

## **Collaborative Research: Interactive Deception and its Detection through Multimodal Analysis of Interviewer-Interviewee Dynamics**

**Principal Investigator & Lead Institution:** Judee K. Burgoon, University of Arizona

Deception is a pervasive feature of social life yet often goes undetected because deceivers capitalize on features of the interpersonal communication process. They adjust their verbal and nonverbal behavior over the course of an interaction in ways that evade detection. To uncover the complexities and dynamics of the communication processes that make successful deception or detection possible, collaborative research will be conducted by a multidisciplinary team of communication, linguistics, psychology, computer science, management information systems researchers from the University of Arizona, University of Chicago, Michigan State University, Rutgers University, and University of Pittsburgh. They will be joined by international experts from the University of Cologne, Imperial College London, and University of Iceland. The project will *develop a theoretical model of interpersonal deception* that shifts emphasis from stable individual behaviors to dynamic interaction patterns. It will *create five test beds by measuring the verbal and nonverbal features from video-recorded interpersonal communication experiments*. The five experiments are a cheating experiment, a mock theft experiment, deceptive interviews, a group collaboration task, and a narration task. Measurement will consist of extensive automated and human-annotated measurement of visual, vocal, and verbal features. As part of the annotation work, the team will *refine and validate software for automated measurement of nonverbal and verbal features*. *Theory-driven hypothesis tests and exploratory tests* will be conducted on the measured communication behaviors using time-series, Bayesian-based Theme analyses, and artificial intelligence data mining techniques to identify dynamic adaptation patterns. The project will *advance the scientific infrastructure for studying deception* by forming the largest international and multidisciplinary research team of deception experts of its kind, integrating the knowledge and methods of multiple disciplines, refining computer-aided analysis of human communication, making progress in automating deception detection, and educating new investigators through laboratory exchanges. Society will benefit from a more valid picture of deception that can guide training and detection efforts in public, business, government, and security settings.