

# INNOVATIVE PHYSICS TEACHING SPACES

Alexander Samarian<sup>a</sup> and Manjula D. Sharma<sup>a</sup>

Presenting Authors: Alexander Samarian ([alexander.samarian@sydney.edu.au](mailto:alexander.samarian@sydney.edu.au)) and Manual D. Sharma ([manjula.sharma@sydney.edu.au](mailto:manjula.sharma@sydney.edu.au))

<sup>a</sup>School of Physics, Faculty of Science, The University of Sydney, Sydney NSW 2006, Australia

## ABSTRACT

There are often heated debates around teaching and learning spaces, from collaborative spaces for student centred learning to abolishing teacher centred lecture theatres. In both school and university contexts, economics and practicalities have led to designing multi-purpose learning spaces which can be used by different disciplines and for different purposes. Consequently, it is often a challenge to justify and advocate for dedicated discipline-based laboratory teaching and learning spaces.

In this workshop we will share a particular innovative space specifically designed as a physics laboratory, with the functionality of being used as a recitation/tutorial space, project space as well as for studio teaching with mini lectures. We will also share our experience of running Physics labs in this space. We will show how particular demands:

- to be 'multipurpose' across different modes of physics teaching allowing for in-depth learning of physics,
- be able to accommodate various level of experimental classes,
- provide ability of skills development including open-ended projects,
- grant effective teaching technical support,

could be implemented in design solutions. We will discuss how features of teaching space influenced teaching modes.

Participants are requested to bring designs of their teaching and learning spaces, share experiences of fit-for-purpose learning spaces as well as pick up some tips if designing new learning spaces. In particular, the space could be welcoming, has a pleasant ambience and has been well received by both staff and students.

Given the current context of 'going online', physical learning spaces need to be something extra special as we move into the future. Bring along your future-looking extra special learning space designs!

Intended Audience: University and Secondary-School Physics Educators

## PRESENTERS



Dr Alexander Samarian is an experimental plasma physicist who gradually shifted into physics teaching and learning. In 2018, he took on the role of Lab manager/coordinator of the first-year undergraduate laboratories in the School of Physics at The University of Sydney.



Professor Manjula Sharma is the Director of the STEM Teacher Enrichment Academy at the University of Sydney. She is the Vice Chair of C14, Commission on Physics Education of IUPAP and the Chief Editor of the International Journal of Physics Education, IJISME.

Proceedings of the IUPAP International Conference on Physics Education, ICPE 2022 5-9 December 2022, page 47, ISBN: 978-1-74210-532-1.