



Award Abstract # 2127924
Collaborative Research: Diversifying Human-Centered Data Science through the Research and Design of Ethical Games

NSF Org: [SMA](#)
[SBE Off Of Multidisciplinary Activities](#)

Awardee: UNIVERSITY OF NORTH TEXAS

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SMA SBE Off Of Multidisciplinary Activities
SBE Direct For Social, Behav & Economic Scie

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ABSTRACT

This award is funded in whole or in part under the American Rescue Plan Act of 2021 (Public Law 117-2).

Tackling the overwhelming issues in data science and machine learning require new ways of training and combining expertise from social science, human-centered design, information studies, statistics, computer science, and related fields. We invite interested undergraduates across disciplines to collaborate on the research and design of a serious game on data ethics issues. In this context, our project studies collaborative learning in groups of peers with conflicting methodological cultures and diverse backgrounds. Participating students will come from two university campuses in different regions of the United States to form a single team of diverse individuals collaborating in a virtual setting. By studying students' experiences throughout the project, we will increase our understanding of learning through collaboration over time and in relation to their sociocultural histories. An additional artifact of this two-year, interdisciplinary project will be a prototype of an educational game, targeted towards the underrepresented communities and the greater public, that will bring more people into critical conversations about the roles of AI and data science in our society.

The primary aim of our research is the production of novel theories in learning sciences regarding collaborative learning in the face of diverse backgrounds and cultural norms. How do students individually and collectively position themselves within data ethics and do these views change over time with increased exposure to technical concepts and norms? How do students reconcile conflicting norms in the design of a single design project? Does the collaborative design of an ethical simulation game facilitate diverse student learning experiences? Our work will be conducted as an ethnographic case study with analysis heavily informed by sociocultural-historical theory. Multiple streams of data will be collected over the course of the project, including observations in the "field," i.e. of the team meetings (consisting of both audiovisual recordings and researchers' field notes), informal conversations with participants, products created by the team (such as papers, images, prototypes, etc), brief surveys, and participant interviews. This work aims to contribute new theories on collaborative learning to the body of research in learning sciences as well as serve as a case study for future educational projects situated between disciplines with conflicting cultural norms.

This award reflects NSF's statutory mission and has been deemed worthy of support through evaluation using the Foundation's intellectual merit and broader impacts review criteria.

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