Medical Simulation & Modelling

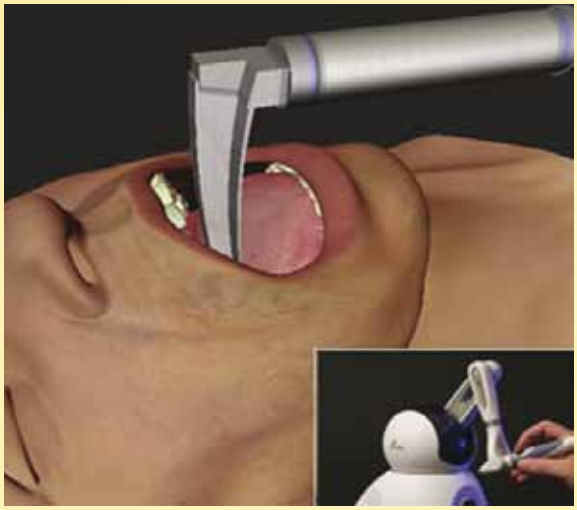
Flinders Medical Devices & Technologies

Researching, Developing, Applying and Commercialising Medical Devices & Technologies

Flinders UNIVERSITY

Flinders Medical Devices and Technologies (FMDAT) is a network of multi-disciplinary researchers, highly skilled in the development and application of a diverse range of medical technologies.

FMDAT's collaborative approach to research allows for the development and delivery of innovative solutions and services. This makes us an ideal single site for product development and testing – taking projects from fundamental concepts right through to clinical trial.



The Medical Simulation & Modelling group develops simulation solutions that are practical and realistic, drawing on expertise from a wide range of disciplines including computer science, electronics, mechanical engineering, clinical specialties and medical training.

The group builds physical and virtual simulators for high-risk, unusual, or difficult procedures that medical practitioners rarely experience in training, using technologies from the fields of Virtual Reality, Augmented Reality, 3D Visualisation, Haptics (precise force feedback that enables users to feel virtual objects), and GPU-boosted Physical Simulation.

These technologies can be used in the development of customised simulation products for new procedures or new products entering the market.

Simulators can be used to:

- Model a prospective device before it is built.
- Help refine the design of prototypes.
- Provide training in the use of a device or procedure.
- Support or augment a device used for rehabilitation following accident or injury.

Selected current and past research projects include:

- **Shopping Simulator** – a diagnostic resource that evaluates the cognitive capabilities of patients undergoing stroke rehabilitation for self-care.
- **Endotracheal Intubation simulator (ISim)** – a virtual reality simulator with a haptic interface for practicing correct incubation position and technique.
- **Endoscopic Sinus Surgery simulator (SinusSim)** – a two-handed anatomically accurate virtual reality simulator for endoscopic sinus surgery training.
- **Anatomical Lego (Skull Jigsaw)** – a hands-on trainer for learning skull anatomy by assembling a virtual 3D skull.
- **Subtotal Tonsillectomy simulator** – a haptic-feedback simulator for practising subtotal tonsillectomy using a Coblation handpiece.

inspiring achievement

www.flinders.edu.au

Why work with an FMDAT member?

- Benefit from expertise of researchers and clinicians from Flinders University, Flinders Medical Centre and the Repatriation General Hospital.
- Gain access to a variety of facilities and services.
- Tap into a network of contacts from around the world.
- Benefit from shared experience in R&D and commercialisation.
- Benefit from the credibility of University based research.

Financial benefits and opportunities for industry members

- Access to Federal Government R&D tax incentives (subject to satisfying eligibility criteria).
- Ability to leverage your R&D spend through a variety of additional grant funding bodies such as the Australian Research Council (ARC) Linkage, National Health and Medical Research Council (NHMRC), AusIndustry and others.
- Opportunity to kick-start your project through the Medical Device Partnering Program (MDPP).

Benefits to FMDAT members

- Greater engagement with both end-users and industry.
- Benefit from a unified and streamlined approach to medical device research.
- Increased relevance of research and the opportunity for new challenges.
- Stronger links to industry resulting in increased opportunities for co-applications to funding bodies.

FMDAT includes more than fifty researchers and clinicians from Flinders University, Flinders Medical Centre and the Repatriation General Hospital who collaborate in research, development, application and commercialisation of medical devices and technologies to benefit the community.

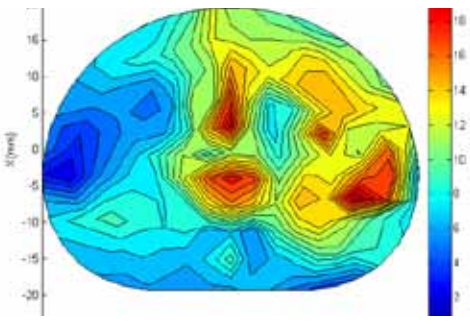
The network provides expertise in several related areas, including Assistive Technologies, Biomechanics & Implants, Health Informatics, Medical Devices & Instrumentation, Medical Signals & Imaging and Medical Simulation & Modelling.

Facilities available

- Ability to undertake pre-clinical and clinical trials
- Biomechanical materials testing laboratory
- CORe Surgical Facility
- Flinders Microscopy
- Fully equipped electronic and mechanical workshops
- Hexapod robot technology
- 3D Rapid Prototyping

Services available

- Contract research services
- Collaborations / Partnerships
- Expert advice and consultancy



Further information

Medical Simulation & Modelling group:

Associate Professor Paul Calder, Program Leader
P: 08 8201 2827
E: paul.calder@flinders.edu.au

Other FMDAT research capabilities:

P: 08 8201 5977
E: kelly.burton@flinders.edu.au

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