



Arctic, Antarctic, and Alpine Research

An Interdisciplinary Journal

ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/uaar20>

Memorial to Norman W. Ten Brink (1943–2023)

William J. Neal, Alan Werner & Christopher F. Waythomas

To cite this article: William J. Neal, Alan Werner & Christopher F. Waythomas (2023) Memorial to Norman W. Ten Brink (1943–2023), Arctic, Antarctic, and Alpine Research, 55:1, 2248844, DOI: [10.1080/15230430.2023.2248844](https://doi.org/10.1080/15230430.2023.2248844)

To link to this article: <https://doi.org/10.1080/15230430.2023.2248844>



This work was authored as part of the Contributor's official duties as an Employee of the United States Government and is therefore a work of the United States Government. In accordance with 17 U.S.C. 105, no copyright protection is available for such works under U.S. Law.



Published online: 06 Sep 2023.



Submit your article to this journal [↗](#)



Article views: 356



View related articles [↗](#)



View Crossmark data [↗](#)



IN MEMORIAM

Memorial to Norman W. Ten Brink (1943–2023)

William J. Neal^a, Alan Werner^b, and Christopher F. Waythomas^c

^aGrand Valley State University, Allendale, Michigan, USA; ^bMount Holyoke College, South Hadley, Massachusetts, USA; ^cU.S. Geological Survey, Alaska Volcano Observatory, Anchorage, Alaska, USA



As we remember him, photograph of Norman Ten Brink taken by Al Werner, January 12, 2018.

On 30 March 2023, our arctic and alpine research community lost an outstanding geomorphologist, Norman W. Ten Brink. Norm's research ranged from high latitudes, both North and South; mountains from the Rockies to the Alaska Range; and to the continental glaciation of the Great Lakes Region. As a professor, he was in the birth years of introducing "Environmental Geology" into college curricula, the evolution of

a college to a university, and bringing emphasis to regional groundwater studies in glacial terrains.

Norm was born in Shelby, Michigan, in 1943, and grew up on a small farm where he hiked over the glacial landforms in his youth without knowing their origins, developing into an out-of-doors man with a love of Nature, an avid hunter and fisherman. Norm's path to becoming a geologist was circuitous after graduating from Shelby High School, first attending Hope College and earning degrees in biology and chemistry, then entering the University of Michigan intending to study dentistry. There, he took a course in geology, which changed his vocational direction and set a new direction for both his professional and personal life's path. Norm earned his B.S. in geology in 1966 and married Shirley Bishop before going on to Franklin and Marshall College for his M.S. degree.

Norm's University of Michigan experience was influenced by John Dorr and Don Eschman and the legacy of James Zumberge, who had established the university's Glacial Geology and Polar Research Laboratory in 1961. Norm frequently credited his Franklin and Marshall adviser John Moss as most influential in shaping his professional academic outlook in "teaching people, not subjects" as well as inspiring his interests in glaciology and Pleistocene history. Norm's M.S. thesis was "Pleistocene Geology of the Stillwater Drainage and Beartooth Mountains Near Nye, Montana. At F & M, Norm also established a lifelong friendship with Dale "Dusty" Ritter, with whom he would later collaborate (Ritter and Ten Brink 1986). At this point,

CONTACT Christopher F. Waythomas  cwaythomas@usgs.gov  U.S. Geological Survey, Alaska Volcano Observatory, Anchorage, AK, USA

This work was authored as part of the Contributor's official duties as an Employee of the United States Government and is therefore a work of the United States Government. In accordance with 17 U.S.C. 105, no copyright protection is available for such works under U.S. Law.

This is an Open Access article that has been identified as being free of known restrictions under copyright law, including all related and neighboring rights (<https://creativecommons.org/publicdomain/mark/1.0/>). You can copy, modify, distribute, and perform the work, even for commercial purposes, all without asking permission. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

Norm was in the pipeline of working with the most influential glacial geomorphologists of the time and continued on to the University of Washington, where he was a student of Link Washburn and Steve Porter. His Ph.D. research began his long-run of high-latitude field studies with mapping in Western Greenland to unravel some of the history of the Greenland Ice Sheet and isostatic rebound (Ten Brink 1971). After finishing his Ph.D., Norm accepted a postdoctoral fellowship at Ohio State University's Institute of Polar Studies and switched his focus from Greenland to Antarctica, including fieldwork in the South Shetland Islands (Deception Island) with Jim Curl. During one season he provided Jacques Cousteau with geologic information and was interviewed for the TV program. As a reward, Cousteau took Norm on a dive under the ice shelf in Calypso's mini submarine. Norm's academic pedigree can be traced back to Louis Agassiz. The lineage goes from Norm to Dale Ritter, to Sheldon Judson, to Kirk Bryan, to Herbert Gregory, to William Morris Davis, to Nathaniel Shaler, to Louis Agassiz!

In 1973, Norm returned to western Michigan as a faculty member of Grand Valley State College's fledgling Geology Department, replacing veteran geomorphologist John Lucke. GVSC's first president was James Zumberge, a well-known Antarctic explorer/geologist, so an unnoticed tradition was occurring. Here Norm taught, mentored, developed curricula, and administered, all while continuing research over the next thirty years as Grand Valley grew from a College to a University. In that time, Norm accrued approximately thirty publications and accessible archived reports, including his Greenland and Antarctic work (e.g., Ten Brink 1973; Ten Brink and Curl 1973; Ten Brink and Weidick 1974). In 1977 he began glacial geologic studies in the north Alaska Range in collaboration with archeological researchers focused on locating evidence for late Pleistocene human occupation. As Norm put it, the archeologists "were looking for needles in haystacks" and our job is to "find the haystacks" (potential sites of early human occupation). This work led to research grants from the National Geographic Society and the National Park Service to study the late Quaternary history of the north Alaska Range and to integrate this work into ongoing archeological studies in the region (Ten Brink 1979, 1982; Ten Brink and Waythomas 1982, 1985; Ten Brink, Waythomas, and Werner 1982, 1983, 1984). This work was enriched by collaborations with John Hoffeecker (archeologist) and Tom Ager (USGS palynologist). Besides publications and numerous reports, this work had two other important results. First, the grants were among some of the first to come to a Grand

Valley State science department, which helped establish the unit's credibility, and, second, Norm launched the careers of several undergraduate students who assisted him with his fieldwork and research before such inclusion was in vogue. The latter helped establish this GVSU tradition. The north Alaska Range Project also led to more opportunities as Norm was a consultant for Woodward-Clyde and assisted with hydroelectric dam site assessments on the Susitna River (Welsch, Goodwin, and Ten Brink 1982). He worked briefly on the Kenai Peninsula, where he did glacial geologic studies in collaboration with Dick Reger (then with the Alaska Division of Geological and Geophysical Surveys).

In addition to his breadth of geographic studies, Norm was a professional resource to the Grand Valley and West Michigan community at large. At one point he worked closely with faculty at Calvin College as they sought to establish their geology department and curriculum. Norm's "local" research was directed at groundwater issues. Most of the principal groundwater aquifers of the region are glacial deposits associated with the Lake Michigan lobe, well known to Norm through his teaching, research, and numerous departmental field trips. He was an expert witness in an extended legal battle to block the siting of a landfill on the Grand River floodplain and was regularly handling questions regarding groundwater resources. As a result, Norm had a vision of unifying GVSU's science departments' efforts regarding water resources studies and wrote the initial proposal that led to the development of a Water Resources Institute at Grand Valley. In addition, he carried out the institute's first grant-funded study resulting in a regional synthesis of ground water conditions. He served as department head and was a founding member of the GVSU Teaching and Learning Center. Most of all, Norm was an enthusiastic teacher, mentor, and role model who inspired many students to embrace learning and pursue careers in geology. He promoted involving students in his projects, was an exceptional spokesperson for his geology department, and was supportive of his colleagues. Norm prized his home life and was a loving husband and father to his two sons, Andy and Ryan, who followed his footsteps as out-of-doors men with strong interests in geology. Although in retirement Norm experienced the loss of his wife Shirley, he didn't lose his faith and later married Carol Gunneman. That same faith kept Norm in his long battle with leukemia.

Yet we remember Norm not just for his research and academic achievements but also as the classic bearded, pipe-smoking professor who looked the part of seasoned geologist explorer, a man who had the stories and experiences aplenty to hold our attention. His tales of getting trapped on an erratic boulder in Greenland by

a musk ox for 16 hours, or boarding Calypso's submersible to dive beneath the Antarctic ice shelf, or one of many bear stories, coming back around to make a geologic point. Whether in the classroom or sitting around the campfire in the remote Alaska Range—perhaps discussing how find those elusive “haystacks” with the early-man “needles”—all are among the many fond memories we continue to hold and share.

Disclosure statement

No potential conflict of interest was reported by the authors.

References

- Ritter, D. F., and N. W. Ten Brink. 1986. Alluvial fan development and the glacial-glaciofluvial cycle, Nenana Valley, Alaska. *The Journal of Geology* 94, no. 4: 613–25. doi:10.1086/629063.
- Ten Brink, N. W. 1971. Holocene deleveling and glacial history between Søndre Strømfjord and the Greenland Ice Sheet, West Greenland. Ph.D. Dissertation, University of Washington, Seattle, 191p.
- Ten Brink, N. W. 1973. Lichen growth rates in West Greenland. *Arctic and Alpine Research* 5, no. 4: 323–31. doi:10.1080/00040851.1973.12003742.
- Ten Brink, N. W. 1979. Glacial geologic and related geomorphic history of the North Alaska Range, with particular emphasis on prehistoric archeological potential. [Report for National Park Service and National Geographic Society]. (tDAR id: 129611).
- Ten Brink, N. W., 1982. North Alaska Range Project, 1978-1982: Objectives, background, and summary of results. [Report to National Geographic Society]. (tDAR id: 129608).
- Ten Brink, N. W. 1983. Glaciation of the Northern Alaska Range. In *Glaciation in Alaska: Extended abstracts from a workshop*. Alaskan Quaternary Center. *University of Alaska Museum Occasional Paper* 2: 82–91.
- Ten Brink, N. W. 1984. North Alaska Range Project final report on 1978-1982 geo-archaeological studies. Report to the National Geographic Society and the National Park Service. Department of Geology, Grand Valley State College, Allendale, Michigan. (tDAR id: 129614).
- Ten Brink, N. W., and J. E. Curl. 1973. Glaciology and glacial chronology in the South Shetland Islands. *Antarctic Journal of the U.S.* 8, no. 4: 175–7.
- Ten Brink, N. W., and C. F. Waythomas. 1982. Late Wisconsin glacial chronology of the north-central Alaska Range—a regional synthesis and its implications for early human settlements. (tDAR id: 129613).
- Ten Brink, N. W., and C. F. Waythomas. 1985. Late Wisconsin glacial chronology of the north-central Alaska Range: A regional synthesis and its implications for early human settlements. *National Geographic Society Research Reports* 19: 15–32.
- Ten Brink, N. W., C. F. Waythomas, and A. Werner. 1982. Surficial geologic maps and map legends for portions of the north-central Alaska Range: McKinley A-3, A-4, and A-5 Quadrangles; McKinley B-1, B-2, B-3 and B-4 Quadrangles; McKinley C-3 Quadrangle; Healy B-2 Quadrangle; Talkeetna D-5 Quad. [Maps produced for National Park Service]. (tDAR id: 129612).
- Ten Brink, N. W., and A. Weidick. 1974. Greenland Ice Sheet history since the last glaciation. *Quaternary Research* 4, no. 4: 429–40. doi:10.1016/0033-5894(74)90038-6.
- Welsch, D., R. Goodwin, and N. Ten Brink. 1982. Late Quaternary glaciations of the Talkeetna Mountains, Alaska abs.]. *Geological Society of America Abstracts with Programs* 14, no. 6: 353–4.