

Health-Related R&D Expenditures and Their Implications

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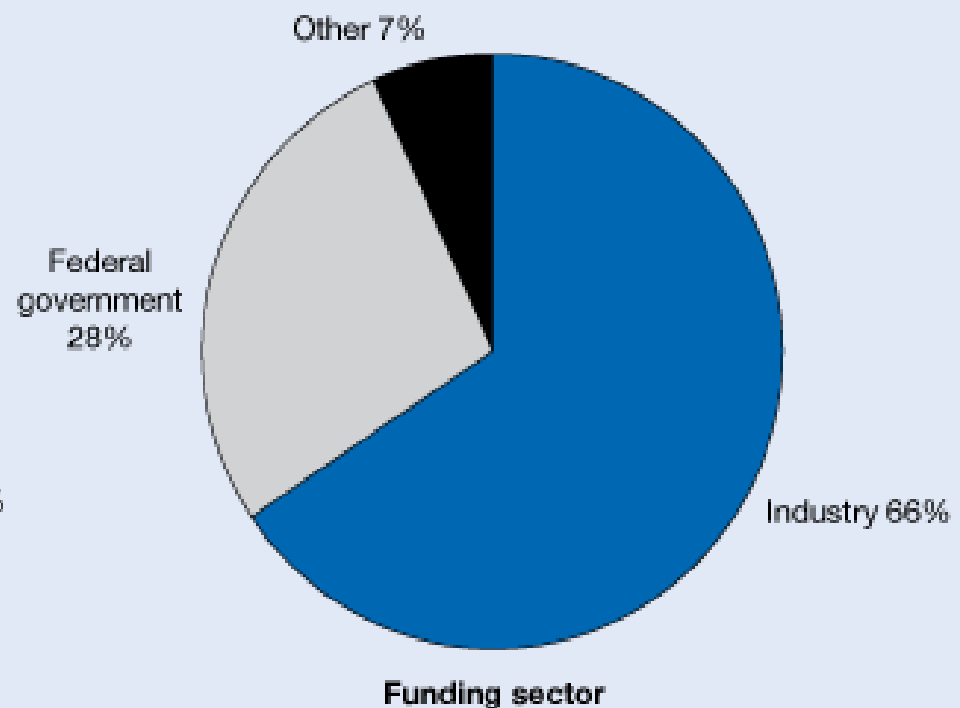
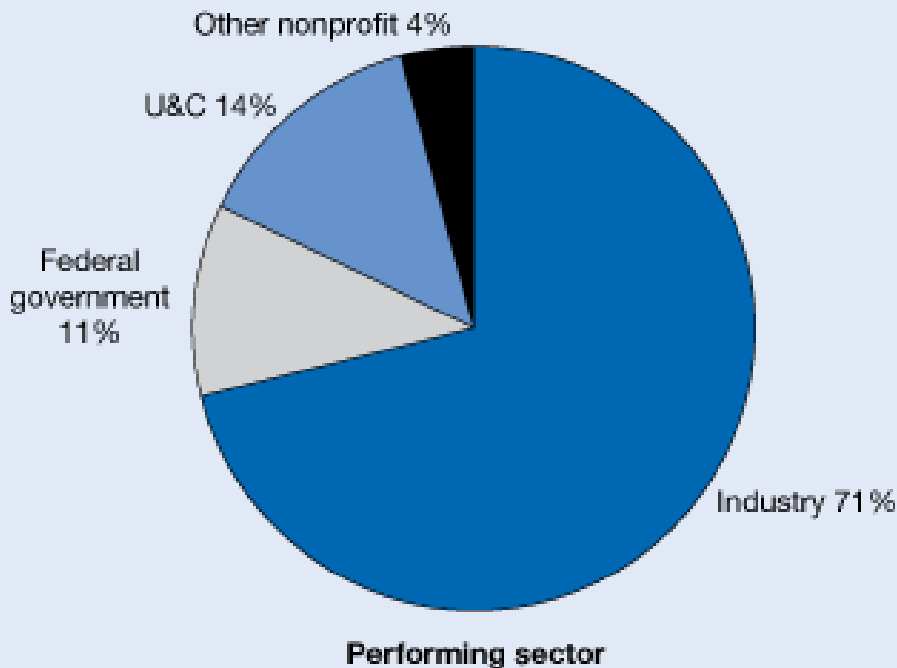
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Measuring the Nation's Economy.



Figure 1. Data on R&D

R&D Reported in NSF, *Science and Engineering Indicators Report 2008*:
R&D by Performer (who does the R&D) and Source (who pays for it) in 2006



Classification

- Most R&D financed and performed by industry; R&D divided by NAICS categories
- Health-related R&D *performed* in:
 - Pharmaceuticals,
 - Medical equipment and supplies, and
 - Medical services
- R&D supported by NIH easily classified as health-related
- Academic R&D divided by mutually exclusive fields
 - Includes “medical sciences,” but can fall under other categories.
 - Example: biology and engineering (includes biomedical engineering).

BEA/DOC/NSF Plans for Innovation in NIPAs

- January 2008, report to Secretary of Commerce on “Innovation Measurement”
- “Outcomes of innovation activity need to be tracked and measured to determine fully the impact of innovation on the economy.”
- Advisory Committee called for “supplemental innovation account.”
- An examination of Health-Related R&D as contribution to this effort.

Health-related R&D is a Key Source of Growth According to BEA's R&D Satellite Account Analysis

- R&D “satellite account provides detailed statistics ... to facilitate research into the effects of R&D on the economy.”
- “Shows how ... GDP ... would be affected if R&D spending were ‘capitalized’ ...”
- “Largest contribution from R&D intensive industries to real GDP growth rates for 1995-2004 ... from the pharmaceutical and medicine manufacturing industry.”
- “Contribution would have accounted for more than a 1-percent share of the real GDP growth rate.”

(From Carol A. Robbins and Carol E. Moylan, “Research and Development Satellite Account Update,” *Survey of Current Business*, October 2007.)

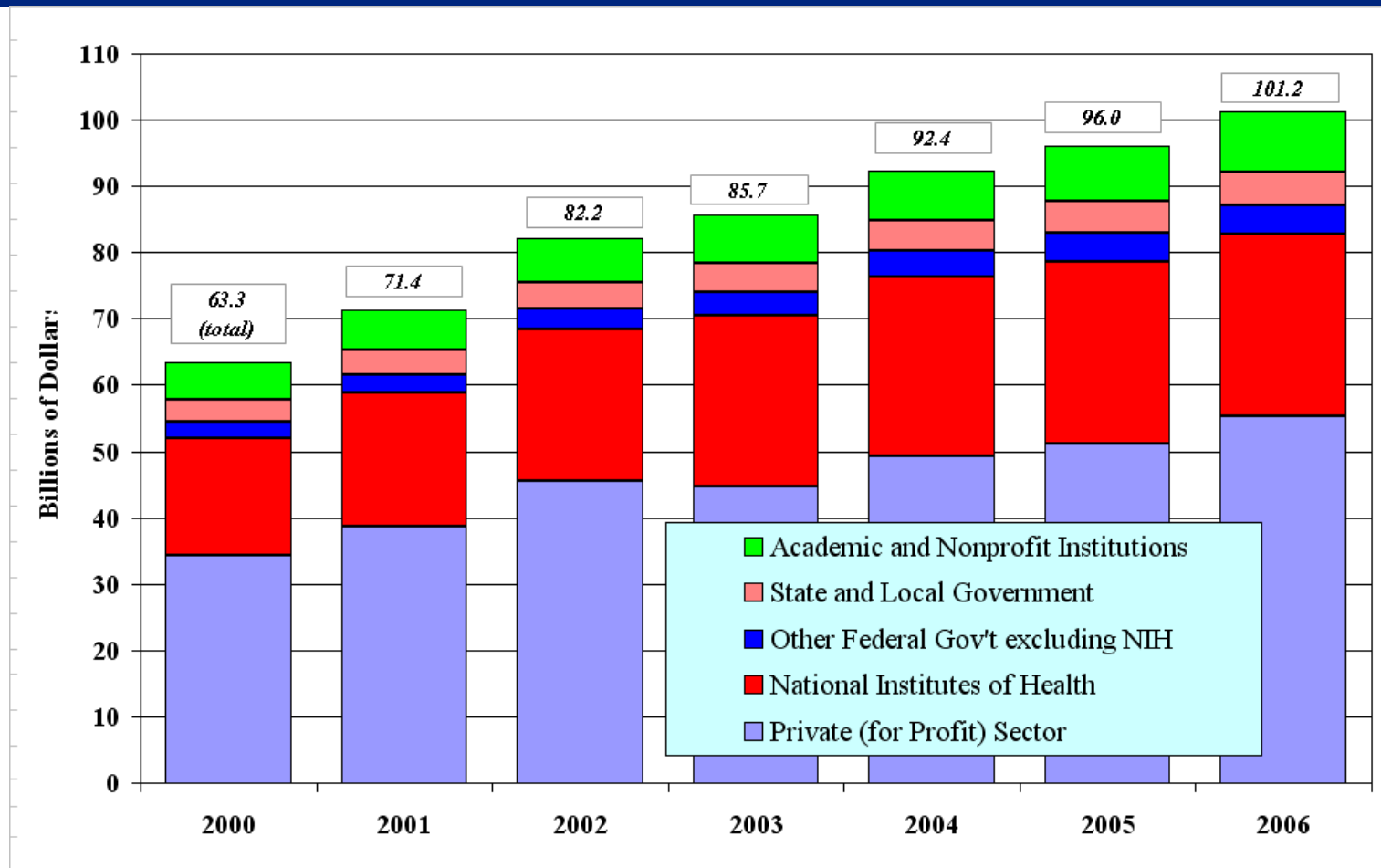
Defining “Health-Related R&D”

- R&D for maintaining or improving human health
- or supporting the functions and comforts associated with human health (e.g., assisted mobility), either:
 - Directly, as in the development of vaccines, or
 - Indirectly, by advancing fundamental knowledge
- Must involve expertise in the subject matter of human health itself.

Stages of the ComSci Research Project

- Literature Review; examples of literature:
 - Moses et al, "Financial Anatomy of Biomedical Research," *Journal of the American Medical Association*, 2006.
 - Research!America, "2006 Investment in U.S. Health Research"
- Piecing together additional data from various sources, such as NSF, PhRMA, and AAAS
- Compiling estimates of health-related R&D by source of funding (industry, government, universities, nonprofit organizations)
- Examining share of health-related R&D among total R&D, and trends

Figure 2. Health-Related R&D in the United States by Major Source of Funds, 2000-2006*

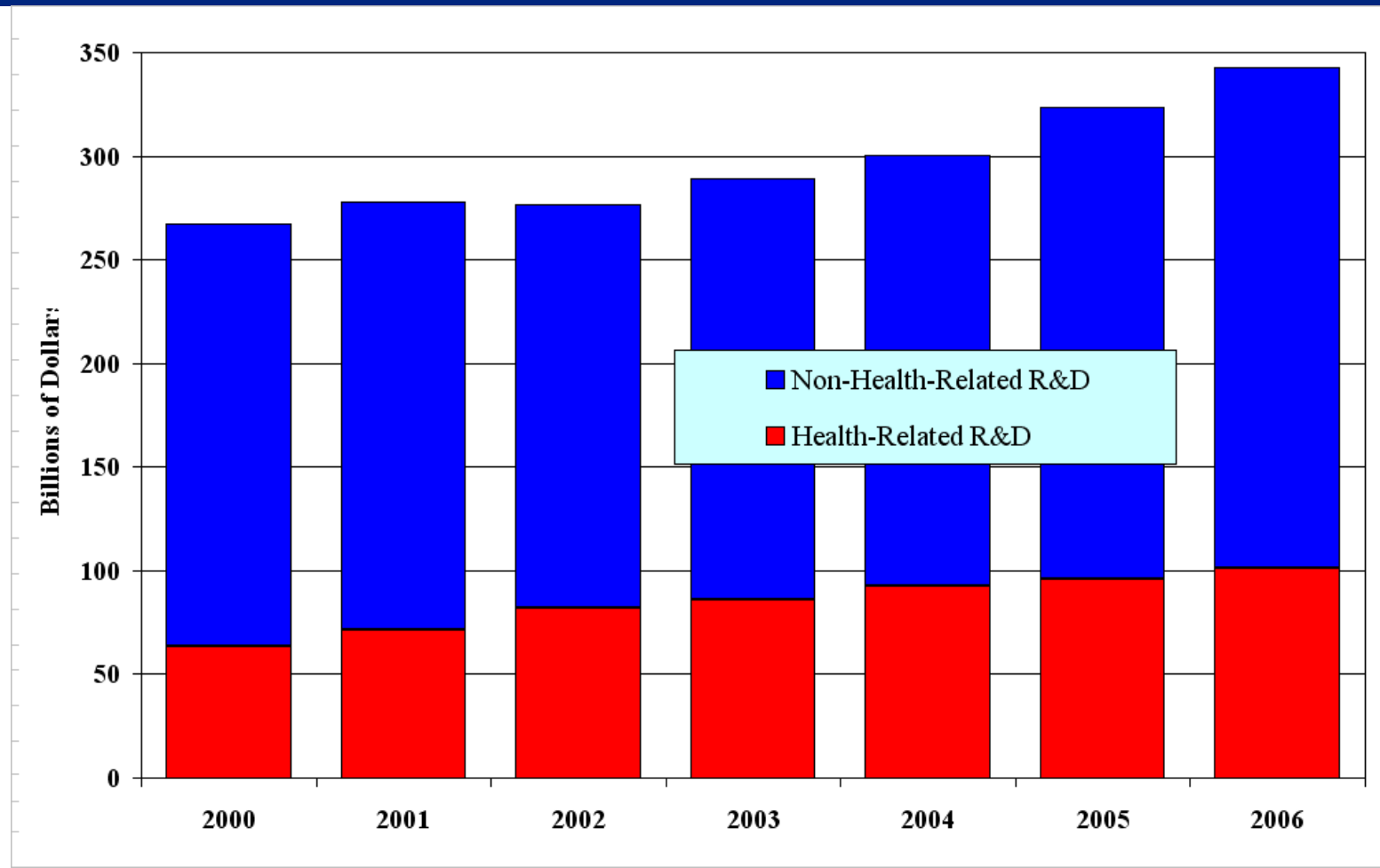


*These estimates were prepared in collaboration with Dr. Jim Schuttinga, Office of the Director, NIH.

Table 1. Health-Related R&D in Perspective (2006)

Source of Funds	Health-Related R&D (\$ Billions)	Total R&D (\$ Billions)	Health R&D as a Percent of Total
Total	101.2	342.9	29.5
Private Industry	55.2	223.0	24.8
Federal Government	31.8	96.8	32.9
Non-Defense Federal (Estimate)	31.0	44.5	69.7
Defense, Federal (Estimate)	0.8	52.3	1.6
State and Local Government, Nonprofit Organizations, and Academic Institutions	14.1	23.0	61.4

Figure 3. Health-Related R&D as a Share of Total R&D in the United States, 2000-2006



Source of Total R&D Expenditures: National Science Foundation, 2008.



Figure 4. Average Annual Growth Rates of Health-Related R&D by Source of Funds, 2000-2006

