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## **(G\*) (POS-18) Gee Whiz: A Redesigned Undergraduate Lab Experience**

*Tuesday 20 June 2023 17:30 (2 minutes)*

In this presentation, we will discuss the continuation of our construction of our Gee-Whiz experiments. These experiments focus specifically on techniques in ultrafast laser physics. We have been developing an experiment in frequency doubling and autocorrelation, both of which make use of an ultrafast laser. The experiment is especially noteworthy at Waterloo because it is part of a new “Gee-Whiz” set of experiments we are developing to help stimulate positive results in line with the expectations laid out by Self Determination Theory. This experiment embodies modeling-based designs similar to those developed by Dr. Natasha Holmes and Dr. Carl Wieman at the University of British Columbia and Cornell University. We are currently surveying our junior and senior physics lab students to understand the impact lab education has on their perspective towards experimental physics and perceived agency and also report on these findings. These attitudinal findings are further discussed elsewhere.

### **Keyword-1**

Undergraduate

### **Keyword-2**

Lab

### **Keyword-3**

Laser

**Authors:** Dr STRICKLAND, Donna (University of Waterloo); Dr CUMMINGS, Karen (University of Waterloo); Dr WARD, Meg (University of Waterloo); NANDIVADA, Urja

**Presenter:** NANDIVADA, Urja

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