Discovering Student Perceptions & Experiences with Undergraduate Research

Erin Burns, Hailley Fargo, Jen Jarson, Emily Mross, and Christina Riehman-Murphy

Project context
Penn State University, a large land-grant institution with 75,000 undergraduates, has 24 campuses, 19 of which have undergraduate research (UR) programs. The UR programs are largely decentralized, however, guided by PSUL’s “one library, geographically dispersed” model, University Libraries (UL) provides coordinated support in the form of multiple research workshops and the UL UR Award for Excellence in Information Literacy across all 19 campuses.

The goal of this pilot project is to understand how Penn State students perceive and experience UR opportunities which can help to inform future library support of UR.

Methodology
• Student email addresses were collected from UR exhibition participation lists at 6 campuses in Spring 2020. We also intended to include students who participated in library UR workshops, but most were canceled due to COVID-19.
• We created a 35-item Qualtrics survey which included a mix of multiple-choice and open-ended questions. Information collected included:
  • Student demographics
  • Research project information, such as compensation, length of project, motivation/confidence regarding project, experience/benefits gained from project
  • Interaction with the library during UR experience
  • The survey and data collection process were approved by IRB.

Students who completed the survey
• 53 students started the survey and represented 6 Penn State campuses
• 19% self-identified as first-generation students; 62% identified as having an immediate family member who had a bachelor’s degree; 19% chose not to answer
• 62% of students reported that this was their first research project at Penn State

Project disciplines
• 25 identified their project as part of a STEM (Sciences, Technology, Engineering, Math) discipline;
• 12 identified their project as part of a Social Sciences discipline
• 13 identified their project as interdisciplinary with the most common combination being STEM and Health Sciences

Student demographics
• 57% identified as female; 26% identified as male; 17% chose not to answer
• 43% were white; 23% Asian; 8% Black or African American; 19% chose not to answer

What we can assume about our sample
• Our sample represents students who have traditionally participated in UR experiences (white students, non-first generation student status, and in the STEM field)
• Did COVID-19 have an impact on the students who were able to participate in UR experiences and spring 2020 virtual exhibitions?

Research questions
• Why do undergraduates participate in research experiences? How did they choose that particular experience?
• What do undergraduates report as the top benefits they receive from this experience?
• How do perceptions of the research process change by participating in an UR experience?

Selected findings
How confident were you during the research process for the project?
• Most common responses: 45% confident, 25% sort of confident, 19% very confident

What motivated you to start this research project?
• Most common responses: 74% interested in the topic, 64% developing research skills/gain research experience, and 57% building resume

Who did you consult with regarding your research?
• Most common responses: 79% instructors, 32% professionals in the field, 28% student collaborators, and 21% friends/other peers

What was challenging to you during your research?
• Most common responses: 42% time constraints, 38% data analysis, 30% literature review, 28% data collection, 28% research design/methods, and 25% getting started/finding an interesting topic

Did your research take more time than you expected?
• Most common responses: 30% somewhat more, 25% about the same, 23% much more

How was the literature review process?
• 36% difficult (52% somewhat difficult and 4% extremely difficult)
• 21% easy (13% somewhat easy and 8% extremely easy)
• 26% neither easy nor difficult

How much do you agree with each statement?
• 79% of respondents agree that they would encourage other students to participate in research (64% strongly agree, 15% somewhat agree)
• 60% of respondents agree that they could teach other students how to do research (26% strongly agree, 43% somewhat agree)
• 61% of respondents agree that they felt confident presenting their research at the exhibition (36% strongly agree, 25% somewhat agree)
• 48% of respondents agree that the research process was different than expected (8% strongly agree, 40% somewhat agree)

As part of your experience, did you learn anything that you could use in a future job?
• 72% yes

Discussion & application to practice
1. Students are not maximizing their interactions with librarians and library resources.
   Can the next iteration of the survey help clarify why students are not interacting more with librarians and library resources?

2. Students recognize significant benefits from research experiences and opportunities to apply gains in future jobs.
   Can we help students better articulate and transfer the benefits of the library research and information literacy skills they’re developing in UR to their future research and careers?

3. Students would encourage other students to participate in UR and believe they could teach other students how to do research.
   How can the library help support peer-to-peer learning in UR?

4. Common challenges that students experience during the research process include: understanding/managing time involved in research, collecting and analyzing data, conducting literature reviews, designing research, and getting started/finding an interesting topic.

The library can offer support for students in all of these commonly challenging areas. How can we increase our degree of embeddedness in the UR experience to better meet students when and where they need help?