Cynthia Heath graduated from Washburn University with a bachelor's degree in 1971 and earned an honorary doctor of law in 2022 from the Washburn University School of Law. She majored in history and graduated magna cum laude with departmental honors. She was a member of Delta Gamma, NONOSO women's honor society, Spirit Squad, Angel Flight, student government and the gymnastics team, winning a national vaulting event championship her freshman year.

After graduating, she taught social studies at her high school alma mater, Topeka West High School, and coached volleyball and gymnastic there. She earned her master of education (summa cum laude) from Kansas State University before changing focus and earning her juris doctor from Washington University in St. Louis School of Law in 1982. After graduation, she worked for the Lewis Rice law firm, subsequently joined Emerson Electric Co. as its employee benefits counsel and rose to the position of vice president for executive compensation. At Emerson, she was a founding member of its women leadership networking group and continued consulting for the company even following her retirement in 2016.

Actively involved in her local community, while in Missouri Heath served as board chair of the Girl Scouts of Eastern Missouri, board member of Action for Autism and development committee member for Marian Middle School. Since relocating to Charlotte, North Carolina in 2020 she became founding member of her residential community's international club and serves as chair of its service committee. She is also a deeply engaged alumna of her alma maters. For Washington University in St. Louis, she served as a member of the law school building campaign, annually supports the David J. Heath and Cynthia G. Heath Honor Scholarship, was named honorary initiate to the Order of the Coif in 2000 and earned a Distinguished Alumni Award in 2015.

At Washburn, Heath has served as a foundation trustee since 2007 and a director since 2009. She has led the board as chair and currently serves on the directors & trustees, compensation and development committees, the latter of which she also chaired. She is a founding member of Washburn Women's Venture Partners, serving as its first chair, and has made significant philanthropic contributions to the history department, Mulvane Art Museum, scholarships for first-year students, endowed scholarships at the university and law school and was instrumental in raising funds for a new home for the law school.

Washburn honored Heath in 2013 with the Lilla Day Monroe Award and Athletics Hall of Fame recognition, in 2016 with the history department Clio award and recognition as an Honorary Lifetime Member of the Washburn University School of Law Alumni Association, and in 2017 as a Washburn University Alumni Fellow.

She met her late husband, David Heath, ba '70, jd '76, at Washburn, and has two daughters and five grandchildren.