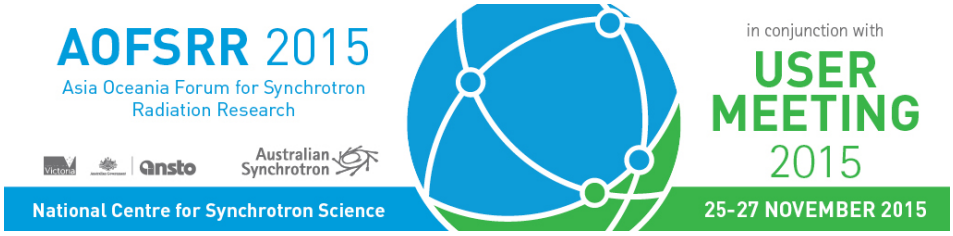

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Successful outreach at the AS and work-integrated learning

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The Chief Scientist of Australia, amongst others, has observed that student engagement (and hence learning) in Science, Technology, Engineering and Maths (STEM) wanes despite the growing importance of a technologically literate population. It is widely held that disengagement flows from disconnection between students' experience in the classroom and science as professionally practised.

A connection to science as a human endeavour can be repaired by involving students in research at large facilities such as the AS, where elite groups of scientists are brought together in well-supported, cross-disciplinary teams to conduct well-planned, intensive experiments using very modern equipment. It is thus natural to invite novice scientists to the facility for pedagogical purposes (i.e. 'outreach').Care must be taken that students do not become mere bystanders in science. While hands-on involvement is engaging, it is difficult to imagine in such a delicate scientific environment. Other barriers are transport, teacher relief, and facility time.

We summarises the state of the art in synchrotron outreach, at the AS and elsewhere, and suggest solutions to the problem of scaling and engagement beyond one-off excursions. These include remote access, targeted leadership programs, and wider community engagement. We consider the evidence for and against the effectiveness of various forms of outreach to engage student learning, and argue that effective outreach can be considered as a form of Workplace Integrated Learning (WIL).

Keywords

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