

COLLEGE OF THE HOLY CROSS

Department of Physics

Dr. Sophia Pells

Instructor in the Department of Radiology-
Nuclear Medicine at UMass Medical School

**Medical Nuclear Physics – Using radioactive
isotopes to image and treat disease**

Thursday, September 19th

4:00 PM

Haberlin 219

Nuclear medicine relies on the administration of a radioactive drug to a patient, either through injection, inhalation, or swallowing. Depending on the radioactive emissions of the isotope used in the drug, it can be used to observe functional processes in the body for diagnostic imaging, or to target and destroy diseased tissue in the body for therapy.

Theranostic (therapeutic + diagnostic) isotopes, or families of isotopes, allow us to combine the two and see exactly what we are treating. This can pave the way for personalized therapies for diseases such as cancer, where radiation doses can be tailored to each specific patient.

This seminar will discuss how different radioactive isotopes are used in nuclear medicine and the criteria which may make novel isotopes good candidates in the future.