

Jonathan Engel – JOINT FRIB and Physics seminar on February 7, 2024  
University of North Carolina

**Topic:** Fundamental Physics in Heavy Nuclei: the Role of Nuclear-Structure Theory

**Abstract:** Low energy experiments play an increasingly large role in the search for physics beyond the Standard Model. Many experiments in that area involve heavy nuclei, where an understanding of nuclear structure at the level needed to interpret results is both crucial and hard to come by. After describing the fundamental physics we seek to better understand, I examine recent theoretical work on two sets of nuclear matrix elements --- those important for experiments on neutrinoless double-beta and on atomic electric dipole moments --- and discuss projects that may lead to major improvements in the matrix elements in the next few years.