

# **Integrating Chemical Crystallography into Undergraduate Laboratories: A Remotely Conducted Discovery Based Molecular Structure Determination Lab Module**

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An approach for increasing the impact of undergraduate scientific training with a discovery based molecular structure determination lab module will be presented. As scientific educators, it is important to mentor students in using state-of-the-art instrumentation and in the communication of new knowledge. Just as chemical crystallography and complimentary spectroscopic techniques such as NMR can be fast, effective tools to experimentally determine the structure of molecules and enhance students learning of molecular structure, they can also provide an inspiring opportunity for students to write short, scientific journal style reports that can be edited and published in collaboration with a mentor. This talk will focus on incorporating X-ray crystallography into an advanced undergraduate integrated laboratory class as part of a discovery based exercise where the students do not know the identity of their sample, and the publication of the resulting crystal structures. Specifically, the experience of conducting this module with remote/hybrid learning during the COVID-19 pandemic will be presented.

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