Connecting Graduate Students, Research and K-12 Students Through Online Outreach: Making the Most of Online Learning During Covid-19

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Williamson Fellowship

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Connects graduate students to local schools, encourage diversity in geosciences

- Generally important for geosciences to do this, not enough geoscience in education system, esp. in underrepresented diverse populations

In the past, in person visits to schools weekly

This year, that wasn’t possible, so time to innovate and come up with something different!
People

Sam Lopez, PhD Candidate
Research Focus: Methane cycling in the Great Salt Lake

Hannah Hartley, PhD Candidate
Research Focus: Lake Powell sediments

Dr. Holly Godsey, Associate Professor
Director of Student Success & Teacher Development, College of Mines and Earth Sciences
3-Minute Videos
Introduction

Short and fairly easy to digest
General “why should we care about your research”
Great Q & A

- How is calcium carbonates formed on our soil? Is there an easy non-polluting way to produce it?
- What where the first steps you noted that made you want to study climate change and what have you done so far to help this problem of climate change?

Sustainable Earth Scientist 3-minute video submission (sustainableearthscientist.org)
Dr Angus McCoss
Create Virtual Modules - Earth Cycles

- Fits in to the Utah Middle School curriculum guidelines
  - Feature local Utah geology

- 3-day modules that can be in-person or **virtual**

- Utilize virtual educational tools

- Freely available on the Utah CMES website
Water Cycle – Sam Lopez

Features:
- Jeopardy game
- Local watershed mapping
- Google Maps

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Rock Cycle – Hannah Hartley

Features:
- Virtual road trip through Utah’s National Parks
- Virtual rock ID
- Sedimentary system learning with playdough
Rock Cycle – Hannah Hartley
Carbon Cycle

Features:
- CO$_2$ chamber heating experiment
- Kahoots, Nearpod, and InsightMaker learning tools
- Making your own carbon cycle model
Carbon Cycle

What Should Our First "What if" Question be?
Virtual Ambassadors of (Geo)Science

Have to build in time for general questions, which often comes naturally in-person

Is college worth it?

Can you get a good job in geology?

Can I get a geology job where I don’t go outside?
Final Thoughts

2 Title 1 Schools, 3 Fellows, 6 Teachers, 800 Students

Geoscience education can utilize many virtual tools, but can be time consuming to create

Local geology / hydrology helps make connections, even virtually

Improvements and the coming year

◦ Working on field trips of local geology
◦ Bryant Middle School teacher Tommy Good, PhD
  students Sam Lopez and Jeremiah Bernau
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