spectrometer (ICP).

His experience with pegmatites suggested that mineral equilibria in aqueous chloride solutions could explain several other enigmatic rock types. He used geochemical data and his geological observations and those of others to propose the metasomatic origin of some blueschists (1969), kyanite deposits (1971), and massif-type anorthosites (1978). He was delighted to have his paper on blueschist alteration during serpentinization selected by W. G. Ernst for inclusion in *Metamorphism and Plate Tectonics*, a volume of Benchmark Papers in Geology published in 1975. His most important paper during this time probably was on the composition-volume relationships of metasomatism (1967a).

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Meanwhile, he continued work in New Mexico with H. L. Stensrud on the geochemistry of micas (1974b), the metamorphic stratigraphy (1974a), and geochronology (1975) of the pre-Phanerozoic rocks that contain the pegmatites. His hotly debated conclusion that the metamorphic stratigraphy is inverted seems to have been substantiated by recent publications emanating from UNM.

Randy had an overwhelming sense of fairness and balance. He deluged departmental and other chairmen with memos, suggestions, and ballot issues. Many colleagues considered him an obstructionist; others regarded him as the conscience of the department; none doubted that he would champion an unpopular cause. He served on the faculty senate. He also spent countless hours on the university grievance committee, until he concluded that the university administration was both judge and jury. In the early 1970s he organized a series of seminars for state legislators on a variety of geologic issues. In 1974 he learned French, took a leave of absence for two years, became a Peace Corps volunteer, and moved his family to the Ivory Coast; however, he resigned after five months when bureaucratic infighting precluded meaningful geologic mapping.

In the early 1970s the department established a three-week field course for non-majors and pre-majors on the eastern slope of the Cascade Range. Some believe that the geochemist's place is solely in the laboratory—not Randy. When no others volunteered to continue the course, he did, and made it an outstanding success. No one was more organized or more convinced that this should be a meaningful but enjoyable geological experience. He became interested in the geology of the nearby Wenatchee area when he noted a previously unmapped unconformity in the Tertiary strata (1980). He spent several summers (employed by the Washington Division of Geology and Earth Resources) in the Wenatchee sun that shines with a southwestern intensity. He produced several abstracts and papers on the geology of Wenatchee and the enclosing Chiwaukum graben. Just before his death, he completed the first draft of a bulletin of the Wenatchee area that will be published posthumously by the state [Gresens, 1983]. He enjoyed his Wenatchee research more than any of his other professional activities.

Lately, he had redirected his research toward exploration geochemistry. This was caused by his observations on the attempted development of the epithermal gold deposits near Wenatchee and, especially, by his expertise in aqueous geochemistry and analytical techniques. During the summers of 1980 and 1981, he consulted for Chevron Resources and for Los

Alamos Scientific Laboratory. His goal was to make geological and geochemical sense of the vast amounts of data reported by the NURE program for stream sediment and water samples. Rather than focus on the obvious few high values, he correlated and displayed relationships in the multi-elemental sets of data.

Although appalled by nuclear weapons, he maintained a scientific interest about them and human health. In 1982 he was investigating the merits of a major grant proposal on neutron activation due to nuclear explosions, specifically whether areas underlain by particular rocks or soils might be safer than others for humans to reoccupy.

Because of his insights into the geology of the Wenatchee area and the renewed interest by several companies in oil and gas exploration beneath the Columbia River Basalt Group, he co-authored (1981) a paper speculating on the stratigraphic and structural relationships beneath the Columbia Plateau. In 1981 he and several of his colleagues (including McKee) founded a geologic consulting firm, Cambria Corporation, based in Seattle; the firm's first major contract was to expand and attempt to document the sub-basalt relationships. As vice-president of the firm, Randy bought and proudly wore his first three-piece suit.

Establishment of the consulting firm promised a better financial future and focused his creative energies on things he could affect, rather than on the department or the university. Accordingly, he found more time for his own scientific pursuits. The geology of the Wenatchee area may be the key to what lies below the Columbia Plateau, so on the beautifully cloudless day of July 17, Randy, Mimi, and Bates decided to do aerial reconnaissance of the poorly known Tertiary stratigraphy along the rim of the Columbia Plateau south of Wenatchee. He and Bates had never been happier professionally; they were doing what they loved best to do.

Randy usually had a broad smile on his oval face, especially when "singing" geological ditties while strumming the guitar that he made. He enjoyed remodeling his house, folk dancing, group singing, and bicycling. He was the master of the surprise party and friendly prank. Mimi was equally informal but even more outspoken and more hilarious. They were devoted parents. Randy's proudest trip was as a chaperone for one of his daughters who was a finalist in the Miss Teen All-American contest in Miami. For many years Mimi operated a neighborhood child-care center. She taught at the Shoreline Community College, and in August of 1982 was to begin teaching in a preschool at the University of Washington. Mimi and Randy cheered for their daughters' soccer-playing, artistic,

talent, and high school cheerleading. Randy and Mimi always shared neighborhood problems and triumphs; they were co-presidents of the local PSTA. The reception following the funeral was held in the local elementary school and designated a celebration of the lives of Randy and Mimi. Over 400 people joined the celebration. They are survived by their daughters, Kelli, Hayley, and Amy, and by Randy's parents who retired to the Seattle area several years ago.

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