

## Invited Talk

Hosted by Winslow Burleson

**Jesse Cirimele, Ph.D. Candidate**  
**Computer Science at Stanford University**  
**Human-Computer Interaction**



**Friday, January 11<sup>th</sup>**  
**11:00 AM – 12:00 PM**  
**BYENG 210**



# “Dynamic Checklist Interfaces to Support Emergency Training and Response”

## Abstract:

Checklist usage can increase performance in volatile, uncertain and complex domains such as medicine and aviation. While paper checklists are valuable, they are static, slow to access and show more information than needed. To address this we introduce the Dynamic Checklist approach. Dynamic Checklists implement three key principles: (1) focusing attention with reactive, dynamic layout, (2) cue based on context and (3) reducing barriers to use with linked displays across tablets and large screens. These principles are embodied in iCogAid, a software system for crisis medicine. iCogAid’s design was based on 12 months of observing medical teams responding to simulated hospital cardiac arrest scenarios. We evaluated iCogAid in an experiment (n=30) that compared dynamic checklists, paper and no aid use by medical doctors and students. This Latin square, within-subjects design used a sequential, screen-based simulation of advanced cardiac life support scenarios. In this study, dynamic checklists outperformed paper and beat no aid by 8-16 percent.

## Bio:

Jesse Cirimele is a Ph.D. candidate in Computer Science at Stanford University with a focus on human-computer interaction. Cirimele has bachelor’s degrees in cognitive science and mathematics from UCSD. His previous research investigated decision support in crisis medical care, adaptive mobile interfaces, mobile health interventions and improved browser history interfaces.