



SYSTEMS ENGINEERING
Research Center

A US DoD University Affiliated Research Center

**SERC Research Council (RC) Panel:
The Future of Systems Engineering (SE) Research**

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Panel Overview

- Nature of SERC Research Council (RC)
 - Research performance oversight
 - Research strategy formulation and evolution
 - Collaborative research stimulation and outreach
- Panelist views of the future of SE research
 - Key future trends
 - Resulting need-capability gaps
 - Key research initiatives needed
- Audience questions and general discussion

Example: Confluence of Increasing Systems Scale, Dynamism, and Criticality

- **Trends:** Net-centric systems of systems; Rapid fielding; Empowered adversaries
- **Need-capability gaps:** Unscalable, stovepipe SE models, tools, and verification&validation (V&V) capabilities
- **Research initiatives needed:**
 - Model and tool interoperability architectures and bridges
 - Model-generated flexible solutions vs. point solutions
 - Models and tools on steroids via multicore processors
 - Parallel option, tradeoff, and assurance analysis
 - Rapid interdisciplinary collaboration and V&V support