

GUIRR Workshop: Supporting K-12 STEM Education to Create the Foundations for Innovation

National Academy of Sciences Building
2101 Constitution Avenue NW
Washington, DC 20418

The Government-University-Industry Research Roundtable will hold a workshop for its membership and invited guests to discuss how the K-12 educational pipeline can be supported by the US research enterprise across diverse sectors to encourage workforce development and enhance future innovation and entrepreneurship.

Exposure to innovation and entrepreneurial concepts at the K-12 level lays the foundation for success in creating the innovators and innovative ecosystems of the future. This workshop will consider the evolving state of K-12 STEM education, early entrepreneurship education and the future of the STEM workforce, how to encourage science based economic development through regional education programs, and the future of early STEM education to prepare an innovation-based workforce.

TUESDAY, FEBRUARY 6, 2024

5:00-6:30 pm ET

Reception – West Court

6:30-8:00 pm ET

Dinner and Fireside Chat – Great Hall

- **Mary Woolley**, President, Research!America
- **Moderator: Darryll Pines**, GUIRR Council Co-Chair, President of the University of Maryland

WEDNESDAY, FEBRUARY 7, 2024

8:30-9:00 am ET

Breakfast – East Court

9:00-9:15 am ET

Welcome Remarks – Lecture Room

- **Darryll Pines**, GUIRR Council Co-Chair, President of the University of Maryland
- **Michael Nestor**, Director, GUIRR

9:15-10:45 am ET

The Evolving State of K-12 STEM Education in the US

Dynamic shifts in technology and how students interact with technology have brought disruption into the K-12 classroom. This has presented K-12 STEM educators with the challenge of both keeping pace with a future STEM landscape that is innovation-focused and disruptive, and teaching fundamental skills that can be applied to diverse scientific contexts. This panel will explore ways K-12 students and educators can help to develop a future STEM workforce that focuses on critical thinking, invention, and adaptability.

Moderator: Darryll Pines, President, University of Maryland

- **Louie Lopez**, Director, STEM, Office of the Under Secretary of Defense for Research & Engineering
- **Nancy Hopkins-Evans**, Senior Science Educator and Associate Director for Program Impact; Acting Director, Equitable Impact, BSCS Science Learning
- **Lucie Howell**, Chief Learning Officer & Director of Learning & Engagement, The Henry Ford
- **Alexandra Fuentes**, Program Manager, STEAM and Computer Science, Fairfax County Public Schools

10:45-11:00 am ET

Break

11:00 am-12:15 pm ET

Early Entrepreneurship Education and the Future STEM Workforce

This panel will survey models of early education approaches to encouraging innovation and entrepreneurial development. This discussion will focus on developing future innovators, encouraging career development in STEM outside the classroom, and opportunities for developing novel partnerships to foster resilient and critically thinking early STEM learners.

Moderator: Ahmad Ezzeddine, Vice President, Academic Student Affairs and Global Engagement, Wayne State University

- **David Coronado**, Senior Program Officer, Lemelson Foundation; Founder, InventED
- **MC Desrosiers**, Chief Education and Learning Technologies Officer, Junior Achievement USA
- **Jorge Valdes**, Program Advisor on STEM Education and Intellectual Property, U.S. Patent and Trademark Office

12:15-1:30 pm ET

Lunch – West Court

1:30-2:45 pm ET

Encouraging Science Based Economic Development Through Regional Education Programs

The CHIPS and Science Act has provided the framework for the application regional innovation models to diverse STEM communities across the US. One goal of the Tech Hubs Program is to strengthen both economic and national security. In addition, economic and national security are dependent on early education STEM programs that prepare a ready workforce of the future. Yet K-12 education policy is typically hyper-local and driven by individual states. This panel will consider the ripple effects of the development of regional innovation hubs on K-12 education at the state level and how new pathways can be built between states and the federal government to encourage innovation.

Moderator: Nichole Pitruzzello, Director of Programs, Connecticut Invention Convention

- **Eric Smith**, Tech Hubs Program Director, U.S. Economic Development Administration
- **Stephen Pruitt**, President, Southern Regional Education Board
- **Michelle Reaves**, Executive Director, Detroit Area Pre-College Engineering Program

2:45-3:00 pm ET

Break

3:00-4:15 pm ET

Mapping the Future of Early STEM Education to Prepare an Innovation-Based Workforce

How can a national educational strategy that integrates diverse learning environments, perspectives and institutions enhance workforce development for the future? This panel will convene to review frameworks for developing policy that will lead to a resilient and diverse STEM workforce. Through identifying programs that are currently working to enhance innovation and scientific development, speakers will illustrate a path to the future for early STEM education.

Moderator: Col. Janelle Jackson, Acting Director, Air Force Office of Scientific Research

- **James Moore**, Assistant Director for the Directorate for STEM Education, NSF
- **Erwin Gianchandani**, Assistant Director of the Directorate for Technology, Innovation and Partnerships, NSF
- **Bill Bonvillian**, Senior Director, Special Projects, MIT Office of Open Learning

4:15-4:30 pm ET

Closing remarks

Darryll Pines, GUIRR Council Co-Chair, President of the University of Maryland