BIOLOGY DISCIPLINE WORKSHOP

Fran van den Berg[a], Reece Sophocleous[a], Pauline Ross[a], Lisa Godinho[b]

Presenting Authors: Fran van den Berg (francesca.vandenberg@sydney.edu.au); Reece Sophocleous (reece.sophocleous@sydney.edu.au); Pauline Ross (pauline.ross@sydney.edu.au); Lisa Godinho (lisa.godinho@unimelb.edu.au)

[a]School of Life and Environmental Sciences, University of Sydney, Sydney, 2006, Australia
[b]School of Biosciences, University of Melbourne, Melbourne, 3010, Australia

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This biology discipline workshop will cover two current themes in the biology higher education space – one an ongoing challenge, the other an emerging opportunity.

Vibe Coding for Biology: Crafting Meaningful Tools to Empower Student Learning

“Vibe coding" refers to the use of AI-assisted programming, where code and scripts are generated through natural language prompts (for example what you say or type) rather than traditional manual coding. This approach lowers the barrier to entry for educators and students, making automation and computational tools more accessible regardless of coding experience. In the context of biology education, vibe coding can support a range of applications: automating routine data handling in Excel or R, generating Python scripts for statistical analysis and data visualisation, or producing interactive teaching resources such as quizzes, learning dashboards, interactive Q&As or gamified/game-based learning applications. By framing coding as a collaborative dialogue with AI, educators can focus on pedagogical goals while trialling tools that streamline teaching and enhance student engagement. In this workshop we will introduce participants to the principles of vibe coding and explore its potential to transform practice amongst educators and students within the biological sciences. We will invite participants to try creating their own ‘vibe coded’ tools, with the option of being able to share some of these resources with workshop participants to increase the impact of these tools

Sustaining Biology Practicals and Fieldwork in a Changing Educational Landscape – creation of a benchmarking tool?

Over the past decade, face-to-face laboratory and field-based learning in biology has come under increasing pressure due to rising enrolments, resource limitations, and the expansion of online and asynchronous delivery. While these modes offer flexibility, they risk marginalising experiential learning, which remains central to disciplinary engagement and skill acquisition in the biological sciences.

During the 2024 biology discipline day workshop, biology educators shared their own experiences of the declining availability of practical and field experiences at their institutions, highlighting the cross-institutional pressures we are facing as a discipline in being able to deliver these key educational experiences for our students. Despite this, discussions highlighted discrepancies between institutions. In this workshop we will continue this critical discussion, addressing what the main barriers are to creating more face-to-face and laboratory experiences in biology at university.

Leveraging the experiences and expertise in the workshop, we will explore options to consistently capture a ‘snap-shot’ of the current laboratory and field experiences that universities offer biology or natural sciences students nationally, the perceived barriers to creating more face-to-face learning experiences and what biology skills and concepts they are prioritising in the limited face-to-face practical time available. Post-workshop, we aim to capture a benchmark of the current state of face-to-face laboratory and field-based learning experiences across Australia.

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