

TRANSFORMING INSTRUCTION IN UNDERGRADUATE MATHEMATICS VIA PRIMARY HISTORICAL SOURCES

Looking to the future, with an eye on the past

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The *TRansforming Instruction in Undergraduate Mathematics via Primary Historical Sources* (TRIUMPHS) project was a multi-year, multi-institution effort to design and test student projects based on the reading of primary historical source materials, and to research their impact on students and instructors. When HPM met in Montpellier in 2016, TRIUMPHS was just completing its first year of funding from the US National Science Foundation. When that funding ended in 2023, the original group of seven principal investigators had expanded to include nine doctoral students in mathematics and mathematics education, thirteen additional authors, and a sizeable cadre of site testers. This presentation takes a reflective look back at what TRIUMPHS accomplished (or not) with regard to the development and classroom implementation of its collection of “Primary Source Projects” (PSPs), and a realistic look ahead at the prospects for sustaining this effort into the future. Some highlights from TRIUMPHS’s accomplishments, and questions associated with each, that will be considered in this presentation:

- Development of over 100 PSPs for use in university (tertiary) mathematics courses ranging from beginning algebra to topology.
 - What do PSPs look like? Who writes them, and how often?
 - How have PSPs been reviewed for consistency and quality? What aspects of the review process could be continued in the future?
 - Should new PSP development continue? If so, who will write them? What does it take to learn to write one?
- Classroom testing of PSPs by over 120 university mathematics instructors at a wide variety of institutions across the US and Canada.
 - What does classroom implementation of PSPs look like? Who teaches with them, and how often?

- Which PSPs get used the most (or least) frequently? Do these PSPs have common features that might explain these trends?
- How have site testers been recruited and supported? What aspects of site tester support could be continued in the future?

This presentation will be of interest to instructors who wish to bring primary sources into their own teaching, as well as those involved in widespread implementation of instructional innovations and researchers who study the effect of using history to teach mathematics.