

Academic Promotion Discipline Statement

Discipline area: Animal and Agricultural Sciences

Discipline: Cellular biology

Sub-Discipline:

Centre:

Discipline Overview

Cellular biology is a fundamental science that investigates the cellular structure and function as well as the behaviour of cells. The expertise in cellular biology is commonly utilised within animal, agricultural, biomedical and veterinary sciences focusing on the fundamental principles that underpin the processes unique to living organisms at the molecular and cellular levels. Cellular biology is a mature discipline both within Australia and internationally. Academics in this discipline typically follow a traditional academic pathway (undergraduate, honours and PhD), but may also have postdoctoral fellow training and complementary industry experience. Individuals with PhD qualifications in this discipline are easily sourced.

Gender Profile

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| Profession/Industry | % male / % female |
| Higher Education Sector | % male / % female |
| University | 50% male / 50% female |

Discipline Context and Expectations

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| INDUSTRY ACCREDITATION | The discipline is not subject to accreditation requirements. Subjects in this discipline are predominantly foundational, taught into the latest animal, agricultural, biomedical and veterinary sciences. |
| DISCIPLINE PEDAGOGIES | The discipline follows a traditional approach to teaching combined with practical components. |
| STUDENT PROFILE | Animal and agricultural students are predominately face-to-face, but there is still a large cohort of online students. Online students engage in practical elements through residential school. Students are predominately undergraduate students. They are mostly domestic students, and largely drawn from regional areas in Australia. The student cohort comprises school leavers and mature age students looking to change careers or to support interests. The gender profile of the cohort is relatively balanced. |

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| STUDENT FEEDBACK/PERFORMANCE | Attrition rates in first year subjects can be high, due to students finding the fundamental science components challenging and team-based learning subject delivery, which impacts the SuES results. As the training backgrounds of the cohort varied widely, e.g., some students in HCS training did not choose biology as their main course. |
| RESEARCH APPROACH | Research is primarily collaborative, typically undertaken in small groups. It is usually interdisciplinary and cross-institutional with other government agencies. At Charles Sturt, research in this discipline is applied in nature and involves only quantitative based approaches, providing a solid grounding for further research in molecular life sciences, bioengineering and biotechnology. There is opportunity in this discipline to take the lead on projects. |
| PUBLICATION | Publication in peer reviewed Q1 and Q2 journals is the norm for this discipline. Books and book chapters are not common. Peer reviewed research articles have standing from an academic perspective, however from an industry perspective the focus is on the impact on applied practice. For this reason, papers from national conferences and funding body are highly regarded because of the practical impacts across the industry. Word counts for publications and journal articles are variable, with the primary focus being quality. The expected average output in this area is generally one to two quality journal articles annually depending on the academic's level. Authorship convention in this discipline dictates the first author is the person who writes the paper while last author is usually the senior researcher. There is no specific order between first and last authors. Single authorship is rare. |
| CONFERENCES | Attending interdisciplinary conferences where cellular biology is used for research is normal for this discipline. There is a strong focus on industry conferences and papers in this discipline. Conferences are highly competitive, but can also be by invitation only. It is normal for academics in this discipline to attend full paper competitive conferences. Invited presentations at such conferences is highly regarded and can precede article submission in peer reviewed journals. Conferences may include Nutrition Society of Australia (NSA), Australian Society for Biochemistry and Molecular Biology (ASBMB) |
| GRANTS | In this discipline funding is normally industry-based, including grants from Cooperative Research Centres (CRCs), Grain Research Development Corporation (GRDC) and Meat and Livestock Australia (MLA). Traditional Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) funding is highly competitive and rare in this discipline. There can also be direct funding from private business including food, dairy and livestock companies. Available funding can range from \$10,000 to multimillion dollar grants. Funding is highly competitive against other government research agencies and other higher education institutions and industry groups. Securing and leading large funding projects is very highly regarded. |
| HDR SUPERVISION | The expectation in this discipline is for academics to supervise HDR students. Primary or co-supervision is common, and supervision is normally inter-disciplinary. |



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| RECOGNITION | There are industry awards and fellowships available within the discipline that are well recognised. |
| EXTERNAL ENGAGEMENT | The study of life processes at the molecular and cellular levels is highly collaborative with external academics, Universities, industries, funding body and our community. Communicating the impact of our work for science and society and engaging a range of audiences with the latest developments in cell biology. |
| PROFESSIONAL REGISTRATION | There is no mandatory professional registration requirement in this discipline. However, academics in this discipline may be members of several national and international societies that uses cellular biology-based research including physiology, food sciences, nutrition, animal sciences, biomedical science, and plant science. Examples of such society's include the Australian Society for Biochemistry and Molecular Biology, Nutrition Society of Australia, Australian Association of Animal Science, Australian Neuroscience Society and the Society for Glycobiology. |

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