



Capsule highlights of a forum convened by the Comptroller General of the United States

Why GAO convened this forum

Nanotechnology is the control of matter in the size range of about 1 to 100 nanometers. The U.S. National Nanotechnology Initiative, begun in 2001, focuses primarily on R&D and represents a cumulative investment of almost \$20 billion. As other nations increasingly invest in nanotechnology, the U.S. faces rising global competition. Additionally, there are concerns about EHS risks. In July 2013, the Comptroller General of the United States convened a Forum on Nanomanufacturing in response to a congressional request; in January 2014, GAO issued a report to congressional requesters (GAO 2014; also identified as [GAO-14-181SP](#)). This booklet presents a capsule version of that report.

View [GAO-14-406SP](#). For more information, contact Timothy Persons, Chief Scientist at (202) 512-6412 or personst@gao.gov

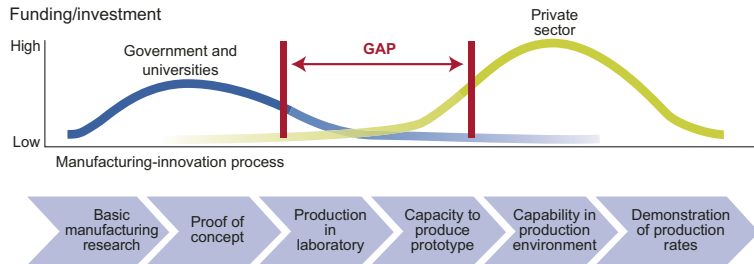
A capsule version of

Nanomanufacturing

Emergence and Implications for U.S. Competitiveness, the Environment, and Human Health

What forum participants said

Participants expressed 10 key views about nanomanufacturing. Notably, participants saw nanomanufacturing as a future megatrend, and they anticipated continuing scientific breakthroughs. Although participants viewed the United States as likely leading in nanotechnology R&D today, they foresaw intense global competition. They also identified emerging challenges to U.S. competitiveness in nanomanufacturing. For example, U.S. funding/investment gaps (one of which is illustrated below) may undermine U.S. innovators' attempts to transition nanotechnology from R&D to full-scale manufacturing—but such gaps do not apply to the same extent in some other countries or are being addressed. Participants also identified ways to enhance U.S. competitiveness in nanomanufacturing—and said that significant new efforts are needed in researching environmental, health, and safety (EHS) implications.



Funding/investment gap in the U.S. manufacturing-innovation process.

Source: GAO, adapted from Executive Office of the President.

Participants suggested two main considerations going forward: specifically, the need to, first, continue a high level of U.S. investment in R&D, and second, address four key issues—(1) challenges to U.S. competitiveness, (2) EHS implications, (3) uncertainty of available data on international investment, and (4) the current (potentially inadequate) level of U.S. participation in developing international standards.