

# **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.

# NSF'S 10 BIG IDEAS



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

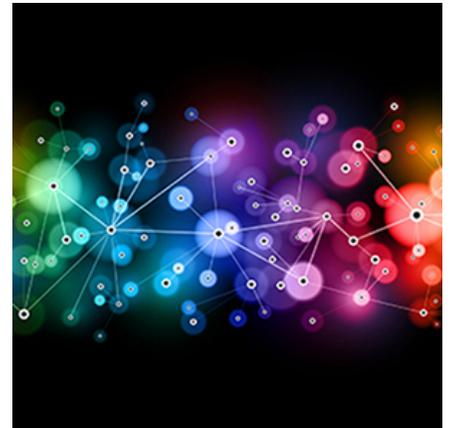


- Designing **ways for people to communicate and assess** affective-cognitive states
- Making **computers more emotionally intelligent**
- Developing **wearable sensors and machine learning algorithms** that jointly analyze multimodal channels of information
- **Ethics**



# 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)
- **AIISL:** Informal STEM learning
- **ITEST:** Workforce development

