

Carl J. Bowser

Emeritus Professor of Geology

How would Carl Bowser describe his career and life? You can find some insights on Carl's web page at <http://www.geology.wisc.edu/people/bowser.html>. A welcoming face and a rich collection of activities reveal, in part, his professional character. I am one of the many who have learned from him and have had my years enriched by knowing him, conducting research with him, and sharing with him an interdisciplinary vision of aquatic sciences on our campus.

His is a career of research, teaching, and service in low temperature geochemistry and chemical sedimentology; a career of undergraduate and graduate education that thrived, not only in the classroom, but on one-on-one interactions through the annual geology field course at White Lake, Ontario, and at the interdisciplinary field course in oceanography at Sapelo Island, Georgia; a career that thrived on taking responsibility and helping lead interdisciplinary research through Long-term Ecological Research on Wisconsin lakes. His is a career of curiosity that led him to see and study the world as a geological oceanographer, in the lakes of Wisconsin, the Laurentian Great Lakes, the equatorial Pacific, the Red Sea, the arid west and the Colorado River, and the Dry Valleys of Antarctica.

Carl Bowser has a lively and critical scientific mind. He is a careful chemist, a stickler for detail, an interpreter of rocks and sediments, one who clearly enjoys the processes that form rocks and layers on our Earth. Carl has an interactive mind. He thoroughly enjoys thinking and talking about problems in our understanding of the



photo: G. Medaris

Carl and Judy Bowser at the Spring Banquet.

Earth. He is a great collaborator in science as his colleagues such as myself in the Long-Term Ecological Research (LTER) Network and Blair Jones and Dick Marzolf in the United States Geological Survey (USGS) can attest.

Carl has a strong attraction to the arid west or perhaps any place that is dry. He was born in 1937 in the west, met his childhood sweetheart, Judy, in high school (1953) and married (1960) in the west. He was educated in the west, their first daughter was born there, later both their daughters, Debbie and Kim, moved westward when they married, and Carl and Judy regularly travel westward to keep this love of the west alive. Fortunately for all of us at Wisconsin, the research and teaching sites moved east with Carl and Judy and with that their love for Wisconsin developed and continues to keep them with us throughout their productive careers.

After receiving his BA (Geology) in 1959 at UC-Riverside and his PhD (Geology and Geochemistry) in 1965 at UC-Los Angeles, he joined the geology department here as an assistant professor in 1964. By 1973 he had become a full professor and finally in 1999 an emeritus professor.

Wisconsin became one of the nation's first Sea Grant colleges in the 1960's and Carl was one of the "salts" brought to Wisconsin at that time to shore-up our oceanographic faculty. He did research on manganese nodules in the Equatorial Pacific, in Green Bay, and even in the non-oceanic small lakes in northern Wisconsin. He taught a course in marine sedimentation and took his turn at other oceanographic courses. He also taught the basic courses like geology 100, 101, 105, and 106. And as many of us "salts" at Wisconsin soon realized, earth processes were either the same across environments or differed in interesting ways that improved our ability to understand. Wisconsin provided



photo courtesy J. Magnuson

Carl Bowser in the field.

Carl rich opportunities to exploit that geographic diversity and hone an ability to be general.

Carl's formal background and training was in "hard rock" geology. When he arrived in Wisconsin he was the only geochemist on the faculty; he decided to spread his interests among igneous, metamorphic, and sedimentary rock environments. His early thesis students reflect this hard-rock background with their studies on the Wausau syenite near, of all places, Wausau, and on metamorphic processes in the Abitibi belt of Archean greenstones in southern Quebec. Carl enjoyed this diversity, but finally realized he was spread too broadly; he returned to his true interests in low temperature, modern geochemical processes. Here chance also played a role. Joe Delfino, a water chemistry graduate student, walked into his office in the late 1960's with a ferromanganese nodule from the bottom of Tomahawk Lake in Vilas County, Wisconsin. Joe was taking Carl's geochemistry course and wanted to know what this thing was. This catalyzed Carl's curiosity and led to his first of many trips to the University's Trout Lake Station, this time to help collect nodules from Tomahawk and Trout Lakes. Joe Delfino, G. Fred Lee, and Dave Armstrong were among those with Carl on what Carl refers to as "that first, memorable trip".

The manganese nodules work in small Wisconsin lakes led Carl to collaborate with Ted Callender (Michigan and the USGS) on manganese nodules first in Green Bay and Lake Michigan and then later in the equatorial Pacific. The Nodule work in the Pacific was one of the first to win support for the NSF-MANOP (MANGANESE NODULE Project).

Carl has mused about how he came to focus on the surficial environment for most of his years at Wisconsin, and how the USGS became his "second home". Here are his thoughts.

I first was infected with geology at Mt. San Antonio Jr. College near Los Angeles. A part time job opportunity came up at a USGS field office in Claremont where I was hired as a lowly GS-5 to help prepare samples of borate deposits (saline residues) from the Mojave Desert. There I received my first training in laboratory chemical analysis, and began a long association with people connected with the USGS. The head of this field office suggested that for graduate education, I look at UC Riverside instead of UCLA or the Colorado or New Mexico schools of mines that were of interest to me at the time. Throughout my education at UCLA I believed that I was destined to work for the USGS. My first summer job at UCLA was with a USGS project in the Bearpaw Mountains in northern Montana. William Pecora, who was at that time the head of the entire USGS, directed the project. During my PhD I met Blair Jones; through his connections and numerous visits to Washington when we worked together, I met many of the USGS people with whom I later worked, such as

Tom Winter and Larry Benson. These ties led me to do both of my sabbaticals with the USGS in the Denver area.

At Wisconsin, Carl was drawn to interdisciplinary faculty groups focused on water and the environment. Among these are the Oceanography and Limnology Graduate Program (now called the Limnology and Marine Sciences Graduate Program), the Water Chemistry Program in the College of Engineering, and the Center for Limnology in the College of Letters and Sciences. He served four years as chair of the O and L Program 1987-1991. In the early 1980s Carl helped bring to our campus, the Long-Term Ecological Research Program on North Temperate Lakes funded by the National Science Foundation and operated by the Center for Limnology. And he served as lead PI on the LTER program in 1983-1884 when I was on sabbatical. Carl played a pivotal role in helping shape these interdisciplinary activities.

From its inception to the present, Carl has been a key person in the orchestration and intellectual leadership of the long-term ecological research program on Wisconsin lakes. He had strong views of how interdisciplinary research should be done based on some experiences he had had of disoperation in interdisciplinary research. He was a strong and early advocate of the idea that data from the various disciplines was a common property of all the researchers. He believed that the data should be made easily available through electronic means (today that is the Web for us). He believed that the researchers should work together to identify the research questions, to select what and where to measure, and synthesize their common resource into papers and graduate student careers. He built up and operated the chemistry laboratory for the LTER research here for almost 20 years. Many geology students and faculty benefited from this major responsibility, as did the LTER research program, and other departments such Soils and Water Chemistry.

Carl is a person with many interests. I am delighted that he continues to analyze, to write and be active in his science. It is clear that he has chosen to make his works available to all through the published literature.

He has developed another passion almost or perhaps even more intense. "Photography" meets several criteria to be a major activity for Carl. It captures the beauty, the structure, and the processes of the world as he sees it. It is technically complex and, like an environmental chemistry laboratory, requires new and amazing tools, machines, and devices with which to play. Carl has been spoiled by Judy and himself in the diverse collection of cameras he's obtained over the years. And it requires that he visit his family to document the grandchildren, that he visit the arid west to photograph rocks or sediment at dawn or sunset, and that he capture the Wisconsin environment.

John J. Magnuson
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