



**Western**  
Biomedical Imaging  
Research Centre

**SEMINAR SERIES**  
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**Wednesday, April 24th, 2019 at 12:15 pm**

**Shuttleworth Auditorium  
St. Joseph's Health Care**

**Pizza will be served at noon**

## **Suzanne Lapi, PhD**

Professor of Radiology and Chemistry  
Vice-Chair of Translational Research, Radiology  
Director, UAB Cyclotron Facility  
University of Alabama at Birmingham



### **Title: From Isotopes to Images: Radiometals for PET Imaging in Oncology**

**Abstract:** With the expansion of approved  $^{18}\text{F}$  based agents for medical imaging using positron emission tomography (PET), low energy (11-24 MeV) cyclotrons are now used at many commercial and academic centers to produce isotopes for medical imaging. The energy of these machines is ideal for isotope production via (p,n), (p, $\alpha$ ) and in some cases (p,2n) reactions. Using the UAB TR24 cyclotron, our group has focused on the development of reaction routes, target materials and the separation chemistry of isotopes to expand the toolbox of nuclear imaging agents. These have included transition metals such as  $^{52}\text{Mn}$ ,  $^{55}\text{Co}$ ,  $^{89}\text{Zr}$ ,  $^{43,47}\text{Sc}$  and  $^{45}\text{Ti}$ . Additional research has developed chemistry to incorporate these isotopes into new imaging radiopharmaceuticals for preclinical or clinical research. In particular, our group has been exploring the use of  $^{89}\text{Zr}$  radiolabeled antibodies for imaging of cell surface receptor expression in preclinical models and in clinical trials of metastatic breast cancer patients. Recent work has also resulted in new radiochemistry techniques for the development of new  $^{43,47}\text{Sc}$  and  $^{45}\text{Ti}$  radiopharmaceuticals for oncologic applications.

**Suzanne E. Lapi, Ph.D.** is currently a Professor of Radiology and Chemistry and Cyclotron Facility Director. Her research interests are in the development of new PET radionuclides and molecular imaging agents. She is particularly interested in the characterization and translation of novel radiometal compounds including  $^{89}\text{Zr}$ ,  $^{64}\text{Cu}$ ,  $^{52}\text{Mn}$ ,  $^{45}\text{Ti}$ . She oversees production of PET radionuclides and imaging radiopharmaceuticals for preclinical research and clinical trials. Her group holds >10 approved INDs and supplies  $^{89}\text{Zr}$ ,  $^{64}\text{Cu}$ ,  $^{52}\text{Mn}$  and other isotopes to groups across the USA and internationally.

## **BIRC PARTNERS**



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