

U.S. R&D

The principal funders of U.S. R&D (~\$400 billion total in 2009) are the private (business) sector, which funds approximately 62% of all U.S. R&D, and the Federal Government, which funds 31%.¹ The NSB companion report, *R&D, Innovation, and the S&E Workforce*, highlights a nationwide decline in business funding for R&D from 2008 to 2009 (from \$259B in 2008 to \$247B in 2009). Federal funding from the American Recovery and Reinvestment Act (ARRA) partially compensated for this decline. Consequently, total U.S. R&D funding was flat from 2008 to 2009. The companion report noted a variety of other related trends, including a decline in venture capital funding and a shift away from early-stage, riskier venture capital investments during the period between 2007 and 2009.

Michigan R&D

The 50 states and the District of Columbia vary in the amount of R&D they perform. Data on the top 10 states in R&D performance² by sector and R&D intensity³ for 2008 can be found in the NSB companion report in the table on page 13.⁴ In 2008, among all U.S. states, Michigan's estimated rank was 8 for total⁵ R&D performance (\$15.51B), and 10 for R&D intensity (4.1%).

Michigan Business R&D

According to the most recent data from NSF's National Center for Science and Engineering Statistics (NCSES) *Business R&D and Innovation Survey* (BRDIS), funds spent by Michigan businesses⁶ for R&D performed in the U.S. declined 12.7% from 2008 to 2009 (\$13.74B to \$12.00B). In 2009 (most current data available), Michigan's estimated rank was 6⁷ in funds spent by Michigan-based businesses for R&D performed in the U.S. (California was first with \$64.9B in 2009).

Federal R&D Funding Obligations to Michigan

According to the NCSES *Survey of Federal Funds for Research and Development*, in 2008, \$1.87B in total Federal R&D⁸ was obligated to entities⁹ within Michigan. In 2009, \$2.41B in total Federal R&D was obligated to Michigan. Of the 2009 Federal R&D obligations, ARRA accounted for \$217.20 million. In 2009, Michigan ranked number 18 in total Federal R&D dollars obligated to the state (including ARRA funds obligated in 2009¹⁰).¹¹

Other Michigan-based Data: Additional Michigan-related data and trends can be found in [chapter 8](#) of *Science and Engineering Indicators 2012*, regularly published data updates on the NCSES [Web site](#), and in the NCSES [state profiles](#).

Contact: If you have any questions regarding the NSB companion report, *R&D, Innovation, and the S&E Workforce*, or the data discussed above, please contact Dr. Matthew Wilson at mbwilson@nsf.gov or 703-292-4510.

¹ See *Science and Engineering Indicators 2012*, Figure 4.3.

² NSF tracks the R&D spending patterns of all the major performers in the overall U.S. R&D system: businesses, intramural R&D activities of Federal Agencies, federally funded R&D centers (FFRDCs), universities and colleges, and other nonprofit organizations.

³ R&D intensity is the ratio of total R&D performed in a state to its GDP.

⁴ Also, see pages 4-11 and 4-12 in *Science and Engineering Indicators 2012*, and *National Patterns of R&D Resources: 2009 Data Update*, Table 10.

⁵ Includes in-state total R&D performance of business sector, universities and colleges, Federal Agencies, federally funded research and development centers, and federally funded nonprofit R&D.

⁶ Data were attributed to the state where the R&D was performed.

⁷ Out of 51 (50 states and District of Columbia)

⁸ Total Federal R&D includes R&D and R&D plant. *R&D plant* is defined as R&D facilities and fixed equipment. Only 11 agencies are required to report data for this section of survey: Departments of Agriculture, Commerce, Defense (DOD), Energy, Health and Human Services, Homeland Security, the Interior, and Transportation; Environmental Protection Agency; National Aeronautics and Space Administration; and National Science Foundation. Obligations of these 11 agencies represented over 98% of total Federal R&D and R&D plant obligations in FY 2009.

⁹ These entities include intramural performers (agencies of the Federal Government) and extramural performers (industry, universities and colleges, non-profits, and state/local governments).

¹⁰ This includes ARRA funds distributed to Michigan for R&D in FY 2009. Additional ARRA funds for R&D may have been received by entities in Michigan in subsequent years.

¹¹ See *Survey of Federal Funds for Research and Development*, Tables 82, 122, and 124.