

A close-up photograph of a hand wearing a blue nitrile glove, holding a pair of black surgical scissors. The background is a soft, out-of-focus gradient of colors.

A Simulation Network

A photograph of a large, modern building with a curved facade, constructed from many horizontal concrete slabs. The building is set against a clear blue sky and a body of water in the foreground.

Opportunities for
industry in healthcare
skills training,
research and medical
device development

Our Dundee welcome

The University of Dundee brings together a unique combination of state-of-the-art facilities, world class expertise and researchers, clinicians and educators working closely to provide a truly integrated and realistic simulation environment for healthcare skills training, research and medical device development.

The Surgical and Clinical Skills Centres within the School of Medicine, University of Dundee have come together as the Dundee Institute of Healthcare Simulation (DIHS) to capitalise on their combined expertise and experience of providing simulation-based medical education spanning almost thirty years. Building on its successful history and collaborating with NHS Tayside and industry partners, DIHS will enhance existing simulated training activity as well as develop new educational products, further establishing our reputation as a world leading facility for simulation-based healthcare education.

The DIHS provides a unique innovation environment for industry/clinician/academic engagement. Industry is an essential partner in supporting the provision of high quality training using the latest technologies in a simulated clinical environment. Enterprises, such as medical device companies, are able to interact directly with key clinicians and academics from the UK and overseas to showcase their products to potential 'end users'.

Collaboration opportunities include:

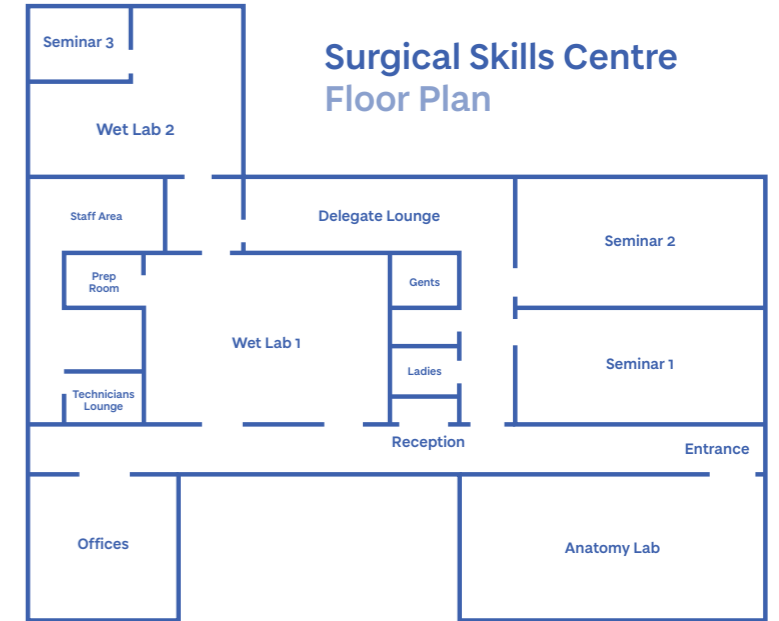
- Partnerships to develop new educational materials and research
- Jointly developing courses for clinical and surgical staff
- Training of company personnel
- Equipment development and validation

Surgical Skills Centre

The Centre recently became the first in the UK to receive full Royal College of Surgeons of Edinburgh (RCSEd) Accreditation. This recognition from one of the largest and oldest surgical organisations worldwide recognises the rigorous internal quality assurance processes that we, and the College, apply across the full range of our educational portfolios.

An extensive £250,000 refurbishment of the Centre's facilities was completed in May 2018 in order to double training capacity and create the best possible visitor experience.

The Centre's training portfolio spans various disciplines with training provided at basic, intermediate and advanced levels for local, national and international trainees.



A unique benefit in Dundee for training surgeons and clinical teams is access to Thiel embalmed human cadavers. The Thiel soft fix embalming technique is a sophisticated method of preservation of complete human cadavers that allows them to maintain many features of a live body, particularly with regard to the authenticity of colour, tissue consistency and flexibility. Benefits include reduced risk of infection, minimal odour, negligible formalin levels, reduced deterioration compared to fresh frozen cadavers and longevity - bodies can be kept for 3 years. These cadavers can also provide good quality medical images (ultrasound, X-ray, CT and MRI) and can be used to simulate many clinical or operative procedures, such as bronchoscopy, arthroscopy, laparoscopy, endoscopy, etc. These characteristics make a Thiel embalmed human cadaver an excellent model for skills training.

Clinical Skills Centre

The clinical skills centre provides a wide range of healthcare education activities. Activities are tailored to learners needs, involving a wide range of simulators from simple part task trainers to interactions with volunteer simulated patients. The centre also offers an array of environments to facilitate learning activities from simple clinical areas and seminar rooms, to immersive scenarios in our simulated ward, outpatient and HDU environments and more recently the use of augmented and virtual reality.

"The DOW simulation suite is a £1M extension to the centre which has recreated a variety of realistic healthcare settings."

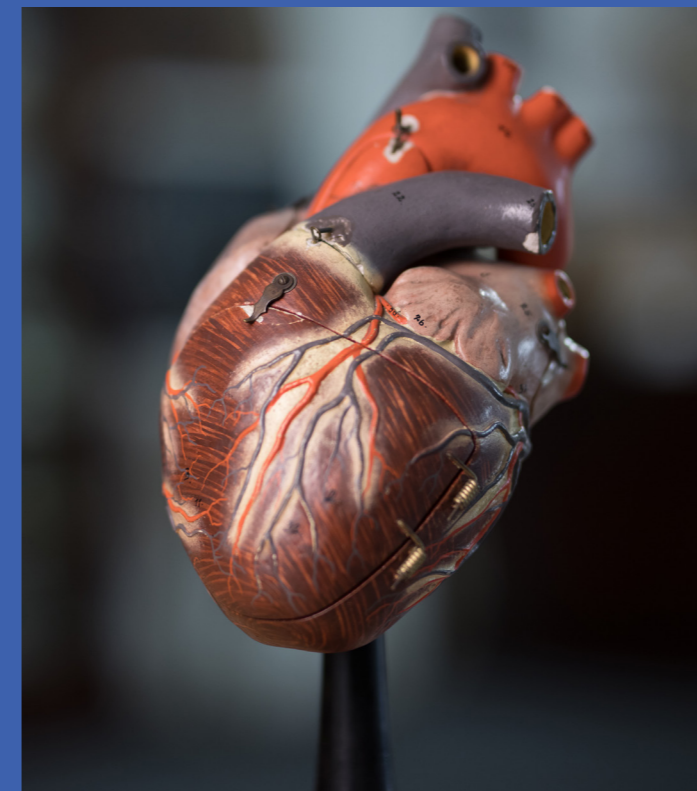


The DOW simulation suite enables healthcare professionals to learn safely in simulated environments and enhancing the transfer of new skills to clinical practice. A state of the art control suite allows real time recordings of simulated sessions, creating the opportunity for video-assisted debriefing which promotes reflective learning.

The centre has an experienced in-house faculty of educators from a variety of clinical and academic backgrounds. The team have particular expertise in non-technical skills teaching, procedural skills teaching and in clinical skills assessment.



The Centre for Anatomy and Human Identification (CAHID)²



CAHID was the first UK institution to take up the Thiel soft fix embalming method and, with several years of experience, is now considered the UK's leading Thiel facility.

An expert team of academics and technicians provide a wide range of undergraduate and postgraduate courses in anatomy, but also work closely with the other departments to develop cadaveric models for training and medical device testing. Most of the body donors come from Dundee, Tayside and the surrounding areas. All have altruistically and generously donated their bodies for the improvement and furtherance of medical education and research. CAHID accepts around 90 donations each year and at any one time has approximately 200 Thiel cadavers in its care. The Centre offers two dissection facilities with either 9 or 30 tables and a range of lecture theatres and seminar rooms.

- Collaboration opportunities include:**
- Development and testing of medical devices (also with IGTRF)
 - Training of clinical and surgical staff
 - Research and educational opportunities

The Image Guided Therapy Research Facility (IGTRF)³

Part of the Institute for Medical Science & Technology³, IGTRF designs bespoke clinical simulations for medical device testing and training in advanced interventional techniques. Through partnership with Centre for Anatomy and Human Identification (CAHID) we have access to the large resource of Thiel human cadavers. This unique cadaveric resource allows IGTRF research staff to perfuse fluids into the bodies, simulate blood flow and create the conditions which allow them to conduct simulations of a "living" patient undergoing an operation. The cadaveric models provide an ideal model for industry to test new devices upon to support regulatory applications. Through partnership with the Clinical Research Imaging Facility (CRIF), we have access to state-of-the-art imaging equipment and experienced multidisciplinary teams of radiographers, physicists and clinical researchers to ensure our simulations are realistic and that the data we collect is of high quality.

Facilities include:

- Access to Multi-modal imaging facilities and expertise
- C-arm X-ray – fluoroscopic angiography within a dedicated surgical suite
- 1.5 T Magnetic Resonance Imaging uniquely adjoining surgical suite
- Ultrasound, access to state-of-the-art equipment



"The cadaveric models provide an ideal model for industry to test new devices upon to support regulatory applications."

Clinical Research Imaging Facility (CRIF)

CRIF is a University of Dundee facility which houses state-of-art medical imaging technology and is staffed by a dedicated team of NHS trained staff including radiographers and medical physicists that functions primarily a clinical research facility. CRIF supports clinical research imaging projects in Tayside involving MRI, CT and PET-CT and is growing in strength in cardiovascular, oncology, dementia and neurological imaging.

CRIF also works in partnership with IGTRF in order to deliver high quality imaging data for novel research and support advanced image guided techniques. This will provide an improved diagnostic pathway for patients and further advance training for medical, technical and research staff. The current imaging capability in CRIF is as listed below:

→ GE Revolution EVO CT scanner

Installed 2018, this is the most advanced CT scanner in Tayside and the focus of this scanner is diagnostic and interventional therapies providing opportunities to participate in ground breaking interventional research and provide potential capacity for NHS diagnostic scanning including cardiac imaging.

→ Siemens 3T Magnetom PrismFit MRI scanner

This state-of-the-art scanner uses a magnetic field twice as strong as many existing scanners, enabling the acquisition of higher resolution images in a shorter time. The scanner supports a range of studies, involving cardiovascular and cancer patients, as well as providing assistance to the NHS service.

→ GE Discovery MI Digital PET-CT scanner

Another key state-of-the-art scanner offering improvements in lesion detection, image quality and patient comfort. The area also includes a space for pharmaceutical preparation, patient changing areas and a dedicated image analysis area. Tayside has seen an increase in PET research activity and has developed links with industry and other boards to source novel tracers to support this activity.





For further information or to arrange a discussion please email us at:

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¹ dihs.dundee.ac.uk

² dundee.ac.uk/cahid/services/details/thiel-cadaver-facility.php

³ imsat.org

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