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INSTITUTE FOR
INTERNATIONAL SCIENCE
AND TECHNOLOGY POLICY

ELLIOTT SCHOOL OF INTERNATIONAL AFFAIRS

U.S. Innovation Policy Approach

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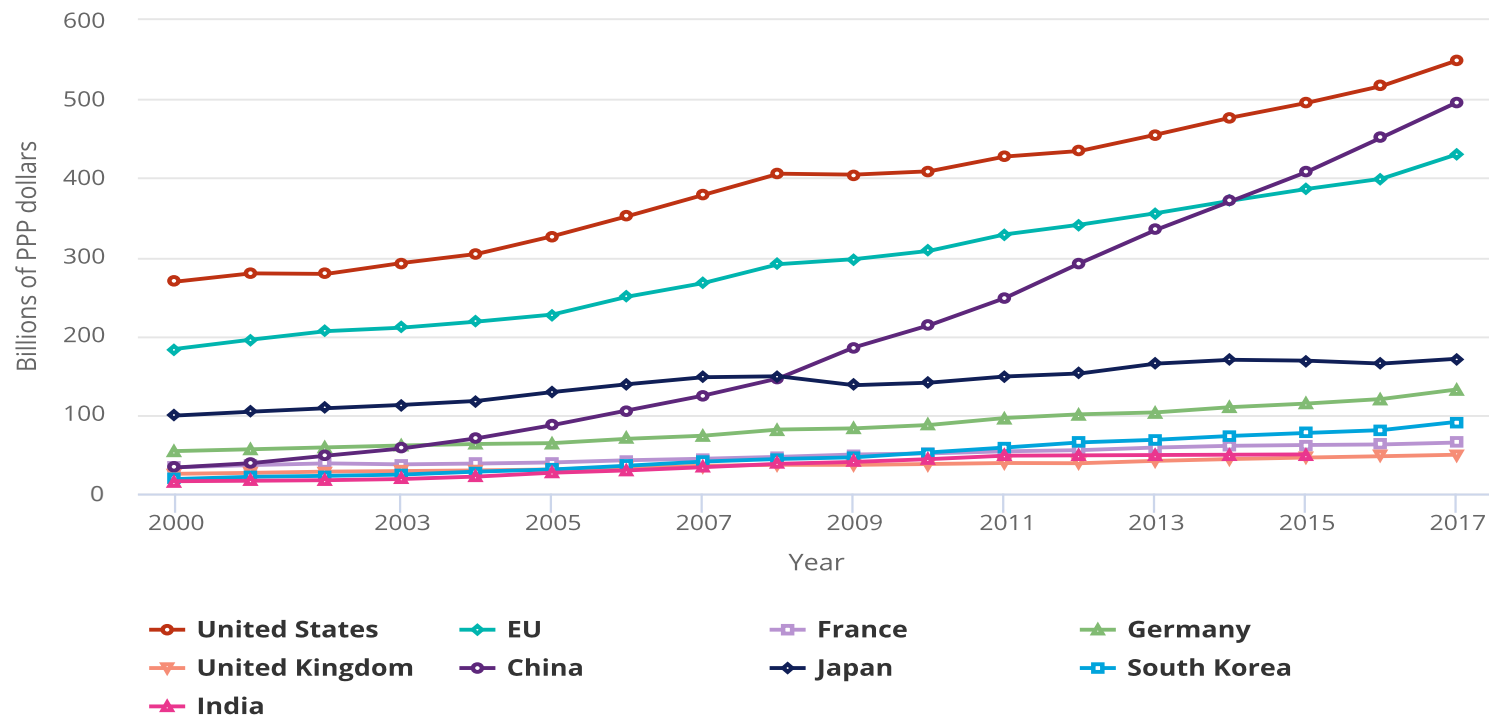
European Research Day

May 10, 2022



R&D expenditure trends

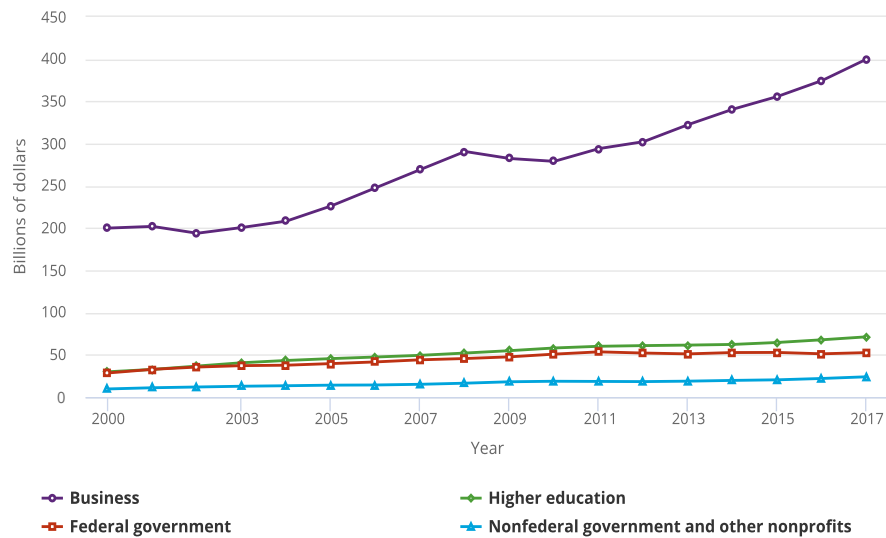
Gross domestic expenditures on R&D, by selected region, country, or economy: 2000–17



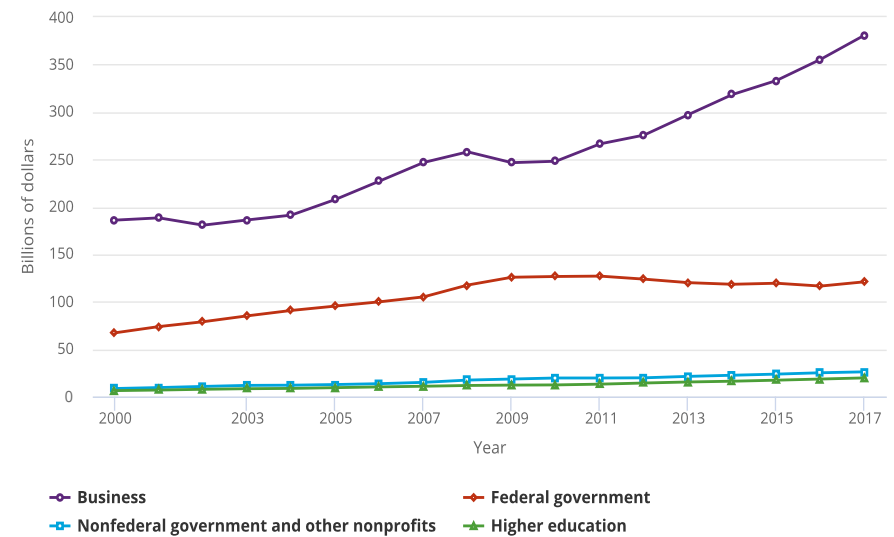
EU = European Union; PPP = purchasing power parity.

Domestic R&D performance & source of funds

U.S. R&D expenditures, by performing sector: 2000–17



U.S. R&D expenditures, by source of funds: 2000–17



I. Last Administration

Nicholas S. Vonortas with Brennan Hoban & Connor Rabb. “United States”, UNESCO Science Report 2021
(released June 11, 2021) <https://unesdoc.unesco.org/ark:/48223/pf0000377433>

Strategic Technology Platforms

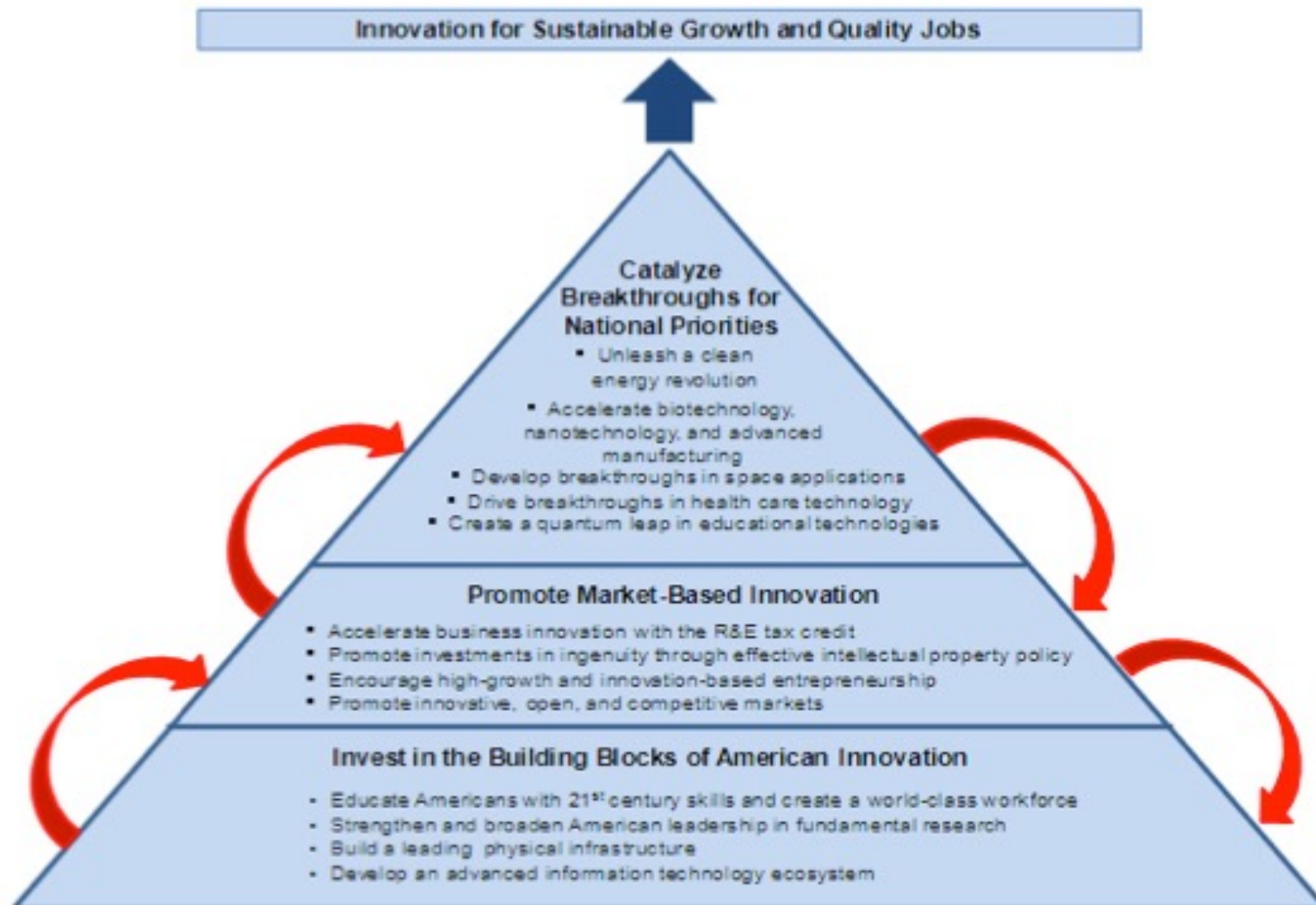
- Artificial Intelligence (AI)
- Quantum Information Science (QIS)
- Fifth Generation Mobile Network Technology (5G)
- Cybersecurity

Broad Strategic Initiatives

- Advanced Manufacturing
- Energy / Environment
- Health
- Space

II. Current Administration

Strategy for American Innovation 2011



Super Legislation: U.S. Innovation and Competition Act

(Bonvillian 4/25/2022)

Led by Sen. Chuck Schumer (D-NY) and Todd Young (R-Ind.) – 14 bipartisan sponsors - \$100 billion (current & new) , Administration support

U.S. technology history is littered with technologies innovated *here* in the U.S., that did not scale-up here, and were produced *there*.

Flat panel displays, solar panels, lithium ion batteries, drones, etc.

A core goal of this bill is to get the new critical technologies into range of industry acceptance – *here*. The new technologies require de-risking to get into the scope of risk and corresponding costs so industry can absorb and implement them.

Now: intense competition for tech leadership with China – expected to pass the US in gov't R&D support soon

Who will lead on AI, quantum, new high-performance computing, robotics, biotechnology, cybersecurity, advanced materials, energy tech?

Super Legislation: U.S. Innovation and Competition Act

Division A – Creating Helpful Incentives to Produce Semiconductors (CHIPS) Act &
ORAN 5G Emergency Appropriations

Division B – Endless Frontier Act (EFA)

Division C – Strategic Competition Act of 2021

Division D – Securing America's Future Act

Division E – Meeting the China Challenge Act of 2021

Division F – Other Matters

Title I – Competitiveness and Security for Education and Medical Research

Title II – Committee of the Judiciary

Title III – Other Matters

Endless Frontier Act: Elements

Focuses on a long list of advanced technology areas including:

- Artificial Intelligence (AI)
- Quantum science
- New high-performance computing and semiconductors
- Robotics (and automation and advanced manufacturing)
- Biotechnology
- Cybersecurity
- Advanced materials
- Advanced energy technology
- Advanced communication technology

Endless Frontier Act: Elements

(Bonvillian 4/25/2022)

New Technology Directorate at NSF

- NSF is our one major, broadly-focused R&D agency not tied to a specific, and narrower, mission. It does basic science research in a range of fields
- Legislation forms a technology-focused sub-unit within the agency – agency within the agency
- Some argue this will create a culture clash within NSF. But - long history of basic and more use-inspired, applied working in tandem and the cultures can be complementary – DARPA works alongside the Office of Naval Research, and ARPA-E alongside the DOE's Labs and Office of Science.
- Still, new Directorate will have to get out of NSF's basic science, peer-review culture – (perhaps a recipe for Europe's mission-oriented policies)
- Directorate is given DARPA-like powers

Endless Frontier Act: Elements

- Directs the Commerce Department to monitor U.S. critical supply chain resiliency issues and has a broad and general authority to set up financing and support mechanisms for U.S. production funded at “such sums as are necessary.”
- Adds provisions for the Commerce Department to greatly expand support for the Manufacturing Extension Partnership that works with small manufacturers.
- Increase funding for the Manufacturing USA institute network as well as to create additional institutes.

House Science Committee has a version of the bill. Now in conference.

Will it emerge? How?

THANK YOU!!

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