How do we ensure investments in U.S. research institutions continue and the U.S. remains competitive globally?

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More than any country in history, the United States has been the greatest driver and beneficiary of technology, innovation, and a vibrant entrepreneurial spirit.

Given the profound impact of science and technology on U.S. prosperity, standards of living, national security, modern society, and geopolitical standing, every American should be concerned with the nation's ability to lead in science, technology, and innovation.

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Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Competing in the Next Economy: Key Truths

- Other nations are replicating the structural advantages that historically have made the U.S. the center of global innovation
- Many nations are developing their own, distinctive innovation ecosystems
- The nature of innovation is changing—more interconnected, turbulent and fast-paced
- New research and business models are emerging, allowing someone to imagine, develop and scale a disruptive innovation independent of traditional institutions
- Not every American has been brought onto the country's innovation team

Innovation is what will grow the U.S. economy.
Innovation is not a silver bullet requiring a singular action.
More money, the creation of a new program or a change in leadership will not suffice.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

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With a $20 trillion economy, a diverse population of over 330 million people, **the United States is an incredible incubator of ideas…**

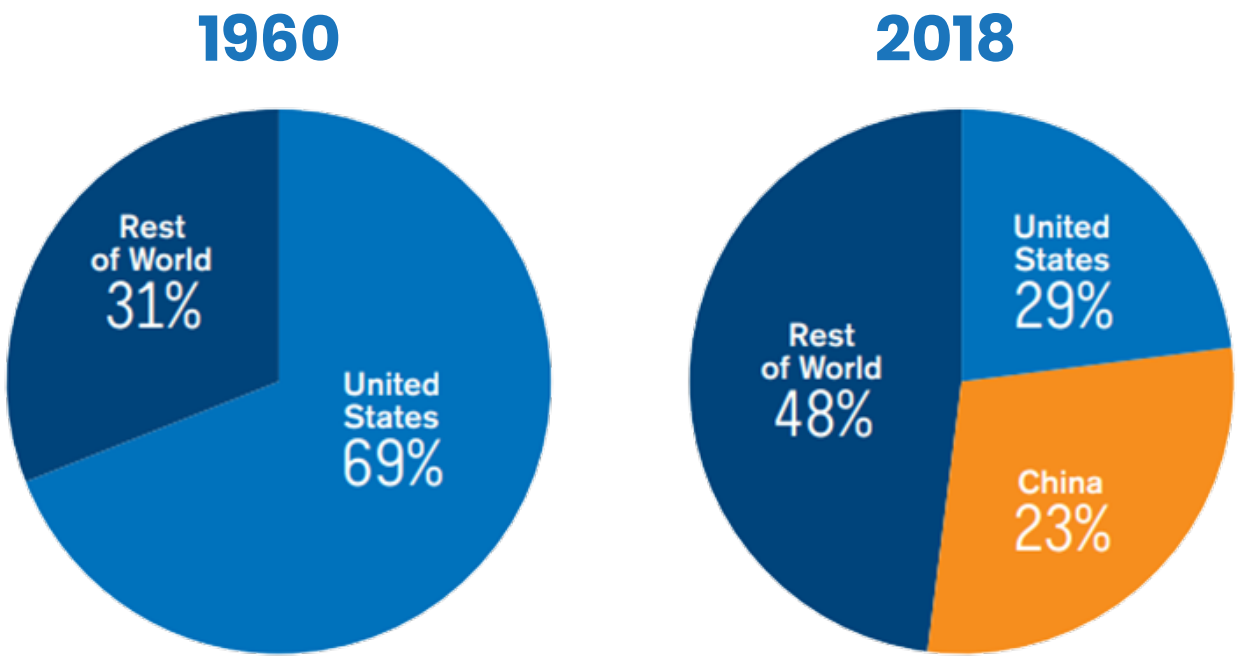
“…What we need now is a ‘**modernization model**’ – we must be unbelievably creative in reinventing America.”

Dr. Michael Crow, President, Arizona State University

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

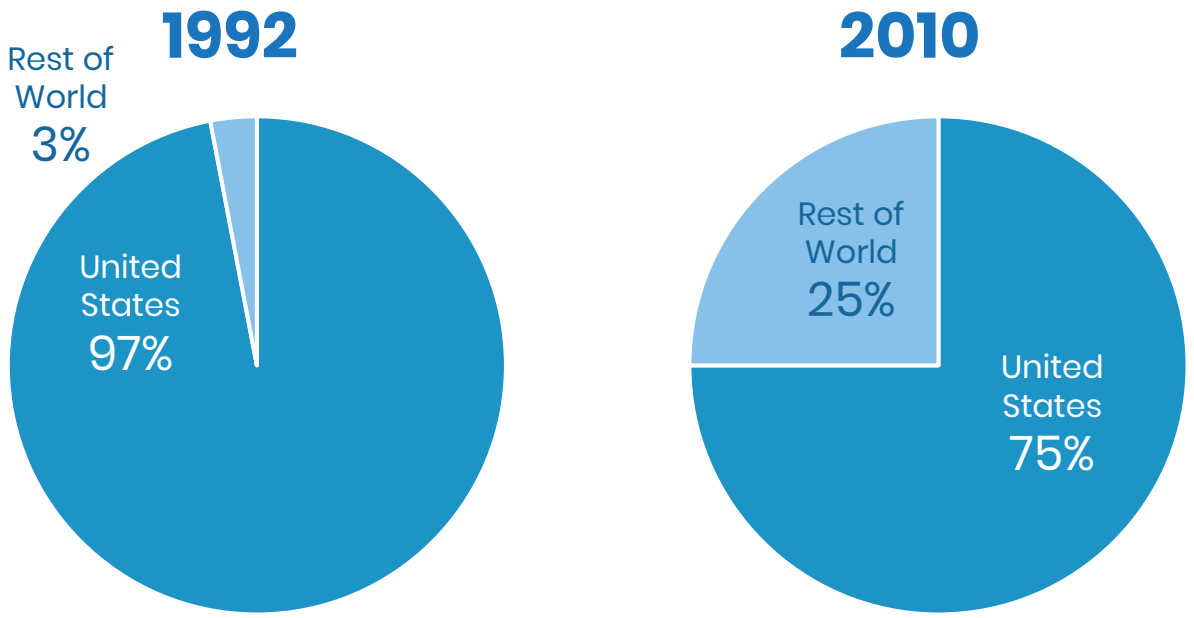
Report released in December 2020 by the U.S. Council on Competitiveness

U.S. share of global R&D expenditures



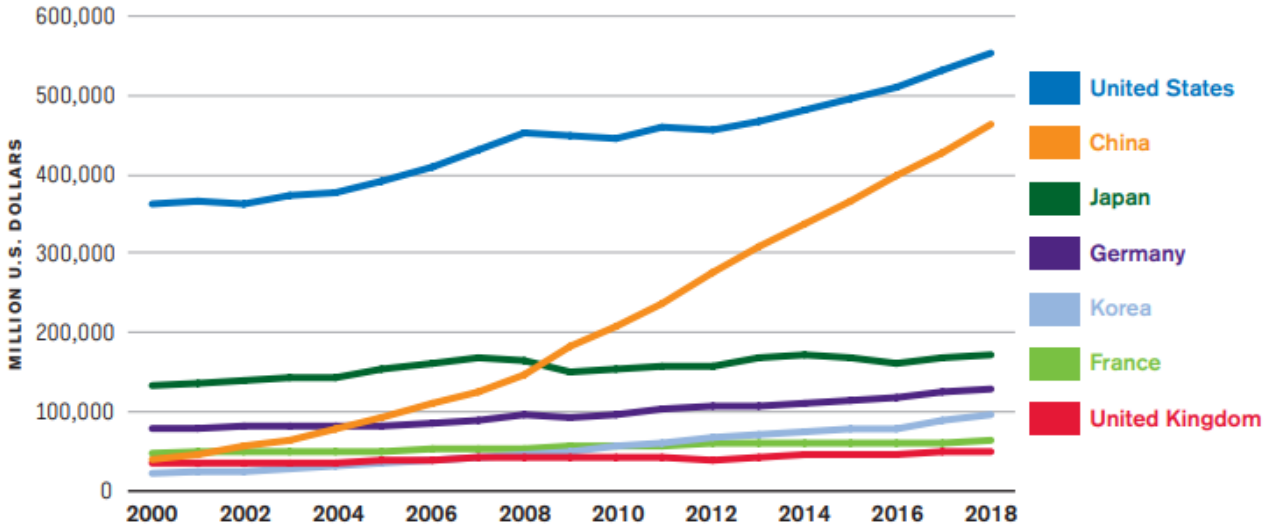
Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

America's lead in venture capital is shrinking



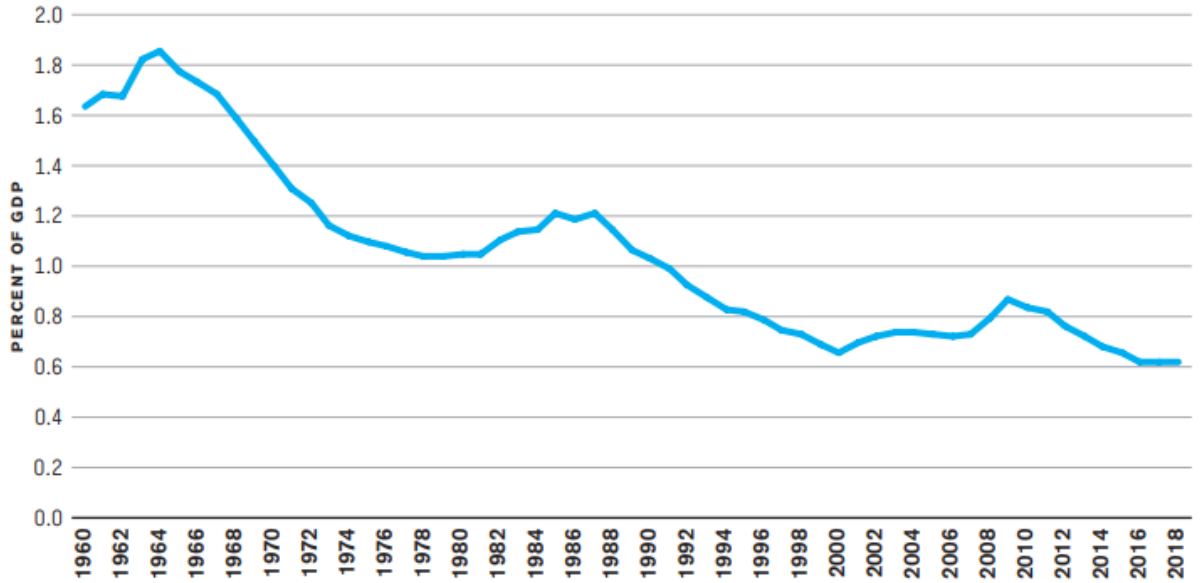
Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Gross domestic expenditure on R&D, 2000–2018



Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Federal government R&D investment as percent of GDP



Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

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of the 15 UN specialized scientific- and technology-related agencies are now led by China:

- International Telecommunications Union
- International Civil Aviation Organization
- United Nations Industrial Development Organization
- Food and Agriculture Organization

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In contrast, the United States leads one.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

A new innovation age calls for a new innovation game

The bottom-line is simple—to compete in the next economy requires playing a new innovation game, one whose goal is to **boost U.S. innovation tenfold: 10x.**

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

TO LEAD

USA must:

OUT IMAGINE

OUT INNOVATE

OUT COMPETE

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10x

- Leadership and National Strategies for Innovation
- Increasing the Number of Innovations Developed in & Deployed by the U.S.
- Increasing the Speed at which the U.S. Innovates
- Increasing the Number & Diversity of Americans Engaged in Innovation
- Whole of nation strategy
- Secure critical supply chains
- Support technologies that will shape industries of the future

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

How?

Establish the **White House National Competitiveness and Innovation Council** and parallel **State** Competitiveness and Innovation Councils to create a national vision for U.S. competitiveness and innovation in the 21st century global economy.

Restore federal R&D investment to 1960 levels of **2% of GDP**.

Extend the mission of national labs to encompass economic competitiveness and permit co-funding with private sector partners.

Launch new community-based public-private partnerships to support students and entrepreneurs, by **expanding invention and entrepreneurship curricula in pre-K through higher education**—to retain and grow regional innovation capacity.

Increase **SBIR funding**.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Strategic and Critical Technologies

- Establish national critical technology strategies
- Refresh and update the national lab infrastructure
- Establish management structure at national labs and universities that mandates and incentivizes use and deployment of Federal funded research
- Accelerate standards development
- Tax Incentives to deploy these technologies domestically
- Train workforce with skills to develop and leverage these technologies

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Developing & Deploying Emerging Tech

We need a new model of R&D organization that focuses and helps integrate the efforts of all parts of the innovation enterprise:

- Industry-driven, with partnerships that engage universities, national laboratories, and government
- Portfolio of real-world problem- or possibility-driven collaborative R&D
- Multi-disciplinary staffing
- Culture and focus on problem-solving, inventing, and making things (as opposed to academic research or product development)
- Training for STEM workers like in private sector R&D work
- Supporting ecosystem—patient capital, legal, regulatory, policy, entrepreneurial development, and economic development

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

The Opportunity in Biotechnology

A recent study suggests as much as **60% of the physical inputs to the global economy could be produced biologically**—one-third biological materials, and two thirds produced using biological processes (like bioplastics).

These applications alone could have a direct economic impact of up to **$4 trillion a year** over the next 10-20 years.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Spurring Innovations for More Sustainable Production & Consumption

- Leverage the U.S. patent system to stimulate sustainable inventions
- Launch a public-private effort to identify key technologies on which future sustainability is dependent & map business opportunities associated with them.
- Incentivize private investment and development of sustainable technologies. Modeled after the Orphan Drug Act, this could include instituting a designation process for sustainable & green technologies, offering a range of incentives for developing technologies that receive such a designation:
    - Tax credits for R&D
    - Prioritization of grants
    - National loan program
    - Compensatory patent extension programs

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Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Increasing the Number & Diversity of Americans Engaged in Innovation

- Expanding the U.S. map of innovators
- Breathing new life in declining U.S. regional economies by stemming the brain drain, injecting high skills, and raising innovation potential

- How do we increase the number of graduates staying close to home after graduation?
    - Local universities and companies should collaborate to **develop the innovation ecosystem and skill base of innovators**, providing opportunities to university students to encourage them to remain in the community as entrepreneurs and business leaders.
    - Federal and state governments could provide incentives—**tuition rebates or scholarships**—for students to remain in, or close to, the home community.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

Closing the Digital Divide

22.3% of Americans in rural areas and 27.7% in Tribal lands **lack coverage from fixed terrestrial 25/3 Mbps broadband**, as compared to only 1.5% of Americans in urban areas.

About 21.3 million Americans lack a broadband connection speed of at least 25/3 Mbps (current FCC benchmark).

13% of households in the U.S. do not have a **broadband Internet subscription**; in some states 20% of households do not.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.

With the right policies, the strengths and potential of the U.S. economy far outweigh the current challenges the nation faces on the path to higher growth and greater opportunity for all Americans.

Source: Council on Competitiveness. Competing in the Next Economy: The New Age of Innovation. 2020.