EMBEDDING DIVERSITY, EQUITY, AND INCLUSION IN AUSTRALIAN STEM HIGHER EDUCATION: A HOLISTIC FRAMEWORK

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ABSTRACT

Efforts to widen participation in STEM higher education has had some success. However, further increases in response to targeted equity programs may be limited with differences in retention and success measures as well as employment outcomes (Productivity Commission, 2019). For example, there has been just a 3% increase in female STEM students over the last ten years and in 2021 the majority (73%) of STEM students still identified as male (STEM Equity Monitor, 2021). Now, two years of pandemic response and disruption have exacerbated inequities (O'Shea, Koshy & Drane, 2021). So, while we, as academics, and our respective institutions, are grappling with imagining and implementing post-COVID STEM education, we have an opportunity to also improve outcomes for our traditionally marginalised students. The data demonstrate that enabling access alone is insufficient, and that the success of these students will require systemic and transformative change (Harkavy et.al., 2015), the very scale of change we are currently traversing. In this workshop we will discuss findings from our ACDS Learning and Teaching project which aims to understand the capacity for inclusive teaching in STEM higher education in Australia. Based on our findings and literature in this space, we are proposing a potential framework for implementing sustainable inclusive STEM education in Australian higher education institutions. We seek your feedback and input into this framework. This will be a session that encourages open dialogue and discussion to envision a pathway to a sustainable inclusive STEM higher education environment in Australia.

REFERENCES

Australian Government Department of Industry, Science, Energy and Resources (2021). STEM Equity Monitor Data Highlights 2021, Australian Government Department of Industry, Science, Energy and Resources. Retrieved 17 March 2022, from https://www.industry.gov.au/data-and-publications/stem-equity-monitor.

Fuentes, M. A., Zelaya, D. G., & Madsen, J. W. (2021). Rethinking the course syllabus: Considerations for promoting equity, diversity, and inclusion. *Teaching of Psychology*, 48(1), 69-79.

Harkavy, I., Cantor, N., & Burnett, M. (2015). Realizing STEM equity and diversity through higher education-community engagement. *Netter Center for Community Partnerships Supported White Paper*, 1-52.

O'Shea, S., Koshy, P., & Drane, C. (2021). The implications of COVID-19 for student equity in Australian higher education. *Journal of Higher Education Policy and Management*, 43(6), 576-591.

Productivity Commission (2019). The Demand Driven University System: A Mixed Report Card, Commission Research Paper, Canberra. https://www.pc.gov.au/research/completed/university-report-card

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