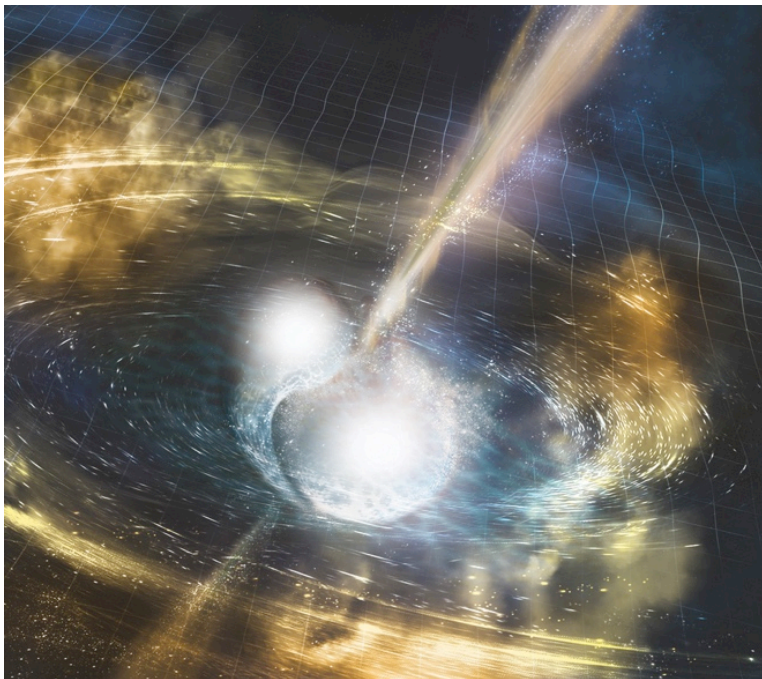


# SPECIAL COLLOQUIUM

Monday, Feb. 11, 2019, 4:00 pm, RLM 11.204

## *Gravitational Wave Astrophysics: a New Era of Discovery*

**Dr. Jessica McIver**  
Caltech



Future gravitational wave observations will provide exciting new insight into key open questions in astrophysics, including the distribution of stellar remnants in the Universe, the evolution of compact binary systems, galaxy formation, the expansion of the Universe, and the explosion mechanism of core-collapse supernovae. I will summarize the major outstanding challenges in gravitational wave astrophysics, including extracting transient signals from noisy interferometer data that contains a high rate of transient noise artifacts. I will present new data science and machine learning techniques to address these challenges and enable future multi-messenger discoveries. I will discuss how the rapidly developing field of gravitational wave astrophysics will shape our understanding of the Universe, including the growing global interferometer network, the next generation of terrestrial interferometers, and the Laser Interferometer Space Antenna (LISA).