

# Vanderbilt Center for Molecular Probes

## VRA Award, Cycle 2015

### What We Do:

- Development of microfluidic radiochemistry techniques for the on-demand production of fluorine-18 PET radiotracers.
- Production of disposable, kit-based, radiochemistry modules that are useable without requiring a dedicated radiochemistry facility.
- This program involves faculty with expertise in microfluidics, nano-fabrication,, organic synthesis, radiochemistry, nuclear medicine and radiology.

### Why We Do It:

- To provide access to non-standard radiotracers for facilities without full radiochemistry capabilities.
- With on-demand access to PET radiotracers of interest, small medical imaging sites could access the full range of developed PET imaging types, allowing for in improved standard of care.

### Who's Involved?

#### **School of Medicine**

H. Charles Manning (PI), Director, Vanderbilt Center for Molecular Probes and Molecular Imaging Research, Vanderbilt University Institute of Imaging Science (VUIIS); Professor of Radiology, Chemistry, Biomedical Engineering, Neurosurgery and Chemical and Physical Biology; Vanderbilt Ingram Professor of Cancer Research and VICC Director of Cancer Imaging Research

Michael Nickels, Technical Director of the Radiochemistry Core Laboratory, Research Instructor, Department of Radiology and Radiological Sciences

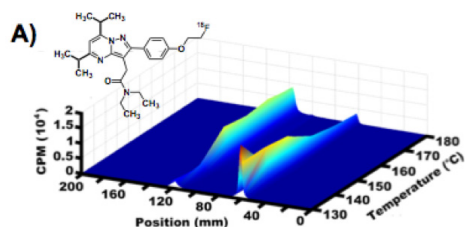
Fei Liu, Radiochemist II, Vanderbilt University of Imaging Science

Adam J. Rosenberg, Radiochemist II, Vanderbilt University of Imaging Science

#### **School of Engineering**

Leon Bellan, Assistant Professor of Mechanical Engineering, Assistant Professor of Biomedical Engineering

Xin Zhang, Graduate Student



**The VU-RAPID concept. (A)** Proof-of-Principle microfluidic production of  $^{18}\text{F}$ -VUISS-1016 using a commercial module. TLC assay showing consumption of starting materials and production of product. **(B)** Conceptual disposable RAPID design.

