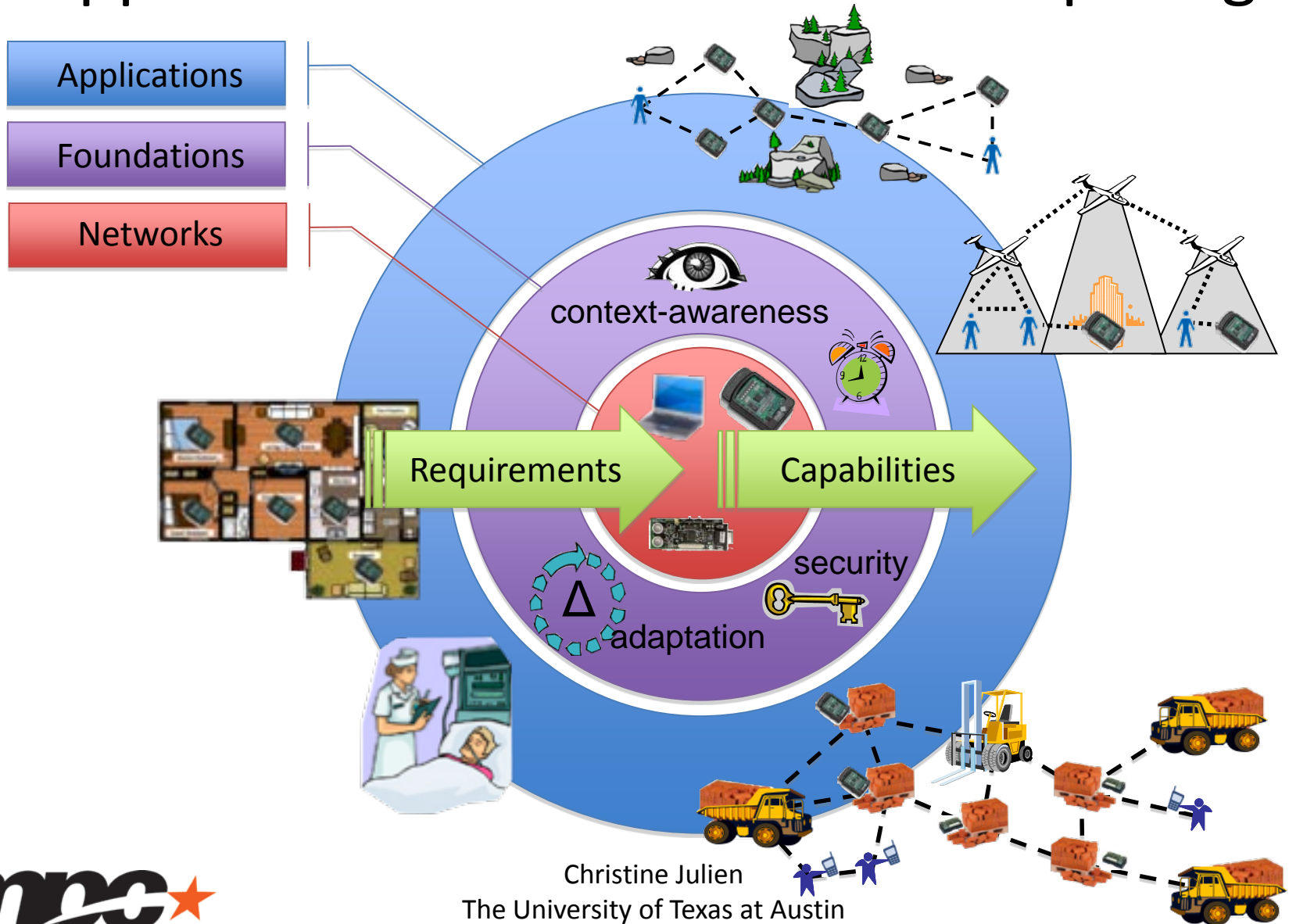
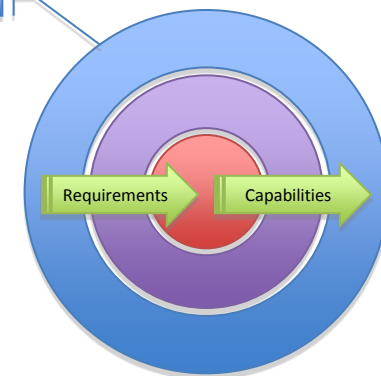


Application-Driven Pervasive Computing

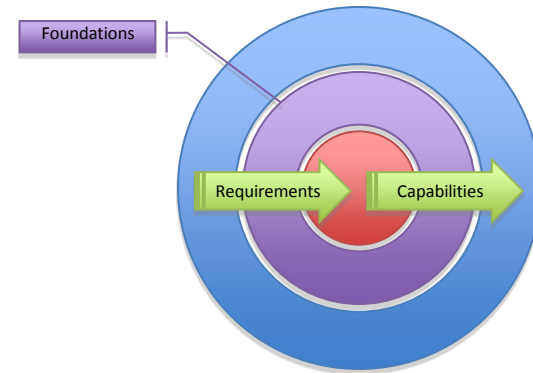




Applications

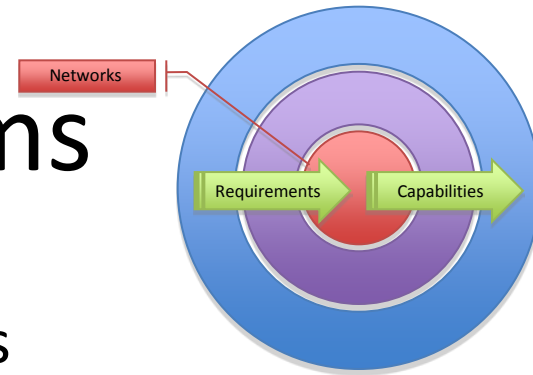
- Application-driven research
 - Applications in *intelligent environments* and *monitoring*
 - Find commonalities among applications to drive research in inner circles, in terms of
 - what capabilities are *feasible*,
 - what functionalities are *necessary*, and
 - what characteristics are *useful*.
 - Example application requirements:
 - Content-based interaction
 - Location-dependency
 - Continuous operation
 - Unobtrusiveness
 - Privacy/trust

Foundations



- Foundations are about *abstraction*
 - Bridging the gap between the concrete capabilities of networks of systems and application interfaces
 - Make it easy and seamless to incorporate
 - *required* qualities (e.g., security, privacy, and anonymity) and
 - *desired* qualities (e.g., context-awareness and social dynamics)
- Must focus on both expressiveness and programmability/usability of constructs
 - With an emphasis on adaptability

Networks of Systems



- Crucial to the support of future pervasive computing are physical networks of systems
 - Must strike a careful balance between opportunistic (i.e., ad hoc) and infrastructure (i.e., Internet) networks
 - Intelligently leveraging available resources
- To support emerging pervasive computing, the networks of systems must be
 - heterogeneous yet interoperable,
 - general-purpose yet customizable, and
 - componentized and reusable
- The structure and function of networks of systems should be driven by application and abstraction requirements
 - Avoid the “if we build it they will come” mentality

Application-Driven Pervasive Computing

