LifeSTREAM Symposium

A Project Fibonacci® Foundation, Inc. Sponsored Event on

Lifelong-learning in Science, Technology, Research, Education, Arts and the Mind!

The Beeches Conference Center in Rome, NY

Friday, October 19, 2018 (8:00 AM – NOON)

This one-day professional development event is intended for educators in Science, Technology, Engineering and Math (STEM), proponents of STEM w/Arts (STEAM), and other professionals including scientists/engineers, business and community leaders, and the public interested in promoting STEAM and STREAM education. Presentations will be given by staff from the Air Force Research Laboratory (AFRL), Defense Advanced Research Projects Agency (DARPA), and local industries. The focus will be on enhancing awareness of cutting-edge scientific research and technologies that incorporate a range of STEAM disciplines, revealing a glimpse into future trends in artificial intelligence, autonomous systems, the limits of human and machine learning, and applications to space travel/exploration to the moon, Mars, and beyond. The event will provide a unique opportunity for attendees to learn what is happening in the fusion of science, technology, and art/design-based projects to enrich STEM education and learning.

AGENDA

0730 - 0800 **Registration & Continental Breakfast**

0800 – 0815 **Opening Remarks (Project Fibonacci® Foundation)**

0815 – 0900 **Opening Remarks (AFRL Director Col. Tim Lawrence)**

0910 – 0950 **Workshop 1 - Communications & Cyber:**
Neural Engineering System Design (NESD) Program (DARPA, Dr. Al Emondi)
This work describes research to greatly expand the "signal resolution and data-transfer bandwidth" between brain signals and the digital world of computers as a way to improve therapies for sight or hearing and to develop neural implants that make it possible for the human brain to speak directly to computer interfaces.

1000 – 1040 **Workshop 2 – Human/Machine Learning & the Brain:**
Neural Development in Children (AFRL, Dr. Bryant Wysocki & Dr. Nathan McDonald)
Focuses on the design of STEM activities to complement neural development in children and explores the effects of incorporating different modes of learning on neural development and suggests methods of maximizing the impact of hands-on activities designed by K-12 educators.

1050 – 1130 **Workshop 3 – Human/Machine Learning & the Brain:**
HaPTIx - Prosthetic Hand Proprioception & Touch Interface (DARPA, Dr. Al Emondi)
Emphasis on the development of technologies to enable precision control of and sensory feedback from sensor-equipped upper-limb prosthetic devices; fully implantable, modular and reconfigurable neural-interface systems that would enable intuitive, dexterous control of advanced upper-limb prosthetic devices and that also provide sensations like those of a natural hand.

1130 – 1200 **Panel Discussion (AFRL, DARPA, Educators, Industry)**
"Hire for Character-Train the Rest" & "Summer Jobs Teaching Life Skills"

1200 **Closing Remarks**