SAI Facility News and Updates

1. The coming SAI seminar will be on 12/9/14 in the Marsico Hall.
   Seminar Title: New Approaches for Magnetic Resonance Imaging and Spectroscopy
   Speaker: Tamara Branca, Ph.D, Assistant Professor, Department of Physics and Astronomy, BRIC, UNC
   Date: Tuesday, December 9th, 2014
   Time: 1:00-2:00 PM
   Location: Marsico Hall, Room 2004 (conference room)

2. Marsico Hall closed and power outage - 6PM Fri Dec 19 to 6AM Mon Dec 22. The SAI facility will not have power during this 60 hour period. Please DO NOT schedule any imaging studies (MRI, PET, SPECT, CT, optical, ultrasound imaging) from 6PM, 12/19 to 6AM, 12/22.

3. Christmas holiday schedule - The SAI facility will be closed during the university holiday, i.e., 12/24 ~12/26, and 12/31~ 1/1. On 12/22, 12/23, 12/29, 12/30 and 1/2, we will be operating under reduced staff schedule. If you have any staff-supported imaging requests for one of these days, please send in the imaging requests before 12/17 (Wednesday). We will contact you and discuss your study details.

4. Cyclotron and Radiochemistry facility updates - The new cyclotron (PETtrace GE Healthcare) has been installed. According to Dr. Zibo Li, the core Director, the first cyclotron beam-on will be scheduled sometime before the end of the year and the full calibration will be finished by Jan 2015. The installation of hot cells was completed on October 30th and the installation qualification/operational qualification (IQ/OQ) will be completed on Dec 15th. Three automated modules will be installed in January 2015 to produce [18]F and [11]C labeled compounds. The quality control (QC) instruments in the cGMP (“current Good Manufacturing Practices”) Laboratory for radiotracer production will be installed in February 2015. The Radiochemistry core is expected to be fully functional in Mar 2015.

5. BRIC holiday open house- There will be BRIC holiday open house on December 15th, 1-3 pm, in the BRIC lobby on the first floor of Marsico Hall. Please join us with food and drinks to celebrate the holiday season.
4. **Animal housing facility at Marsico Hall** - The vivarium is fully functioning and it can house both rats and mice that are primarily used for imaging studies. If you need housing space in this facility, please contact Neil Grove, Assistant Operations Director at DLAM (email: ngrove@email.unc.edu; or 919-962-5322).

5. **Ongoing construction** - There has been minor ongoing construction in the SAI facility, namely installing an additional door to the 9.4T console room, and replacing the doors to the PET, ultrasound, and Procedure room. There might be noise and dust from the construction so if you have concerns about your imaging study being affected by this work, please let us know.

6. **Training**: The optical imaging training will be on the first Monday of each month from 2-3:30 PM. Please check the following link for updates: [http://www.med.unc.edu/bric/safety-and-training](http://www.med.unc.edu/bric/safety-and-training).

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**New Publications (Studies Using the SAI facility)**


◊ **Support acknowledgement**: If research supported by the Small Animal Imaging core facility results in publication, please acknowledge this support by including the following in your publication(s): We thank the Small Animal Imaging Core facility at the UNC Biomedical Imaging Research Center for providing the ______ imaging service, and the imaging core is supported in part by an NCI cancer center Grant #P30-CA016086-35-37.
Imaging Study Highlights

- **Microbubble enhanced ultrasound imaging to quantify blood perfusion in brown adipose tissue (BAT) in diabetes mouse model**

  Microbubble was used as an imaging contrast agent in ultrasound imaging to quantify blood perfusion in response to norepinephrine in brown fat tissue in a mouse model of diabetes. A: B-mode ultrasound image shows anatomical location of the brown fat on the back of mouse near shoulder. B & C: Enhanced perfusion signal after microbubble injection indicating the level of blood perfusion before and after the injection of norepinephrine. D: Curve fitting with the bolus perfusion model to quantify the blood perfusion on BAT. (Courtesy of Dr. Tamara Branca)

- **Contrast enhanced CT imaging to visualize lung dysfunction in cystic fibrosis mouse model**

  In cystic fibrosis mouse model, heavy mucus in the lung airway leads to airflow obstruction and inflammation. Iodine contrast enhanced CT imaging helped to visualize the normal exchange region and obstructed region in mouse lung. A: regular CT image of CF mouse lung; B: contrast enhanced CT image indicating dysfunctional lung. (Courtesy of Dr. Camille Ehre)

- **Development of new PET imaging probe targeting neurotensin receptor (NTR) in prostate cancer mouse model**

  Neurotensin peptide was labeled with Cu-64 radioisotope for PET imaging. Mouse with LnCap prostate cancer was injected with the Cu-64 labeled probe and underwent PET scan to reveal the expression of the NTR. The left images showed the axial and coronal view of PET images. (Courtesy of Dr. Zibo Li)
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