CT@IMBL 2017B
Welcome and Introduction

Chris Hall

IMBL

Traffic and pedestrian safety

- Park in one of the designated car parks
- Use footpaths and crossings provided

There are two designated smoking areas

- Smoking is permitted only in the designated outdoor areas as shown below

In case of emergency…

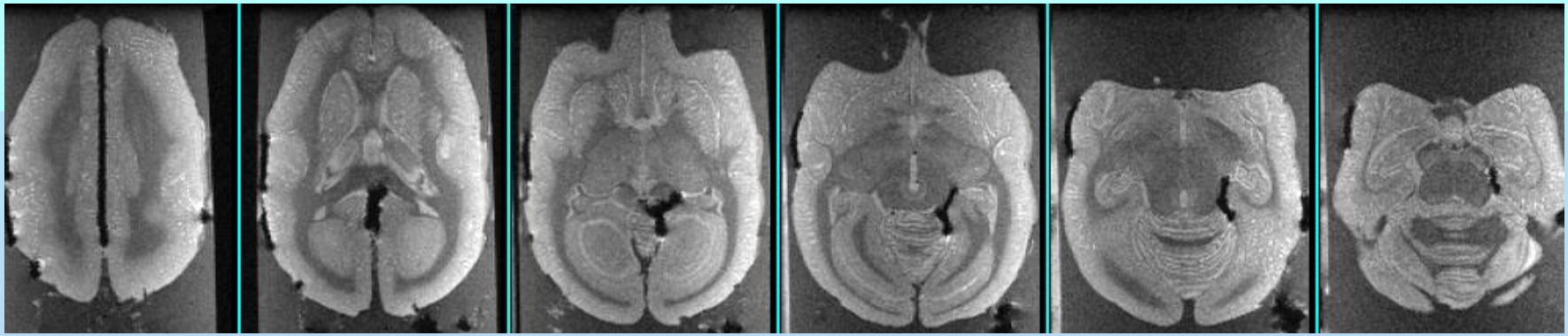
When the evacuation alarm sounds

- Leave the building via the nearest exit, located at the **front, rear, and side of this building**
- Gather at the assembly point:
    - Grass area adjacent to the main car park, inside the property fence
- Follow the directions of fire wardens (wearing red hardhats)

Rest rooms…..

- Toilets are located on ground floor next to rear entrance doors
- Additional toilets are located at the top of the first floor stairs

Small animal imaging at the Monash Biomedical Imaging Facility



Courtesy: Dr James Pearson

Ex. Head of Animal Imaging Research Team

High Field small animal MRI Scanner

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- Agilent 9.4T Horizontal bore scanner
- Suitable for small animals, *ex vivo* tissues, biomaterials (eg. nanoparticles)
- Anaesthetised and restrained in cradles to fit within 80mm bore of gradient coil
- Surface coils used for RF receivers
- ECG/ventilatory monitoring at console and gated-imaging

PET/CT imaging on Siemens Inveon Scanner

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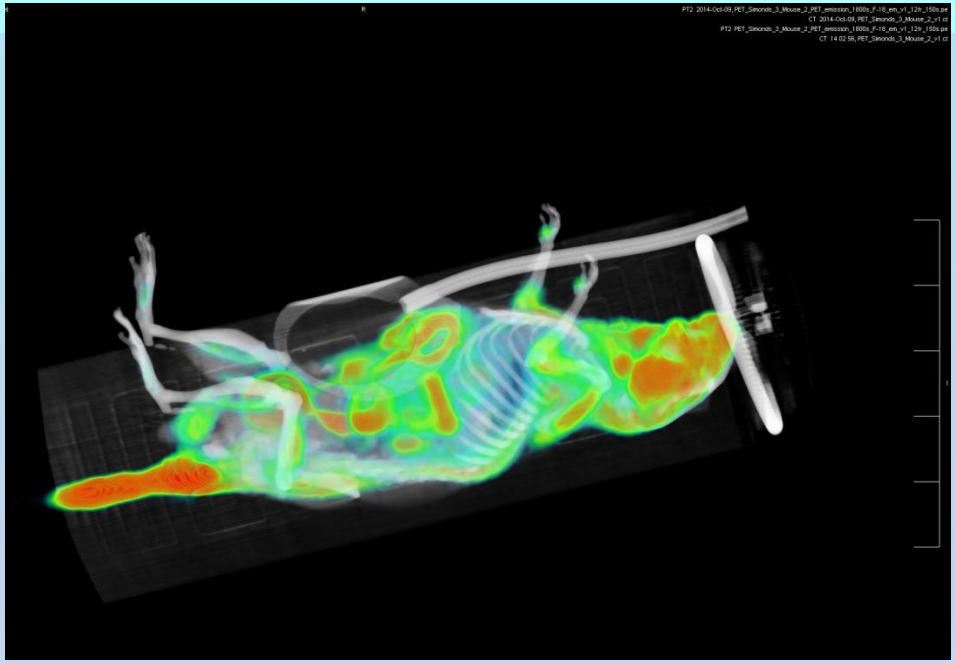
^{18}F, ^{62}Zn, ^{64}Cu, ^{123}I, ^{99}Tc

micro CT, FOV = 8cm x 5 cm,40µm pixel resolution standard, with microfocus automatic zoom 20µm

PET scans, 0.8mm voxels.

Co-registered CT image with PET overlay



Clinical and large animal MR imaging

The Siemens 3 Tesla Skyra MRI scanner has a 70 cm wide bore, a full range of imaging coils including an advanced 32-channel head coil, a 20 channel head and neck coil, a 32 channel spine coil, and an 18 channel body coil.

PET-MRI

Monash Biomedical Imaging operates Australia's only research-dedicated Siemens Biograph mMR scanner

It is capable of simultaneous magnetic resonance (MR) and positron emission tomography (PET) imaging.

The MR-PET scanner allows for concurrent acquisition of **morphology, function, and metabolism.**

MRI: 3 Tesla with 60cm bore diameter, short bore and high homogeneity

PET: 127 Image planes

MBI rates

Hourly rate* ($AUD, ex GST)	
	2017
Scanners	
Human/large animal MR-PET (Siemens Biograph mMR) - does not included radiopharmaceuticals#	1200
Human/large animal 3T MRI (Siemens Biograph mMR)	660
Human 3T MRI (Siemens Skyra)	660
Preclinical 9.4T MRI (Agilent)	175
Preclinical PET-CT or SPECT-CT (Siemens Inveon)	150
Preclinical CT (Siemens Inveon)	75
Preclinical PET-CT (Mediso) located at AMREP, Prahran	150
Preclinical FLECT (TriFoil) and CT (Mediso) located at MIPS, Parkville	75
Ultrasound (VisualSonics Vevo 2100)	75

https://platforms.monash.edu/mbi/

Session timetable - Monday

- Coffee
- IMBL and X-ray imaging in general – Andrew
- Phase contrast and how to use it - Andrew
- Beam line Graphical User Interfaces – Anton
- How to run a CT collection – Anton
- Data management - Robbie
  - Visit to IMBL, lunch and posters
- Intro to the new AS cluster ASCI– Robbie
- Visualising the data – Chris
- CT reconstruction basics - Sherry
- Practicals: How to avoid and cope with artefacts – All
  - Dinner at the Kitchen Synch starting at 18:00 (finish 20:00)

Session timetable - Tuesday

- Optimising your raw data quality - Chris
- X-ray detectors – Chris
- Introducing HDF5, a new storage format - Chris
- Batch processing image reconstruction – Sherry
  - Coffee
- Practicals: Rendering volumes with Drishti - Anton
- User Experiences – Usage of IMBL from those who know
  - Lunch
- Practicals: More rendering, animations, and VR – Anton and all
- Round up and closing (~17:00)