



Obituary

Duane M. (Dewey) Moore (1933–2024)



CMS President 2005



Albuquerque 2023

We have lost one of our internationally best-known clay scientists, a teacher, and historian. Dewey Moore was born in Rochelle, IL, USA during the Depression, as the eldest of six children. Despite poverty and difficult family circumstances, he found his way to Beloit College for two years while working on farms, a room and board job, and at a foundry. He transferred to the University of Illinois in Champaign, thinking he might become a high school biology teacher. His mineralogy professor, Don Henderson, changed his career path. Dewey completed three geology degrees in six years. His financial vehicles to support his studies as well as his family included operating a boarding house, milking cows, selling water softeners, working at a football stadium concession stand, and being a laboratory assistant at the Illinois State Geological Survey – unthinkable in current times. His 1963 PhD thesis focused on the clear connection between clay mineralogy and trace metal accumulation in the White Pine Group in Eastern Nevada.

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In 1964, Dewey joined a one-year-old Geology department at Knox College, a small liberal arts college, and taught there for 24 years, serving 10 years as Chair. Even though this was a three-person department, it ranked sixth among undergraduate institutions in the number of students who went on to complete PhDs, including the present authors. His teaching centered on field trips, mineralogy, problem-solving, and responding to students' questions through inquiry. Dewey's interest in applying a geologic worldview to the man-in-nature debate attracted many geology majors. Student groups investigated waste disposal, water pollution and conservation, soil resources and erosion, energy and air pollution, radioactive waste, geologic hazards, and food and the green revolution. Dewey set up telephone conferencing equipment for students to interview scientists with opposing views. He involved us in his research and stimulated us to pursue senior honors projects.

During Dewey's 1980 sabbatical at the University of Illinois, organized by John Hower, he shared an office 'with this crazy guy riding his motorcycle to Urbana ... from New Hampshire ... in March' – Robert (Bob) Reynolds. This led to a long intellectual

friendship and increased focus on two-dimensional modeling of the structured layers of minerals. Dewey's 1984–85 Fulbright proposal to Pakistan emphasized the appropriateness of X-ray diffraction for developing countries—simple preparation techniques, simple maintenance, and important clay mineralogy insights into the properties of soils and sediments. While in Pakistan, Dewey prepared a four-day short course on X-ray diffraction, clay mineralogy, and its applications. The short course became the framework for a book combining theoretical discussions about clay mineralogy with recipe-like directions for X-ray diffraction laboratory procedures. The copy-ready, wire-bound book took shape with bright undergraduates as the target audience. A publisher sent the manuscript to Bob Reynolds to evaluate, and Dewey discovered that Bob had always intended to write such a book. For 14 days over winter break at Dartmouth, they sat back-to-back, each on a Macintosh, each working on a different chapter. They wrote and traded texts to test one another's clarity and uniformity of tone, only taking breaks to watch the Celtics basketball games. Thus, they co-authored the highly cited textbook on clay minerals: two editions of *X-Ray Diffraction and the Identification and Analysis of Clay Minerals* (Oxford University Press 1989, 1997).

In 1987, Dewey joined Herb Glass and Randy Hughes at the Illinois State Geological Survey (ISGS), where he retired as a Senior Clay Mineralogist in 2001. Dewey's major research interests focused on clay mineral diagenesis in shales and sandstones, smectite illitization, changes in soil mineralogy due to cultivation, the use of mineralogy to decipher geologic history, and the history and teaching of geology and clay mineralogy. Dewey supported graduate student research employing nuclear magnetic resonance spectroscopy and served on dissertation committees. He also enjoyed investigating interdisciplinary problems. He contributed to hazardous waste and fly ash studies and collaborated with the Brookfield Zoo to study intestinal fragments to discover the minerals in animal diets. He collaborated with archeologists to use mineralogical approaches to sourcing pipes and figures to determine cultural interactions across space and time. Dewey's final research interest brought him full circle to farming. He and Bruce Velde, an undergraduate classmate, examined the human impact on clay mineral alteration in soils and what this can tell us about sustainability. After retiring, Dewey moved with his wife, Shelley Roberts, to Albuquerque, where he received invitations to conduct short courses from all over the world, including Argentina, Indonesia, and New Zealand. Dewey ran his final X-ray patterns at the University of New Mexico in Albuquerque as an Adjunct Professor in the Department of Earth and Planetary Science.

Dewey's professional affiliation was primarily with The Clay Minerals Society (CMS), in which he was known by some colleagues as the 'Renaissance Man of CMS' due to his breadth of knowledge and interests. He served on the nomenclature and source clay committees and held numerous CMS positions, including council member, historian, CMS meeting organizer (Santa Fe, 2005), and President (2004–2005). His interviewing project as CMS historian and a 50th anniversary symposium emphasized how life stories, cultural context, and intellectual genealogy shape research directions. He received the Brindley Lecture Award in 2000 and the Special Recognition Award in 2018. Unofficially, Dewey and Bob Reynolds founded the Friends of Illite (including illite-smectite), hosting a Friends of Illite meeting at CMS meetings that included a bottle of Scotch provided by Dewey. Everyone studying illite and illite-smectite was invited, including students who were encouraged to bring their diffractograms to share and discuss with established clay mineralogists. Dewey valued community, mentoring, and serendipity.

Aside from his interest in clay mineralogy, Dewey loved to be in the field and explore the landscape. He had a remarkable ability to vividly describe the geologic context of the landscape, invoking awe in people from all walks of life. For us, as with so many others, being in the field or the laboratory with Dewey not only transformed our view of the world but also changed our life trajectories. A rafting trip through the Grand Canyon, as well as many field trips to the Colorado Plateau together with Shelley, inspired his final contribution: a historical fiction novel, *Death on the North Rim* (2019), written as a sesquicentennial tribute to John Wesley Powell's exploration of the Grand Canyon.

We will miss this unassuming man who nurtured our curiosity and capacities. On the family side, Dewey is survived by his three children, seven grandchildren, 14 great-grandchildren, three siblings, and his wife, Shelley, a fellow educator, accompanied him to many CMS meetings and shared his love of the outdoors and commitment to the land ethic. Consistent with his nature to teach, share, and conserve, Dewey donated his brain to the University of New Mexico for dementia research. A biodegradable urn placed at their SW Wisconsin farm will return him to the soil, where he will mix with his dear friends illite-smectite.

Written by Georg Grathoff, Rob Lander, and Jay Matthews, with grateful acknowledgment of contributions by Dennis Eberl, Lynda Williams, Paul Schroeder, and Shelley Roberts.

Kevin Murphy