

Statement of Informed Consent

Middlebury College

Study Title: Transforming theory-building and STEM education through reproductions and replications in the geographical sciences

Investigators: Dr. Joseph Holler (Middlebury College) and Dr. Peter Kedron (University of California Santa Barbara)

Summary of the Research

You are being asked to participate in a study about pedagogical effectiveness and outcomes related to teaching open and reproducible geographic research methods. The study will be conducted for two years beginning the fall 2023 academic year. You are being invited to participate in this research because you are enrolled in a course on open and reproducible geographic research methods. You will be asked to complete one survey at the beginning of the course, one survey at the end of the course, and one survey approximately one year after the course. Each survey is expected to take 10 to 20 minutes. There is no direct compensation or benefit for participating in the research. Indirectly, your participation should contribute to improved pedagogy for open and reproducible geographic science. There is no penalty for declining to participating in the research.

What will happen if I take part in this research? The purpose of this research is to examine effectiveness and outcomes of teaching open and reproducible research practices in geography methods courses. To this aim, you will be asked to fill out three surveys: one prior to the course, one at the end of the course, and one approximately a year after the course has concluded. Each survey is expected to take 10 to 20 minutes. You are free to discontinue participation at any time during any of the surveys.

You will also be asked for permission to include your coursework published publicly on GitHub.com in the research. If you agree to this inclusion, Dr. Holler and Dr. Kedron may use your coursework in two ways. First, we may collect anonymous data on learning outcomes and report outcomes in aggregate, anonymous form. Second, we may acknowledge exemplary intellectual contributions in your coursework by citing or quoting examples from your work, giving you public credit for the contributions. Your permission to include your coursework in the study will be requested by electronic survey at the end of the course.

All of your responses to surveys and all of your learning outcomes will be recorded confidentially and anonymously. The only information linking anonymous identification numbers in surveys with your email address is a password-protected Qualtrics survey distribution list. Only Dr. Holler and Dr. Kedron have access to this list. The list will be destroyed within one month after conducting the final survey. Anonymous data will be archived with public access for future research.

Your decision to consent or to decline participation in any part of this research shall not have any impact on your participation or your grade in the course. You may participate in some components of the research while declining in other parts of the research. Anonymous course response form responses may be referenced or quoted as part of normal educational activities.

Will my study-related information be used for future research?

Dr. Holler and Dr. Kedron will create an anonymized database of survey results and learning outcomes to be archived for public access on the GitHub.com and OSF.io web archives. The data will be published with an open license to permit use in future research.

Who can answer questions about this study?

If you have any questions about this research before or after you complete the survey, please contact Joseph Holler at josephh@middlebury.edu or (802)443-5992. If you have any concerns or questions about your rights as a participant in this research, please contact the Middlebury Institutional Review Board at IRB@middlebury.edu.

You may download a PDF of this informed consent at:

https://github.com/HEGSRR/OR-Pedagogy-Evaluation/blob/main/procedure/protocols/informed_consent.pdf