BIOGRAPHICAL MEMOIRS

Patty Jo Watson

April 26, 1932–August 1, 2024
Elected to the NAS, 1988

A Biographical Memoir by Janet E. Levy, William H. Marquardt, Julie K. Stein, and Steven A. LeBlanc

Figure 1 Patty Jo Watson. *Courtesy of Anna Watson.*

Patty Jo "Pat" Watson was a distinguished archaeologist who conducted research in both North America and the Middle East. She was known for her pioneering work on ethnoarchaeology, method and theory, and the study of the independent development of horticulture in the eastern United States. She was not only a leader in the profession but also a stellar mentor to many colleagues and students. In a 2009 contribution to *Annual Review of Anthropology*, she described herself as an anthropological archaeologist "thoroughly imprinted in the unity of the discipline."

Early Life, Education, and Teaching Career

Pat was born April 26, 1932, in Superior, Nebraska, grew up in Iowa, and started her college education at Iowa State College (now Iowa State University). She transferred to the University of Chicago in her junior year and went on to earn a master's degree in anthropology in 1956 and a Ph.D. in anthropology in 1959. Her dissertation chair was Robert Braidwood, a pioneer in the study of the emergence of agriculture in the Middle East. Her dissertation was titled *Early Village Farming in the Levant and its Environment*.[1]

After completing her graduate studies, Pat taught part-time at several colleges and universities in southern California and at the University of Michigan before joining the anthropology faculty at Washington University in St. Louis in 1969; she would teach there until her retirement in 2004. She served as chair of the Department of Anthropology twice and ended her career as the Edward C. Mallinckrodt Distinguished University Professor in the Humanities.

Research Career

Over her distinguished career, Pat made groundbreaking contributions to several significant topics in world archaeology. These include cave archaeology; the "Neolithic Revolution," that is, the beginnings of domestication, horticulture, and farming in both the Middle East and North America; archaeological theory and the role of science in archaeology; and in her later career, the importance of valuing gender and the lives of women in our interpretations of the past.

Figure 2 Patty Jo Watson, Steven LeBlanc and Charles Redman on the site of Çayönü. *Photo by Richard A. Watson, courtesy of Anna Watson.*

Starting in 1953 and continuing for fifty years, Pat participated in and led archaeological field work in Iraq, Iran, Turkey, Arizona, New Mexico, Kentucky, and Tennessee and consulted on excavations in many other places, including China. Her pioneering ethnographic research in western Iran was an early example of archaeological ethnography, also known as ethnoarchaeology, or living archaeology.

Her career was strongly influenced by multiple seasons of work with her dissertation advisor, Robert Braidwood, first as a student and then as a colleague. He had pioneered a multidisciplinary approach to fieldwork, especially in securing and analyzing faunal and floral remains. She continued and expanded on this approach throughout her career.

She undertook excavations in the Kurdistan region of Iraq, at the chalcolithic Halaf site of Banahilk, and later performed the above-mentioned ethnoarchaeological study in Iran. When Robert Braidwood shifted his interests to southeastern Turkey and began work on the early farming village of Çayönü Tepesi, Pat joined the project to work on Girikihaciyan, a Halaf site nearby. She worked during the first season with Charles Redman and the second with Steven LeBlanc. In the early 1970s, this same team, under Pat's leadership and funded with her first National Science Foundation grant, undertook excavations and site surveys in the El Morro Valley of New Mexico. Known as the Cibola Archaeological Research Project, it put into practice concepts of the "New Archaeology," which coincided with this period in Pat's career.[2]

She was not a disciple and did not like the term New Archaeology, but she and some others reached the similar conclusion that archaeology needed to be more scientifically grounded. As an essentially unknown assistant professor, in collaboration with graduate students LeBlanc and Redman, she laid out in a coherent fashion the concepts of the New Archaeology. With no publisher lined up and no concern that this might be the domain of big names in the field, they proceeded to produce a manuscript. What became *Explanation in Archeology: An Explicitly Scientific Approach* was accepted by Columbia University Press and published in 1971. She was no longer an unknown junior archaeologist. In the ensuing years, she went on to actively engage in what was a lively and healthy public debate on the goals and strategies of archaeology.[3,4]

Not only did she engage in the debate, but Pat also practiced what she preached. In Turkey, she and Redman undertook a very early systematic random surface sample of a site. Later in New Mexico, with the help of young Zuni women on a summer job work team (only Pat could have arranged such a thing), they stripped the heavy brush vegetation of the more-than-a-football-field-size site of Pueblo de los Muertos. It was quickly wall-trenched, exposing a pueblo containing hundreds of rooms. The rooms to be excavated were then chosen by a systematic random sample. The team also conducted a pioneering intensive random sampling of the valley concurrently.[5]

Pat contributed significantly to Middle Eastern and Southwestern U.S. archaeology and was a leader in archaeological method and theory, but it was her work in the caves

Figure 3 Excavations in Salts Cave Vestibule. *Photo by Steven A. LeBlanc.*

Figure 4 Pat and archaeobotanist Gail Wagner processing a flotation sample along the Green River, Kentucky. *Photo by William H. Marquardt.*

of western Kentucky and Tennessee that probably excited people most. Whether speaking to the public or to colleagues and students, her lecture on cave archaeology was the most often requested. Pat had been introduced to caving by her husband, Richard "Red" Watson, during their honeymoon in 1955. She quickly recognized the archaeological significance of the caves and sought funding to investigate the large and complex Mammoth Cave system in central Kentucky, with later forays into several caves in Tennessee. An important result of her cave research, in collaboration with paleoethnobotanist Richard Yarnell, was the conceptualization by the early 1970s of the Eastern Horticultural Complex, a suite of native North American plants including chenopodium, sumpweed, sunflower, and maygrass that was being cultivated by Native Americans as early as the Woodland period.

After the New Mexico project, Pat shifted her interests back to Kentucky and surrounding states for the remainder of her field career. She and her students continued to work in the caves but expanded their survey efforts to rock shelters and open sites within Mammoth Cave National Park. In 1972, with graduate student William Marquardt, the focus expanded further to encompass the Green River shell mounds made famous by the Works Progress Administration (WPA) excavations of the late 1930s, which were located just west of the caves. The premise was simple: if undisturbed parts of one or more of the Archaic period mounds could be found and if plant remains could be recovered, might we discover the antecedents of the Woodland-period domesticates that had been so well documented in the caves?

They did find apparently undisturbed deposits and initiated careful excavations, but two problems presented themselves. First, there was such a concentration of silt and clay in the midden sediments that botanical remains would not survive the agitation needed to break them free. The "garbage can" flotation technique that had been successful elsewhere simply would not allow the sediments to give up their fragile contents. This led Pat to design and have fabricated the first flotation machine, soon dubbed the "SMAP (Shell Mound Archaeological Project) Machine." Many hundreds of flotation samples were processed and analyzed.

The second big problem was in discerning one stratum from another. Color and consistency of the matrix simply all looked alike. This became an even bigger issue when third-millennium BCE squash remains were identified from some two meters below surface of the Carlston Annis Shell Mound. There, we *had* to know for certain that our deposits were undisturbed and to explain why they looked so discouragingly undifferentiated.

In response to this second problem, the team embarked on intensive multi-scalar research that included seasonality studies; paleoenvironmental reconstruction using terrestrial snails, river mollusks, and animal bones; vertical and horizontal microstratigraphy; and a multi-scale study of the area's geological history, focused particularly on the Green River. For the latter study, we enlisted the services of a geoarchaeologist (Stein). Once again, this was the classic Braidwood strategy: involve specialists in fieldwork (not just after the fact) and integrate the study of archaeology with the study of geology and environmental fluctuations. This approach was second nature to Pat, who passed it on to her students, who then passed it on to their students.[6]

The evolution of the flotation method of sample recovery paralleled Pat's career. She was at the very forefront of using this method in Southwest Asia through her work in Turkey. As was typical of Pat, the approach was pragmatic. The field season took place late in the year, and as a result, the soil was very wet. The charcoal was saturated and would not float. Undaunted, she hired a large crew of local workmen, who spread each damp sample out to dry and dutifully turned them until ready, then watched in disbelief when she then took the now dry samples and tossed them into water. Many dozens of samples were processed this way. As Pat had predicted, the charred plant remains now floated, leading to the discovery of early cultigens. Others might have given up, but Pat just calmly solved the problem.

She continued her efforts with flotation in New Mexico, again undertaking one of, if not the, earliest large-scale flotation endeavors in the region. Pat's determination to recover archaeological plant remains greatly enhanced what came to be known as the "flotation revolution" and resulted in a standardized method for quantitative comparisons of the results. Again, she linked field methods to analysis, a goal of the archaeological theory she espoused.[7]

In the 1990s, Pat expanded her interests and publication areas once again by participating in the growing discussion of

the importance of gender in the interpretation of the past. Although not significantly involved in theoretical discussions of gender, she considered, along with her student Mary Kennedy, the active role of women in early horticulture in the eastern woodlands.[8] Pat also facilitated the study of sex hormones in a sample of Mammoth Cave paleofeces that has the potential for enriching our understanding of prehistoric human use of the cave system (all twelve samples in this preliminary study were likely deposited by males).[9] Equally important, she strengthened the careers of women in archaeology. Although Pat said she found equal opportunity in Near Eastern archaeology, she became more sensitized to gender imbalances and potential discrimination as her professional focus turned toward the eastern United States. Pat lived her commitment to gender equity by hiring women archaeologists at Washington University, accepting them into the graduate program, and mentoring them both in St. Louis and across the country.[10]

Pat was soft-spoken and never raised her voice, was always listened to when she spoke, and everyone knew who was really in charge. Her first summer job in Iowa was detasseling corn, a difficult and unpleasant activity, but she was proud to have done it as well as any of the boys. Many of her students remember similar experiences doing assigned tasks, such as excavating in the cold, dark, wet vestibule of Salts Cave (LeBlanc), only to wonder later whether they were being tested to see how tough they were. Many of her students bonded with her and each other while crawling through the passages of Mammoth and Salts Caves, recording evidence of Native American sophisticated use of the caves 4,000 years ago. Pat never asked her students to do anything they were uncomfortable doing or that was beyond their capabilities. She simply set an example. We thought, "well, if Pat can do it, maybe we can do it too."

Pat believed that the community living adjacent to the Green River shell midden sites, and who owned and planted the fields in which they were located, should be included in our research as much as possible. She provided copies of the 1930s WPA publications, which they had never seen. She gave presentations at the church social every summer and encouraged all of us to do the same. We invited everyone to visit the site regularly and encouraged them to jump in the trench and take a sample. We gave each of them copies of every book, dissertation, master's thesis, and journal publication related to the work. Stein's regional geoarchaeological reconstruction of the river's history and mound's stratigraphic disturbances relied heavily on observations from locals about flooding, bank slumping, artifact collecting, and activities of the creatures that bioturbated the sediments. The research benefited greatly from Pat's attention to the community. Pat continued to visit our friends in the Big Bend until she was no longer able to travel.

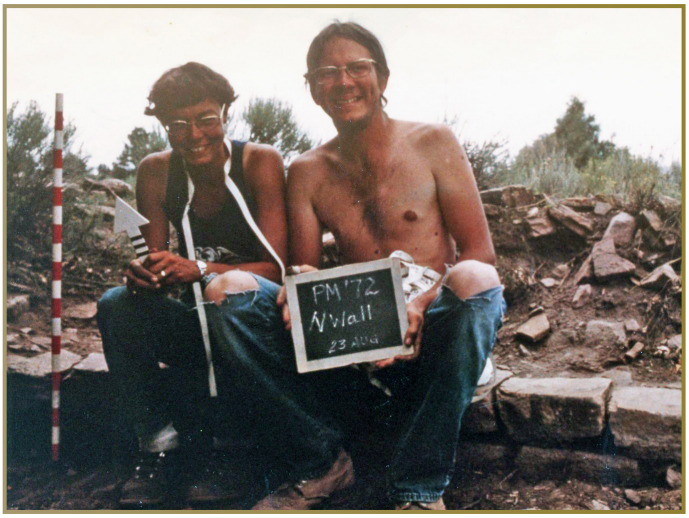

Figure 5 Measuring walls at Pueblo de los Muertos with William Marquardt. *Photo by William H. Marquardt.*

Service and Mentorship

In addition to her many publications, Pat contributed to her profession through service to several organizations. She was a board member of the Association for Field Archaeology; a grant evaluator for the National Science Foundation and the National Endowment for the Humanities; editor of *American Antiquity*, the flagship journal of the Society for American Archaeology; chair of Section H of the American Association for the Advancement of Science; and president of the Kentucky Organization of Professional Archaeologists.

In addition to these professional accomplishments and recognitions, Pat is perhaps remembered best for her extraordinary commitment to graduate and undergraduate students, colleagues, and mentees. She was not only an advocate for collaborative, interdisciplinary research, she lived this commitment in her numerous co-authored, multi-authored, and co-edited publications. During her teaching years and after retirement, she frequently reviewed and commented on others' draft manuscripts; advised undergraduate and graduate students and early-stage professionals; helped secure fieldwork opportunities and financial support for current and past students; and provided advice by letter, phone, email, and in person. She was an exemplary mentor to young professionals across the whole field of archaeology, and her students tried to take this model to their own careers.

Many of her students fondly remember hanging around her house talking in the kitchen in warm weather. When it was cold, people gathered around the fireplace in the living room, which was carpeted by a dozen rugs from her travels, and drank tea in small painted glasses brought from the Middle East. Pat's and Red's house was a home away from home for graduate students.

Pat was good-natured and kind-hearted. She loved to work hard and laugh. She brought her family to the field and cared deeply about other families too. She stayed connected, always wanting to learn the newest technique or discovery. She is missed by a large number of friends, colleagues, students, and mentees.

Awards and Honors

Her research was supported by grants from numerous organizations and institutions, including the Illinois State Museum, Washington University, National Geographic Society, National Science Foundation, and National Endowment for the Humanities. Pat was elected to the National Academy of Sciences and named a fellow of the American Association for the Advancement of Science. Her professional accomplishments were recognized with numerous awards: the Fryxell Medal for Interdisciplinary Research from the Society for American Archaeology, the Distinguished Service Award (now the Franz Boas Award) from the American Anthropological Association, the Gold Medal for Distinguished Archaeological Achievement from the Archaeological Institute of America, the Peter H. Raven Lifetime Achievement Award from the Academy of Science St. Louis, and Honorary Life Membership in the National Speleological Society.

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