

JOHN JOSEPH KELLEY (1933–2022)

John Joseph Kelley was born 4 January 1933 in Philadelphia, Pennsylvania, and died 11 February 2022 in Fairbanks, Alaska. After graduating high school in 1951, John served in the US Army (1953–55), after which he earned a BSc in geophysics and geochemistry from Pennsylvania State University in 1958. He then worked in several capacities for the Department of Atmospheric Chemistry, University of Washington, Seattle, from which he was sent to the US Navy's Arctic Research Laboratory (NARL) near Barrow (now Utqiagvik) in 1959 to study the movement of carbon dioxide (CO₂) and trace gases in the atmosphere, tundra, lakes, and ocean. In 1968, Don Hood, Director of the University of Alaska's Institute of Marine Science, recruited John as a graduate student and staff scientist.

After obtaining his PhD in chemical oceanography from the University of Nagoya, Japan, in 1974, Dr. Kelley became a tenure track faculty member at the University of Alaska in Fairbanks (UAF). From 1974 until his retirement in 2010, Kelley's career and appointments proliferated significantly. From 1974–76, he served as manager for the National Science Foundation's Meteorology and Oceanography Program. In 1975–77, Kelley participated as a State of Alaska Governor's Office research management officer in the National Oceanic and Atmospheric Administration's (NOAA) Outer Continental Shelf Environmental Assessment Program (OCSEAP). From 1977–80, he was appointed by the university to be the final director of NARL.

Prof. Kelley's longest assignment through the university was as chair of the North Slope Borough (Mayor's) Science Advisory Committee (NSB-SAC) through its critical formative years (1980–89). Another extended assignment was to manage the National Science Foundation's Polar Ice Coring Office (PICO) from 1989 to 1996. Throughout his career years and beyond, John reserved his highest priority for mentoring undergraduate and graduate students and younger research faculty. He also valued civic outreach exemplified by his memberships, elected offices held, and awards received. Professional societies, such as the Arctic Institute of North America, Sigma Xi, and The Explorers Club honored him, as did the College Rotary Club in Fairbanks. Colleagues provide personal reflections on John below.

I first met John at the Arctic Research Laboratory in 1959. Over the years John's scientific interests focused on atmospheric chemistry and CO₂. He pioneered research on the content and sources of atmospheric CO₂ using the University of Washington's station adjacent to Elson Lagoon. The exceptionally strong storm of October 1963 destroyed that station, so John and colleagues relocated their efforts to the nearby



Prof. John J. Kelley (R) presents Kenneth Toovak, Sr. (L) with a whale painting after the 10 May 2003 University of Alaska Fairbanks Commencement at which Kenneth was awarded an honorary doctorate. Photo: D.W. Norton

inland beach ridge where measurements and discoveries continued into the next decade. They discovered the buildup of CO₂ beneath the spring snowpack and its subsequent transport into freshwater and marine systems.

Jerry Brown

John J. Kelley's name, and those of others, were part of my extended family's lore of NARL leadership that we discussed during my formative years spent partially in Utqiagvik. Dr. Kelley deeply respected Iñupiat Traditional Knowledge. He spoke often of Harry Brower, Sr., Pete Sovalik, Chester Lampe, and others and supported public recognition of their contributions to science. One Dr. Kelley story from this era I heard from Kenneth Toovak, Sr. who reported that Kelley, while studying Arctic Ocean trace gases, requested support for a trip to sea to take gas samples. It was summer, and the weather appeared fair. Dr. Kelley asked Kenneth, who supported many scientists at NARL, to take him out. Kenneth refused, citing unstable local winds and currents foretelling a bad storm coming. John proposed going out without Kenneth, who responded, "You can go out, John, but I won't go with you—and afterward I will not even look for you!" John stayed onshore and soon witnessed a storm that would have devastated his sampling trip. For years afterward John thanked Kenneth for his emphatic advice.

Richard Savik Glenn

John Kelley joined Alaska's Institute of Marine Science (IMS) in the late 1960s. John's interests soon diversified, and Don Hood, the institute's first director, remarked that when you asked John to do something, it got done. That remark helps us see why John ultimately played so many roles.

Vera Alexander

During tundra biome field studies (1970–74) under the US International Biological Program, John Kelley and his colleague Pat Coyne established a floating station on the lake near John's tundra station at Barrow to measure seasonal fluxes of CO₂ from the lake surface. Throughout the years John worked closely with Charles D. Keeling at Scripps Oceanographic Institute to compare Arctic CO₂ behavior with the baseline measurements from Hawaii's Mauna Loa Observatory.

Jerry Brown

My collaboration with John Kelley began in the fall of 1970 under what seem, in retrospect, like improbable circumstances. John, a meteorologist and chemical oceanographer, had agreed to "adopt" me, a US Army captain and physiological ecologist freshly graduated with a Utah State University PhD. The recently appointed director of the Tundra Biome Program, Dr. Jerry Brown, of the US Army's Cold Regions Research and Engineering Laboratory had asked John to include me in a rigorous series of quantitative measurements of carbon fixation and flux, from atmosphere to tundra, and to other ecological compartments.

Improbable as it may have seemed at the outset, John turned the next few years into a rigorous, scientifically rewarding collaboration. John was perhaps the most unselfish person I have ever worked with. He was a gifted writer and could write a proposal or journal article in the time it took me to get organized. Not only that, his first drafts were final drafts. He never seemed concerned about who got the credit. His goal was always good science and getting the job done as promised, on time and within budget.

Pat Coyne

Soon after the Arab oil embargo of 1973, the Nixon Administration introduced Project [Energy] Independence intended to accelerate leasing of US Outer Continental Shelf (OCS) acreage to petroleum companies for exploration and development. Alaska, with its large share of US coastline fronting on OCS acreage, stood to be especially interested in the assessment of ecological conditions and environmental risks inherent in OCS developments in both Arctic and subarctic seas surrounding the state. After hearing my pitch for doing so, Dr. Kelley helped persuade the US Department of Interior to welcome State of Alaska representation on research management teams overseeing the long-term objectives of what became

NOAA-OCSEAP. Alaska assigned three professional environmental scientists to positions funded by NOAA beginning in 1975 in Fairbanks, Juneau, and Boulder, Colorado. Kelley himself served as one of those state-appointed scientists in Boulder through 1976.

Dave Norton

After earning his doctoral degree at Nagoya University, John maintained positive ties with Japanese colleagues. He focused on a small city, Mombetsu, in northern Hokkaido, on the Okhotsk Sea. The city was dedicated to sea ice research and had built an offshore tower and a small icebreaker. The community held annual ice symposia, which John regularly attended to present papers. He proposed establishing a sister city relationship between Mombetsu and Fairbanks. This project was adopted by the Rotary Club of College, Alaska. After agreements were exchanged by their respective mayors, the sister community relationship became effective in 1991. Colleagues who faced administrative or social hurdles learned how attentive John was whenever they approached him for advice or help.

Vera Alexander

I met Dr. John Kelley in May 1977 when he had recently become director of NARL. As a newcomer, I was deeply impressed by Iñupiaq culture and the scientific legacies of NARL's founding scientists Laurence Irving and Per (Pete) Scholander. I also learned that the International Whaling Commission (IWC) had imposed a moratorium on subsistence bowhead whale hunts. Barrow residents were devastated and angered by their 2000-year-old whale hunting tradition's abrupt suspension.

I was also impressed by Dr. Kelley's commitment to maintaining strong ties with the Native community that former directors, including Max Brewer, had developed. IWC's moratorium could have threatened NARL-community relations. Kelley and the Navy's base commander calmly reported to NARL's resident staff and scientific researchers that NSB Mayor, Eben Hopson, had assured them that there was no need for concern, and indeed the tensions soon lessened.

J. C. (Craig) George

As the last director of NARL, John Kelly coped with the closure of the lab by the Office of Naval Research before its formal transfer to the Ukpëagvik Iñupiat Corporation (UIC). During my 22 years in Barrow, John was respected by NSB mayors and the Alaska Eskimo Whaling Commission leaders with whom I worked. In the years before NARL's closure, 1978–80, John sought outside funding to save NARL. He led a team that obtained major funding from the US Interior Department's Bureau of Land Management. Project Whales involved dozens of scientists collaborating to assemble basic information on bowhead whales and

how they might be affected by offshore leasing and subsequent oil and gas exploration. Aspects of John's Project Whales were to form a major part of the basis for what became the decades-long Bowhead Whale Research Program conducted by the NSB's Department of Wildlife Management. The NSB bowhead whale project, a "descendant" of John's Project Whales, continues today, and is the largest and longest-lasting (40 years) science project strengthened by Indigenous Knowledge. Harry Brower, Sr. was especially instrumental in guiding the formative years of the project (Albert, 2000; Brewster, 2004). Significantly, for the bowhead whale-dependent people, years of study have shown that the bowhead whale stock has been steadily increasing, thus can support a well-regulated subsistence harvest.

Thomas F. Albert

After John became director of NARL, we continued to collaborate overseeing environmental research in the Beaufort and Chukchi Sea regions for OCSEAP. When the US Navy ceased funding NARL and its administration through the University of Alaska Fairbanks in 1980, John returned to the university's IMS, from which he continued to promote Arctic marine studies as chair and convener of the NSB-SAC. John Kelley made these transitions smoothly, fostered positive reciprocities among academic and government scientists, Iñupiat stakeholders, and industry representatives. Many people remember the period and John fondly.

Dave Norton

I returned to Utqiagvik to work for the NSB in 1980 as a biologist under Dr. Thomas Albert. Our initial task was to estimate how many spring-migrating bowhead whales passed Point Barrow. Tom Albert's cordial ties with the Native community from his earlier physiology work at NARL on rodent cold adaptation, allowed him to seek advice from local senior whaling captains about bowhead migratory behavior. Their advice helped improve our survey techniques.

Later, I came to appreciate how John Kelley's transition from NARL director to chairman of the NSB-SAC had made these improvements possible within what became the NSB's Department of Wildlife Management Bowhead Whale Project. John contributed greatly to Arctic science, the NSB, and the Arctic Iñupiat communities.

J.C. (Craig) George

When, as a graduate student, I met Prof. Kelley on the UAF campus in 1985, he updated me on events and people connected with UIC-NARL between 1980 and 1985. I had been away from Utqiagvik working on my undergraduate degree in California during those years.

John's thoughtful briefing served me well on several levels. As an advisor, Dr. Kelley strongly supported outreach to Alaska Native students, encouraging us to explore science and engineering disciplines. He was one of the faculty advisors, along with Sue McHenry of Rural Student Services, for the newly formed American Indian Science and Engineering Society chapter at UAF.

In the late 1980s, as a member of a geo-exploration team, I made presentations to the NSB Assembly and mayor regarding local natural gas exploration and development. We were promptly referred to the NSB-SAC. Dr. Kelley chaired those SAC reviews with utmost professionalism. He was kind and polite as chairman, but there was a serious side to his role. We were not simply in class studying Arctic science but were in the real world affecting the lives of the NSB residents. The review and recommendations of the SAC had the power to slow, alter, or stop major proposed efforts, in this case for local energy development; its recommendations to the NSB mayor could bear grave consequences.

Richard Savik Glenn

John was presiding officer of College Rotary when I became a member in late 1986. Shortly after my induction, he and his wife Eleanor invited me to dinner at their home. We talked about linkages between college faculty and the Fairbanks community, which have been so important to the vitality of social organizations such as Rotary in Alaska, the US, and internationally. At Rotary's weekly meetings, John took time to listen to what other club members had to say and often made jovial comments, which endeared him to others.

John was a faculty leader in research on climate change in Alaska and the Arctic. I admired the diverse tactics he used to disseminate research findings to the general public, the academic community, and especially to students. In IMS, he taught undergraduate and graduate students and led seminars in which I had the good fortune to participate. In the late 1990s my research began focusing on endangered species issues. John invited me to present my case study of the Steller sea lion controversy. Environmentalists, scientists, and others presented briefs to the Seattle District Court, which persuaded Judge Thomas Zilly that the Endangered Species Act (ESA) required closure of the North Pacific fishery until the population recovered. After Zilly's injunction, Senator Ted Stevens added a rider to must-pass omnibus budget legislation that suspended the ESA until further scientific study led by NOAA Fisheries moved the issue toward resolution. John urged me to arrange for the publication of my case study in *Marine Policy* and to present it at conferences in Alaska. He was persistent in promoting the works of others.

Gerald A. McBeath

When I first joined the University in 1989, John proved to be a wonderful mentor for how things worked at UAF. He was kind, understanding, and always radiated a calm view of the world. By then John was directing the PICO so his office hummed with visitors, phone calls, and activity. Just watching him handle these challenges was valuable. Nevertheless, John patiently listened whenever I described some new project, then he suggested how to move ahead with my ideas.

By the early 1990s, John was pioneering the remote delivery of marine science courses. Technology for distance-delivered instruction was primitive then, but John saw the need to work with rural Alaska Native students living beyond the University's urban campuses. His early advocacy for distance education stimulated colleagues including me, so we look back gratefully on the progress he initiated. John Kelley understood Arctic issues both deeply and broadly. He learned from NARL experience, the people, the politics, funding opportunities, timing, and international issues. As the world focuses more effort on the Arctic, we shall miss his guidance and knowledge of the region.

Michael A. Castellini

The 50th Anniversary of NARL 1997 was commemorated by the Arctic Institute of North America's publication, *Fifty more years below zero: Tributes and meditations for the Naval Arctic Research Laboratory's first half-century at Barrow, Alaska* (Norton, 2000). Before the August celebration took place, John Kelley, with his special blend of courtesy, consideration, and organization, had already solicited 74 written reminiscence letters from NARL's various alumni, comprising 219 pages of text and illustrations. That volume grew to include 46 articles authored by a total of 83 authors and co-authors, comprising another 320 pages. Many contributors wrote letters and also authored formal articles for the book, so its index lists a grand total of 105 individual contributors. The Arctic Institute of North America has made the entire volume available online free of charge (Norton, 2000).

Regrettably, John's eyesight started failing as a result of macular degeneration shortly after his formal retirement. Nevertheless, he enjoyed a vibrant social life, happily hosting many friends at this home. He is survived by his wife Eleanor of 52 years, who has been cheerfully encouraging the contributors to this tribute.

REFERENCES

- Albert, T.F. 2000. The influence of Harry Brower, Sr., An Iñupiaq Eskimo hunter, on the Bowhead Whale Research Program conducted at the UIC-NARL facility by the North Slope Borough. In: Norton, D.W. (ed.). *Fifty more years below zero: Tributes and meditations for the Naval Arctic Research Laboratory's first half-century at Barrow, Alaska*. Fairbanks: Arctic Institute of North America. 265–278.
- Brewster, K. 2004. *Whales, they give themselves: Conversations with Harry Brower, Sr.* Fairbanks: University of Alaska Press.
- Norton, D.W. 2000. *Fifty more years below zero: Tributes and meditations for the Naval Arctic Research Laboratory's first half-century at Barrow, Alaska*. Fairbanks: Arctic Institute of North America.
<https://archive.org/details/fifty-more-years-below-zero/mode/2up>

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