

ENJOYING PHYSICS UNDERGRADUATE LABS IN A PANDEMIC

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It has been well documented (Rice et al., 2009) that student engagement when learning physics and science is most powerful when experimenting in laboratory classes. With the forced shift to online teaching during the COVID-19 pandemic in a matter of weeks, making online laboratory activities 'hands-on' to the same extent of in-person experiments was difficult. In the rush to convert to online delivery, much of the 'fun' element of the exercises had been left out – designing the experiment, working with equipment, being in a team. By the second semester into the pandemic, we were able to reflect on students' experiences and engagement and design a new set of experiments based on 'emerging good practices' for online learning (Olympiou & Zacharia, 2012) that incorporated choice, experimental design using simple, everyday equipment and data collection, including simulations and activities – the fun element, while still restricted by lockdowns and quarantines. A survey to measure student engagement during this time (Kota et al., 2021) explores student enjoyment in physics undergraduate online laboratory classes through an open-ended question. We discuss the qualitative results of the survey and how the implementation of the 'emerging good practices' led to improved student enjoyment and engagement in an online environment.

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