

HIGH SCHOOL EXCURSIONS TO OUR UNIVERSITY PHYSICS LABORATORY

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Authentic experimentation is an important component of physics instruction at the secondary school level, as it allows students to link learned physics concepts to observed reality and provides engagement opportunities that encourage students to pursue Physics/STEM degrees (Constan & Spicer, 2015). Furthermore, it has been demonstrated (and should be immediately apparent) that the quality of a student's high school physics education affects their preparedness for - and future success in - university physics programs (Salehi et al., 2019). "Authentic" physics experiments, however, are often costly and difficult to organise, engendering a large gap in education quality between schools with the means to afford (and utilise) lab equipment and those who cannot, which may persist into university and unfairly disadvantage students from low socio-economic backgrounds.

In this talk, we will present an overview of The University of New South Wales' (UNSW) Physics Excursion program, where students from high schools throughout the state of New South Wales visit our first-year teaching laboratory as part of a whole-day school activity. These excursions are tailored to fit with the existing education syllabus in NSW, allowing teachers and students to perform relevant experiments that are typically inaccessible due to logistical or financial issues. These have been utilised within schools as both assessment opportunities and as simple 'exciting experiences' aimed at showing students the potential excitement of pursuing a degree in physics. These excursions take place in teaching-free weeks in the university calendar.

We will detail how important [input from high school teachers](#) was to the development and creation of this program, how it is currently maintained, explore feedback from staff and students, as well as provide a brief overview of our equipment and current [repertoire of experiments](#). We will also go over our more recent "digital incursion" program aimed at schools for whom the trip to UNSW is not feasible, often rural schools. This talk should be useful for any university academic interested in creating a similar experimental physics outreach program, as well as high school teachers looking for ways to increase student access to high quality physics experiments.

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