This *Innovations in Development* project, Using Technology to Research After Class (UTRAC), explores the potential of technology to improve the measurement of learning outcomes among rural and Native American middle school youth in informal educational settings. This UTRAC proposal builds on our discoveries from our NSF-funded AISL Pathways grant (NSF-DRL 1423561, Sept. 2014-current).

UTRAC will test how specific technological tools can best be used 1) to *increase students’ engagement with and content knowledge of* place-based perspectives on climate change, and 2) to *measure changes in their engagement and knowledge*. This project includes numerous innovations: 1) gathering and utilizing real-time, crowdsourced schoolyard data; 2) creation of a survey instrument to measure cognitive engagement and motivation in informal settings; and 3) development of lesson plans to increase place-based carbon cycle literacy.