The Department of Radiology and Biomedical Imaging Invites the Research Community to:

**Exit Seminar**

Zi Zhu, PhD

Development and Translation of Hyperpolarized Carbon-13 Cancer Imaging for Therapy Response Monitoring

Thursday, 12 July 2018
3:00PM – 4:00PM
Genentech Hall, N-114

Reception will follow
Byers Hall, 2nd Flr Atrium
4PM

Hyperpolarized $^{13}$C metabolic imaging is an emerging medical imaging modality with powerful potential of probing a variety of diseases. With the recent technical breakthrough of dissolution dynamic nuclear polarization, the signal-to-noise ratio of $^{13}$C substrates enhanced drastically, enabling in vivo detection of metabolism, perfusion, pH, diffusion, and etc. The recent phase I and phase II human studies of hyperpolarized [$^{1}$ – $^{13}$C]pyruvate on cancer patients have shown safety and feasibility of this new technique. This presentation focuses on the development and application of novel hyperpolarized $^{13}$C metabolic imaging techniques to monitor therapy response, with a particular emphasis on the bioengineering technical developments required for clinical translations, including new coil designs, pulse sequence considerations, and data processing methods.