



Areas of Research Strength

Never Stand Still

Division of Research





Contents

Research at a Glance.....	1
Key Statistics.....	2
Research Strengths Summary.....	3
UNSW Research Centres.....	4
UNSW Research Strengths:	
Biomedical Sciences.....	5
Water, Climate, Environment and Sustainability.....	7
Next Generation Materials and Technologies.....	9
Social Policy, Government and Health Policy.....	11
ICT, Robotics and Devices.....	13
Law, Business and Economics.....	15
Fundamental and Enabling Sciences.....	17
Contemporary Humanities and Creative Arts.....	19
Defence and Security.....	21

Research at a Glance

UNSW is a member of the Group of Eight (Go8) research intensive universities in Australia. UNSW is also a member of Universitas21, the Global Alliance of Technological Universities (GlobalTech) and the Association of Pacific Rim Universities (APRU).

Established in 1949 with a unique focus on the scientific, technological and professional disciplines, UNSW has a proud tradition of sustained innovation, through world-class research and research facilities that focus on areas critical not only to Australia and the region but also internationally. These areas range from:

- + climate change, environmental and sustainability, renewable energies and renewable materials
- + life-saving medical treatments and therapies
- + groundbreaking technologies and new processes
- + world-leading health and social policies

The University's award-winning researchers are strongly represented in national and international prizes, honours and fellowships.

We continue to build on our reputation for world-class research in key areas of research strength that are critical to the future, using our close links with industry and other institutions to ensure our work has practical application and impact.

Most of our research is concentrated in the following areas of strength:

Key Areas of Research Strength:

- + Biomedical Sciences
- + Water, Climate, Environment and Sustainability
- + Next Generation Materials and Technologies
- + Social Policy, Government and Health Policy
- + ICT, Robotics and Devices
- + Law, Business and Economics
- + Fundamental and Enabling Sciences
- + Contemporary Humanities and Creative Arts
- + Defence and Security

Key Statistics

Total Research Income

>\$525M¹

Research Publications

5,758²

UNSW Research Staff

2115³

Higher Degree Research Completions

678

¹ Research income from all sources including HERDC, Research Block Grant Funding, NCRIS, LIEF and EIF 2014

² 2014 HERDC Return – weighted fractional publications

³ 2014 DET Staff Return

Research Strengths Summary

Research Indicator	Income ⁴	Completions ⁶	HDR Load	Publications ²	FTE (Lecturer & Above)	% UNSW Performance
Biomedical Sciences	\$123M	268	599	1360	437	28%
Water, Climate, Environment and Sustainability	\$35M	165	398	687	231	11%
Next Generation Materials and Technologies	\$35M	204	463	682	193	12%
Social Policy, Government and Health Policy	\$53M	112	307	713	308	12%
ICT, Robotics and Devices	\$21M	130	271	483	116	8%
Law, Business and Economics	\$18M	99	210	365	266	6%
Fundamental and Enabling Sciences	\$17M	68	149	238	100	5%
Contemporary Humanities and Creative Arts	\$8M	103	280	334	149	5%
Defence and Security	\$24M	84	196	364	123	7%
Other	\$13M	117	314	532	191	6%
Total	\$347M	1351	3188	5758	2115	100%

UNSW Research Centres

10

Australian Research Council (ARC) Centres of Excellence

7

National Health and Medical Research Council (NHMRC) Centres of Research Excellence

6

Affiliated Medical Research Institutes and Centres

11

Cooperative Research Centres (CRCs)

12

National Research Centres

Over 50

Established research, community and program centres across nine Faculties and encompassing all UNSW Research Strengths. ⁵

¹ Research income from all sources including HERDC, Research Block Grant Funding, NCRI, LIEF and EIF 2014

² 2014 HERDC Return – weighted fractional publications

³ 2014 DET Staff Return

⁴ 2014 HERDC Return – Income

⁵ As of 1 January 2015

⁶ Student Headcount, DET return

Biomedical Sciences

- + Ageing
- + Biomaterials
- + Biomedical Engineering
- + Biotechnology
- + Brain Science, Neurosciences & Mental Health
- + Cancer
- + Cardiovascular Diseases
- + Genomics
- + Infectious Diseases & Immunology
- + Public Health & Health Services

Supported by

- + Adult Cancer Program
- + ARC Centre of Excellence in Advanced Molecular Imaging
- + ARC Centre of Excellence in Cognition and its Disorders
- + ARC Centre of Excellence in Convergent Bio-Nano Science and Technology
- + ARC Centre of Excellence for Integrative Brain Function
- + Australian Centre for NanoMedicine
- + Australian Centre for Perinatal Science
- + Brain Sciences UNSW
- + Centre for Big Data in Health
- + Centre for Healthy Brain Ageing
- + Centre for Marine Bio-Innovation
- + Centre for Obesity Management & Prevention in Primary Health Care
- + Dementia Collaborative Research Centres
- + Evolution and Ecology Research Centre
- + The Health-Science Alliance
- + The Kirby Institute
- + Lowy Cancer Research Centre
- + Mark Wainwright Analytical Centre
- + NSW Cancer Survivors Centre
- + Ramaciotti Centre for Genomics
- + Simpson Centre for Health Services Research
- + St Vincent's Centre for Applied Medical Research

Affiliated Medical Research Institutes

- + Black Dog Institute
- + Centre for Eye Health
- + Children's Cancer Institute
- + Garvan Institute of Medical Research
- + Ingham Institute
- + Neuroscience Research Australia
- + Victor Chang Cardiac Research Institute

Water, Climate, Environment and Sustainability

- + Alternative Energies & Fuels
- + Climate Change
- + Conservation Biology & Biodiversity
- + Environmental Modelling
- + Marine Biology & Oceanography
- + Microbial Biofilms
- + Rainfall, Rivers & Water
- + River & Wetland Ecology
- + Sustainable Cities
- + Sustainable Materials & Recycling
- + Water Use & Re-Use
- + Water Purification

Supported by

- + ARC Centre of Excellence for Advanced Silicon Photovoltaics & Photonics
- + ARC Centre of Excellence for Climate System Science
- + Australian Centre for Sustainable Mining Practices
- + Australian Energy Research Institute
- + Australian Housing & Urban Research Institute (AHURI)
- + Australian Poultry CRC
- + Australian Water Recycling Centre of Excellence
- + Centre for Ecosystem Science
- + Centre for Energy & Environmental Markets
- + Centre for Marine Bioinnovation
- + Climate Change Research Centre
- + Connected Waters Initiative
- + CRC for Greenhouse Gas Technologies
- + CRC for Low Carbon Living
- + Evolution & Ecology Research Centre
- + Institute Of Environmental Studies
- + National Centre For Groundwater Research & Training
- + National Centre of Excellence In Desalination
- + Research Centre For Integrated Transport Innovation
- + Sino-Australian Research Centre For Coastal Management
- + Sustainable Materials Research & Technology Centre
- + Sydney Institute for Marine Science
- + UNESCO Centre for Membrane Science & Technology
- + Universities Climate Consortium
- + Water Research Australia
- + Water Research Centre

Next Generation Materials and Technologies

- + Advanced Functional Materials
- + Advanced Polymers & Membranes
- + Biomaterials
- + Nanomaterials
- + New Generation Building Materials
- + Next Generation Computing (Quantum Computing)
- + Silicon Solar Cells (Photovoltaics)
- + Space Engineering

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Supported by

- + ARC Centre of Excellence for Advanced Silicon Photovoltaics & Photonics
- + ARC Centre of Excellence for Functional Nanomaterials
- + ARC Centre of Excellence for Quantum Computation & Communication Technology
- + ARC Training Centre for Advanced Technologies in Food Manufacture
- + ARC Research Hub for Green Manufacturing
- + Australian Centre for Advanced Photovoltaics
- + Australian Centre for Nanomedicine
- + Australian Centre for Space Engineering Research
- + Australia-China Research Centre for Light Metals
- + Australian National Fabrication Facility (ANFF)
- + Australian PV Institute
- + Australia-US Institute for Advanced Photovoltaics
- + Baosteel-Australia Joint Research & Development Centre
- + Centre for Advanced Macromolecular Design
- + Centre for Infrastructure Engineering & Safety
- + Centre for Marine Bio-Innovation
- + CRC for Advanced Composite Structures
- + CRC for Polymers
- + Innovative Manufacturing CRC
- + Integrated Materials Design Centre
- + Mark Wainwright Analytical Centre
- + Meta - The Art of Manufacturing
- + Research Centre for Integrated Transport Innovation
- + Sustainable Materials Research & Technology Centre
- + UNESCO Centre for Membrane Science & Technology

Social Policy, Government and Health Policy

- + Ageing & Retirement
- + City Planning
- + Community Medicine
- + Criminology
- + Defence & National Security
- + Disability, Policy & Planning
- + Drug & Alcohol Policy
- + Human Rights
- + Indigenous Policy
- + Mental Health
- + Risk Management & Safety
- + Social Impact of Disease

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Supported by

- + ARC Centre of Excellence in Population Ageing Research
- + ARC Research Network for a Secure Australia
- + Asia-Pacific Ubiquitous Healthcare Research Centre
- + Australian Centre of Research Excellence in Offender Health
- + Australian Human Rights Centre
- + Centre for Big Data in Health
- + Centre for Clinical Research Excellence in Aboriginal Health
- + Centre for Primary Health Care & Equity
- + Centre for Refugee Research
- + Centre for Social Research in Health
- + Centre of Research Excellence in Mental Health and Substance Use
- + Centre of Research Excellence in Population Health Research
- + Centre of Research Excellence in Suicide Prevention
- + City Futures Research Centre
- + CRC for Living with Autism Spectrum Disorders
- + Crime & Justice Research Network
- + Gilbert & Tobin Centre of Public Law
- + Indigenous Law Centre
- + Industrial Relations Research Centre
- + Initiative for Health & Human Rights
- + Injury Risk Management Research Centre
- + Lowitja Institute Aboriginal & Torres Strait Islander Health CRC
- + National Cannabis Prevention & Information Centre
- + National Drug & Alcohol Research Centre
- + Nura Gili Indigenous Programs Centre
- + Social Policy Research Centre

ICT, Robotics and Devices

- + Biomedical Engineering & Bionics
- + Embedded Systems & Communications
- + Fuzzy Logic
- + Interactive Media & Electronic Art
- + Optical Fibre Communications (Photonics)
- + Programming Languages
- + Robotics & Autonomous Systems
- + Satellite Engineering & Applications
- + Simulation & Modelling
- + Software Engineering
- + Unmanned Aerial Vehicles (UAVs)

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Supported by

- + ARC Research Network for a Secure Australia
- + Asia-Pacific Ubiquitous Healthcare Research Centre
- + Australian Centre for Cyber Security
- + Bionic Vision Australia
- + Centre for Interactive Cinema Research (iCinema)
- + The CRC for Spatial Information
- + Data to Decisions CRC
- + National ICT Australia (NICTA)

Law, Business and Economics

- + Accounting
- + Business & Management
- + Capital Markets & Finance
- + Economics
- + Law, Governance & Regulation
- + Taxation

Supported by

- + Andrew & Renata Kaldor Centre for International Refugee Law
- + ARC Centre of Excellence for Mathematical & Statistical Frontiers (ACEMS)
- + ARC Centre of Excellence for Population & Ageing Research
- + Australasian Legal Information Institute
- + Capital Markets CRC
- + Centre for Accounting & Assurance Research
- + Centre for Applied Economic Research
- + Centre for Energy & Environmental Markets
- + Centre for Innovation & Entrepreneurship
- + Centre for International Finance & Regulation
- + Centre for Law, Markets & Regulation
- + Data to Decisions CRC
- + Gilbert & Tobin Centre of Public Law
- + Indigenous Law Centre
- + Industrial Relations Research Centre
- + Institute of Global Finance
- + SIRCA (Formerly Securities Industry Research Centre of Asia-Pacific)
- + UNSW Crime & Justice Network

Fundamental and Enabling Sciences

- + Astronomy, Astrophysics & Astrobiology
- + Biology & Biosciences
- + Chemistry & Chemical Sciences
- + Mathematics
- + Physics
- + Space Science & Engineering

Supported by

- + Australian Centre for Astrobiology
- + Australian Centre for Space Engineering Research
- + Australian Mathematical Sciences Institute
- + Mark Wainwright Analytical Centre, containing the following six Research Facilities:
 - » Bioanalytical Mass Spectrometry Facility (BMSF)
 - » Biological Resources Imaging Laboratory (BRIL)
 - » Biomedical Imaging Facility (BMIF)
 - » Electron Microscope Unit (EMU)
 - » Nuclear Magnetic Resonance Facility (NMR)
 - » Solid State & Elemental Analysis Unit (SSEAU)

Contemporary Humanities and Creative Arts

- + Art History
- + Chinese Studies
- + Electronic Art
- + Film Studies
- + Heritage & Culture
- + Historical Studies
- + Interactive Cinema (iCinema)
- + Journalism & Media
- + Korean Studies
- + Literature & Languages
- + Memory & Learning
- + Performing Arts
- + Philosophy
- + Science & Practice of Music

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Supported by

- + ARC Centre of Excellence for Creative Industries & Innovation
- + Centre for Interactive Cinema Research
- + Centre for Modernism Studies in Australia
- + Centre for Refugee Research
- + Confucius Institute
- + Korea Research Institute
- + National Institute for Experimental Arts

Defence and Security

- + Complex Systems
- + E-Security
- + Financial Markets
- + Hypersonics
- + International Politics
- + Law & Human Rights
- + National Security
- + Terrorism
- + Unmanned Aerial Vehicles (UAVs)



Supported by

- + Australian Centre for Cyber Security
- + Australian Centre for the Study of Armed Conflict & Society
- + Australian Hypersonics Initiative
- + Centre for Refugee Research
- + Data to Decisions CRC



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