Ann Johnston, RSCJ, was born in Detroit, Michigan in 1932. She attended Manhattanville College, graduating in 1954. She entered the Society of the Sacred Heart the same year and was finally professed in 1963. She taught in middle and secondary schools in New York and elsewhere, while earning three Masters degrees, in Education and in Interdisciplinary Studies, both from Manhattanville College in 1964 and 1971, then in Historical Theology from St. Louis University in 1975.

She completed the Ph.D. in Hebrew Bible in 1983 at Boston University under the direction of H. Neil Richardson and James D. Purvis. The dissertation was "The Concept of Waiting in the Isaianic Corpus: A Rhetorical Critical Study of Selected Texts." She was assistant professor of Hebrew Bible at the University of San Diego from 1984 to 1988, when she moved to Bangor Theological Seminary in Bangor, Maine. There she was associate professor of Hebrew Scripture and from 1993, the George A. Gordon Professor of Old Testament Language and Literature. During sabbaticals, she was visiting professor at Union Seminary in New York in spring 1995, and Yarra Theological Union in Melbourne and Nungalinya Aboriginal College in Northern Territory, Australia in 2001. Her research interests continued primarily in the Isaianic corpus and the Isaiah Scroll. She had a number of published works, and was a member of SBL, CBA, and ASOR.

She died peacefully and unexpectedly at the age of eighty-eight on September 22, 2020 at Teresian House Center for the Elderly in Albany, New York.