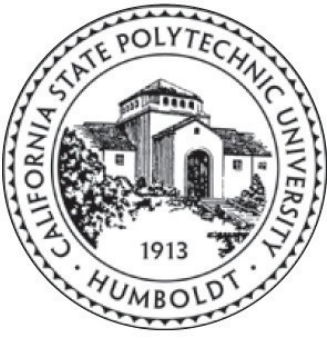




DEPARTMENT OF MATHEMATICS
Fall 2025 MATH Colloquium Series

Where did we come from?

Revealing the Mysteries of Galaxy Formation and Evolution

Dr. Regina Jorgenson

**Department of Physics & Astronomy
Cal Poly Humboldt**

Observations taken with NASA's powerful new space observatory JWST are challenging our understanding of galaxy formation and evolution in the early Universe. JWST has found more galaxies, further evolved at earlier times than expected according to current theories. Understanding the full picture of galaxy evolution requires us to explain how these early galaxies become massive spiral galaxies like our own Milky Way Galaxy. In this talk, I will describe my work on galaxy formation and evolution using the technique of absorption line spectroscopy. Absorption line spectroscopy enables the accounting for and understanding of the gas in galaxies, which is typically difficult to detect directly. Gas is crucial for fueling the star formation in galaxies and typically makes up the majority of the baryonic matter. I'll describe how absorption line spectroscopy works, what the limitations are, and how we are using new observational facilities and instruments to overcome them. Finally, I'll describe an exciting new extension to this work that takes advantage of the recently discovered phenomenon of fast radio bursts and how we are using them to improve our picture of galaxy formation and evolution, and ultimately, to answer the question 'Where did we come from?'

THURSDAY
Oct. 16, 2025

4:00 PM
BSS302

FOR MORE INFO GO TO <https://math.humboldt.edu/get-involved/mathematics-colloquium>

**We cordially invite you to the PRE-COLLOQUIUM TEA in BSS#312
at 3:30 PM**