JOHNSON CENTER SESSION: MENTORING STUDENT RESEARCH IN A REMOTE LEARNING WORLD

4/16/20
WHAT STUDENT SCHOLARSHIP/CREATIVE WORK IS AFFECTED BY MOVE TO REMOTE?

• Current research students (including Honors students & research courses)
• Senior art shows, senior recitals, music ensembles, theater shows
• Summer research
  • Scarbrough
  • Sciences Summer Research Program
• Fall semester research?
CHALLENGES OF REMOTE RESEARCH MENTORING

• Challenges to students:
  • Access – what to do about students who want to do research but have technology issues or need to work to support families?
  • Lack of access to software/resources
    • Library collections, statistical software
  • Presenting scholarship in a scholarly context – cancelled seminars, canceled conferences, virtual thesis defense, virtual conferences
  • Moving from ‘hands-on’ to virtual work – how to translate bench-based lab sciences or art to virtual?
  • Many external summer research experiences are cancelled – supporting students who were relying on stipend?

• Challenges to faculty:
  • Lack of access to software/resources
  • How will remote research experiences be viewed in tenure review process?
  • Lack of time to prepare a reasonable alternative – avoiding burnout?
OPPORTUNITIES OF REMOTE RESEARCH MENTORING

• **Access** – some students who may not be able to commit to summer research normally (jobs, etc.) may now have space to do so; students with health issues may be able to participate remotely
  • Supply funds can be used for student access to technology

• **Creative collaboration** between disciplines & students of different experience levels – e.g., media production/science communication

• **Community outreach** – COVID-related projects with community-facing outputs

• **Focus on writing** – grants, proposals, review articles, manuscripts, abstracts

• **Opportunity for skills practice** – what background skills are needed for a student to be able to produce creative/scholarly work in your discipline?
WHY SHOULD WE CONTINUE TO OFFER RESEARCH OPPORTUNITIES IN A VIRTUAL SETTING?

• Upcoming seniors developing Honors projects or grad school-bound
• Continuing to develop and support ongoing student/faculty collaborations – keep momentum (3-year impacts for one lost summer research)
• Curricular implications – many courses have embedded research components, some departments have research requirements
• Students counting on funding/experience
• Engagement in scholarship keeps students connected to institution (retention)
• Use this as an opportunity to model flexibility in the research process
• Research/scholarship is one of best tools we have to foster skills for student growth
  • Prioritize student learning outcomes over project outcomes
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, …)
  • 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/DAD2zIgbssk/view?utm_content=DAD2zIgbssk&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
EXISTING MODELS OF REMOTE STUDENT SCHOLARSHIP MENTORING AT AC

- Scarbrough summer program previous faculty mentors
  - What sort of project did you mentor remotely?
  - How did you interact remotely with your student?
  - What were the challenges/benefits of remote mentoring?

CREATE assessment tool for learning outcomes

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<tr>
<th>Learning the Discipline (LD)</th>
<th>Practicing the Discipline (PD)</th>
<th>Communicating in the Discipline (CD)</th>
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<tr>
<td>1. Selects appropriate and relevant primary and secondary materials.</td>
<td>1. Shows ability to approach problems from different perspectives.</td>
<td>1. Writes clearly and effectively in discipline-specific formats.</td>
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<tr>
<td>2. Shows understanding of important scholars, concepts, and/or history within the discipline.</td>
<td>2. Works independently and collaboratively to identify when input, guidance, and feedback are needed.</td>
<td>2. Uses and understands professional and discipline-specific language.</td>
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<td>3. Keeps organized, detailed, and accurate records.</td>
<td>3. Accepts constructive criticism and applies feedback effectively.</td>
<td>3. Demonstrates an informed reflection and communicates with clarity future plans and aspirations regarding further study and career.</td>
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<td>4. Synthesizes ideas, information, processes, and concepts from multiple sources.</td>
<td>4. Uses time well to ensure work gets accomplished and meets deadlines.</td>
<td>4. Orally presents research clearly and effectively in discipline-specific formats.</td>
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<td>5. Displays a thorough grasp of relevant research methods and is clear about how these methods apply to the research project at hand.</td>
<td>5. Learns from and is not discouraged by setbacks and unforeseen events, showing flexibility and a willingness to take risks and try again.</td>
<td>5. Shows an awareness of audience in communicating research to audiences with differing degrees of expertise.</td>
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BREAKOUT ROOMS

HONORS STUDENT MENTORS
• What challenges are you currently facing in getting these projects out the door?
• What resources would be helpful for you or your students?

CURRENT RESEARCH COURSES
• What challenges are you currently facing in getting these projects out the door?
• What resources would be helpful for you or your students?

SUMMER RESEARCH PROGRAMS
• What are some ways in which you could alter your existing research program to go remote?
• How can you use your summer time more flexibly to avoid burnout? When to start, make project last longer with fewer hours per week, etc.
• What resources would be helpful to you to support your research project/students?
HELPFUL HINTS FOR ONLINE RESEARCH MENTORING:

• Meet with students at least once a week (for semester courses) or daily (for summer programs) via Zoom  
  • Have agenda with well-defined tasks & deadlines (flexible as necessary)

• Have students keep online research journal (Google Docs, OneNote, Overleaf)

• Use shared whiteboards to share ideas or work out notes

• Team building:  
  • Keep putting in context (what is known/not known/knowledge creation)  
  • Encourage students to create & use chat group
OTHER RESOURCES

• 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

• Lab options for online courses: 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) field work in a pandemic:
  https://docs.google.com/document/d/1clGjGABB2h2qbduTgfqribHmog9B6P0NvMgYuiHZCI8/edit

• Citizen science projects: https://www.citizenscience.gov/