



William G. McGinnies Annual Lecture

WINDS ABOVE AS SEEN BY PLANTS BELOW: THE
JET STREAM AS A FRAMEWORK FOR DRYLAND
VEGETATION VARIABILITY

SPEAKER: Amy Hudson

2018 McGinnies Scholar

DATE: Friday April 26th, 2019

TIME: 11:00 am to 12:00 pm

LOCATION: ENR2, S225



ABSTRACT: Dr. William G. McGinnies contributed to a global dryland research community through his roles as a founder of the Office of Arid Lands and a Director of the Laboratory of Tree-Ring Research. Beyond their prominence in our daily lives here in Tucson, dryland systems are large sources of variability in the carbon land sink, and are projected to be impacted by- and expand polewards with- warming temperatures. Here, I focus on characteristics and trends of dryland vegetation growth and phenology through the lens of shifts in atmospheric circulations. Depending on the region and season, when the jet stream moves latitudinally, we see changes in geopotential heights which reverberate to climate at the surface. We see water-limited vegetation in the western U.S. delay their spring onset with a northern jet stream shift, while temperature-limited lilacs unfurl their leaves earlier, and trees at high elevations put on more radial growth that year. I integrate data that span leaf to satellite and day to decade in order to develop a hemispheric framework for dryland vegetation variability.