# Aedan McCarthy

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**Profile:** Final-year Bachelor of Philosophy – Science (Honours) student at ANU with honours thesis completed and degree completion expected in June 2026. My research has involved plant biology, transcriptomics, metagenomics, and pathogen biology, with additional experience in public health. I am looking for early-career roles in biosecurity, biological research, or science-focused AI where I can apply strong lab skills, data literacy, and clear communication.

## Education

**Bachelor of Philosophy – Science (Honours)** January 2021 – June 2026 (expected; honours thesis completed)
*Australian National University* Canberra, ACT

- Competitive-entry, research-focused science degree with integrated honours training.
- Completed honours thesis in the Pogson Lab, with research training in molecular biology, transcriptomics, sequencing, and biological data analysis.
- Selected coursework: Bioinformatics and Biological Modelling, Biomedical Parasitology, and Bioethics and Society.
- ACICIS Public Health Program, Java, Indonesia (2023); supported by the New Colombo Mobility Grant.

**Exchange Semester**, *University of Zurich, Switzerland* September 2024 – January 2025

- University of Zurich Exchange Scholarship; studied neuroscience during exchange.

## Research Experience

**Honours Thesis: Identifying Novel Regulators of Photosynthesis in Plants** July 2025 – June 2026
*Pogson Lab, Australian National University* Canberra, ACT

- Completed thesis investigating lncRNA-related regulators of photosynthesis in plants using plant growth, PCR, phenotyping, RNA handling, transcriptomics, and limited machine learning analysis.
- Worked in a lab with substantial synthetic biology activity, providing exposure to synthetic biology approaches. Contributed to a project intended for manuscript preparation after thesis completion.

**Semester Research Projects During Undergraduate**

- **Burgio Lab:** Metagenomics to identify novel CRISPR-Cas enzymes.
- **Shirokikh Lab:** Nanopore sequencing and transcriptomic analysis of macrophage differentiation with contribution of results indended for publication.
- **Tham Lab:** Nanobody-based identification of surface proteins in the fungal chytrid pathogen.

## Professional Experience

**Dental Assistant and Receptionist** *at Kaleen Family Dental Surgery* December 2020 – Current

- Clinical support role involving patient care, front-desk coordination, and sterilisation and hygiene procedures in a time-sensitive environment.

**Learning Support Assistant** *at Narrabundah College* May 2022 – Current

- Provided tailored learning support in philosophy, mathematics, biology, chemistry, and physics, including for students needing additional assistance.

**Private Tutor**, *Independent* March 2023 – December 2025

- Tutored school students in mathematics, English, and science.

## Key Capabilities

**Technical skills:** R for biological data analysis; Python (basic) & Python notebooks; limited machine learning and biological foundation model for biological classification tasks; LaTeX.
**Methods and tools:** Plant growth, PCR, phenotyping, RNA handling, transcriptomics, metagenomics (basic), Nanopore sequencing, and biological data analysis, with limited machine learning exposure from the completed honours thesis.
**Strengths:** Protocol-driven work, sterilisation and hygiene awareness, and clear communication across clinical, education, and research settings.