



## Brenda Bannan, PhD

Associate Professor, Division of Learning Technologies  
Co-Director, Center for Advancing Human-Machine Partnerships

### Education

PhD, Instructional Systems, The Pennsylvania State University

### Key Interests

Learning Science | Smart Technologies | User Experience Design/Human-Centered Design | Educational Design Research | Team-Based Learning | Mobile Behavioral Analytics

### CONTACT

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### SELECT PUBLICATIONS

- › B. Bannan *et al.*, (2019). *Toward wearable devices for multiteam systems learning*. In I. Buchem, R. Klamma, & F. Wild (Eds.), *Perspectives on Wearable Enhanced Learning (WELL): Current Trends, Research, and Practice*. Springer International Publishing 79–95 (2019).
- › B. Bannan & J. Burbridge. *Smart city learning solutions, wearable learning, and user experience design*. In I. Buchem, R. Klamma, & F. Wild (Eds.), *Perspectives on Wearable Enhanced Learning (WELL): Current Trends, Research, and Practice*. Springer International Publishing 253–271 (2019).

### Research Focus

My work centers on leveraging emerging technologies, learning science, user experience design, and human-machine partnership interactions to inform both the human system and the smart technology system. This reciprocal learning cycle positions the technology system to become an intelligent observer with insights to inform the human system which then adapts and takes action to promote learning across both systems. Working on these efforts across multiple workforce learning contexts, I co-lead the Center for Advancing Human-Machine Partnerships (CAHMP) that supports transdisciplinary research related to complex human-machine partnerships with automated, artificial intelligence integrated with human systems in the most appropriate, ethical, and trusted ways. My current research has been applied to first responder team-based live simulation training with intelligent sensor-based, instructional support systems leveraging mobile behavioral analytics, and machine learning.

### Current Projects

- The Smart Technology to Enhance Emergency Response project is a collaborative effort with the Center for Innovative Technology and the Department of Homeland Security to conduct research on the application of smart technology solutions in first responder live simulation training exercises.
- The Center for Advancing Human-Machine Partnerships is a transdisciplinary research center with the goal of optimizing the reciprocal relationships between humans and assistive computing systems.
- The Public Safety SuperCluster (PSSC) of the NIST Global City Teams Challenge (GCTC) project is a worldwide collaboration forum for developing and deploying replicable, interoperable, and scalable cyber-physical systems and Internet of Things (IoT) solutions in cities and communities related to public safety.