On January 14, 2019, Blayne Arthur was sworn in by Governor Kevin Stitt as the Oklahoma Secretary of Agriculture—the state's first female to hold the position. She acts as Governor Stitt's chief advisor on policy development and implementation related to agriculture, food and forestry, and holds the titles of Oklahoma Commissioner of Agriculture and the President of the Oklahoma State Board of Agriculture.

Secretary Arthur grew up in Chickasha, Oklahoma, where her family raised horses, shorthorn cattle, wheat, alfalfa and soybeans. Arthur and her two sisters, Dr. Rosslyn Biggs and Chelsea Evans, were active in 4-H and FFA, focusing primarily on showing horses and shorthorn cattle — both statewide and nationally. Arthur's mother, Dr. Peggy Clark, worked for the USDA as a veterinary medical officer. Her father, David Spencer, owns and operates Spencer Livestock, LLC., a family-oriented operation focusing on show horses and cattle, based out of Chickasha.

Upon graduating from Oklahoma State University in 2004, with a bachelor's degree in agricultural economics, Sec. Arthur took a role in small-business financing for Rural Enterprises, Inc. In 2009, the then-Secretary of Agriculture, Terry Peach hired her as the department's social media coordinator. When Secretary Jim Reese was elected in 2011, he offered her the position as the Deputy Commissioner of Agriculture, where she stayed from 2011 to 2016. In 2016, she served as the Executive Director for the Oklahoma 4-H Foundation until her appointment by Governor Stitt.

She is the 2016 Oklahoma Cattlemen's Association Distinguished Service Award Recipient; remains active in Oklahoma Farm Bureau, Diamond Hats, American Quarter Horse Association, Oklahoma Beef Council, and Ponies of the Americas; and selected for multiple honors including Oklahoma Agricultural Leadership Program Class XV, a Journal Record 2011 Achievers Under 40 honoree, and the 2014 Oklahoma Agricultural Woman of the Year.

Secretary Arthur married Jerrod Arthur in 2006 and they have two children, Kelton and Kennedy, who both enjoy showing cattle and horses. The Arthur family lives east of Stillwater and raise show cattle for 4-H and FFA members.