

## 49-3 - REMOTE TEACHING OF INTRODUCTORY PHYSICAL GEOLOGY LABS DURING THE COVID PANDEMIC



Sunday, October 10, 2021



2:05 PM - 2:20 PM



Oregon Convention Center - B113/B114 (Hybrid Room)

### Abstract

I had taught introductory physical geology lab courses only in face-to-face (F2F) settings before March 2020, when the pandemic forced classes fully online. To support F2F labs, I had accumulated a substantial collection of specimens, maps, posters, and devices for measuring (mass, length, volume, temperature, etc.) and observing (hand lenses, microscopes, etc.). Those labs have been group-learning environments, and I created sets of lab activities with that dynamic in mind. Many of those activities are incorporated in the AGI-NAGT lab manual, for which I have been the content editor for the last two editions.

The structure of the AGI-NAGT lab manual, inherited from prior versions edited by Richard Busch, involves chapters with an introductory section of explanatory text and graphics followed by several activities based on the preceding material. That structure facilitated conversion to flipped labs in a mostly-asynchronous remote-learning environment, supported by TAs and teachers who were available through MS Teams to help students learn. Completed laboratory assignments were scanned by students using their smartphones and submitted through our learning-management system.

The crux of the problem involved lab activities that required an experiment or the identification of specimens, because students did not have access to the necessary materials. The AGI-NAGT lab manual included links to videos of a few experiments that are difficult to conduct at some schools. I expanded this collection to include additional experiments and dozens of short (~2 minute) videos featuring unknown mineral and rock specimens. (Scott Brande's video resources – e.g., <https://omg.georockme.com> – helped students learn by seeing mineral and rock specimens explained.) I created a web portal for teachers to make these resources more widely available (<https://croninprojects.org/TeacherPortal/>) and publicized the new and existing video resources through NAGT and the Pearson representatives who serve users of the AGI-NAGT lab manual. Creating these videos quickly on a budget of exactly \$0 was challenging.

Anecdotal and grading evidence indicates that students were able to learn with these remote-learning strategies. The video collection, begun before the pandemic and greatly expanded thereafter, will continue to be developed.

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