Research Objective

- Study social cues, game structure, and individual differences in behavior and/or physiological changes in people
- Use ecologically valid yet controlled virtual humans (VH) and environments

Challenges

- Determining how to characterize and represent simultaneous measures of participant non-verbals (facial, vocals) and physiological state
- Real-time analysis of cardiovascular measures in response to events in virtual world

ARL Facilities and Capabilities

Available to Support Collaborative Research

- Psychophysiology of Immersive Experiences (PIE) Lab (NICO100C for impedance cardiography; CNAP for continuous blood pressure) at ARL West (Playa Vista, CA)
- ICT Virtual Human Toolkit
- Tobii 300X eye tracker

Preliminary Findings:

- VH inconsistent facial expressions relative to their behavior and framing cause cardiovascular patterns reflective of a threat motivational state (Khooshabeh et al., 2013; 2015; 2016)

Selected References:


Complementary Expertise / Facilities / Capabilities Sought in Collaboration

- Signal processing expertise to integrate across multimodal channels
- Sensor development to support ambulatory impedance cardiography and blood pressure
- Proxy measures of blood flow that are highly related to biopsychosocial model measures
- Affecting computing mappings and representations for how interfaces and virtual humans should respond to changes in psychophysiological states
- For culture research, access to populations that are not available in USA