UNSW Built Environment graduate Joel Adler's work *Viewfinder* as featured in this year's Sculpture by the Sea.
What We Do

Strategic - $127M p.a.
S25 - $1.4B (to 2025)
Staff 230 FTE
In support of S25

2025 Strategy

Academic Excellence
- Research Quality – a world leader
  - Scientia Fellowships and PhD Scholarships
  - Recruiting world class performers
  - Delivering impact from research excellence
  - Facilitating interdisciplinary research
  - Strategic world-class research infrastructure program
- Educational excellence

Social Engagement
- A just society
  - Equity, Diversity & Inclusion Board
  - SAGE Athena SWAN
- Leading debate on Grand Challenges
- Knowledge exchange for social progress and economic prosperity

Global Impact
- Internationally engaged education
- Partnerships that facilitate our strategy
- Our contribution to disadvantaged & marginalised communities
How are we doing – 2019?
ARC Funding 2019

- Australian Laureate Fellowships (FLx3) $9.6M
- Future Fellowships (FTx13) $11.5M
- Industrial Transformation Research Hubs (ITTHx2) $8.3M
- Discovery Projects yet to be announced & DECRA under embargo...
ARC Laureate Fellows 2019

= pinnacle of research achievement in Australia

3 of 17 awards - $9.6M

Scientia Professor Karen Anstey
School of Psychology
Faculty of Science

Scientia Professor Andrew Dzurak
School of Electrical Engineering
Faculty of Engineering

Scientia Professor Liming Dai
School of Chemical Engineering
Faculty of Engineering
ARC Linkage Projects

Go8 LPs 2013 - 18

• Continuous round – LP18 (final announcement Q3 19)

• UNSW awarded 16, $6.8M

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![Graph showing ARC Linkage Projects funding amounts awarded from 2013 to 2018.](attachment:graph.png)
NHMRC Funding 2019

- New schemes
- Ideas & Synergy grants yet to be announced...
- Investigator Grants - 28, $42.7M
- Partnership Projects 2018 - 5, $4.6M (2019 incomplete – 2, $2.5M)
- Boosting Dementia – 1, $2.0M
- TCR (targeted calls) – 1, $1.0M
HERDC Funding

- 6% increase (Go8 3.8%)
- UNSW 3rd in Go8
Highly Cited Researchers

UNSW HCRs 2014-2019

- Single Category
- Cross Field

Go8 HCRs 2016-2019

- 2016
- 2017
- 2018*
- 2019* draft list

DRAFT 2019 List

<table>
<thead>
<tr>
<th>Category</th>
<th>No. HCRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHARP</td>
<td>7*</td>
</tr>
<tr>
<td>MRI</td>
<td>8</td>
</tr>
<tr>
<td>Organic</td>
<td>17</td>
</tr>
</tbody>
</table>
Other Highly Cited Achievements

Google H-Index 100+

18 UNSW affiliated academics

http://www.webometrics.info/en/hlargerthan100:

Ioannidis Ranking

2019

- Ranks 100k researchers
- Excludes self cites
- Adjusts for 1st, last & single author

28 UNSW affiliated academics in top 5K
2019: Best yet for Rankings

Improved all major Rankings – THE, ARWU, QS

Key Drivers

THE:
T&R Reputation votes contributed 72% of rise

ARWU:
Rise of 14 HCRs contributed 88% of rise

QS:
Normalised citations/FTE increased 17%
Aggregate Rank

Based on ordinal position using aggregate rank (THE+AWRU+QS)

Positioned above historically-strong international universities:
- U. Hong Kong (58\textsuperscript{th})
- Chinese U. Hong Kong (65\textsuperscript{th})
- U. Southern California (67\textsuperscript{th})
- U. Warwick (69\textsuperscript{th})
ERA & EI 2018 Results

Research Quality
Grade Point Average (2-digit FoR)

Research Impact
Number of Impact cases rated ‘High’

Next round
• ERA 2023
• E&I 2024
Prizes & Awards 2019

International

Banco Bilbao Vizcaya Argentaria (BBVA) Foundation - Frontiers of Knowledge in Climate Change
Professor John Church FAA FTSE FAMOS Climate Change Research Centre

Society for Vertebrate Paleontology - Romer-Simpson Medal
Professor Michael Archer AM FAA, School Biological, Earth & Environmental Sciences

World Society of Sustainable Energy Technologies - Low Carbon Buildings and Future Cities Award
Scientia Professor Mat Santamouris
Faculty of Build Environment

NSW Premier’s Prizes for Science and Engineering

• Scientia Professor Rose Amal AC FAA FTSE, School of Chemical Engineering (2019 NSW Scientist of the Year)
• Professor David Keith, School of Biological, Earth and Environmental Sciences (Excellence in Biological Sciences category)
• Professor Susan Clark FAA, Garvan Institute (Excellence in Medical Biological Sciences category)
• Dr Angelica Merlot, Children’s Cancer Institute (NSW Early Career Researcher of the Year – Biological Sciences)
• Dr Neeraj Sharma, School of Chemistry (NSW Early Career Researcher of the Year – Physical Sciences)

NSW Young Woman of the Year

• Dr Angelica Merlot, Children’s Cancer Institute
National & State

Australian and New Zealand Society for Mass Spectrometry - Bowie Medal
Dr Alex Donald, School of Chemistry

Cancer Council NSW - Sally Crossing AM Award for an Outstanding Outcome in Cancer Research (inaugural)
Professor Murray Norris AM, Children’s Cancer Institute

Australian Society for Biochemistry and Molecular Biology - Lemberg Medal
Professor Maria Kavallaris AM FAHMS, Children’s Cancer Institute

Australian Accounting Hall of Fame
Scientia Professor Roger Simnett FASSA, School of Accounting

Lowitja Institute - Emerging Torres Strait Islander Researcher Award
Dr Kalinda Griffiths, Centre for Big Data Research in Health

Australian Academy of Technology and Engineering - Clunies Ross Innovation Award
Professor Thorsten Trupke FTSE and Adjunct Associate Professor Robert Bardos, School of Photovoltaic and Renewable Energy Engineering

Australian Institute of Architects - Paula Whitman Leadership in Gender Equity Prize
Professor Helen Lochhead, Faculty of Build Environment

Australian Institute of Architects - National Leadership in Sustainability Prize
Professor Deo Prasad AO FTSE, Faculty of Build Environment

Engineer’s Australia - Australia’s Most Innovative Engineers
Associate Professor Xiaojing Hao, School of Photovoltaic and Renewable Energy Engineering

ACT Government - ACT Scientist of the Year
Dr Sophie Lewis, School of Science (UNSW Canberra)

Australian Institute of Policy & Science - NSW Tall Poppy Science Awards
Professor Rebecca Guy, Kirby Institute
Dr Angelica Merlot, Children’s Cancer Institute

Business/Higher Education Round Table (BHERT) - Award for Outstanding Collaboration in Research & Development
Scientia Professor Veena Sahajwalla FTSE FAA, SMaRT@UNSW

Royal Society of New South Wales - Liversidge Medal and Lecture
Professor Martina Stenzel FAA, School of Chemistry
AFR- 100 Women of Influence

- Professor Louise Chappell FASSA, Faculty of Law (*Diversity & Inclusion category*)
- Professor Helen Lochhead, Faculty of Build Environment (*Board & Management category*)
- Professor Robyn Norton AO FAHMS, The George Institute for Global Health (*Global category*)
- Associate Professor Tracey O’Brien, Sydney Children’s Hospital/Children’s Cancer Institute (*Innovation category + category winner*)

Australian Academy of Science Honorific Awards

- Dr Daniel Falster, School of Biological, Earth and Environmental Sciences (*Fenner Medal*)
- Dr Laurie Menviel, Climate Change Research Centre (*Dorothy Hill Medal*)

Fellowships of Australian Learned Academies

- 8 new FAHMS (20% of awards)
  - Professor Minoti Apte OAM FAHMS, Ingham Institute for Applied Medical Research
  - Professor Sally Dunwoodie FAHMS, Victor Chang Cardiac Research Institute
  - Professor Ian Jacobs FAHMS, President & Vice-Chancellor
  - Professor Stephen Jan FAHMS, The George Institute
  - Conjoint Professor Tuan Nguyen FAHMS, Garvan Institute of Medical Research
  - Scientia Professor George Paxinos AO FASSA FAA FAHMS, Neuroscience Research Australia
  - Conjoint Professor Balasubramanian (Bala) Venkatesh FAHMS, The George Institute
- 1 FTSE, 0 FAA
- Awaiting Humanities. Social Sciences
- 187 hold total of 222 fellowships
Council KPIs
Performance July 2019

KPI Status
- Above target by more than 5%
- On target within +/-5%
- Below target by more than 5%
2019: other achievements

- Most comprehensive uni (ARWU 3rd year)
- Top of the Nature Index (G08)
Strategy 2025
Programs
SHARP Program

• On track to target of 100 hires by end 2025
• 51 SHARP hires commenced; 5 during 2019

2020

• Continued prioritisation of outstanding candidates
• Focus on Futures Institutes, interdisciplinary hires, and Faculty-funded appointments
Grand Challenges & Thought Leadership

2019
• Thought Leadership incl. Academic Promotions
• **Emerging Thought Leader Prize: 2019 - Adriana Vergés**
• Grand Challenges:
  - *Rapid Urbanisation* commenced
  - *Living with 21st Century Technology* concluded
  - *Inequality* concluded
• UNSOMNIA Open Day
• UNTINKABLE festival in “Future Imperfect”

2020
• Grand Challenges
  - *Trust*
  - *Thriving in the Anthropocene* launch
UNSW Futures

2019 Achievements
• Lifeline partnership
• Keynote at Alzheimer’s Association International Conference
• Big Anxiety Festival – Ageing Programme

Upcoming Activities
• Joint submission to Royal Commission on Aged Care
• Ageing Well Clinic and Lab without Walls

Collaborating Faculties
Science; Medicine; Engineering; Law; Business; FASS; Built Environment; Art & Design

2019 Achievements
• Electrifying Transport Industry Engagement Showcase
• NUW Alliance / Upper Hunter Valley Energy project initiated
• Tamworth Smart City project initiated

Upcoming Activities
• Smart Campus Initiative
• Hong Kong Showcase Event April 2020

Collaborating Faculties
Science; Engineering; Law; Business; FASS; Medicine
UNSW Cellular Genomics Institute

2019 Achievements
• 4th largest throughput single cell centre globally
• Creation of ONEK1K cohort
• 3 collaborative biotech industry partnerships

Upcoming Activities
• AI computation capabilities
• Human Cell Atlas Flagship
• Complex disease modelling

Collaborating Faculties
Medicine; Science; Engineering; Art & Design

UNSW Materials & Manufacturing Futures Institute

2019 Achievements
• Hosted delegation from China
• Collaboration with industry partners in Hangzhou
• Establishment of MMFI HDR Stipend

Upcoming Activities
• Appointment of definitive Director

Collaborating Faculties
Science; Engineering; Medicine
World Class Research Infrastructure

WCRI S25
RIS grants, HPC, research data infrastructure, animal facilities, new experimental facilities & lab upgrades, stats & data consulting services, biobanking, cryo-EM and CLEM, cold storage services

• Research Imaging NSW (with POWH & SESLHD)
  3T MRI Facility in POW - Stage 1 open; 2 in progress

• CHRONO Radiocarbon Dating Facility (with ANSTO)
  Opening Nov 12, 2019

• New Protein Facilities (MWAC & Faculties)
  Stage 1 (crystallography) established

• Major upgrade of ANFF Labs
  Completion late 2019

• New Research Data Capabilities
  eLab Notebook released - R&T
  Research Data Management training
Scientia Fellowships

- New recruitment process B-C (-D)
  - salaries funded faculties
  - *support* packages S25
  - (S25 funds Indigenous fellows)
  - 2+ rounds (Oct 2019, April 2020)

- Focus
  - high quality candidates
  - external fellowships

- Target
  - 30 SFs 2020, 50 in 2021
UNSW Scientia PhD Scholarship Scheme

Flagship program for broad experience candidates on projects aligned with S25

- c. $150 million investment
- Unique mentoring / career development
- 303 enrolled (115 in 2019)
- c. 90 to commence 2020

“I get to work with some of the most established scholars in my field. And that was an opportunity that was too good to pass up.”

SUJITH KUMAR
UNSW Scientia PhD Candidate
Arts and Social Sciences
2020 Challenges and Opportunities
Funding Challenges

• National R&D expenditure dip

• Flatline NHMRC/ARC funding

• Research Block Grant Freeze (RSP/RTP)

• Medical Research Future Fund – but no indirect costs

• Indirect Costs lag full cost of research by $1.19
Internal schemes/investment in faculties

**Strategic Fellowships & EB Gaps (2019) $25M**
- 27 fellowships approved this year
- Bridging 3 Safety Net 4 Transition 19.
- EB gaps $10M

**Grant Leveraging $17M**

**HDR Scholarships & Support $10M**

**Strategic Priority Fund (SPF02) $12M**
- 7% of RBG distributed to Faculties

**Analytical services**
- Subsidised access 10 facilities
World scaled by number of documents published in 2017 with authors from each country (publications counted once per country)

CC-BY J.P. Alperin & Costas, R. @juancommander & @RodrigoCostas1
Geopolitical Concerns

• National context, business model
• Rankings & reputation
• Media Concerns
• University Foreign Interference Taskforce
  • Cyber Security; Research and Intellectual Property; Foreign Collaboration; and Culture and Communications.
  • UNSW represented on 3/4 working groups
• Brexit & Horizon Europe

Source: ABC News
Citations
211th Times Higher ranking

Stop publishing rubbish!

THE SCIENCE THAT’S NEVER BEEN CITED

PHQRP Incentive Scheme $1M
3 key incentives to support and reward quality publishing
2 rounds complete. 3rd round at end of 2019

Average FWCI
Go8 quantity vs quality movement in 1 year
Reproducibility & Quality

“In the case of the research sector here and abroad, we need to acknowledge that as good as the research system is, there is a problem. There are a significant number of papers that are poor quality, and should never have made it through to publication.”

RQ Steering Committee will advise on mechanisms for enhancing quality in NHMRC-funded research through rigour, transparency and reproducibility...
Research Integrity

• Training & Culture
• Reproducibility, data storage, scrutiny
• Rigorous and formal processes
• calls for Office Research Integrity?

For falsification and fabrication, only 11 complaints in 2017 across the Go8
Gender Equity

NHMRC Investigator Grant outcomes 2019

<table>
<thead>
<tr>
<th></th>
<th>Female</th>
<th></th>
<th>Male</th>
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<tr>
<td></td>
<td>Application Number</td>
<td>Awarded</td>
<td>Success rate %</td>
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<tr>
<td>EL1</td>
<td>340</td>
<td>43</td>
<td>12.6</td>
<td>271</td>
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<tr>
<td>EL2</td>
<td>245</td>
<td>21</td>
<td>8.6</td>
<td>227</td>
</tr>
<tr>
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<td>194</td>
<td>15</td>
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<td>284</td>
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<tr>
<td>L2</td>
<td>60</td>
<td>13</td>
<td>21.7</td>
<td>134</td>
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<tr>
<td>L3</td>
<td>17</td>
<td>5</td>
<td>29.4</td>
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<td>Total</td>
<td>856</td>
<td>97</td>
<td>11.3</td>
<td>991</td>
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</table>

$123.3M $241.8M

ARC consultation Increasing Women’s Participation in ARC Grant Processes to consider:

- Introducing target of women’s participation in DECRA applications
- Introducing targets of women’s participation in ARC College of Experts
- Publishing additional gender information on the ARC website
Business model changing

- UNSW $19-25M subscriptions
- UNSW $0.8-2M APC
- Gold v green
- Plan S drive by funders
- Goal- publish and read contracts
Randwick Health Precinct

- Integrated Acute Services Building to be completed in 2022
- One of the most comprehensive health innovation districts in Australia – women’s, children’s and adult hospitals co-located
- $550M UNSW investment
Q&A