Patrick McMillin
PHYS 493 Dr. Lau
1 March 2018

Colloquium Date: 26 February 2018
Colloquium Speaker: Dr. Indra Sahu
Colloquium Title: Advances in Structural Biology Techniques for Membrane Proteins
Speaker Affiliation: Department of Physics and Astronomy, Miami University

Dr. Sahu focuses on the calculation of dynamic properties through the use of EPR measurements and spectra analysis. Specifically, he uses electron paramagnetic resonance (EPR) to investigate the membrane proteins since the use of EPR doesn't have a size limitation, and it's highly sensitive. Dr. Sahu discussed the development of his EPR techniques for the study of structural biology, and the recent results that he has obtained while studying the proteins associated with the K+ ion channel. The mutations of such proteins are closely linked with the development and progression of hearth disease, which is a leading cause of death in the United States. Dr. Sahu used the EPR techniques that he helped develop to study the interaction of the K+ ion channel proteins with the lipid bilayers in the cell. Although these results were interesting to hear about, Dr. Sahu did not convey what the applications were. Additionally, it seemed as if he rushed through the talk about his work and spent about half of an hour talking about his proposed research structure at CSUN, rather than explaining his work more clearly. I would have liked to hear more about his current work, results, and possible applications rather than how many undergraduate and graduate students that he could train and employ if hired by CSUN. Specifically, I would have like to know how the simulations that he used were performed, and if there was any utilization of high performance algorithms employed, or what kind of care was given to the simulations, since simulating such large proteins is often very computationally expensive.