Overview/Abstract

The influence of artificial intelligence (AI) on individuals and society has become increasingly prevalent and impactful, as highlighted by recent studies (Holzinger et al., 2023; Xu et al., 2023). One growing concern revolves around the spread of AI-generated misinformation (referred to as AI-misinfo hereafter), especially in the context of science and medicine. AI-misinfo is increasingly disseminated on the internet to target vulnerable populations such as African Americans and Hispanics. Therefore, it is imperative to understand the impact of AI-misinfo on these underserved racial groups and to devise effective intervention strategies to curb potential negative implications. Such efforts are critical for promoting equitable communication about science and medicine.

Drawing upon our prior research on AI and digital media, we are well suited to develop a research project that identifies psychological, contextual, and communication-related factors that affects underserved racial minority groups' experiences with online AI-misinfo and what can be done to mitigate its potential negative impacts on equitable science communication. This project will also be among the first to investigate the longitudinal causal impact of AI-misinfo on science communication and to develop intervention strategies for mitigating potential adverse impacts. The findings will advance our understanding of the topic and provides important insights for future efforts promoting more equitable science communication among susceptible underserved racial groups. Specifically, the proposed project has two main objectives: One, it seeks to investigate the impact of online AI-misinfo related to science and medicine that underserved racial minorities such as African American and Hispanics encounter on their perceptions, attitudes, and behaviors toward science and medicine and the underlying psychosocial mechanisms. Two, it aims to develop and test the efficacies of a novel generative AI literacy intervention in promoting desirable changes in critical thinking, fact-checking, and attitudes toward science and medicine among African Americans and Hispanics.

The National Science Foundation (NSF) Science of Science: Discovery, Communication and Impact (SoS: DCI) program is designed to advance theory and knowledge about increasing the public value of scientific activity. This program aims to advance theory and research about scientific discovery, communication and impact. It welcomes proposals that improve our understanding of scientific communication and outcomes and inform evidence-based policy making and the creation of public value. Our proposed project addresses some of the most pressing questions concerning the influence of AI and misinformation in promoting equitable science communication. Therefore, the project is well aligned with NSF SoS: DCI's funding priorities.

Consistent with the SEED Grant Program's objectives, our project will provide important baseline data and preliminary findings, which will largely strengthen our competitiveness in applying for extramural funds, including the NSF's the Science of Science: Discovery, Communication and Impact (SoS: DCI) and the NSF CAREER program. The project will offer valuable insights for researchers, practitioners, and policy makers to better understand AI-misinfo in the current media landscape. Potential findings can also help inform future interventions aiming to mitigate the negative influence of AI-misinfo on underserved social groups.