

Introducing the University

Prof. Mark Spearing
Pro Vice-Chancellor

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Changing the world

Our world-leading interdisciplinary expertise, state-of-the-art facilities and global partnerships give our research and education an international reach.



Over 150 years of history

Hartley Institution opening procession

- The University has a distinguished heritage that can be traced back to the creation of the Hartley Institution in 1862
 - 1862: Hartley Institution founded
 - 1883: Hartley Institution becomes a college
 - 1902: Hartley College becomes a degree-awarding branch of the University of London
 - 1952: We become the University of Southampton after Her Majesty The Queen grants us a royal charter

At a glance

- An institution in the top one per cent of global universities*
- Top 15 UK university with consistently high scores for teaching and learning activities**
- Ranked 8th in the UK for research intensity†
- Founding member of the Russell Group
- 24,500 students and over 6,500 staff
- 6 UK campuses and 1 campus in Malaysia

*QS World University Rankings, 2015-16; **The *Guardian* University Guide 2016; †*Times Higher Education* (Research Excellence Framework 2014)



Research excellence

The Research Excellence Framework (REF) is the system for assessing the quality of research in UK higher education. In REF 2014, we were ranked:

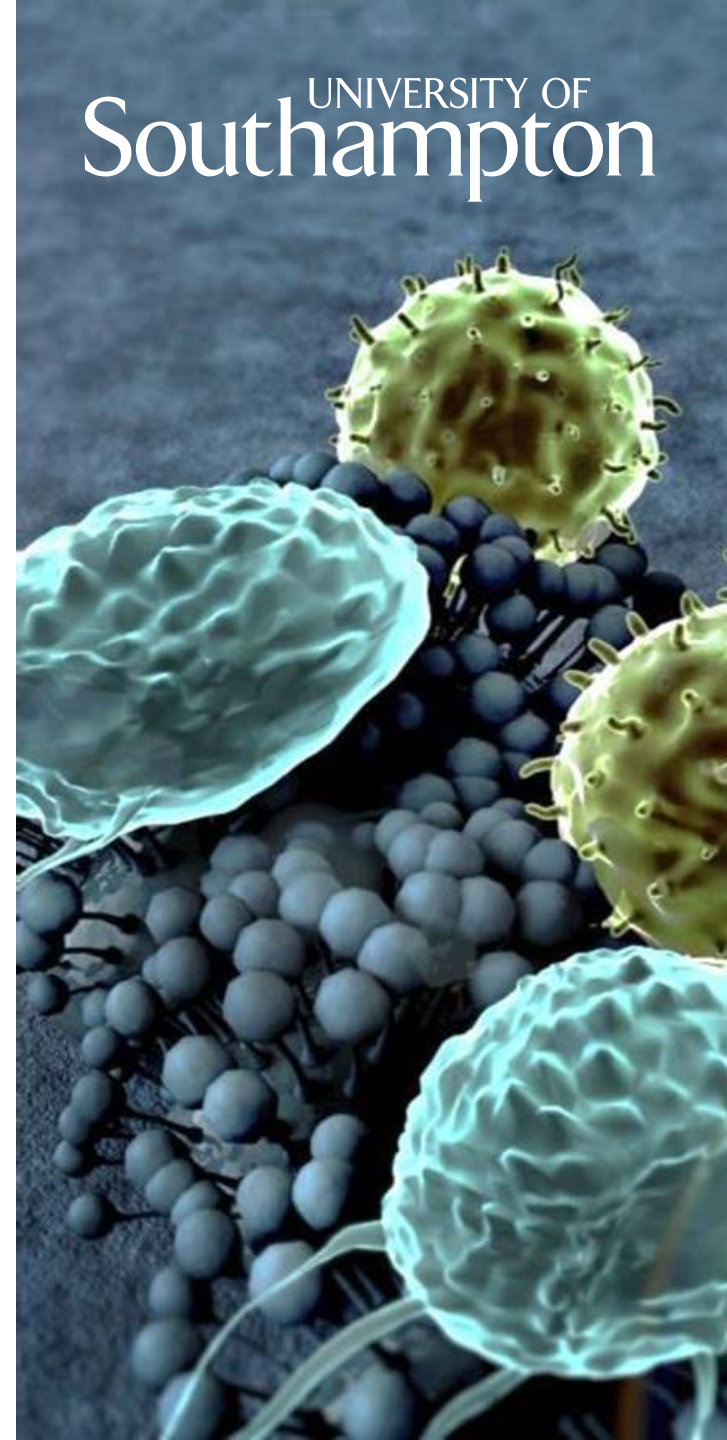
- 8th in the UK for research intensity¹
- 11th most powerful university for research in the UK²
- Best music department in the UK
- Most powerful university in general engineering
- Most powerful submission in electrical and electronic engineering

(1) *Times Higher Education*, January 2015

(2) *Research Fortnight*, December 2014

Harnessing the immune system

- 40-year reputation for cancer immunology
- Pioneering immune-based therapies such as antibodies and DNA vaccines
- Partners with the Francis Crick Institute
- An estimated 20 per cent of our clinical trial patients are living cancer free



Connecting the world

- Low-loss optical fibres, developed at Southampton, drive the internet
- Our erbium-doped amplifiers resulted in broadband and fast telecommunications
- Founded the discipline of Web Science
- World's first Open Data Institute
- Centre of a photonics cluster of 10 companies



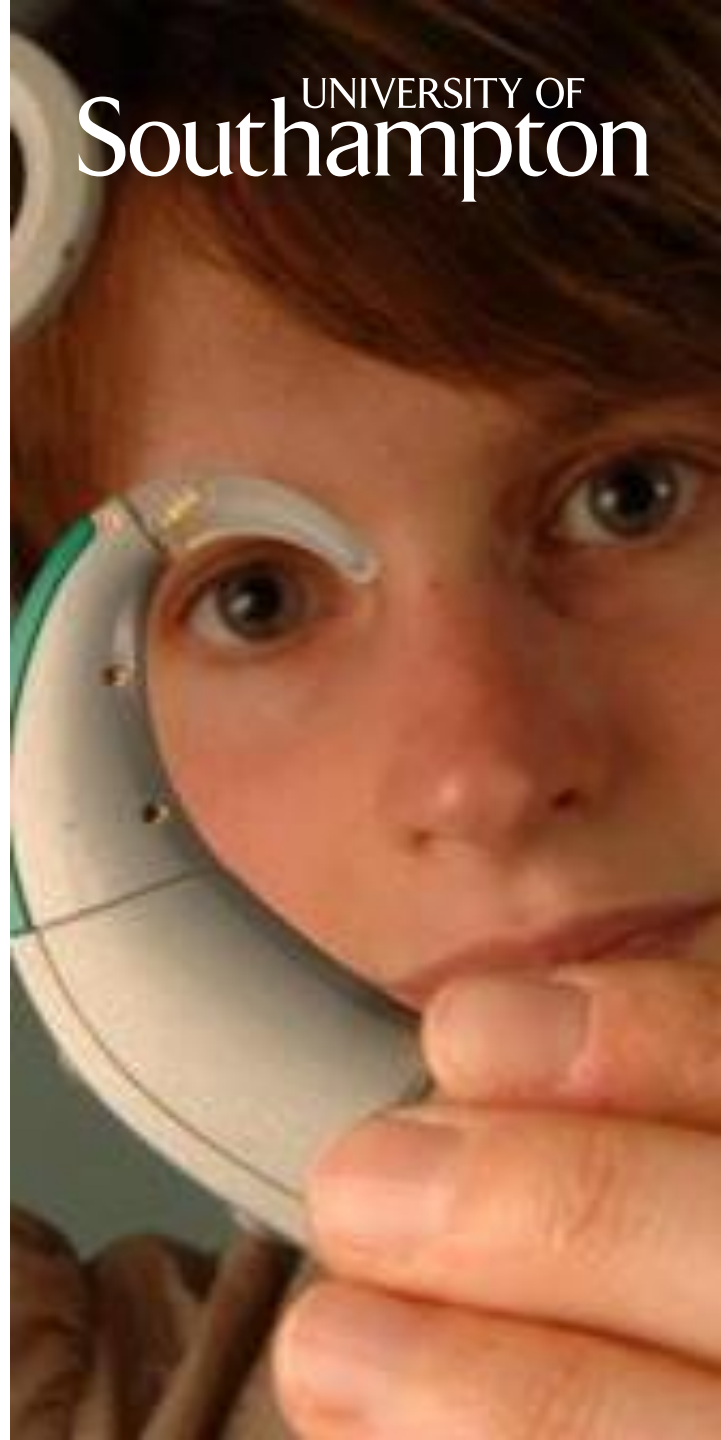
Aircraft noise reduction

- Long-standing research collaborations with Rolls-Royce and Airbus
- Largest provider of aero-acoustic expertise in the UK
- UK focal point for the X-NOISE European aero-acoustic network bringing together industry and academic partners
- Our cutting-edge research provides tools to understand and reduce noise pollution from commercial aircraft



Enjoying music again

- Interdisciplinary project that enables cochlear implant users to hear and appreciate music again
- Online interactive music awareness programme to retrain hearing to pick out sounds from musical instruments
- Music donated by 10cc and Philip Selway from Radiohead



Bubble science

- Linking bubbles with medicine, ultrasonic cleaning and locating landmines
- Work with NHS and industry to turn bubble acoustic theory into practice
- Our research applies dolphin-inspired use of bubbles when hunting fish for:
 - sonar to detect naval mines
 - treatments for migraine
 - Locating survivors in collapsed buildings



Copper takes on superbugs

- We link the change in your pocket to the fight against superbugs in hospitals
- Bacteria on stainless steel surfaces, routinely used in hospitals, can survive over a week
- Our research shows pathogens placed on copper alloys die within hours and MRSA dies in minutes
- Partners with the Copper Development Association



Uncharted waters

- Our researchers have discovered deep-sea vents teeming with new life and valuable metal resources
- Interdisciplinary research
- In collaboration with the UK Natural Environment Research Council
- Partners with Japan Agency for Marine Earth Science Technology
- Protecting ecosystems and underwater heritage



Uncovering the past

- We uncover vital information about the maritime port of Imperial Rome
- Cutting-edge geophysical analysis, combined with traditional excavation
- Making the past a virtual reality using computer graphic simulations
- We inform policy makers about the importance of the site



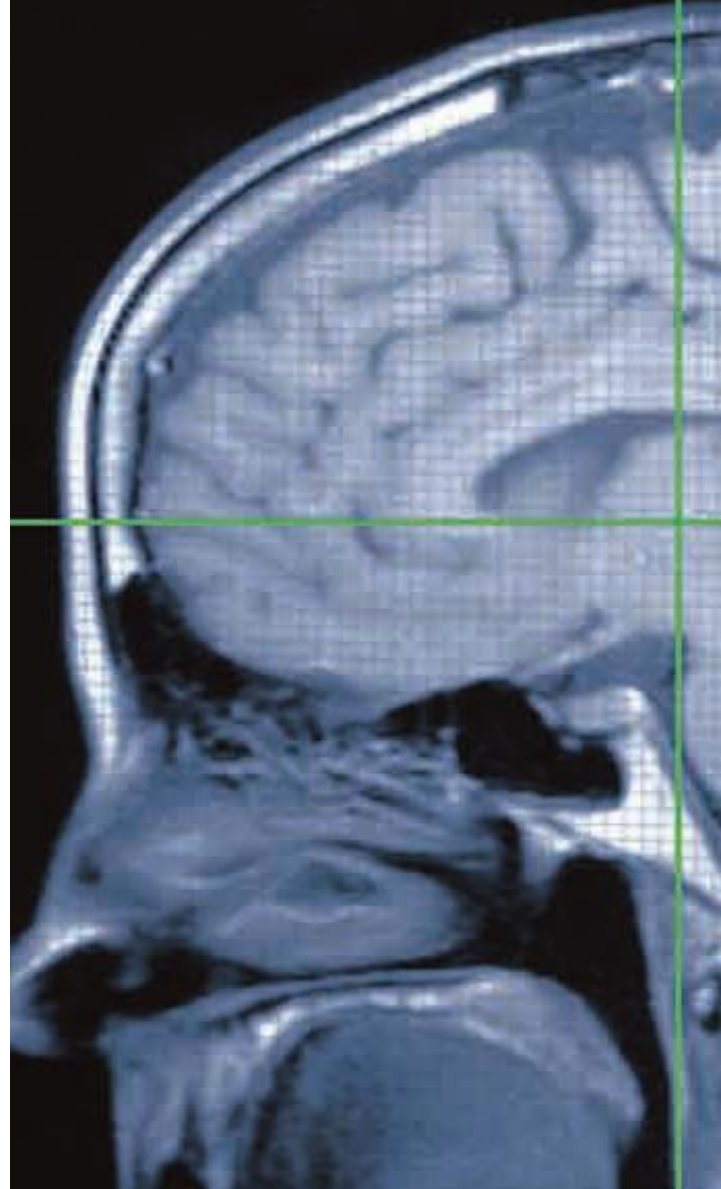
Population change

- Home to the largest group of demographers and gerontologists in the UK
- Determining how the world will ‘survive’ and adapt to a global population rise
- Our partners include:
 - UK Office of National Statistics
 - National Records of Scotland
 - AgeUK
 - World Health Organization



Re-education after stroke

- We develop gaming technologies and use Microsoft Kinect as rehabilitation tools after stroke
- Our research uses finger-tip devices to help regain touch sensations
- We partner Chemring Technology Solutions and Morgan Innovation & Technology



Diagnosing diseases

- Groundbreaking 40-year discovery
- Impact on cancer diagnosis, crime scene analysis, drug and art forgery detection
- Surface Enhanced Raman Spectroscopy (SERS) allows scientists to detect molecules in smaller quantities than ever
- With AstraZeneca we are using SERS with gold nanoprobles to detect tumours in cells



Tackling malaria

- Our research is at the forefront of the fight against malaria
- We use anonymised mobile phone data to map movements of populations between malaria ‘hotspots’ and conduct elimination feasibility assessments
- Collaborate with the National Vector-borne Diseases Control Programme in Namibia and WHO
- Funded by the Bill and Melinda Gates Foundation



Developing tomorrow's experts



- Students taught by world-leading researchers
- Paid internships and work placements
- 94 per cent of graduates in employment or further study six months after graduation*
- Notable alumni include:
 - Adrian Newey, Chief Technical Officer, Red Bull Racing
 - Sir George Buckley, Retired CEO of 3M
 - Caroline Wyatt, BBC News Correspondent

Flexible learning

- UK leader in flexible degrees where students can shape their own experiences
- Students have the option to take modules outside their area of study
- First UK university to offer Major/Minor degrees
- Students can access many learning resources on the move
- Founding member of the FutureLearn Consortium and member of FutureLearn's MOOCs

Global education

- Around 8,000 students from outside the UK
- 233 partnerships in 54 countries
- Educational partners overseas include:
 - Nanyang Technological University
 - Dalian Polytechnic University
 - Singapore Institute of Management
 - Xiamen University
- University of Southampton Malaysia Campus
- UK leader in study abroad opportunities
- Engaged in research activity on every continent



University links: SES-5

- Science and Engineering South Consortium
- Annual research spend over £2bn
- 30% of total EPSRC funding
- Share infrastructure, HPC, clean rooms
- Strategic planning of national infrastructure
- Engaging with industry and other partners
- Promoting economic growth
- Work with many other universities



Connecting with business

- 50 per cent of research involves external collaborators
- At any one time, we are working with 1,000 companies
- Over 150 international businesses have chosen us as a major research partner
- Our contracts with industry are worth £45m annually



Commercial connections

- Spun out 13 successful companies since 2000
- Portfolio of 300 patents with an annual income over £500,000
- Collaborations with multi-nationals such as Rolls-Royce, Airbus, Microsoft, GSK and Google
- Largest university-business collaboration in the UK with Lloyd's Register
- SETSquared, our business incubation programme, is ranked the most influential university business incubator globally*

Our strategy says:

- Our knowledge and technologies, developed through our research and applied through our enterprise will have a real economic and social benefit for the world....
- We have a global reputation for our passion and ability to work collaboratively in delivering world-class education, research and innovation that makes a real impact on society's biggest challenges

Local links

- The University brings £1bn into the regional economy*
- Second largest employer in Southampton
- Partner with University Hospital Southampton NHS Foundation Trust
- Our students volunteer for 130 local and national organisations
- Business engagement: University of Southampton Science Park
- EcoCampus Platinum Award

* Independent Economic Impact Survey, 2015

Strategic partnerships – thoughts for today

- Enduring partnerships require:
 - Clear understanding of the mutual benefit – achieve more together
 - Achieve high levels of trust and respect – open, one team
 - Accurate appreciation of the resources required (time, funds, data..)
- Require strong, frequent interaction to achieve trust and understanding, embedded personnel, secondments, executive leads
- Strong partnerships typically have multiple strands: basic research, applied problem solving, education, employment
- Work across a spectrum of TRL – applied work provides insight into underlying fundamental issues, basic science allows innovation

Connect with us

View the University of Southampton [film](#)

Search 'we are connected'