Low-mass "dwarf" galaxies with stellar mass log(Mstar/Msun)<9.5 outnumber other galaxy types in our Universe. These galaxies, with their low density and metallicity, shape extreme environments for star formation, offering opportunities to explore various factors governing the chemical evolution of the interstellar medium (ISM). Due to their shallow potential wells, dwarf galaxies are highly sensitive to internal feedback and external mechanisms, details of which are crucial for improving models of baryonic cycles in galaxies and addressing cosmological tensions, especially at the low-mass end.
Only recently, with the advent of high-resolution integral field spectrographs, have we been able to spatially map these low-surface brightness galaxies beyond the Local Group and uncover the chemical properties of their ISM. In this talk, I will review recent advancements and lessons learned from analyzing chemical enrichment in dwarf galaxies. I will demonstrate how the level of chemical enrichment can serve as a diagnostic tool for detecting pre-processed galaxies and how its radial gradient changes with the galaxy's stellar mass. Moreover, I will discuss the observed increase in the chemical enrichment level of least massive dwarf galaxies, along with the extent to which these results are affected by the choice of analytical methods and frameworks. Part of this talk will be dedicated to our challenges in measuring, analyzing, and interpreting results from state-of-the-art observations and simulations.