

## **Battelle-R&D Magazine Global Funding Forecast Predicts Cautious Growth**

Battelle-R&D Magazine



*U.S. Still Leads in R&D Funding but Federal Budget Turmoil Having Specific, Real Impact on Defense and Aerospace Industries*

COLUMBUS, OH — Global research and development (R&D) spending is forecast to grow by 3.8 percent — or \$60.0 billion — to \$1.6 trillion in 2014, according to the closely watched annual forecast by [Battelle](#) [1] and [R&D Magazine](#) [2]. After a flat year of R&D spending in 2013, the U.S. is projected to show modest growth while China is expected to continue its two-decade upward trajectory in R&D investment.

**The full 2014 Global R&D Funding Forecast can be found [here](#) [3].**

“We are cautiously optimistic that U.S. R&D funding will improve after a flat 2013, largely attributable to growth in private sector R&D spending,” said Martin Grueber, a Battelle research leader, and co-author of the report. “However, federal funding has become difficult to forecast because of the breakdown of orderly budget processes.”

The U.S. remains the world’s largest R&D investor at a globally competitive level of research intensity. The Battelle-R&D Funding Forecast projects U.S. investments to equal 2.8 percent of the U.S. Gross Domestic Product (GDP). United States research activity is projected to increase by 3.2 percent to \$465 billion in 2014, a 1.0 percent increase in real dollar terms. This is significant in that R&D directly employs more than 2.7 million U.S. residents in the public and private sectors and indirectly supports an additional 6 million jobs throughout the U.S. economy.

The outlook contains a degree of uncertainty because of the various budgetary

paths federal lawmakers could take. Increases could result either as a result of mitigation of the federal budget sequestration or the enactment of a budget that prioritizes R&D. Among the scenarios considered for this report, the reasons this scenario was selected include: General acknowledgment that R&D has both short- and long-term returns to the economy; concern about maintaining U.S. innovation-based competitiveness at a time when other nations are catching up in R&D spending, capability and output; and the apparent bipartisan support for publicly funded R&D.

**Federal Outlook:** The U.S. federal government is expected to fund \$123 billion of R&D in 2014—an increase of 1.5 percent, largely to agencies that focus on basic research like the National Institutes of Health (NIH), the National Science Foundation (NSF), and the Department of Energy’s Office of Science. [Read more here](#) [4].

**Industry Outlook:** Industrial funding of R&D in the U.S. is expected to rebound from 2013, increasing by 4 percent to \$307.5 billion in 2014. Although many individual firms and some industries increased investments in 2013, industry investment in R&D as a whole was flat due to the slow global economy, continued rationalization of R&D activities in selected industries and the private-sector impact of federal budgets and sequestration. Industries that supply and support the federal government—notably aerospace, defense and security—also were subject to funding reductions and increased uncertainty. The impact on revenue led many firms to restrain internal R&D activity and these cautious strategies are likely to continue in 2014. [Read more here](#) [4].

**Academic Outlook:** Academic R&D performance in the U.S is expected to increase by 2.2 percent to \$62.9 billion. This growth stems from the forecast’s optimistic projection of slight increases in federal R&D funding. [Read more here](#) [5].

**Global Outlook:** The broad patterns of R&D spending are not expected to change significantly in 2014, but regional shifts are occurring. Asian share of global R&D continues to increase, driven by China, Japan and Korea, while U.S. and European shares decrease. At the current rates of growth and investment, China’s total funding of R&D is expected to surpass that of the U.S. by about 2022. [Read more here](#) [6].

## Trends

Significant R&D investments by Western countries in long-range technology platforms such as robotics, high-performance computing, social media, software, cost-effective energy sources and nanobiotechnology could stimulate rapid industry-scale economic growth.

The civilian and defense aerospace industries are seeing the creation of more efficient, cost-effective capabilities that are offsetting reduced government funding. These are occurring via internal R&D and technological integration in materials, electronics and communication and surveillance technologies.

## Industry Snapshots

**Life Sciences:** The biopharmaceutical sector accounts for 85 percent of all expenditures in the life sciences industry that also includes medical instruments and devices, animal/agricultural bioscience and commercial life science research and testing. The global industry is forecast to have a healthy recovery after a flat 2013, increasing 3.1 percent to \$201 billion in 2014. In the U.S., a small projected rebound of 2.2 percent would increase spending to about \$93 billion, with growth primarily coming from smaller biopharmaceutical innovators and medical device manufacturers. A complicating factor in the coming year is the Affordable Healthcare Act which could create vulnerabilities or new markets as the number of people with healthcare expands. [Read more here](#) [7].

**Information and Communication Technologies:** This industry is the largest private-sector R&D investor in the U.S., performing nearly one-third of the total, and is expected to grow by 5.4 percent to \$146 billion in 2014. U.S. firms also are dominant globally and will account for more than half of the industry's worldwide R&D expenditures of \$257 billion in 2014. Cloud computing and associated technologies will remain the major R&D thrust for the foreseeable future. [Read more here](#) [8].

**Aerospace, Defense and Security:** The economic and policy climate indicates a small decline in 2014 and a negative 1.2 percent retrenchment is forecast for this \$12.6 billion industry in the U.S. Global industry R&D spending remains stable due to growth among major non-U.S aerospace firms in Asia, Russia and Europe, reaching \$26.4 billion in 2014. [Read more here](#) [9].

**Energy:** The level of energy industry R&D is projected to increase in the U.S. by 1.7 percent to \$7 billion and increase by 4.8 percent globally reaching nearly \$22 billion. Respondents to the R&D Funding Forecast survey identify biofuels research as the most significant development area, although it still faces challenges in reaching economically competitive production levels. [Read more here](#) [10].

**Chemistry and Advanced Materials:** The forecast for R&D growth in the chemical and advanced materials industry reflects the improving global economy and the key markets the industry serves. Spending is expected to grow in the U.S. by 3.6 percent, reaching \$12 billion in 2014, while overall global R&D is expected to grow at slightly higher rate of 4.7 percent to \$45 billion. [Read more here](#) [11].

## About the Report

This year's report is the 56<sup>th</sup> annual R&D Funding Forecast created by R&D Magazine and the 20<sup>th</sup> done jointly with Battelle. The forecast draws upon information from a variety of sources, including the National Science Foundation, the American Association for the Advancement of Science, the International Monetary Fund and the White House Office of Science and Technology policy. See other source material [here](#) [12].

A PDF of the [14 Global Funding Forecast](#) [13] can be downloaded at

<http://www.rdmag.com/articles/2013/12/2014-r-d-magazine-global-funding-forecast>  
[3]

Hard copies of the report are available by contacting Battelle's Sandy Walker at (614) 424-7610 or [walkers@battelle.org](mailto:walkers@battelle.org) [14].

## About Battelle

Every day, the people of Battelle apply science and technology to solving what matters most. At major technology centers and national laboratories around the world, Battelle conducts research and development, designs and manufactures products, and delivers critical services for government and commercial customers. Headquartered in Columbus, Ohio since its founding in 1929, Battelle serves the national security, health and life sciences, and energy and environmental industries. For more information, visit [www.battelle.org](http://www.battelle.org).

## About R&D Magazine

Since its founding in 1959 as Industrial Research, R&D Magazine has served research scientists, engineers and technical staff at laboratories around the world, providing timely, informative news and useful technical articles that broaden readers' knowledge of the research and development industry and improve the quality of their work. R&D Magazine is a publication of [Advantage Business Media](#) [15].

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## Links:

[1] <http://www.battelle.org/>

[2] <http://www.rdmag.com/>

[3] <http://www.rdmag.com/articles/2013/12/2014-r-d-magazine-global-funding-forecast>

[4] [http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=8](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=8)

[5] [http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=11](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=11)

[6] [http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=12](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=12)

[7] [http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=22](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=22)

[8] [http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=24](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=24)

[9] [http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=26](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=26)

[10]

[http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=28](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=28)

[11]

[http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=30](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=30)

[12]

[http://www.battelle.org/docs/tpp/2014\\_global\\_rd\\_funding\\_forecast.pdf#page=35](http://www.battelle.org/docs/tpp/2014_global_rd_funding_forecast.pdf#page=35)

[13] [http://www.rdmag.com/sites/rdmag.com/files/gff-2014-5\\_7%20875x10\\_0.pdf](http://www.rdmag.com/sites/rdmag.com/files/gff-2014-5_7%20875x10_0.pdf)

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[15] <http://www.advantagebusinessmedia.com/>