

JACK DALTON

CITIZENSHIP: BRITISH, AUSTRALIAN, SOUTH AFRICAN

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Education

- 2024-2028 University of Oxford | DPhil Engineering Biology**
- Machine learning guided control and evolution of biological systems
- 2021-2024 Australian National University | Bachelor of Philosophy (Science) (Honours)**
- Research intensive undergraduate degree focussing on Synthetic Biology
 - First Class Honours, GPA: 7/7, Weighted Average Mark: 87/100
- 2020-2021 Imperial College London | CertHE in Molecular Bioengineering**
- One-year course on applying engineering principles to biological systems
- 2014-2019 Tonbridge School | A-levels**
- A*A*A*AB in Mathematics, Physics, Biology and Chemistry and Further Mathematics

Research Experience

- 2024-Present Steel Lab | University of Oxford**
- Machine learning guided control and evolution of biological systems
 - Optimising adaptive laboratory evolution for applications in health and sustainability
- 2023-2024 Jackson Lab | ARC Centre of Excellence in Synthetic Biology**
- Protein engineering and bioinformatics for health and environmental applications
 - Applied AI protein design methods, phylogenetics and sequence similarity networks to design improved enzymes
 - Engineered *Vibrio natriegens* as a platform for waste valorisation.
- 2023-2024 ANU iGEM Team**
- Founded and led the ANU iGEM in 2023 and mentored the 2024 team
 - Both teams achieved silver medals at the iGEM jamboree
 - In 2023 we focussed on protein encapsulation for heavy metal bioremediation
 - In 2024 we worked on engineering symbiotic bacteria to mitigate coral bleaching
- 2022-2023 Huber Lab | ANU Research School of Chemistry**
- In silico design and experimental validation of novel nanobodies against CD markers and sodium channels.
- 2022 Brock Lab | ANU Australasian Synthetic Biology Challenge Team 2022**
- Nanobody engineering for crop disease resistance
- 2022 Fischer Lab | John Curtin School of Medical Research**
- Designing and testing dCas-RNaseH fusion proteins for R loop studies and cancer diagnostics.

Professional Experience

- 2025 Blackbird Ventures | Foundry Fellow**
- Foundry is a launchpad for ambitious researchers with a science-led startup idea
- 2025-Present Exeter College Oxford | Casual Sessional Academic**
- Teaching and support of undergraduate students

- 2023-2024 Australian Government Department of Climate Change, Energy, the Environment and Water | Senior Policy and Engagement Officer**
- Responsible for engagement delivery, procurement and drafting briefing materials for senior executives and cabinet ministers
 - Co-authored reports on options to deliver the Murray-Darling Basin Plan and Water Market Reform
 - Introduced new software products to accelerate existing workflows
 - Delivered engagement workshops and webinars for stakeholders across the Murray Darling Basin
 - Developed and supervised team members
- 2022-2023 Australian Government Clean Energy Regulator | Regulatory Officer**
- Improved average response to stakeholder requests from multiple days to less than 24hrs, which increased stakeholder milestone completion
 - Implemented a new software product into the team's workflow automating 4 business processes
 - Developed a data analysis pipeline to automate updates of PV inspection data
 - Analysed installer data leading to the introduction of a new compliance program
- 2022-2024 ANU | Undergraduate Teaching Assistant and Science Ambassador**
- Assisted in the development and teaching of the 3rd year course: The Australasian SynBio Team Challenge
 - Produced and featured in educational STEM content for students from disadvantaged backgrounds
 - Interviewed ANU researchers and wrote promotional content
- 2021-2022 Stocks Down Under | Research Analyst**
- Research and analysis of small cap companies listed on the ASX in emerging technology industries

Volunteering

- 2025-Present STempals**
- Pen pal program connecting STEM professionals with school children to inspire them to pursue STEM careers
- 2023-2025 Australasian SynBio Challenge Executive | Operations Lead**
- Lead the organisation of the first in person conference of the Aus SynBio Challenge at the ANU
 - Created the Aus SynBio Challenge Ambassador program
 - Raised AUD\$20,000 from sponsors to fund the travel of students from around Australia
- 2025-Present Nucleate UK | Research and Tech Sourcing**
- Writing reports on the UK Biotech ecosystem
 - Sourcing of startups for the Nucleate Activator program
- 2024-2025 Nucleate Australia | Operations Co-MD**
- Part of the Nucleate Australia founding team
- 2022-2024 ANU iGEM | Founder**
- Founded the ANU team to compete in the iGEM Synthetic Biology competition
 - Raised AUD\$45,000 from multiple sponsors to take part and attend the iGEM Jamboree in Paris
- 2024 Synthetic Biology Australasia (SBA) | Node Leader**
- Organised events and workshops for SBA in Canberra
- 2022-2024 ANU Biology Society | President**
- Hosted events with academics, start-ups such as Samsara Eco and biopharma companies including Moderna
 - Utilised leadership, organizational and graphic design skills to increase the membership and number of events the society holds 3-fold

2023-2024	SABRE Alliance Member
	<ul style="list-style-type: none"> Member of the Australian Department of Defence Safeguarding Australia through Biotechnology Research Alliance Contribute to workshops, research activities and consultation to inform biotechnology policy
2021	The Climate Council Corporate Sponsorship Researcher
	<ul style="list-style-type: none"> Delivered reports on potential corporate partners companies' environmental commitments and philanthropic capabilities.

Research Presentations

2025	Dalton JAT. – <i>Engineering Biology Summer School</i> , University of Bristol, United Kingdom
2025	Dalton JAT. - <i>V. Natriegens 2025</i> , Virtual
2024	Dalton JAT. - <i>National Film and Sound Archive: Science, Art, Film, Panel</i> , NFSA, Canberra, Australia
2023	Dalton JAT. , ANU iGEM Team - <i>iGEM Jamboree</i> , Paris, France
2023	Dalton JAT. - <i>Australian Rare Earth Elements Conference</i> , ANU, Canberra, Australia
2023	Dalton JAT. - <i>ARC Centre of Excellence in Synthetic Biology Mariculture Industry workshop</i> , Mallacoota, Australia

Conference Posters

2024	Dalton JAT. , Horton J., Jackson CJ., <i>ARC Centre of Excellence in Synthetic Biology Annual Conference</i> , Wollongong, Australia
2024	Dalton JAT. , Jackson CJ., <i>Asia-Pacific Workshop on Engineered Living Materials</i> , ANU, Canberra, Australia
2023	Dalton JAT. , Jackson CJ., <i>Australian Society for Biochemistry and Molecular Biology</i> , ANU, Canberra, Australia

Awards

2024	Ramsay Postgraduate Scholarship
2024	EngBio CDT Scholarship
2024	iGEM Silver Medal
2024	ANU Chancellor's Commendation for Academic Excellence
2023	ARC Centre of Excellence in Synthetic Biology Honours Scholarship
2023	iGEM Silver Medal
2023	ANU Chancellor's Commendation for Academic Excellence
2022	ANU Chancellor's Commendation for Academic Excellence
2020	Imperial College President's Scholarship
2019	Gold medal, British Biology Olympiad
2019	Silver medal, British Chemistry Olympiad
2018	ISSET Mission Discovery winner, our experiment launched to the ISS in November 2022

Publications

Dalton JAT. Innovation for security: why Australia needs its own DARPA (2025). *Australian Strategic Policy Institute – The Strategist*

J Kaczmariski, H Ashley, **JAT Dalton**, M Lorenzon, C Jackson (2023). Applying ProteinMPNN, RFDiffusion & ColabFold tools for the generation & optimisation of useful protein tools. *Protein Science*

Additional Qualifications

2024	Drafting New Policy Proposals – Australian Public Service Commission
2024	First Nations Cultural Awareness – Australian Public Service Commission
2023	Management Skills for Regulators and Managers – Australian Public Service Commission
2023	National Electricity Markets – Australian Energy Market Operator

Grants

2023	iGEM Impact Grant (2500USD) Bioremediation of Heavy Metals through machine learning guided design of metal binding proteins
2022	TWIST Synthetic Biology Initiative Seed Grant (2000AUD) In-silico design of nanobodies