



Indiana R&D 2010



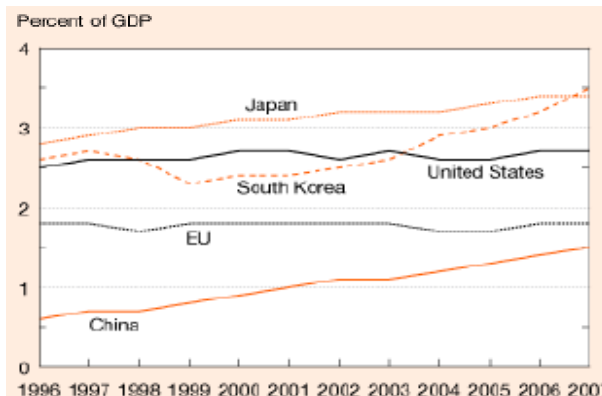
Research & Engineering Investments for Economic Growth

America's economic recovery requires more federal investment in basic scientific research. Overall scientific research and development (R&D) promotes economic development, job growth, national security, competitiveness and global leadership. Recent efforts to double our investment in R&D over a ten-year period may help turn the tide, but U.S. leadership continues to narrow across a broad range of indicators when compared to the rest of the world.

A National Science Foundation (NSF) study found that 73% of the science papers cited in industry patents were funded by taxpayers through the federal government, especially university research operations.¹

Indiana contractors earned \$395,882 million in federal R&D contract expenditures in FY 2009, with approximately 122 contractors involved.² This amount *does not include* federal grants and loans for R&D activities. Information and charts on this page demonstrate the importance of federal investment in R&D to Indiana's economy, and its future in the global marketplace.

U.S. R&D Expenditures as Percentage of GDP Compared to Strategic Competitors 1996 - 2007

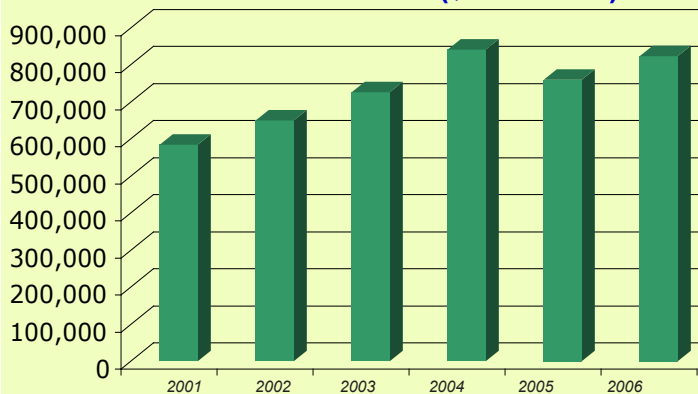


Wither America's Jobs? U.S. Advanced Technology Exports (ATE) Collapse — U.S. in ATE Trade Deficit Since CY 2002*



* All figures in billions of CY '07 dollars. Source: U.S. Census Bureau FT900: U.S. International Trade in Goods and Services (aggregated data). See www.census.gov/foreign-trade data series.

Federal R&D Funding to Indiana Colleges & Universities FY 2001-2006 (\$ thousands)



SOURCE: National Science Foundation/Division of Science Resources Statistics, Survey of Research and Development Expenditures at Universities and Colleges, FY 2006.

For more information and explanations of the summary data sets presented on this page, ASTRA Members can contact ASTRA with specific requests. Contact rboege@comcast.net for details.

Top 5 Known Indiana Congressional Districts Where Federal R&D Contracts Performed FY 2009²

| | |
|----------------------------|---------------|
| Indiana 3 (Mark E. Souder) | \$198,287,058 |
| Indiana 7 (André Carson) | \$110,632,469 |
| Indiana 4 (Steve Buyer) | \$35,962,208 |
| Indiana 8 (Brad Ellsworth) | \$16,572,688 |
| Indiana 2 (Joe Donnelly) | \$15,705,538 |

Key Reports and On-line Resources:

- **ASTRA's State Innovation Index®** is a flexible, user-defined on-line tool for comparing relative performance by your state to other states across 300 innovation indicators. ASTRA's 14-Point Program, part of its *Riding the Rising Tide Report*, shows how America can regain its scientific & technology lead. A comprehensive set of analytical tools and policy reports on innovation and R&D policy are also found at www.usinnovation.org and www.aboutastra.org, the two ASTRA Web Sites.
- The **Science-Engineering-Technology Working Group (SETWG)** sponsors the annual Congressional Visits Day Program. See www.agiweb.org/gap/cvd/cvd2010/index.html
- **Science & Engineering Indicators 2010**, published by the National Science Board, provides a broad base of quantitative information on the U.S. and international science and engineering enterprise. It is created biennially by the National Science Foundation's Division of Science Resources Statistics (SRS). See www.nsf.gov/statistics/sind10/

Top 10 Recipients of Federal R&D Contracts² Performed in Indiana FY 2009*

| | |
|---------------------------------|---------------|
| ITT Corporation | \$108,495,113 |
| Rolls-Royce Group, PLC | \$106,626,064 |
| Raytheon Company | \$76,320,753 |
| Pitney Bowes Inc. | \$25,227,768 |
| Day & Zimmermann Group Inc | \$14,163,132 |
| University of Notre Dame Du Lac | \$12,760,974 |
| Northrop Grumman Corporation | \$5,977,348 |
| Trustees of Indiana University | \$5,771,931 |
| ERAPSCO | \$4,200,000 |
| Nuvant Systems Inc | \$3,492,000 |

* Note: R&D contract amounts do not include management and administrative fees for the operation of Government-Owned, Contractor-Operated (GOCO) facilities under OMB definitions.

Top 5 Federally-Funded R&D Products or Services Sold in Indiana FY 2009²

| | |
|--------------------------------|---------------|
| R&D — Other Space-OpSys Dev | \$103,533,301 |
| Defense Aircraft — Applied R&D | \$50,695,524 |
| Defense Elect. & Comm. R&D | \$44,672,456 |
| Undisclosed Code | \$42,711,311 |
| Other Defense — Applied R&D | \$42,046,402 |

The 2010 CVD State R&D Sheet State Series are made possible by the American Chemical Society www.acs.org; IEEE-USA www.ieee-usa.org; SPIE-The International Society for Optical Engineering www.spie.org; and MRS The Materials Research Society www.mrs.org



How Indiana Ranks 2010

| Rank | General Demographic & Economic Indicators ³ | Indiana | Total U.S. |
|------|--|-----------|----------------|
| 16 | Indiana's Population as of July 1, 2009 | 6,423,113 | 304,059,724 |
| 16 | Indiana's Civilian labor force, 2009 (thousands) | 3,108 | 153,203 |
| 41 | Indiana's Personal income <i>per capita</i> , 2008 (\$) | \$34,605 | \$40,208 |
| 20 | High Tech Employment in Indiana's Workforce, 2008 | 90,840 | 5,781,460 |
| 18 | Gross State Product, 2009 (\$ billions) | \$246.4 | \$13,972.3 |
| 45 | Federal R&D Obligations per Civilian Worker 2007 | \$187 | \$764 |
| 15 | Business R&D in Indiana 2007 (current \$ millions) | \$4,939 | \$265,919 |
| Rank | Academic Indicators & Degree Production ³ | | |
| 18 | Advanced S&E Degrees Awarded, 2007 | 2,880 | 150,127 |
| 21 | Bachelor's Degree Holders or Higher Among Individuals 25-44 Yrs. Old in Indiana, 2007 | 431,559 | 24,856,576 |
| 24 | Federal R&D Expenditures at Universities & Colleges, all sources, FY 2006 (\$ thousands) | \$392,583 | \$30,033,156 |
| 15 | State & Local Govt. R&D Expenditures at Universities & Colleges, FY 2006 (\$ thousands) | \$62,201 | \$3,016,240 |
| 11 | Industry R&D Expenditures at Universities & Colleges, FY 2006 (\$ thousands) | \$62,684 | \$2,427,627 |
| 12 | Institutional R&D Expenditures at Universities & Colleges, FY 2006 (\$ thousands) | \$248,207 | \$9,062,058 |
| Rank | NCES Key Educational Statistics — Public Schools (latest) ⁴ | | |
| 27 | Expenditure per Pupil 2007-2008 School Year | \$9,175 | \$9,154 |
| 14 | Enrollment in Public Elementary & Secondary Schools 2007-2008 | 1,046,766 | 966,519 (avg.) |
| 16 | Number of Full Time Equivalent (FTE) Teachers, 2006 - 2007 | 61,315 | 3,181,494 |
| Rank | Workforce Indicators ³ | | |
| 22 | Employment in High-Tech Establishments in Indiana, 2006 | 224,644 | 13,733,632 |
| 35 | Individuals in S&E Occupations as Share of Workforce in Indiana, 2008 (percentage) | 2.81% | 3.75% |
| 21 | Employed S&E Doctorate Holders in Workforce in Indiana, 2006 | 9,870 | 618,370 |
| 19 | Engineers in Workforce in Indiana, 2008 | 30,780 | 1,626,330 |
| 28 | Life & Physical Scientists as Share of Workforce in Indiana, 2008 (percentage) | .36% | .40% |
| Rank | R&D Spending by Source, R&D Indicators, Awards, & Patents ³ | | |
| 24 | SBIR Funding for Indiana Small Businesses, 2006-2008 (current \$ thousands) | \$16,932 | \$1,731,667 |
| 30 | Avg. Annual Federal SBIR Funding per \$1 million of GDP in Indiana, 2006-2008 | \$69 | \$127 |
| 17 | Academic R&D in Indiana, 2008 (\$ thousands) | \$954,188 | \$51,784,120 |
| 23 | Patents Awarded per 1,000 indiv. in S&E Occupations in Indiana in 2008 | 10.8 | 13.4 |
| 35 | Hi-Tech Share of business establishments in Indiana, 2006 (percentage) | 6.73% | 8.35% |
| Rank | Venture Capital & Entrepreneurial Indicators ^{5, 3} | | |
| 23 | Number of Deals CY 2009 | 16 | 2,802 |
| 17 | Venture Capital Investments in 2009 (millions of 2009 \$) | \$159.4 | \$17,690.7 |
| 23 | Net High-Tech Business Formations in Indiana, 2006 | 164 | 14,031 |

Sources: 3. *Science & Engineering Indicators 2010*, National Science Board and National Science Foundation / Science Resources Study Division; 4. U.S. Department of Education, National Center for Education Statistics, various report series; 5. National Venture Capital Association www.nvca.org

** rankings include the District of Columbia



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