Intelligence, Surveillance, Reconnaissance and Analysis Systems are Mostly Failing Users (Fortunately, it's a Fixable Problem)

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Over the past decade, the United States has invested untold millions of dollars into the development and deployment of remote sensing systems for intelligence, surveillance and reconnaissance activities throughout the national security community. Largely absent from the sensor revolution was thoughtful attention to a very basic question: how do we make sure these systems are useful and usable for the many human stakeholders who will be operating, exploiting, disseminating and analyzing data and information from our exquisite sensor technologies? Based on a decade's work of human-information interaction research across the national security community, this talk examines some of the ways that sensor technologies are failing their human stakeholders. As demands for automation increase, failure to understand human operational requirements will become increasingly costly. Accordingly, this talk presents a set of practices and principles for designing systems that really work for human operators, drawing on basic frameworks from human factors, design ethnography, and human-computer interaction. In addition, we will discuss some recent developments in human-information interaction that can help researchers ensure that new collection, management and analysis technologies are genuinely supporting the perceptual and cognitive requirements of their human operators.

About Me:

I've spent the past 18 years in the Department of Energy's national laboratory system as an anthropologist with an organizational and policy bent. I began my career 1997, as a graduate student at Los Alamos National Laboratory, where I wrote my dissertation about nuclear weapons design and engineering at the end of the Cold war. I also spent a couple years as a staff member at LANL's statistical sciences group before accepting a position at Sandia National Laboratories in 2003. For the past 12 years or so, I've been a research staff member at Sandia. Most of my work deals with the design and evaluation of human-information interaction systems across a wide range of domains, from cybersecurity forensics to synthetic aperture radar (SAR) operational interfaces. At Sandia, I get to work in a wide range of technical areas, from software design and evaluation, visual cognition and human-information interaction; mostly within Sandia's Airborne Intelligence, Surveillance and Reconnaissance (ISR) research community.