

TYPES OF SURIGAL RESEARCH

TRANSLATIONAL RESEARCH

The IAS is committed to stimulating aspiring Research conducted in a laboratory environment entails the formulation of hypotheses, the careful design of experiments with controlled conditions, and the detailed measurement of exact results to answer questions and most importantly to raise new hypotheses. It is not just the equipment and skills therefore that separates laboratory research from clinical research, but the ability to apply experimental method in a way that is not possible in the clinical setting. Laboratory research thus provides a unique method to investigate key problems in medicine, and forms an essential part of translational research - it is the 'bench' in "bench to bedside".

Whilst clinical research is commonly encountered during medical training and employment, exposure to laboratory research is limited to those who directly seek out the opportunity and is therefore foreign to most doctors. The IAS therefore seeks to introduce laboratory research to a wider audience, and to foster linkages and opportunities between laboratory researchers and those interested in / pursuing a surgical career.

Director of Translational Research, **Professor Jonathan Clark** is the best contact who anyone seeking to engage in surgical Laboratory or Translational research at RPA.

CLINICAL RESEARCH

Clinical research involves all aspects of research directly involved in the application of treatment to a patient, analysis of the effectiveness of treatment and the identification of decision making processes involved in that treatment.

The following research themes are common amongst all disciplines involved in clinical research:

- Decision making - Equipoise, Patient and Clinician preference
- Audit - Outcomes based clinical research
- Hypothesis testing - Retrospective or Prospective
- Clinical Trials – nonrandomised and randomised

Clinical research is the most common form of research undertaken across all specialties however the quality of the research is not well understood and the ability to determine generalisability of the research is often unclear. The aim of the IAS is to provide those pursuing a career in surgery an introduction to research methodology, an understanding of the components of clinical research and education about the development and implementation of all aspects of clinical research.

The IAS currently runs a new ideas' research meeting once a month. The meeting provides researchers with an opportunity to present their research ideas or protocols and get feedback from expert researchers within the IAS on their ideas to ensure that they have thought about all aspects of their study; and to also minimise delays in ethics clearance and recruitment.

If you have an interest in conducting clinical research but unsure how to start, please get in touch so we can put you in contact with IAS Director of Clinical Research, **Associate Professor Charbel Sandroussi** or one of the Surgical Department research leads.

EDUCATIONAL RESEARCH

Surgical education research seeks to understand the factors that affect surgical training.

Surgical educators need to effectively train surgical trainees to perform increasingly complex procedures in a manner that optimizes both patient safety and resource utilisation, while also ensuring they are highly competent in essential surgical skills.

Examples of surgical education research include comparing the effectiveness of computer-aided simulation versus animal training for teaching advanced laparoscopic procedures, evaluating the effects of teaching techniques on trainee retention of lecture material, and determining whether medical students with the best technical skills choose careers in surgical specialties.

Within RPA, considerable expertise and much research activity has been undertaken within the Laboratory and Clinical Research areas. The Surgical Education team lead by Associate Professor David Storey and Associate Professor Jonathan Hong have been working to further expand our expertise into Surgical Education Research.

Our team are currently working across the following areas:

1. Skills and simulation training methods
2. The development and introduction of new techniques and models including utilisation of 3D printed models
3. The effectiveness of multidisciplinary training
4. The measurement and cost of training within an Activity Based Funding (ABF) environment

Please feel free to contact our Surgical Education team, Assoc. Professor David Storey or Assoc. Professor Jonathan Hong if you have any questions via our contact us page (link this <https://www.slhd.nsw.gov.au/rpa/IAS/contact.html>)