Quark Gluon Plasma created at RHIC and LHC

YOUNGSHIN KIM, Stony Brook University — During the last decade, ultra-relativistic heavy ion collision experiments at the Relativistic Heavy Ion Collider (RHIC) and the Large Hadron Collider (LHC) have revealed interesting features of Quark Gluon Plasma (QGP). QGP turned out to be the most strongly coupled system ever observed that flows with a shear viscosity to entropy ratio $\eta/s$ surprisingly small. In this talk, I describe the heavy ion collision events at RHIC and LHC, focusing on the “elliptic flow”, the anisotropy of particle production. Then I relate this flow to $\eta/s$ with viscous hydrodynamics. I also explain the “jet quenching”, the degradation of jet energy, and the large dijet asymmetry observed in the LHC. I end with the implication and questions for the future research.

Local Expert : Professor Derek Teaney