The QUT/Mater Paediatric Spine Research Group (PSRG) was formed in 2002 to conduct clinically driven, high quality research into spinal deformities and disorders.

Paediatric Spine Research Group now located in Mater Research Hub!

The PSRG staff and students have moved into the recently refurbished Research Hub on Level 2 of Aubigny Place at the Mater. Aubigny Place started out as the Mater Private Hospital in 1910 after the Sisters of Mercy purchased a 10 acre dairy farm at South Brisbane in 1893. This dairy farm, now known as Mater Hill, is the current home of the Mater Mothers, Adult and Children’s Hospitals. Levels 1 and 2 of Aubigny Place housed patients, while the 3rd and top floor served as the Sister’s Convent until 1926 when the first of many additions to the building were made. It was renamed Aubigny Place in 1995 in recognition of the first Mater Hospital which operated out of a large home called “Aubigny” at North Quay in Brisbane. The PSRG office is located in what was the Chapel of the original hospital, complete with beautiful stained glass windows, one level directly above the spectacular main entrance (see below).

New PSRG Research Masters Candidate & International Fellow

Dr Simon Parfitt (left) commenced his Research Masters project this year titled “Semi-constrained growing rods with and without apical staples for juvenile scoliosis correction.” This work will be an extension of the previous Masters candidate’s project. Growing rods in children with severe and progressive spinal deformity aim to halt progression and provide some correction of the deformities whilst allowing the spine, ribcage and lungs to continue growing with the child. Modern semi-constrained systems appear to reduce the incidence of common complications such as rod breakage and auto-fusion of spinal segments. Dr Parfitt’s study will conduct biomechanical tests on immature porcine spines (as a model for young human spines) using growing rods in addition to staples inserted at the apex of the scoliosis which will be clinically applicable to patients with juvenile scoliosis. The effect of the addition of the apical staples to the growing rods on spine biomechanics will be examined.

We also welcome Dr Andrew Cook, a British trained Orthopaedic Surgeon, as our 2013-14 visiting Spinal Fellow. He attended Oxford University followed by time at Imperial College School of Medicine. He joined the Cambridge Training Rotation in 2007 and gained his Ortho Specialist qualification in 2012. He has worked with two of our previous PSRG Spinal Fellows, John Crawford at Cambridge and just prior to arriving in Australia, worked with Lennel Lutchman at Norwich, UK. His interests outside of work include skiing, triathlons, rugby and entertaining his children. He is married to Laura and together they have three young children, Imogen (4 years), Sam (2 years) and Ellie (6 months).

While he is continuing his spinal surgical training in Brisbane, he will also be involved in research projects with the PSRG. Andy will perform a hospital cost analysis of anterior spinal deformity correction surgery as well as reviewing the long term surveillance of children with spinal deformities. As part of this we will be examining patient satisfaction a minimum of four years after deformity correction surgery. The patients will be evaluated in the broad areas of function/activity, self-image/appearance, mental health, pain and satisfaction with their spinal deformity management. Previous PSRG work (Spine 31(21) 2006) using the Scoliosis Research Society's validated quality of life questionnaire, reported outcomes before surgery and at intervals of 2 months, six months, one year and two years after surgery for a group of 83 patients. A more recent PSRG paper (Spine 35(26) 2010) evaluated the relationship between deformity correction and patient satisfaction responses after thoracoscopic scoliosis surgery in a series of 100 patients.

Above: Aubigny Place, Mater Health Services, Brisbane, Australia.
News from Clayton Adam in Paris

Clayton’s work at Laboratoire de Biomecanique, Arts et Metiers ParisTech on the European Union 7th framework Marie Curie project "DiscSim: Multiscale biomechanical modeling and simulation of the intervertebral disc" has led to the development of a novel imaging technique to explore the microstructure of the IV disc. This work was recently presented at the 2013 Eurospine conference (Oct 2-4 Liverpool, UK) and uses multimodal polarized light microscopy to differentiate between collagen and elastic fibre networks in the disc. The images below show a translamellar cross-bridge, where the colours in the transmitted polarized light image on the left provide information on the alignment of the collagen in the outer annulus of the disc, and the reflected polarized light image on the right (at higher magnification) shows that the cross-bridge is comprised of an inner collagenous core surrounded by an elastic fibre sheath. The microstructural imaging being developed will be used to define multiscale biomechanical models of disc function in health and disease.


In April the PSRG was again represented strongly at this key Australian Spine meeting with four podium presentations. Congratulations go to our Queensland X-Ray Masters Fellow, Dr Mostyn Yong, who won the Rob Johnston Award (pictured below with Prof Mark Pearcy and Maree Izatt). This award is given for the Best Presentation by a Trainee. Our three other presenters were; Qld X-Ray Clinical Masters Fellow Dr Nabeel Sunni, PhD Student Bethany Keenan and our previous Spinal Fellow Dr Eric Huang.

PSRG Publications in 2013!

The PSRG is pleased to announce that we have had four scientific journal papers published so far, with a further six currently undergoing the international peer review process.


Any questions or want to know more?
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