A Psychological Approach to Designing Systems and Creating Interventions: Case studies from Autism, Asthma and Diabetes

ABSTRACT:
In this talk, I will present two social cognitive theories that have influenced my conceptualization of designing for children with chronic health conditions. These are the Ecological System’s Theory (EST) and the Health Belief Model (HBM). I will argue that these theories of human development and cognition can inform HCI design and intervention. The EST views a child’s development as being affected by relationships and social contexts; it can be visualized as a set of concentric circles where the child is at the center and is both influenced by and influences the other layers (e.g., family, community, society, environment). The HBM describes the circumstances that encourage individuals to think in a manner that will lead to improved health. I will discuss how I have used these two models to understand where technology can be targeted and what variables can be manipulated in empirical studies to improve outcomes for children with chronic illness. The EST has led our research team to a patient-centered approach and to systems that mediate communication between children and their caregivers and among the caregivers; it has also urged us to consider how society can help. The HBM, on the other hand, informs our decisions regarding how to get the child to engage in thought processes that will lead to improved management of their chronic illness. I call the combination of these theories an ecological approach to chronic care management.

BIO:
Dr. Arriaga is a developmental psychologist in the School of Interactive Computing at Georgia Tech. Her emphasis is on using psychological theories and methods to address fundamental topics of human computer interaction. Her current research interest is in the area of chronic care management. Recently she has addressed some of the following questions: how software solutions can improve asthma management in children, how crowd sourcing can aid individuals with autism spectrum disorders and their caregiver, and how lab-based technologies can be scaled and deployed to broaden their impact. She is testing the hypothesis that systems designed with principles of human development and cognition can be effective across different clinical populations simply by altering the content (e.g., from asthma information to diabetes information).

She received her Ph.D. in Developmental Psychology from Harvard University. She is currently a Senior Research Scientist in the School of Interactive Computing at Georgia Tech and has been the Director of Pediatric Research at the Health Systems Institute since 2009. In this role, she has forged important relationships with both private and public community partners in the greater Atlanta metro area. Dr. Arriaga has won several awards for her research, including most recently, a Best-of-CHI RepliCHI award in 2013. During the 2013-2014 academic year she will be on leave visiting the HCII at CMU (in the fall) and Microsoft Research- Bangalore (in the Spring).

HOST: Anind Dey & Jen Mankoff