Applied Learning Experiences in the (Semi?) Remote Environment: Continuing the Conversation

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Which fall courses/programs have an applied component?

- Art
- Non-majors science courses
- Biology
- Chemistry
- Computer science
- Education
- ENVS
- Leadership
- Music
- Physics

- Psychology
- Public Health
- Theater
- Non course-centered experiences:
  - Honors Program
  - Scarbrough
  - Directed/independent study research students
  - Language house
Reports from the field

- Sciences summer research program – all remote
  - Faculty collected data in lab or field & students analyzed (me, Dave Baker)
  - Faculty led students in analyzing data from previous projects/available data and/or writing a paper for submission for publication (Jim, me, Huy, Lance, John)
  - Faculty led students in literature review/planning for future experiments (David A, Kelli)
- Scarbrough – all remote
  - Faculty mentor students in conducting independent summer research in humanities & social sciences
- Social Entrepreneurship for Poverty Alleviation (SEPA) Nonprofit Organization
  - Invited back previous summer interns to write grants
Potential problems & proposed solutions

1) Insufficient space in assigned rooms for all students to carry out activities concurrently
2) Certain activities require close work between students or between students/faculty
3) Starting in person then moving remote
4) Some group members may need to quarantine/not come to campus
5) Limited availability of off-campus community involvement
1) Insufficient space in assigned rooms for all students to carry out activities concurrently

- Conduct activities outside/with distancing
- Expand labs into 2 rooms where available to run concurrently (Genetics)
- In 3-hour lab sessions, have ½ class in person for 90 minutes, then other half
- Have students take turns conducting experiments in person vs. concurrent ‘dry lab’ activities (Chemistry, workshop physics)
- Reduce student number in research labs (Google sheets document for signing up for spots in shared spaces)
- Reduce total number of labs/experiences/scope of project/reertoire
- Shift focus from experimentation to skill-building/information literacy
2) Certain activities require close work between students or between students/faculty

- Face shields + face masks for short-term close interactions (biology field labs)
- Build physical Plexiglas barriers to separate work stations (Biology, Chemistry, Art)
- Language house
  - Make outdoor spaces accessible for meetings (outdoor projector, improved internet in courtyard)
- Music ensembles
  - Break into smaller ensembles
  - Work on chamber repertoire
  - Record & broadcast concerts
3) Starting in person then moving remote

- Faculty conduct experiments & share data for analysis (Physics research, Biology)
- Plan citizen science/data analytic project that can be conducted either in person or remote
- Fully flip courses with all lectures pre-recorded & activities that can be conducted either in-person or remote
- Give students mobile art kit/lab/field materials to take home (Art, Biology)
- Use free versions of software (Computer Science)
- Use remote log-ins for software with on-campus license (Physics, Psych, ENVS)
4) Some students may need to quarantine/not come to campus

- Have video labs/prelabs/materials demos pre-recorded and available online (Chemistry, Art)
- Design groups with mix of remote & in-person participants (workshop physics)
  - Use Google docs/cell phones/organization apps to manage
5) Limited availability of off-campus community involvement

- Leadership capstone
  - Solve community problems through effective use of technology
  - Conduct remote research & interviews
- Teacher program
  - Video observation tasks
  - Remote observation of online K-12 classes
Questions for discussion:

- What applied experiences am I administering in the fall?
- What challenges posed by that experience haven’t been addressed yet?
- What are some potential solutions to those challenges?
  - What are the learning objectives for this applied experience?
  - What do I most want students to get out of it?
  - What are the safety concerns surrounding this applied experience?
  - What software do I need students to have access to?
  - What are the student’s career goals?
  - What sort of experiences do students absolutely need to have before progressing to their career/grad school/professional school?
Lab options for online courses:

Conducting remote interviews for oral histories:
[https://www.oralhistory.org/2020/03/26/webinar-oral-history-at-a-distance-conducting-remote-interviews/](https://www.oralhistory.org/2020/03/26/webinar-oral-history-at-a-distance-conducting-remote-interviews/)

Doing (social science) field work in a pandemic:
[https://docs.google.com/document/d/1clGjGABB2h2qbdUTgfqribHmog9B6P0NvMgVuiHZCI8/edit](https://docs.google.com/document/d/1clGjGABB2h2qbdUTgfqribHmog9B6P0NvMgVuiHZCI8/edit)

Citizen science projects: [https://www.citizenscience.gov/#](https://www.citizenscience.gov/#)

Mentoring Remote Undergraduate Research in Mathematics (but also good general advice for remote research mentoring):
[https://drive.google.com/file/d/1YTz7ul6S8Ly0AUhvWHNRDnZcHf6lcvFS/view](https://drive.google.com/file/d/1YTz7ul6S8Ly0AUhvWHNRDnZcHf6lcvFS/view)

Council on Undergraduate Research:
- Resource library: [https://community.cur.org/resources/communitylibraries#GoOnline](https://community.cur.org/resources/communitylibraries#GoOnline)