

## MEDICAL IMAGING

The Medical Imaging Department supports clinical research within St. Vincent's and undertakes department-initiated research programs and projects.

### About us

The department provides imaging support to St. Vincent's clinical research programs and projects, particularly neurology research and oncology clinical trials.

We host the editorialship for all diagnostic and interventional radiology original manuscripts submitted to the **Journal of Medical Imaging and Radiation Oncology** (formerly Australasian Radiology) and in doing so work to improve the national standard of radiology research in Australia.

Medical Imaging is associated with St. Vincent's BreastScreen, with shared senior medical staff and joint collaborations.

### Projects in progress or completed

The Perceptual Error in Diagnostic Imaging Program (PEDIP) is directed at identifying those environmental factors that lead to radiologists' perceptual errors (aka 'missed

diagnoses') with the ultimate aim of improving the accuracy and quality of radiological reading. It has shown that radiologist memory, per se, does not impact radiologist diagnostic accuracy.

The Medical Imaging Department interventional radiology service (Director Dr Peter Mossop) is involved in clinical trials of new interventional devices and has produced a number of significant publications.

In collaboration with Victorian Hand Surgery Associates, we are validating new methods of imaging difficult wrist clinical conditions (eg distal radioulnar joint instability and failed treatment of carpal tunnel syndrome). These methods are expected to become more commonplace once validated.

In collaboration with the neuroscience service, our MRI centre (Director Dr Nicholas Trost) is building expertise in tractography imaging, which is expected to develop into a routine tool to enable more accurate treatment of brain tumours and multiple sclerosis.

In collaboration with the gastroenterology service, Medical Imaging is working on better imaging assessment of severity of Crohn's disease and on radiation-free methods of detecting colonic cancer in high-risk individuals.

We are leading a multi-site collaboration to secure NHMRC funding for a research project to validate the use of breast MR spectroscopy in non-invasive diagnosis of breast masses as cancerous or benign.

### The team

**Prof Oliver Hennessy, Director of Medical Imaging**; Dr Wai Kit Lee, Director of CT and Ultrasound; Dr Peter Mossop, Director of Angio; Prof Alexander Pitman, Director of Research and Education; Dr Hannah Rouse; Dr Stephen Schlicht, Director of Nuclear Medicine

### Selected presentations

#### Lee WK

- 'Cumulative diagnostic medical radiation exposure in patients with Crohn's disease and potential reduction of cancer risk through small bowel magnetic resonance enterography', 16th United European Gastroenterology Week, Vienna, Austria, October 2008
- 'Prospective comparison of magnetic resonance enterography and CT enterography in detection of strictures in small bowel Crohn's disease', 16th United European Gastroenterology Week, Vienna, Austria, October 2008
- 'Prospective evaluation of accuracy and outcomes of magnetic resonance enterography in small bowel Crohn's disease', 16th United European Gastroenterology Week, Vienna, Austria, October 2008

#### Pitman A

- 'Diagnostic accuracy of mammography readers and their memory performance have no correlation with each other', RSNA, Chicago, USA, December 2008

## Publications

'Anatomea CD ROM and Textbook' (www.anatomea.com). Volume V. Limbs. University of Melbourne. (A. Pitman contributing author).

El-Barhoun E, Gledhill S, Pitman A 2008, 'Normal Circle of Willis artery diameters on MR angiography: an Australian database', *Journal of Medical Imaging and Radiation Oncology*, 52, A76 (abstract E63) Supplement 1: RANZCR 59th Annual Scientific Meeting Radiology Abstracts

Hawari A, Gottsegen C, Iyengar G, Boswell W, Lee WK, Duddalwar V 2008, 'Eponymous nodes: radiological and clinical significance', *AJR Am J Roentgenol*, 190, A102

Heriot G, McKelvie P, Pitman AG In Press, 'Diagnostic errors in patients dying in hospital: radiology's contribution', *Journal of Medical Imaging and Radiation Oncology* Article in press.

Hoang JK, Lee WK, Hennessy OF 2008, 'Multidetector CT pulmonary angiography features of pulmonary embolus', *J Med Imaging Radiat Oncol*, 52, 4, 307-17

Kalade AV, Taylor A, Lee WK, Smith P, Desmond PV 2008, 'Prospective comparison of magnetic resonance enterography and CT enterography in detection of strictures in small bowel Crohn's disease', *J Gastroenterol Hepatol*, 23(S4), A212

Lee WK, Lau EWF, Duddalwar VA, Stanley AJ, Ho YY 2008, 'Abdominal manifestations of extranodal lymphoma: spectrum of imaging findings', *AJR Am J Roentgenol*, 191, 198-206

Lee WK, Mossop PJ, Little AF, Fitt GJ, Vrazas JI, Hoang JK, Hennessy OF 2008, 'Infected (mycotic) aneurysms: spectrum of imaging appearances and management', *Radiographics*, 28, 7, 1853-68

Pitman AG, Van Dijk J, Cunningham NJ 2008, 'Resuscitation skills for radiologists: a short paper', *Journal of Medical Imaging and Radiation Oncology*, 52, 463-470

Pitman A, Kok P, Gledhill S, Cawson J, Kremer S, Lawson J, Mehta K, Mercuri V, Shnier D, Taft R, Zentner L 2008, 'Memory performance patterns in screening mammography readers: highlighters and memorisers', *Journal of Medical Imaging and Radiation Oncology*, 52, A16 (abstract) Supplement 1: RANZCR 59th Annual Scientific Meeting Radiology Abstracts O32

Pitman A, Gledhill S, Cawson J, Kremer S, Lawson J, Mehta K, Mercuri V, Shnier D, Taft R, Zentner L, Kok P 2008, 'Radiologist memory performance over time: 'memoriser' type memory shows a time related decline', *Journal of Medical Imaging and Radiation Oncology*, 52, A45 (abstract) Supplement 1: RANZCR 59th Annual Scientific Meeting Radiology Abstracts EO1

Roberts E, Thyer S, Pitman A 2008, 'Abducens nerve location on CT: an anatomical – radiological map.' *Journal of Medical Imaging and Radiation Oncology*, 52, A84 (abstract) Supplement 1: RANZCR 59th Annual Scientific Meeting Radiology Abstracts E79

Rouse HC, Godoy MCB, Lee WK, Phang PT, Brown CJ, Brown JA 2008, 'Imaging findings of unusual anorectal and perirectal pathology: a multimodality approach', *Clin Radiol*, 63, 1350-1360

Tse LF, Ek ET, Slavin JL, Schlicht SM, Choong PF 2008, 'Intraosseous angiosarcoma with secondary aneurysmal bone cysts presenting as an elusive diagnostic challenge', *Int Semin Surg Oncol*, 5:10