Successes in the Integration of Modeling and Simulation in Educational Programs

National Simulation Training Association
Modeling and Simulation Leadership Summit
February 25, 2019
Norfolk VA
Talking Points for the Panel

• Success stories in the use of technology and modeling and simulation in your programs/focus areas.

• Barriers to the expanding inclusion of modeling and simulation into K-12 education

• Thoughts on ways that legislation or policy could support its growth going forward.
Since 2017, NSF has been building a foundation for the Big Ideas through pioneering research and pilot activities. In 2019, NSF will invest $30 million in each Big Idea and continue to identify and support emerging opportunities for U.S. leadership in Big Ideas that serve the Nation's future.
Future of Work at the Human-Technology Frontier

- Building the human-technology partnership
- Augmenting human performance
- Illuminating the socio-technological landscape
- Fostering lifelong learning.
Affective Computing

• Designing ways for people to communicate and assess affective-cognitive states
• Making computers more emotionally intelligent
• Developing wearable sensors and machine learning algorithms that jointly analyze multimodal channels of information
• Ethics
Convergence Research

• Research driven by a specific and compelling problem.
  • inspired by the need to address a specific challenge or opportunity, whether it arises from deep scientific questions or pressing societal needs.
• Deep integration across disciplines.
NSF INCLUDES

• NSF has **funded 67 launch pilots** to date.

• Multi-year **alliances** engage partners from private and corporate philanthropy, federal agencies and scientific professional societies.

• **Broadening participation** activities – from STEM engagement and preparatory experiences for students and other community members to educator training to new academic programs that expand access to STEM education.

• **Networked testbed** for research on **STEM inclusion**.

• Determine key components and approaches for **scale up of local alliances**.
Advanced Technological Education (ATE)

• focuses on the education of technicians for high-technology fields
• partnerships between academic institutions (grades 7-12, and 1-year IHEs) and industry to promote the education of science and engineering technicians.
• supports curriculum development; professional development of college faculty and secondary school teachers; career pathways; and other activities.
• Faculty-driven and credit-bearing, although may also include incumbent worker education.
Education and Human Resources Directorate (EHR)

Division of Research on Learning in Formal and Informal Settings

- **STEM+C**: Computer science, computational thinking
- **DRK-12**: applied research, including early childhood and learning disabilities (READ Act)
- **AISL**: Informal STEM learning
- **ITEST**: Workforce development