Biotechnology Innovation Organization

THE SUCCESSFUL PARTNERSHIP OF PUBLICLY-FUNDED RESEARCH & PRIVATE SECTOR INNOVATION

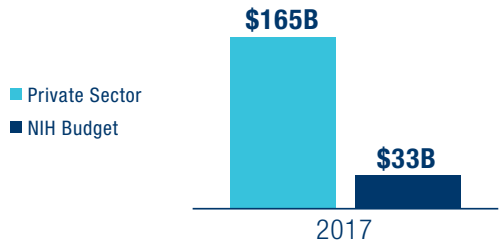
While basic research supported by public funding is critical to the advancement of some biopharmaceutical innovation, private entities take this foundational knowledge and invent practical applications that result in real-life treatments and cures for patients.

- For the 210 new molecular entities approved between 2010 and 2016, **roughly 30%** of the relevant scientific literature concerning those drugs or their targets arose from NIH-funded research and roughly **70% arose from private or non-NIH-funded research.**
- Further, almost all (96%) of this NIH-funded research was basic research regarding biological targets, not the drugs themselves.
- NIH defines basic research as "the systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts **without specific applications towards processes or products in mind."**
- Private entities take this foundational knowledge and invent practical applications that solve real-life problems.

Source: Cleary et al., Contribution of NIH Funding to New Drug Approvals 2010-2016, PNAS (2018).

Biopharmaceutical companies spent nearly $165 billion on drug development in 2017.

GLOBAL PRIVATE SECTOR R&D VS. NIH BUDGET



Source: NIH.gov; Factset, EvaluatePHarma, BIO Industry Analysis, October 2018

About **90%** of new drugs originate entirely from industry research.

Source: Stevens et al., The Role of Public-Sector Research in the Discovery of Drugs and Vaccines, New Engl. J. of Med. (2011); 364:535-41.

United States biopharmaceutical companies:

Reinvest more of their revenue into R&D **than any other industry.**

Fund **nearly 1/4** of all R&D conducted by U.S. industries.

Will spend **$204B annually** on drug development **by 2024.**

Paid **$1B** in royalties to the federal government between 2011 & 2018 to support future basic research.

Source: EvaluatePharma, World Preview 2018, Outlook to 2024 (2018)