

# MITRE'S HORIZON STRATEGY: INNOVATION FOR SCIENCE & TECHNOLOGY



## **The United States is making a generational investment in science and technology (S&T).**

The nation's current innovation model falls short in the face of today's technology needs and global market competition. The U.S. research and development (R&D) portfolio not only faces complex challenges that cross technological stovepipes, it struggles to fill the so-called “chasm” in the technology adoption life cycle between basic research and marketable commercial applications.

Innovators must also navigate an ecosystem fraught with challenges in technology governance and how new technologies interact with broader societal, legal-regulatory, and policy dynamics. These challenges must be addressed if we are to protect our innovation, integrate critical technologies into the economy, and grow our strategic advantage.

Government, industry, and academia must work together to address our most important S&T needs. A new level of cooperation is needed to prioritize R&D investment, fix flaws in the innovation paradigm, and apply system-of-systems thinking to “techno-system” challenges. A holistic approach to S&T innovation—focused on interdisciplinary and cross-sector problems of national importance but too complex to be solved by a single entity—can help ensure global leadership in the most critical and competitive industries and technologies.

The U.S. should wisely invest in technology development and engage in global leadership for our nation's security and economic prosperity for generations to come.

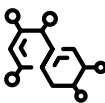
[MITRE's Horizon Strategy Framework](#) provides a structure to help shape public-private cooperation and improve technology governance across the U.S. innovation market's stakeholders.



**Advanced Manufacturing and Materials (AM).** Realize performance gains and cost savings through novel AM applications, and address supply chain challenges through edge production solutions and by scaling secure and distributed manufacturing.



**Artificial Intelligence (AI).** Implement the National Security Commission on AI's recommendation to create a Department of Defense/Intelligence Community foundation for AI assurance, lead industry in AI threat sharing, lead the national R&D agenda in discovering and codifying AI assurance approaches, and ultimately become the nationally recognized driver of assurance for high-stakes AI applications.



**Biotechnology.** Invigorate the national bioeconomy by launching a distributed and open bio-foundry, and lead operationalization of synthetic biology applications in support of MITRE-operated federally funded research and development centers.



**Climate, Energy & Environment.** Provide data and quantitative insights to inform climate adaptation and mitigation decisions and measure their impact. Provide mission-focused advanced energy systems engineering for data-driven analysis and modeling, technology evaluation and development, and operationally driven deployments and exercises.



**Cybersecurity.** Enable dynamic resiliency at scale and mitigate attacks on critical infrastructure. Accelerate adoption of zero trust architecture, post-quantum cryptography, software supply chain integrity, and threat- and risk-informed defense.



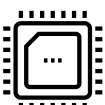
**Digital Health.** Improve health and well-being for all by putting patients at the center of their care, build resilience in accurate health information, and ensure justifiable confidence in AI for health applications.



**Future Connectivity.** Accelerate 5G industrial applications, and set the foundation for and influence U.S. investment in 6G. Promote adoption of AI and spectrum sharing in wireless. Advance decentralized technology stacks.



**Intelligent Domains.** Leverage edge intelligence to bring autonomy to our oceans, cities, transportation networks, and outer space. Make coastlines more resilient. Improve surface transportation safety. Strengthen supply chains with smart logistics.



**Microelectronics.** Maximize the whole-of-nation impact of investments by integrating across government programs. Make semiconductor security capabilities and tools widely available in support of high-assurance needs.



**Quantum.** Develop quantum sensing for critical applications and collaborate to build the world's first scalable hybrid photonic-based quantum computer.

A horizon strategy for innovation-focused R&D could catalyze a range of new opportunities for global competitiveness and job creation to achieve the full potential of today's innovation economy.

For more information about partnering with MITRE on these and other areas of interest, contact [labs@mitre.org](mailto:labs@mitre.org).

*MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government and in partnership with industry to tackle challenges to the safety, stability, and well-being of our nation.*

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