ACES: The Irish Dimension Celebration
1. Custom-built electronics with wireless communication (Shimmer)

2. 3D printed casing

3. Microfluidic chip + ISE

4. 3D printed sweat harvester and sensor connections

- Rapid prototyping techniques such as laser ablation and 3D printing are utilised to custom build various components including casing and sweat harvesting device \textit{(the Australian National Nanofabrication Facility – Materials node and the Nano-Bioanalytical Research Facility (NRF) in Dublin City University)}
Electrochemical Generation of Cl- gradients on demand...
Activate the Channel Walls…
Switchable Binding and Release
Functional Fluidics Toolbox

- Flexible fluidics
- Smart, functional micro/nano vehicles
- Biomimetic flow control components
- Multi-functional channel walls
- Dynamic micro/nano-pores

What’s Next?
Near Term Applications (5 Years)

Data and Information; IOT

Outside: On-Body
- Smart Bandages
- Sensorised Contact Lens
- Sensorised Splints/dentures
- Smart Textiles/Clothing

Inside: Implants/In-vivo
- Smart Stents
- Platforms and Implants
- Self-Aware Transplant Joints
- Post-Operative IC (days)
- Medium term Convalescence (weeks)

MATERIALS
- Physics Chemistry Biology Engineering
  ( photonics, electronics, fluidics, 4D materials)
Triads…..

‘A triad is one of many branches of Chinese transnational organized crime organizations’
But what about the TRIADS of IRELAND.....

A collection of sayings in Gaelic collected from local people and from Gaelic manuscripts like the ‘Yellow Book of Lecan’ (ca. 1400) and the ‘The Book of Ballymote’ (ca. 1390).
Trí caindle forosnat cach ndorcha: fír, aicned, ecna.

Three candles to light all darkness: truth, nature, knowledge