# THREE DECADES OF EVAPOTRANSPIRATION (ET) MEASUREMENT

## – THE BUSHLAND LARGE WEIGHING LYSIMETERS

**TTU Plant and Soil Science Spring Seminar 2024**

Gary Marek, Ph.D.

MCOM 153 (Texas Tech University)
Thursday, March 7th
12:00 – 1:00 PM

**Texas Tech University, Plant and Soil Science Spring Seminar 2024**

Title: **Three Decades of Evapotranspiration (ET) Measurement – The Bushland Large Weighing Lysimeters**

Speaker: **Gary Marek, Ph.D.**

Location: **MCOM 153 (Texas Tech University)**

Date/Time: **Thursday, March 7th / 12:00 – 1:00 PM**

Abstract:

The large weighing lysimeter facilities at USDA-ARS Bushland have been used for direct measurement of evapotranspiration (ET) for over three decades. Several alternative methods are used for estimating ET, including eddy covariance, the Bowen ratio, surface renewal, and scintillometry. However, direct measurement of ET using properly designed and managed weighing lysimeters is considered the most accurate method. This presentation presents a summary overview of ET and energy and water balance studies conducted on dryland and sprinkler- and subsurface drip-irrigated lysimeter fields at Bushland, TX. Also presented are quality assurance and quality control (QA/QC) techniques for processing both lysimeter ET data and weather data and their usefulness for crop and hydrologic modeling.