

# Columbia University Department of Physics

## High Energy Particle Seminar Series



### “Neutrino Physics at the Dawn of the Liquid Argon TPC Era”

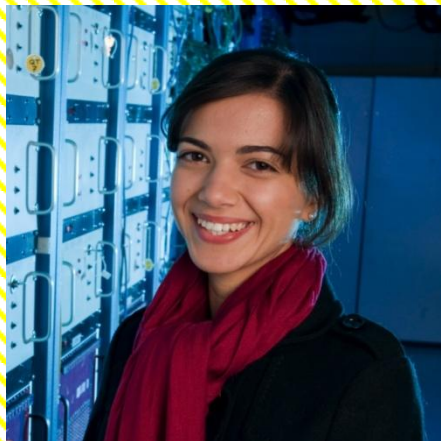


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A tremendous amount of progress has been made in the field of neutrino physics over the past decade. However, the questions of (1) sterile neutrinos, (2) leptonic CP violation, and (3) neutrino mass hierarchy still remain and form three of the most pressing issues in the field. MicroBooNE is the first in line of next-generation experiments that aim to address those questions. I will discuss the MicroBooNE liquid argon time projection chamber (TPC) experiment and its physics reach, and pay particular focus to its ability to address, within the next 3-5 years, the recent experimental hints for the existence of sterile neutrinos. Finally, I will describe other ongoing efforts--both theoretical and experimental--which aim to further investigate the global picture of sterile neutrinos.