



## Spring 2022 Colloquium

Department of Computer and Information Sciences

### *Designing culturally relevant early literacy and STEM educational technologies that supplement formal education for underserved students*

**Dr. Judith Uchidiuno**

Learning Science and HCI researcher  
HCI institute  
Carnegie Mellon University

**Monday, February 7th, 11 AM**

**Zoom Link: <https://temple.zoom.us/j/98178925651>**

**Abstract:** Education technologies are often posited as solutions for closing early literacy and STEM gaps for students with limited access to quality formal education. Some technologies have shown success as educational interventions; however, many others fail as they do not account for the culture and deployment context of their target demographic. In this talk, I will describe my work in the last 6 years designing culturally responsive education technologies to supplement formal education for and with underserved students in the United States and in rural villages in Tanzania. I will show evidence that designing education technologies in culturally responsive ways leads to better system engagement and learning outcomes for students. This work has led to an early literacy system used by over 2000 students without access to formal education in Tanzania, a tablet-based intervention that fosters peer-peer tutoring in the absence of knowledgeable adults, and programmable video games that improve students computational thinking while prioritizing their culture and gaming preferences.



**Bio:** Dr. Judith Uchidiuno is a Learning Science and HCI researcher with a PhD from Carnegie Mellon University's HCI institute. She designs culturally relevant, early literacy and STEM education technologies that improve learning for students from low income and underserved populations. Her work prioritizes identity development, belonging, enjoyment, and long-term sustainability of interventions. She is currently a postdoctoral researcher with CMU's Robotics Academy working on a project that teaches children to understand, design, and program their own games and robots. As a passion project, she reviews children's storybooks that celebrate African history and culture.