

Fall 2018 Colloquium

Department of Physics & Astronomy, TAMU-Commerce

Oct 25, Thursday, 4-5 PM in Science Building 127

(coffee and cookies will be served at 3:50 PM)

Nuclear Physics, Astrophysics

Nuclear Astrophysics in the new era of multi-messenger Astronomy

Dr. Jorge Piekarewicz

Florida State University



Dr. Piekarewicz earned a BS in Physics (1981) from the Universidad Nacional Autonoma de Mexico and a PhD in Physics (1985) from the University of Pennsylvania. After postdoctoral work at CalTech (1985) and Indiana University (1987), he arrived at Florida State University in 1990 where he has been ever since. His main research area is nuclear physics with particular interest on the behavior of nuclear matter under extreme conditions of density, such as those found in the interior of neutron stars. More information about

Dr. Piekarewicz and his research can be found at:

<http://web2.physics.fsu.edu/~piekarewicz/bio.html>

Abstract

One of the overarching questions animating nuclear physics today is "How does subatomic matter organize itself". Neutron stars are cosmic laboratories uniquely poised to answer this fundamental question. The historical first detection of a binary neutron star merger by the LIGO-Virgo collaboration is providing fundamental new insights into the astrophysical site for the r-process and on the nature of neutron-rich matter. In turn, the study of exotic atomic nuclei at various terrestrial facilities will shed light on the underlying dynamics of the r-process and on the structure of neutron stars. In this presentation I will discuss how this synergy in combination with nuclear physics insights, modern theoretical approaches, and powerful statistical ideas can pave the way to understanding these fascinating objects.