JOHNSON CENTER ROUNDTABLE: LABS & APPLIED LEARNING IN A REMOTE ENVIRONMENT

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WHAT APPLIED EXPERIENCES ARE AFFECTED BY MOVE TO REMOTE?

- Courses with labs
- Student teaching
- Applied art courses, music ensembles, music lessons, theater shows, Improv troupe
- Research students (including Honors students & departmental research courses)
- CSOCS/internships
- Other?

WHAT WORKED/DIDN'T WORK THIS SEMESTER?

- For ongoing lab courses, how did you complete lab components?
  - Changed syllabus to lit review/project proposal rather than complete CURE experiments?
  - Conducted experiments yourself in lab and had students analyze data?
  - Made descriptive dissection videos for students to watch?
  - Found online lab-like resources (e.g., OpenStax, SimBio, JOVE, ACS videos, etc.)?
  - Other?
- For ongoing creative courses/fine arts, how did you complete the applied components?
  - Ensemble recordings?
  - Mailed art supplies to students' homes?
  - Live theater on Zoom/other platform?
  - Other?
- For ongoing directed/independent research projects, how did you keep students engaged?

POTENTIAL MODELS GOING FORWARD

- All-remote from beginning of semester
- Start in-person then move to remote only
- Remain in-person all semester, but required to also offer remote asynchronous option

MODEL 1: ALL REMOTE ALL SEMESTER

- What kinds of experiences are absolutely necessary for my course to achieve the necessary learning objectives?
- Are there existing online options that I can use as ‘canned’ labs for lower-level courses?
- Are there creative ways to use designated lab/studio time to meet learning objectives?

MODEL 2: START IN-PERSON THEN MOVE TO REMOTE-ONLY FOR PART OR REMAINDER

- What kinds of experiences are absolutely necessary for my course to achieve the necessary learning objectives?
- How can I design my syllabus for flexibility in case we need to change formats quickly again?
- Can I schedule the activities that really need to be conducted in person at the beginning of the semester?
- Are there certain labs or activities that can be conducted by students at home for which we can pre-package materials for students to take with them?

MODEL 3: REMAIN IN-PERSON ALL SEMESTER, BUT OFFER REMOTE ASYNCHRONOUS OPTION

- What kinds of experiences are absolutely necessary for my course to achieve the necessary learning objectives?
- How to best provide a comparable experience if not all students can be present in person, especially if who is remote/in person varies over time?
- Are there data analysis/citizen science projects that can be conducted as team projects rather than collecting own data in lab?

OTHER RESOURCES

- Lab options for online courses:
  - https://li.wsu.edu/documents/2020/03/how-to-quickly-and-safely-move-a-lab-course-online.pdf/
  - https://li.wsu.edu/teaching-tool-boxes/options-for-virtual-labs-and-simulations-for-laboratory-based-courses/
- Conducting remote interviews for oral histories: 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/1clGjGABB2h2qbduTgfqribHmog9B6P0NvMgVuiHZCl8/edit
- Citizen science projects: 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
- Council on Undergraduate Research:
  - Resource library: https://community.cur.org/resources/communitylibraries#GoOnline

POTENTIAL MODELS FOR REMOTE STUDENT RESEARCH ENGAGEMENT

- Sciences:
  - Skill building:
    - Literature search (create/update database, work on citation management skills)
    - Experimental design
    - Develop videos used for communicating science to a general audience
    - Write 'lab manual' of standard operating procedures for new students
    - IACUC/IRB protocols
  - Project preparation:
    - Develop citizen science project
    - Develop proposal for Honors project
- Data analysis:
  - Modeling/computational work
  - GIS-based project
  - Coding projects
  - Meta-analysis of existing literature
  - Working with & analyzing big data (NEON, … https://www.nature.com/sdata/policies/repositories
  - Gene screen 'library' analysis
  - Collect data yourself, have students analyze it
- Writing projects:
  - Literature review (written lit review paper on topic of shared interest)
  - Manuscript writing project (collaborate on writing up results of previous experiments)
  - Grant writing project

https://www.canva.com/design/DAD2zlgbssk/view?utm_content=DAD2zlgbssk&utm_campaign=designshare&utm_medium=embeds&utm_source=link#1

POTENTIAL MODELS FOR REMOTE STUDENT RESEARCH ENGAGEMENT

- Humanities & Social Sciences
  - Skill building:
    - Translations
    - Creating databases
    - Developing IRB protocols
    - Writing literature reviews
    - Transcribing films, interviews, other materials
    - Professional development (CV preparation, grad school prep)
    - Website building
    - Podcast development
  - Project preparation:
    - Archival research
    - Conducting interviews
    - Developing surveys/questionnaires
  - Data gathering/analysis
    - Remote research/data analysis
  - Writing projects:
    - Preparing manuscripts for publication
    - Expanded literature review
    - Developing writing skills across research genres