



## Prof. Gail McLaughlin

## North Carolina State University, Department of Physics

## 2025, June 16 – 16:00 Theoretical Physics Seminar Room (3<sup>rd</sup> Floor)

Neutrino flavor transformation and element synthesis in exploding astrophysical events

## Abstract

Many exploding astrophysical objects are multimessenger events that include gravitational waves, an electromagnetic signal, element synthesis, and the emission of enormous numbers of neutrinos. To understand these signals, we need a careful accounting of the microphysics that occurs during and after the merger. One rapidly evolving area is the application of neutrino flavor transformation physics to large-scale simulations. I will review new developments in this area and discuss the importance of these developments to predictions of heavy element synthesis and the astrophysical origin of the r-process.

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