

Notes and Recommendations from Workshop on Teaching Undergraduate Courses with Labs/Field Trips for Fall 2020 -May 13, 2020

Organizers: Andy Cohen and Luke McGuire

Participants: Susan Beck, Barbara Carrapa, Pete DeCelles, George Gehrels, Paul Goodman, Amanda Hughes, Roy Johnson, Paul Kapp, Marty Pepper, Kau Thirumalai, Diane Thompson

Amanda gave a presentation on her experience with virtual field trips. She will be posting a document with links to various useful software tools related to this in the "On-line Teaching Resources for Geosciences" box folder (box.arizona.edu) which all faculty should have access to. In addition to simply filming "how-to" videos there are numerous tools available for 3-D visualizations/renderings of outcrops, hand samples or subsurface features. Some key observations related to her experience and others from webinars she has attended:

- 1) Record videos in short 3-5min clips (attention span)
- 2) Personal engagement with people the student audience knows is important. Better to have the lead instructor be the presenter
- 3) Intersperse use of videos with exercises
- 4) Consider embedding geological map, image and photo data into Google Earth
- 5) The Geologic Map Data Extractor (Rick Almendinger product) is freeware that she has found very useful

Marty also shared his experience. He will be available to help with video production during the summer.

- 1) Plan the field/lab experience to be filmed in advance. The more a script is prepared the easier it will be to shoot and edit. Think through what you are going to say in advance.
- 2) Closeup shots (nearly microscopic views) are possible in the field to emulate the view with a hand lens
- 3) The narrator should introduce themselves at the beginning and then switch as much as possible to images.
- 4) Again, short and sweet has proven better. ~5 min clips.
- 5) "How-to" videos will be most effective if students also have access to simple and comparable tools at the location where they are watching from

General Discussion Points

- 1) There was general agreement that we should try to develop a set of linked how-to presentations using our in-house instructors at some local outcrops (perhaps Gates Pass or Arastre Wash?) later this summer. With enough advance planning these could have high production value and could be useful outside the UA community to have a bigger outreach impact.
- 2) Andy will poll the faculty to see who might be interested in participating in this exercise and then to find a time (July-August) when as many people as possible could be available. A document will be posted on "Box" to build up our list of topics for the mini-videos and scripts will be built up in advance of the field work.

- 3) Actual Field Trips. We are still waiting for further instructions from UA as to what will/won't be allowed, but Barbara anticipates much will be left to departments and individual instructors to decide based on their comfort level and class size. It is not possible for students to take individual vehicles (car-pooling) because of UA liability/insurance policies but instructors could take their own vehicles to meet up with students.
- 4) In-lab activities "Best Practices"
 - a) Again, it is anticipated that much will be left to the discretion of departments.
 - b) It is critical that Instructors communicate with their TAs as early as possible during or prior to the start of the semester to explain expectations in a hybrid class/on-line lab situation.
 - c) Gloves, wipes, cleaner, alcohol will be needed in each lab room and a system for restocking labs. Who will be responsible?
 - d) Specimens that will be displayed/handled during a lab exercise should be dipped in alcohol before and after the lab by the TA/preceptor in charge.
 - e) Supplies should not be shared among students/preceptors/TAs
 - f) TA tasks should continue to conform to the % time workload for which they were hired. Instructors need to be mindful not to overtask TAs and should consider, for example, reducing numbers of lab exercises when it is anticipated that the new format of instruction will result in an increased effort per existing lab exercise for each TA
 - g) Coordination of the Computer Lab will be necessary given anticipated increased demands, especially for students in different time zones logging in remotely.
- 5) Class Activities
 - a) Instructors should consider organizing discussion sections around a variety of time periods to accommodate international on-line students, who may be numerous among our majors this fall.
 - b) Consider making assignments asynchronous with lectures, again to address likelihood that many students will not be able to participate live due to time zone differences
 - c) Paper discussions with guided and graded questions have proven valuable in the spring semester but may require accommodation for students in different time zones.