

## Black hole formation, neutrinos, and nucleosynthesis

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Tuesday

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12:30 P.M.

Rm 184 NSH

The relativistic collapse leading to the birth of an accreting black hole is an essential part of more than one paradigm for the formation of gamma-ray bursts. In this talk we will overview aspects of relativistic numerical magneto-hydrodynamic and simple hydrodynamic simulations in 1, 2, and 3 dimensions for the collapse of a massive star leading to the formation of a relativistic jet. We will also examine the paradigm of an accreting neutron star in a binary system. Each paradigm has its sets of computational challenges and potential diagnostics. We will discuss the nucleosynthesis in the black hole jet along with the radiation transport issues in the accreting neutron star. We will also discuss the cosmic diffuse relic neutrino background as a probe of black-hole formation and evolution.