



SPORTING CHANCE INITIATIVE

Centres Of Excellence **PROSTHETICS**

This is an area of active technology development, from the science of biomechanics and human movement control to applied physics (such as pressure-sensing technologies), materials science, motion analysis and rehabilitation within the healthcare profession.



1 University of Strathclyde
National Centre for Prosthetics and Orthotics

2 Glasgow Caledonian University
Musculoskeletal & Neurological
Rehabilitation Group

3 Edinburgh Napier University
School of Life, Sport & Social Sciences

4 University of Dundee
Institute of Motion Analysis & Research (IMAR)
Tayside Orthopaedic & Rehabilitation
Technology (TORT) Centre

5 Robert Gordon University
School of Health

CENTRES OF EXCELLENCE **PROSTHETICS**

Innovation is about getting business value from an idea. **Radical innovation** in Prosthetics includes new materials for limbs/joints (e.g. titanium, carbon fibre and thermoplastic polymers) and cutting edge research at the neural interface to improve signal quality. Current research at Stanford University is developing pressure sensors for touch-sensitive prosthetic limbs using a transparent film of carbon nano-springs.

Opportunities for Prosthetics technology in Sport have been highlighted by Oscar Pistorius, the "Blade Runner", who qualified for London 2012 to compete against able-bodied athletes. The Walk Again project in America has also demonstrated a way to link living brain tissue to a variety of robotic devices, including prosthetic arms and legs. On the opening day of the 2014 World Cup in Brazil, they hope to send a young quadriplegic into the midfield wearing a prosthetic exoskeleton.

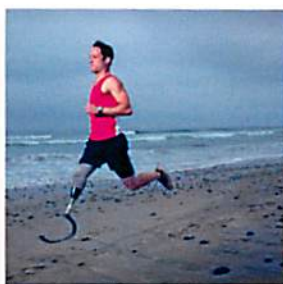
There can also be real value from **incremental innovation**: the use of existing technology to make improvements. Therapists working with athletes will have additional criteria for the selection of components and materials due to the functional and biomechanical demands of sport. They may know of improvements which would improve fitting, function or comfort. With support, these ideas could be the basis of a new product.

Could day-to-day issues in rehabilitation be overcome with technology?

How could prosthetics be improved to help people to get back into sport after an injury?

What challenges are faced by those trying to get the most out of their chosen sport?

Scotland has a wide range of expertise in its Universities and the business base which could enable the development of technology-based ideas. If you would like to explore this further, email sportingchance@suip.co.uk



FUNDERS



UNIVERSITY OF
STIRLING



STIRLING UNIVERSITY
INNOVATION PARK™