This research theme focuses on highly interdisciplinary and cutting-edge research at the interface between mechanical engineering, material science and bioengineering. We bring together our expertise in micromechanics, tissue engineering, computational mechanics, micro/nano manufacturing, thermo-fluid mechanics and digital design and manufacture to address the challenges in biomedical engineering including cancer diagnostics, tissue mechanics, tissue engineering and characterisation.

Much of our research is in collaboration with physicists and clinicians both nationally and internationally. Examples of our completed or ongoing projects include:

- E-finger: an in vivo tactile diagnostic device with microscale resolution
- A novel diagnostic tool: from structural health monitoring to tissue quality prediction
- Identifying problem sensitivity in soldering procedures using haptics through knowledge capture and psycho-physiological analysis