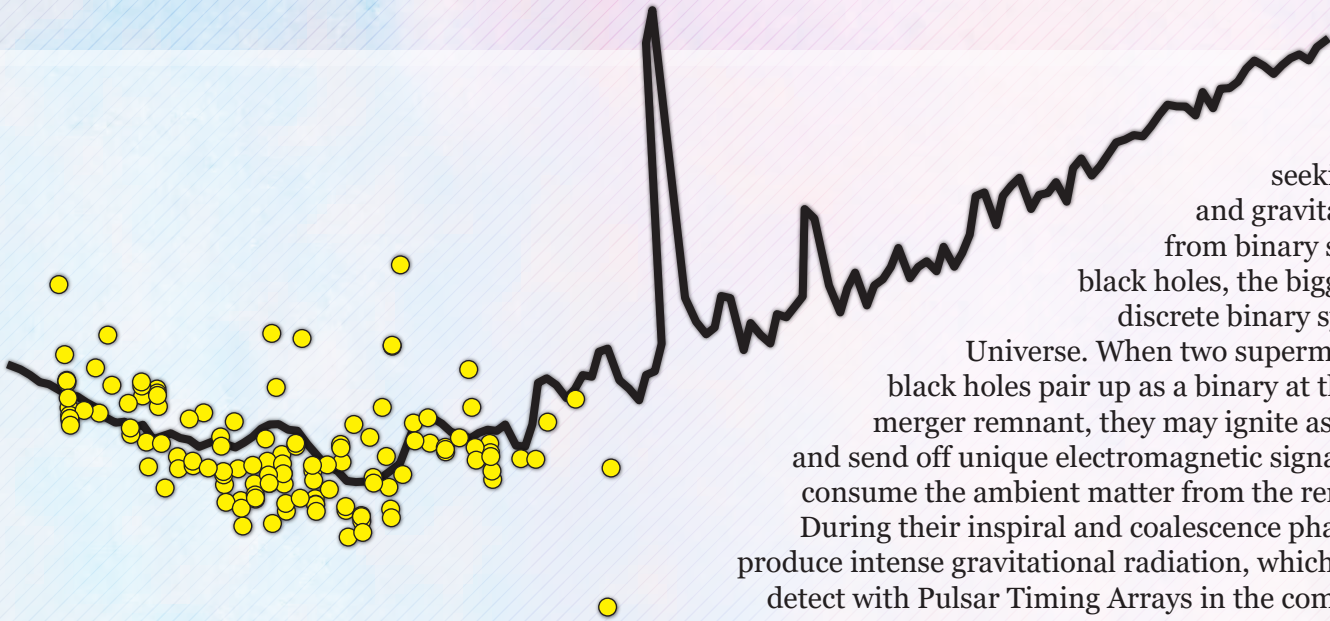


Astrophysics Seminar Series

Sarah Burke-Spolaor
West Virginia University

MULTI-MESSENGER MONSTERS!



We are seeking both light and gravitational waves from binary supermassive black holes, the biggest, meanest discrete binary systems in the Universe. When two supermassive binary black holes pair up as a binary at the center of a merger remnant, they may ignite as active nuclei and send off unique electromagnetic signatures as they consume the ambient matter from the remnant's core. During their inspiral and coalescence phases, they will produce intense gravitational radiation, which we expect to detect with Pulsar Timing Arrays in the coming ~decade.

If the inspiral of black holes is isolated and smooth, we should by now have already detected nanohertz-frequency gravitational waves with pulsar timing arrays... or so we thought. This talk will discuss what our latest, most stringent limits on gravitational waves mean for galaxy evolution and supermassive binary black holes. It will also show a few results from several ongoing searches for binary supermassive black holes, and will consider the prospects of Pulsar Timing Arrays to detect or place physically interesting gravitational wave limits on these targets.

Tuesday, 17 Oct • 3:30 PM

Bell Room (103) • Rutherford Physics Building