In Memoriam

Ed Murphy

Over the last nine months, two current Survey geologists and a former longtime Survey geologist passed away. Mark McDonald departed this life in September, Julie LeFever in December, and Sid Anderson in May.

Mark R. McDonald

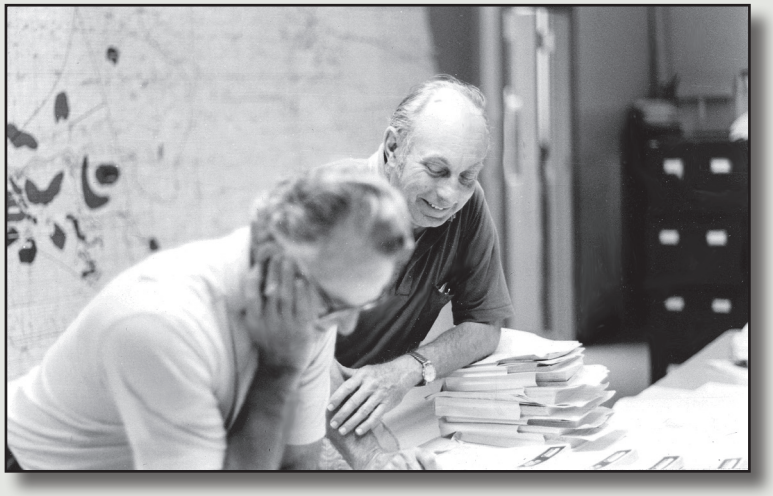
Mark McDonald grew up in Mohall, North Dakota and first worked for the Survey in 1991 as a temporary summer employee. After years of geotechnical consulting, Mark returned to school and obtained a PhD in geology from the University of North Dakota with an emphasis on geophysics and geothermal resources. Mark's background served the Survey well when he was hired in 2013. The three years he was with us were very productive; he reviewed numerous waste permit applications, mapped the surface geology in the Williston area, and updated geothermal gradients in the Williston Basin by temperature logging 21 temporarily abandoned oil wells.

Mark McDonald determining the water level of a monitoring well at an abandoned oil and gas well site in Billings County in 2014.

Sidney B. Anderson

Although Sid Anderson had been retired from the Geological Survey for 27 years, he remained an important source of information regarding geophysical logs, cores, and the initial oil plays in the Williston Basin. Several poorly marked or mislabeled cores from the 1950s and 1960s might have been lost forever if not for Sid's extremely valuable institutional memory.

Sid grew up in Finley, North Dakota and received a Ph.B. in Geology from the University of North Dakota in 1951. In 1952, only nine months after Amerada had discovered oil in North Dakota, Wilson



Sid Anderson (background) and Professor Walter L. Moore (foreground) correlating oil and gas well logs in the Geological Survey offices on the third floor of Leonard Hall. Photo circa 1979.

Laird hired Sid to be the Chief of the Subsurface Division, a position he held for 38 years. Sid was in on the ground floor of Williston Basin development, saw many of the geophysical logs from those oil wells as they first came in to the agency, and had a near-photographic memory when it came to those well logs. Decades later Sid could rattle off well names and ND Industrial Commission well permit numbers along with log characteristics of hundreds, if not thousands, of wells in the Williston Basin. He authored or co-authored 33 reports on the oil potential of rock formations in North Dakota. Most importantly, Sid gave freely of his time to assist industry geologists and graduate students whenever they sought his advice on the subsurface of North Dakota. Sid was Acting State Geologist from 1985-1990.

Julie A. LeFever

Julie LeFever came to the Geological Survey in 1981. The following is an amended version of her biography that I submitted to the American Association of Petroleum Geologists for the 2017 Robert R. Berg Outstanding Research Award. It is a very prestigious award and Julie was thrilled when she received word from AAPG President Paul Britt on November 16, 2016 she had been selected to receive it. Unfortunately, she passed away three weeks after hearing of the award and before she could personally accept it.

Julie Fowler was born and raised in Los Angeles, California. She received her undergraduate and Master's degrees in geology from California State University, Northridge. She did the fieldwork for her Master's Thesis in the Mojave Desert and Death Valley. She would fondly recall those unbearably hot conditions during her winters in Grand Forks.

Sid Anderson and Julie LeFever standing in front of their Spearfish Formation poster display at a AAPG Sectional Meeting in 1983.

Julie and Richard D. LeFever were married in 1976. In 1980, Rich became professor of sedimentology and stratigraphy at the University of North Dakota. Soon thereafter State Geologist Lee C. Gerhard hired Julie to work as a subsurface geologist for the North Dakota Geological Survey. In those early years, Julie was mentored by both Lee and Sid Anderson, the head of the Survey's subsurface program. This was back in the days of 20-foot-long cross sections made from Xerox-reduced logs taped to graphed vellum paper. Julie spent countless hours with Sid in the Survey log room discussing log tops, thinning and thickening formations, and changing lithologies. At first she listened intently, soaking in his knowledge. Before long she was an active participant, expressing how she thought the log correlations should be. Julie co-authored more than a dozen articles with Sid and/or Lee during those early, formative years.

In 1989, Julie became manager of the Wilson M. Laird Core and Sample Library in addition to her subsurface geologist duties. The Survey was short on office space, so for the next 19 years her office was in what had previously been a clean lab. During that time her desk was an ergonomically incorrect chemical bench, her walls were book cases, and her office door was nonexistent. But as she did with so many things, Julie made the best of it.

Julie explaining lithologic changes in core from the Three Forks Formation (Devonian) to then ND Governor John Hoeven (left) and ND Attorney General Wayne Stenehjem (right) in the Wilson M. Laird Core and Sample Library in 2009.

In 1990, Julie authored her first paper on the Bakken Formation (Mississippian/Devonian). She would go on to author or co-author more than 50 Bakken papers, earning her the affectionate nickname of "Miss Bakken" among those working in the Williston Basin. In 2015, the Rocky Mountain Section of AAPG awarded the 2015 John D. Haun Landmark Publication Award to Leigh C. Price and Julie for a paper they published in 1992. Julie authored more than 150 papers, articles, posters, maps, etc. on the Paleozoic and Mesozoic rocks in the Williston Basin. Twenty of those were collaborations with her husband, Rich, and in later years more than two dozen with Stephan H. Nordeng. Although she made a significant contribution to the literature on the Williston Basin and the Bakken Formation in particular, it was her readiness to share her wealth of knowledge, much of it unpublished, with others which set her apart from most researchers. Countless industry geologists, professors, and graduate students benefited from Julie's spontaneous, one-on-one core workshops in the Wilson M. Laird Core and Sample Library.

In recognition of her valuable service, one of the core laboratories in the recently expanded Wilson M. Laird Core and Sample Library was named in her honor at the building dedication on September 26, 2016. During that ceremony, Julie heard from industry and academia how valuable her contribution had been to them.

Lyn Canter and Mark Sonnenfeld (Whiting Petroleum) congratulate Julie on having a laboratory named in her honor at the core library dedication on September 26, 2016.

Julie originally submitted the Pronghorn Member (Bakken) article that is printed in this volume for our January 2017 newsletter. We had exceeded our page limit for that issue and Julie graciously volunteered to wait and have her article appear in the summer 2017 newsletter. This article is emblematic of how her work carries on after her death. Julie's publications continue to be cited by current researchers and the scientists she assisted. In addition, the students she mentored will continue to make geologic contributions far into the future.