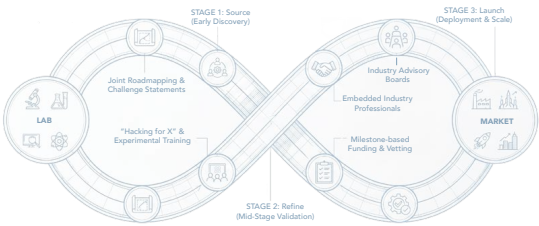
IDENTIFYING AND REMOVING GAPS AND BARRIERS TO TRANSLATING RESEARCH TO PRACTICE - WORKSHOP REPORT

Executive Summary



The "Workshop on Identifying and Removing Gaps and Barriers to Translating Research to Practice" examined why strong U.S. scientific output does not consistently produce societal and economic impact. Participants identified four recurring "valleys of death": spinning out a technology and forming a startup; finding product-market fit and launching a minimum viable product in a complex market; demonstrating the first full-scale commercial product or facility; and proving that the product is stable, profitable, and scalable.

Moving discoveries from Source to Refine to Launch requires replacing disconnected handoffs with a coordinated system across academia, industry, philanthropy, government, and nonprofits. This also demands cultural change, including promotion and tenure systems that value collaboration and applied impact, along with funding and organizational practices that reward shared responsibility and long-term partnership.

The proposed options to support this systematic coordination are organized into four pillars that replace disconnected handoffs with a continuous loop of learning, feedback, adaptation, and application.

Pillar 1: Strengthen Connections to Market Signals and Industry Vetting

- Integrate industry-informed priority setting at the earliest research stages
- Co-develop challenge statements that directly shape research agendas
- Use milestone-based funding to facilitate industry engagement in translational pathways
- Embed industry fellows within research and startup ecosystems to provide continuous, insider market validation

Pillar 2: Expand Researcher and Student Exposure to Real-World Challenges and Entrepreneurship

- Expand experiential learning programs that connect research with industry
- Integrate innovation and entrepreneurship into academic curricula
- Co-sponsor "Hacking for X" courses with agencies and trade associations

Pillar 3: Strengthen Translational Pathways and Coordination Across the Innovation Lifecycle

- Link follow-on sector-specific translational programs into integrated, lifecycle-spanning funding pathways
- Support multiple pathways to impact beyond traditional patent and startup models
- Align interagency coordination and pathway navigation across the translational ecosystem
- Use grant eligibility requirements strategically to strengthen institutional support for translation

Pillar 4: De-Risk Translational Progress and Enable Scalable Investment Pathways

- Provide bridge funding for prototypes, testbeds, and high-risk translational activities
- Establish risk-sharing approaches, including milestone-based supplements and co-investment models
- Develop predetermined global IP strategies and partnerships with shared cost and return structures.

The central challenge is therefore not simply to help more technologies cross individual valleys of death, but to build an innovation ecosystem capable of learning, adapting, and carrying promising ideas across the full journey to impact.

This executive summary is from a workshop held on March 18-19, 2026. The workshop and companion report were sponsored by the U.S. National Science Foundation Award Number 2614158 to the University of Pittsburgh of the Commonwealth System of Higher Education.

FOR MORE INFORMATION ABOUT THE REPORT, GO TO https://www.research.pitt.edu/researchdev/nsf-workshop.

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