CENTER FOR COMMUNITY SECURITY AND RESILIENCE (CCSR): OVERVIEW

DHS University Network Summit
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Overview of Panel Presentations

- Center for Community Security and Resilience
  - Vision, Concept, and Value Added
  - James Bohland, Virginia Tech
- Technology Imperatives
  - Technologies under Development
  - John Smith, IBM
- Arlington County as a Testbed and Living Lab
  - Attributes and Assets
  - Terry Holzheimer, Arlington County

Center for Community Security and Resiliency (CCSR):Overview

- Structure of the Partnership
- Research Mission of the Partnership
- Value Added by CCSR to R&D in Security and Resiliency

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STRUCTURE OF THE PARTNERSHIP

Open and Synergistic

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Value Proposition for Partners

- Virginia Tech
  - Establishes an internationally known center on secure and resilient communities
  - Attracts world-class researchers and graduate students
  - Leverages new research facility in Ballston to enable a unique public-private collaboration
- Arlington County
  - Directly benefits from creative solutions to real-world community security and resiliency problems
  - Enhances Arlington's position as a scientific epicenter, complementing existing research and development on homeland security
  - Showcases Arlington as exemplar for other communities nationally with its complex mix of local, state and federal risks and exposures
  - Helps to create and sustain high tech employment opportunities
- IBM
  - Expands research agenda relative to its *Smarter Planet / Smarter Cities* initiatives, complementing research from top universities worldwide
  - Enables vision of a "living laboratory" for Smarter Cities that utilizes real-world data and experience
  - Catalyzes adoption of resulting capabilities through commercial partners creating local and national jobs

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Open Partnership

- Intent is to include other partners over time
- Future partners
  - Universities, research centers, or private firms that would bring research consist with Living Lab concept
  - Partners interested in commercialization
  - Communities desiring to leverage technologies developed in lab as solutions for local problems

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RESEARCH VISION

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Vision

"Virginia Tech, IBM and Arlington County create a living lab for scientific, technological, and policy research that enhances the security and resilience of communities while preserving privacy and community quality of life"

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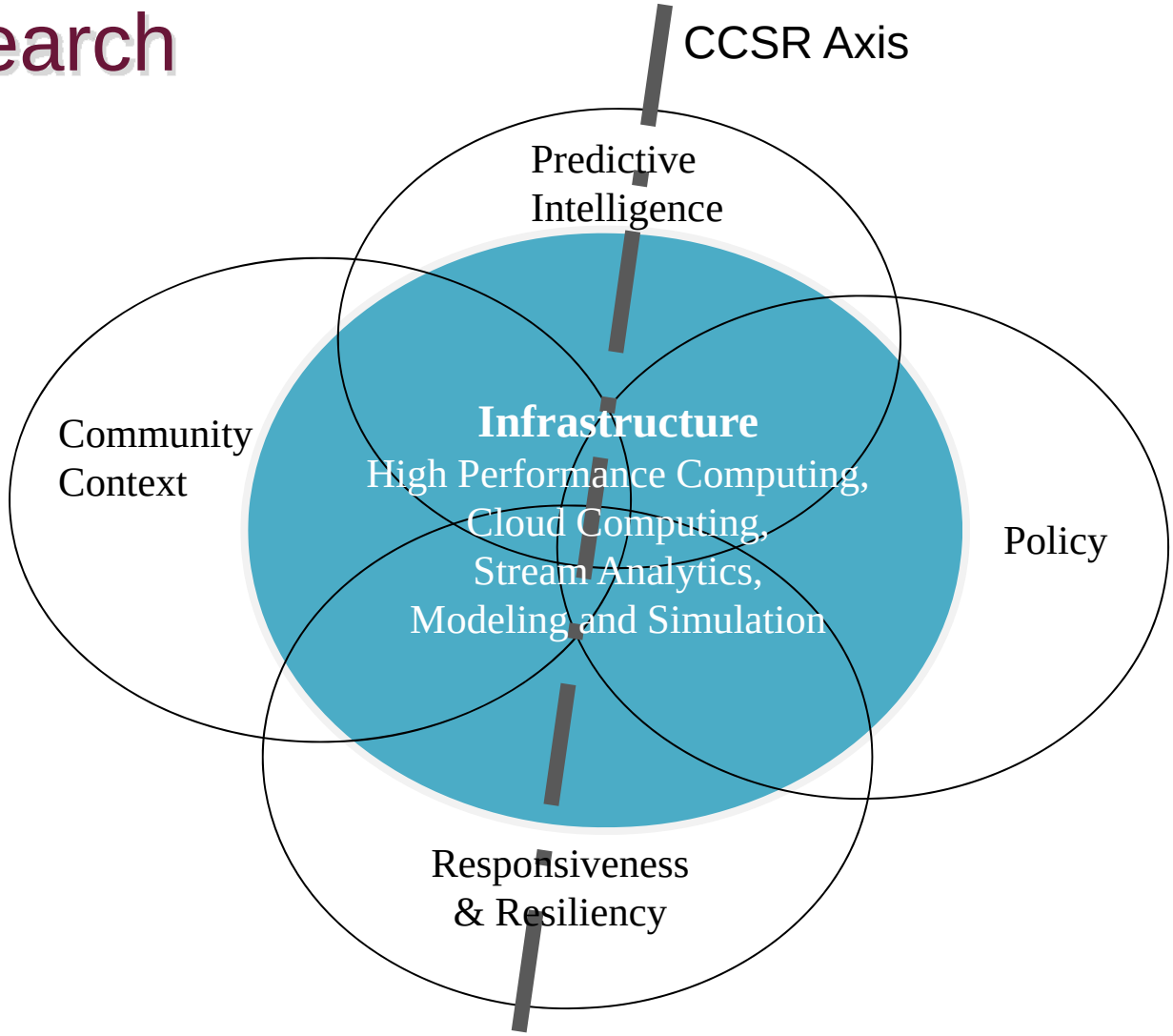
Challenges in Community Security and Resilience

- Increasingly interconnected world where regional and global conditions can negatively impact local communities
- Interdependencies between critical infrastructures becoming more complex and vulnerable to cascading effects from even minor failures
- Increased diversity in communities challenges policy application and equitable servicing during crises
- Largely absent in existing approaches is the role that **information and communication technologies can play in helping communities achieve acceptable levels of resiliency**

Community Security and Resilience Research



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Initial Research Foci

Research Area	Description
Connect the Dots	Describe patterns of use cases and for each orchestrate a set of decentralized, dynamically configurable, high-speed specialized and optimized analytics.
Enhanced Usability of Advanced Technologies	Provide insight from massive amounts of data through invisible, smart, assured and visual analytics when and where it is required by an average user.
Pervasive Sensing	Enable smart data gathering, initial pre-analysis and correlation through hybrid existing and advanced techniques.
Anticipating Cascading and Secondary Effects	Develop models, simulate effects and anticipate real-time adjustments through e.g. risk modeling and mitigation techniques
Special Populations	Create systems that facilitate continuous assurance, investigation and remediation of policy versus activities in populations more vulnerable to systemic disruptions
Secure, Reliable, Accessible Information Systems	Enable multi-scale, cloud delivery of structured, unstructured and assured data analytics and machine learning algorithms
Engagement of Citizens	Leverage social computing technologies and information for pre, intra and post event purposes
Network and Computing Platforms	Provide elements of information technology as backbone to research, development and operational systems

VALUE ADDED BY CCSR TO CURRENT SECURITY AND RESILIENCE RESEARCH APPROACHES

Beyond the Lab – Core Challenges

- Policy-relevant technologies for decision-makers that are timely and appropriate (policy informatics for security and resilience)
- Commercialization capabilities that can be implemented nationally and internationally
- Promoting understanding of need for tactical and strategic development of technologies

CCSR as a Living (Embedded) Lab: Value Added

- Living Lab is a concept for R&D developed and expanded in Europe
  - Grounded in an existing problem domain
  - Problem-solving centric
  - Stakeholders work together to co-create
  - Non-linear R&D processes
  - Lower risk commercialization opportunities

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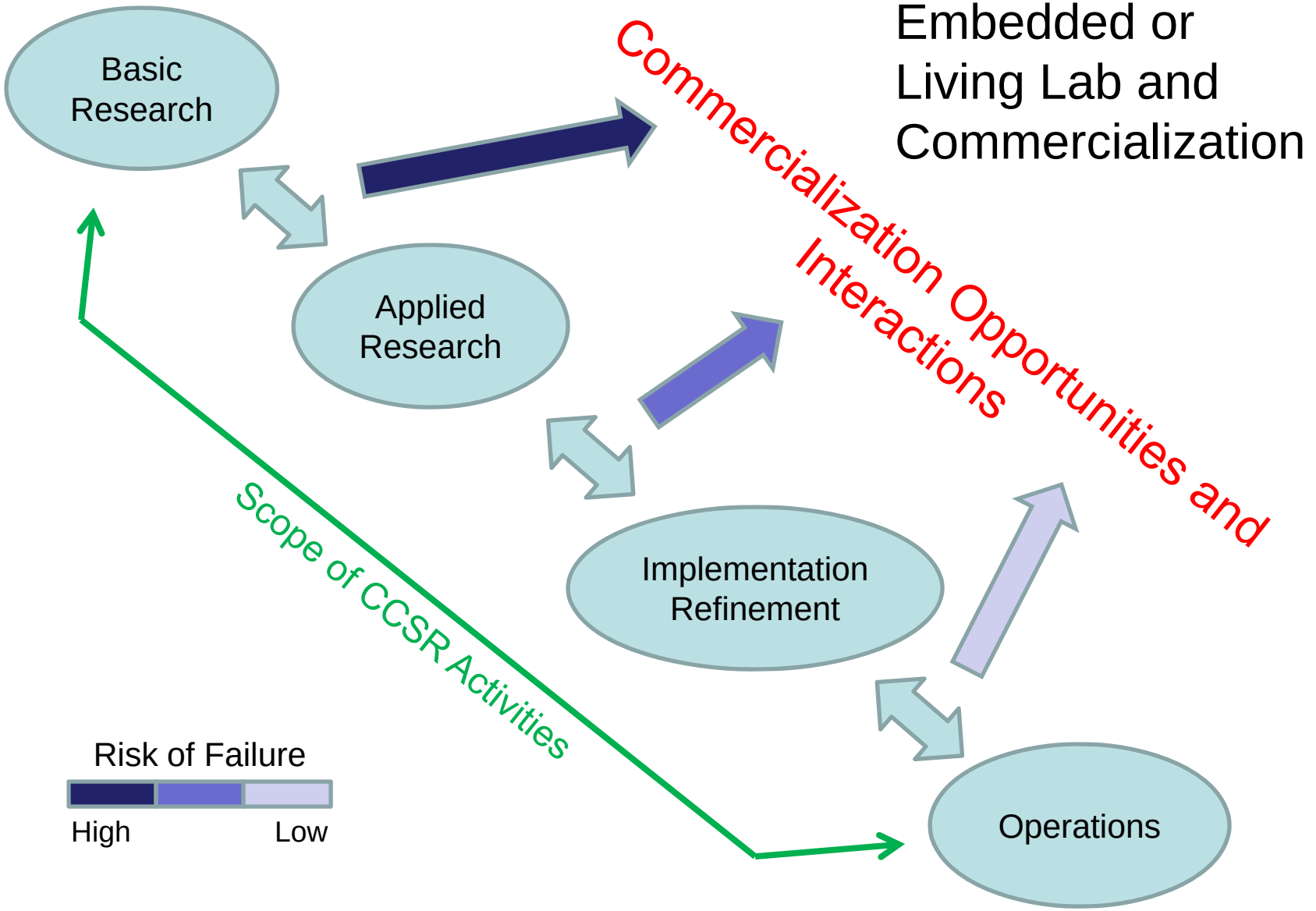

Embedded or Living Lab and Commercialization

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Value to Homeland Security Research

- Increased understanding of end-user requirements in complex community environment
- Platform for rapid commercialization
- Ability to deal with legacy systems as well as create new innovative approaches
- Platform for collaboration with Centers of Excellence
- Supports DHS efforts on community and national resiliency

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THANK YOU

Questions…?

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