How well do we know the matter that is inside of neutron stars?

**Objectives**
- Create a framework for effective field theory truncation errors that includes correlations within and between observables.
- Enable efficient and reliable evaluations of derived quantities (e.g., speed of sound).
- Apply to the dense matter in neutron stars.

**Impact**
- Produced the first statistically meaningful uncertainty estimates for key quantities of neutron stars. Correlations mean much smaller uncertainty than one might naively expect.
- Prediction for the symmetry energy – slope parameter correlation in excellent agreement with net experimental constraints (see figure).
- Equation-of-state results in good agreement with observations from gravitational waves and NICER.

**Accomplishments**

Constraints on the symmetry energy and its density dependence from experiment and new theory with UQ (yellow ellipses).