

**Research Reproducibility 2020**  
**Educating for Reproducibility: Pathways to Research Integrity**

**IDENTIFYING BARRIERS TO REPRODUCIBILITY: AN ETHNOGRAPHIC STUDY OF  
A HANDS-ON WORKSHOP**

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**ABSTRACT**

**Introduction:** In recent years, alarms have been raised over instances of irreproducibility in science, including biomedical research. Overcoming this issue requires understanding the practical challenges and barriers that contribute to reproducibility problems. This talk will describe some of the factors contributing to lack of reproducibility in the biomedical literature based on the experiences of researchers participating in a hands-on reproducibility workshop hosted by the National Library of Medicine.

**Methods:** During the three-day workshop, teams attempted to reproduce the results of published studies that made their data and code available in publicly accessible repositories. The workshop also included brief lectures on tools for reproducibility, like Docker containers and Git, that participants could use to make their own research more reproducible. Of ten teams at two workshops, none of the teams could fully reproduce the studies. This study takes a grounded theory ethnographic approach to understand processes employed by researchers in attempting to reproduce research results.

**Conclusion:** This study elucidated several characteristics of the publications and their related data and software code that lead to breakdowns in these processes and potentially to irreproducibility of research results. This talk will also discuss how the issues identified as contributing to reproducibility could be addressed by librarians working with research teams.