National Imaging Facility

Preclinical PET/SPECT/CT
CT Small & Large Animals
Experimental Design
Multi-modal PET
Plants & Materials
MRI MR/PET Novel biomarker
MEG Expertise

Exploring Inner Space
National Imaging Facility

The Australian National Imaging Facility (NIF) provides the most advanced technology in the imaging of animals, plants and materials for the Australian research community. NIF’s grid of imaging facilities across Australia provides a range of leading-edge imaging instrumentation, advice and assistance in the optimal use of imaging to the research community.

Specifically, the NIF provides:

- Access to molecular imaging instrumentation, including a range of MRI and PET scanners;
- Access to other live animal imaging equipment including bioluminescence, microCT, ultrasound and intravital microscopy;
- Development and validation of novel biomarkers/radioligands for in-vivo imaging using PET and MRI;
- Development and application of stable isotope-labelled analogues to new radio-ligands;
- Small and large animal imaging;
- Magnetic resonance spectroscopy, q-space imaging, coil design and pulse sequence development;
- Application of these new technologies in large-scale trials in animal models of disease;
- Bio-mathematical modelling of tracer kinetic data and integration of the high-dimensional data in a dedicated neuroinformatics system;
- The creation of databases of normative data, and a common platform of base data;
- Preclinical trial imaging;
- Fully equipped and staffed large animal surgeries with anaesthetic and physiological monitoring;
- GLP accredited laboratories and
- Animal ethics committees.

The NIF is one of four projects implemented as an initiative of the Australian Government being conducted as part of the National Collaborative Research Infrastructure Strategy (NCRIS) Characterisation capability. More recently NIF has been expanded by the Education Investment Fund (EIF), an initiative of the Australian Government being conducted as part of the Nation-building Economic Stimulus Plan. For more information on both NCRIS and EIF, visit www.ncris.innovation.gov.au and www.deewr.gov.au/HigherEducation/Programs/EIF.
Current NIF Technology

The University of Queensland- Preclinical combined MR-PET (2012), high field 9.4T MRI animal system (2012), small animal PET-CT, small animal 16.4T MRI scanner, whole body MRI scanners (3T & 4T), 18 MeV cyclotron (2012).

The University of Sydney/ANSTO- Research Cyclotron, radiochemistry hotcells & synthesis units, small animal & primate brain PET, small animal PET/CT, small animal CT, Small animal PET/SPECT/CT. 3T MRI, autoradiography, beta microprobe, biodistribution laboratory & image analysis & biomodelling laboratory.

The University of New South Wales- 3T MRI whole body scanner, IVIS lumina live imaging, Faxitron X-ray, Vevo 770 Ultrasound microimaging, Skyscan1072 Micro CT.

University of Western Sydney- 11.7 T MR scanner, 7 T MR scanner.

LARIF- 1.5 T MRI, DEXA, Angiography suite/ Image intensifiers, Large Animal CT, Digital X-ray.

The Florey Neuroscience Institutes- 4.7 T MR scanner.

The University of Western Australia- Small animal imaging (micro-CT and multispectral imaging).

Future NIF Technology

The NIF recently received a $40.2M injection from the Education Investment Fund (2011-2014), as part of a $106M expansion program, extending NIF to include The University of Melbourne, Swinburne University of Technology, The University of Western Australia and ANSTO. The consortium, incorporating 13 institutions, includes all Australian Universities with a significant research and education presence in imaging, and serves as a springboard for national and international collaborations.

The future technologies from EIF Funding includes:

7 T MRI for The University of Queensland (2012)
7 T MRI for The University of Melbourne (2013)
Cyclotron/Radiochem Lab for The University of Queensland and ANSTO (2012)
MEG system for Swinburne University of Technology (2011)
Small animal 9.4 T for The University of New South Wales (2011)
Small animal 9.4 T MRI for the University of Western Australia (2013)
Small animal PET/SPECT/CT for Monash University (2011)
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NIF Subsidised Access Scheme

The subsidised access program seeks to address the need to provide support for the following:

- Promotion of new facilities where Node Directors/Science Committees will look to draw researchers to use the appropriate capability where it is clear that this capability may provide critical data to solve a scientific problem of national and/or international significance;

- Strategic research initiatives for researchers of merit who need to initiate research programs out of cycle with research funding opportunities;

- Support and promotion of early career researchers or recently appointed staff who may not yet have had an opportunity to attract independent research funding.

To apply for subsidised access to equipment and facilities available through NIF, visit www.anif.org.au, click on ‘Subsidised Access’ and fill in the details required.

For further information regarding Subsidised access, Access Criteria, Instrumentation & Pricing, please refer to the NIF website: www.anif.org.au.