

## A

- Abbott Laboratories, 6.34*t*
- Academic research and development, O.9. *See also* Research and development (R&D)
  - applied work, 5.36
  - basic, 4.12–13
  - cooperative research agreements, 4.34
  - cyberinfrastructure, 5.20–22
  - doctoral workforce
    - distribution
      - academic position, 5.31–32, 5.33*t*
      - age, 5.26*f*
      - birthplace, 5.29*f*
      - degree field, 5.33*t*
    - diversity, O.19–20
    - employment
      - academic appointment, 5.24*f*
      - growth rate, 5.23*t*
      - institution, 5.24*f*
    - federal support, O.20, 4.23–24
    - by field, 5.32–33
    - full time, 5.24
    - by institution type, 5.31, 5.32*t*
    - minorities, 5.27–29
    - nonfaculty, 5.24
    - part time, 5.24
    - postdocs, 5.24
    - recent degree recipients, 5.24–25
      - tenure-track status, 5.25*f*
    - research activities, 5.30
    - by research involvement, 5.34*f*
    - retirement patterns, 5.25–26
    - size, 5.29–33
    - tenure-track positions, O.19, O.20*f*
      - recent degree recipients, 5.25*f*
    - women, 5.26–27
    - work responsibilities, 5.30
  - equipment, 5.18
  - expenditure, O.18–19
    - by character of work, 5.11*f*
    - components, 5.16
    - by country, 4.53*f*
    - federal and nonfederal, 5.11*f*
    - by field, 5.12–14
    - by funding source, 5.12–14
    - laboratory construction, O.19, O.20*f*
    - by university ranking, 5.17*f*
    - ratio to GSP, 8.66–67
    - by S&E field, 4.54*f*
  - financial resources
    - across institutions, 5.11*f*
    - changes in, 5.12–14
    - for construction, 5.20*f*
    - data sources, 5.10
    - federal, 4.23–24
      - agency support by field, 5.14–15
      - congressional earmarking, 5.14
      - interpreting support data, 5.35
      - for scientists and engineers, 5.34, 5.35*t*
      - for young doctorate holders, 5.35–36
    - funding indicators, 5.9
    - by funding source, 5.16*f*
    - general university fund (GUF), 4.53
    - industrial, 4.54*f*, 5.15
    - industry funds, 5.12
    - institutional funds, 5.12
    - state and local government funds, 5.12
  - graduate research assistants, 5.30–31
  - growth rate, 5.11
  - infrastructure, 5.19–20
  - intensity of, 5.33–34
  - Internet resources, 5.20–22
  - invention disclosure, 5.54
  - licensing options, 5.54–57
  - literature
    - article output
      - by field, 5.40–41
      - intraregional, 5.48*f*
      - by publishing region, 5.38*f*, 5.40*t*, 5.47*f*
      - ratio of total expenditure, 8.72–73
      - by R&D growth quartile, 5.48*t*
      - by sector, 5.48*t*
      - by state, 8.70–71
      - by type of authorship, 5.43*f*
      - by type of control, 5.49*t*
      - United States, 5.38–39
      - worldwide trends, 5.38
    - citations
      - foreign scientific articles, 5.51*f*
      - prominence, 5.52*t*
      - by region, 5.46, 5.51*f*
      - United States, 5.46–47
      - in U.S. patents, 5.48–50
      - volume, 5.46
      - worldwide, 5.50*f*
    - collaboration
      - by country, 5.43*f*
      - EU, 5.43–44
      - Japan, 5.44
      - United States, 5.42–43
    - terminology, 5.37
    - U.S. articles
      - citations in, 5.46–47
      - citations of, worldwide, 5.52*f*
      - citations on U.S. patents, 5.48–50
      - collaboration, 5.44–45
      - by field, 5.41*t*
      - foreign coauthorship, 5.49*f*
      - multiple authorship, 5.44*f*
      - nonacademic sectors, 5.49*f*
      - trends, 5.39
      - by type of authorship, 5.43*f*
  - patents
    - citations in, to S&E literature, 5.48–50
      - by inventor's nationality, 5.53*f*
  - research space, 5.19–20
  - by state, 8.67*t*

- Advanced Placement courses
  - completion rates, 1.28*t*, 1.29–30
  - by highest score, 8.28–29
  - multiple taken, 1.31*t*
  - students taking, by state, 8.28–29
- Advanced Technology Program (ATP), 4.38
- Aerospace/defense manufacturing
  - exports, by country, 6.16*f*, 6.17
  - global market shares, 6.14–15
  - R&D funding sources, 4.17*t*, 4.18
  - trade surpluses, 6.20
  - U.S. trade, 6.21*t*
- Africa
  - R&D expenditures, 4.40
  - majority-owned affiliates, 4.58*f*
  - per capita, 4.47*f*
- African Americans. *See* Black Americans
- Age Discrimination in Employment Act of 1967, 5.25
- Agricultural sciences
  - R&D
    - expenditure, 4.54*f*
    - priority, 4.56*f*
    - research space, 5.19–20
- Alabama. *See* State indicators
- Alaska. *See* State indicators
- Algebra, precollege coursetaking, 1.28
- Ansari X PRIZE, 4.11
- Argentina
  - academic R&D expenditure, 4.53*f*
  - basic research/GDP ratio, 4.46*f*
  - education
    - foreign students, 0.14*f*
    - undergraduate enrollment, 2.32*f*
  - manufacturing, leading indicators, 6.26*f*
  - R&D/GDP ratio, 4.45*t*
- Arizona. *See* State indicators
- Arkansas. *See* State indicators
- Asia
  - education
    - doctoral degrees, 2.25–26
    - first university degrees, 2.33*f*
    - postsecondary degrees in S&E, 0.12–13
  - export of manufacturing know-how, 6.24
  - high-technology shares, 0.7, 0.8*f*
  - import of advanced technology, 6.20
  - journal article output, 0.9–11
  - literature
    - collaboration on, 5.44
  - patent filings, 0.8, 0.9*f*
  - R&D expenditures, 4.40
  - foreign, 0.4–5
  - per capita, 4.47*f*
  - S&T in, 0.3
- Asian Americans/Pacific Islanders. *See also* Race/ethnicity
  - in academic R&D, 5.27–28
  - education
    - college enrollment, 2.10*f*
    - coursetaking by, 1.28–29
    - mathematics performance gap, 1.10–11
    - postsecondary completion, 2.5
    - school-age population, 1.20
    - salary, 3.21*t*
    - unemployment rate, 3.20*t*
- Association of University Technology Managers (AUTM), 5.54
- Astrology, as pseudoscience, 7.21–22, 7.23*f*
- Attitudes. *See* Public attitudes about science and technology
- Australia
  - basic research/GDP ratio, 4.46*f*
  - education
    - average math/science performance, 1.21*t*, 1–23*t*
    - foreign students, 0.14*f*
    - postsecondary degrees in S&E, 0.13*f*
    - science literacy, 0.19*f*
    - undergraduate enrollment, 2.32*f*
  - intellectual property, 5.57*t*
  - R&D expenditures, 4.40
  - academic, 4.53*f*
  - ICT, 4.51
  - industrial, 4.50*f*
  - R&D/GDP ratio, 4.45*t*
- Austria
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - foreign students, 0.14*f*
    - science literacy, 0.19*f*
    - undergraduate enrollment, 2.32*f*
  - intellectual property, 5.57*t*
  - R&D/GDP ratio, 4.45*t*
- Automotive manufacturing
  - R&D
    - expenditures, 4.19
    - funding sources, 4.17*t*
- B**
- Bachelor's degree. *See under* Degrees
- Bayh-Dole University and Small Business Patent Act (1980), 4.32, 5.51–52
- Becton, Dickinson and Company, 6.34*t*
- Belgium
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - foreign students, 0.14*f*
    - science literacy, 0.19*f*
    - undergraduate enrollment, 2.32*f*
  - import of advanced technology, 6.22*f*
  - intellectual property, 5.57*t*
  - R&D expenditure
    - academic, 4.53*f*
    - ICT, 4.51
    - industrial, 4.50*f*
  - R&D/GDP ratio, 4.45*t*
- Big bang theory, 7.19
- Biological sciences
  - Advanced Placement testing, 1.31*t*
  - articles, 5.41*t*, 5.44*f*
  - R&D
    - equipment expenditure, 5.18*f*
    - research space, 5.19–20
- Biotechnology, 6.19
  - patenting, 6.31–34
  - triadic, 6.38*f*
  - public attitudes toward, 7.30
  - U.S. trade, 6.21*t*
  - venture capital disbursement, 6.40*f*
- Black Americans. *See also* Race/ethnicity
  - academic R&D, 5.27
  - education
    - college enrollment, 2.10*f*, 2.14
    - coursetaking, 1.28–29
    - mathematics performance gap, 1.10–11, 1.19
    - postsecondary completion, 2.5

- school-age population, 1.20
  - S&E degrees, 2.19–20
  - salary, 3.21*t*
  - unemployment rate, 3.20*t*
  - Boehringer Mannheim G.M.B.H.
    - patents, 6.34*t*
  - Bolivia, R&D/GDP ratio, 4.45*t*
  - Brazil
    - manufacturing
      - aerospace industry, 6.15
      - leading indicators, 6.26*f*
    - postsecondary education, 0.11*f*, 3.33*f*
    - R&D/GDP ratio, 4.45*t*
  - Broadband, 7.11*t*, 7.12
  - Bush, Vannevar, 4.19
  - Business services, 6.18
  - Businesses. *See also specific industries*
    - R&D
      - funding by, 4.10, 4.15–16
      - applied research, 4.13
      - intensity, 4.16
- C**
- Calculus
    - Advanced Placement testing, 1.31*t*
    - precollege coursetaking, 1.27–28
  - California. *See also State indicators*
    - R&D performance, 4.5, 4.14*t*, 4.16*t*
  - Canada
    - article output, 5.40*f*
    - education
      - average math/science performance, 1.21*t*, 1.23*t*
      - doctoral degrees, 2.24–25, 2.27*f*
      - foreign students, 2.35
      - postsecondary degrees in S&E, 0.13*f*
      - science literacy, 0.19*f*
    - GDP composition, 4.43*f*
    - import of advanced technology, 6.20, 6.22*f*
    - intellectual property, 5.57*t*
    - R&D
      - expenditures, 4.40–41
        - academic, 4.53*f*
        - by funding source, 4.48*f*, 4.52*f*
        - ICT, 4.51
        - industrial, 4.50*f*, 4.54*f*
        - majority-owned affiliates, 4.58*f*
        - by performing sector, 4.47*f*
        - priorities, 4.55, 4.56*f*
      - foreign support, 0.4
    - R&D/GDP ratio, 4.45*t*
    - stem cell research, attitudes toward, 7.35
  - Canon Corporation, patents granted, 6.29*t*
  - Carnegie classification of academic institutions, 2.8*f*, 2.9
    - employment of women and minorities, 5.27*t*
  - Certificate programs, 2.8–10
  - Chemicals, manufacturing
    - R&D, 4.15
      - funding sources, 4.17–18, 4.17*t*
  - Chemistry
    - literature
      - articles, 5.41*t*, 5.44*f*
      - patents citing, 5.54*t*
    - precollege coursetaking, 1.28
  - Chile
    - education
      - foreign students, 0.14*f*
      - undergraduate enrollment, 2.32*f*
    - R&D/GDP ratio, 4.45*t*
  - China
    - basic research/GDP ratio, 4.46*f*
    - education
      - degrees
        - S&E, 0.13*f*, 2.24–25
      - reforms, 2.34
      - postsecondary, 0.11*f*, 3.33*f*
    - GDP composition, 4.43*f*
    - high technology
      - exports, 6.5
      - imports, 6.22*f*
      - manufacturing, 0.6–7
    - information sources on S&T, 7.10
    - Internet use, 7.11
    - journal article output, 0.9–11
    - manufacturing
      - aerospace industry, 6.15
      - communication equipment, 6.14
      - high-technology exports, 6.16*f*
      - high-technology value added, 6.12*f*
      - leading indicators, 6.26*f*
      - pharmaceuticals, 6.15
      - scientific instruments, 6.18
    - market exchange rate, 4.39
    - patent filings, 0.8, 0.9*f*, 6.30
    - public interest in S&T, 7.14*f*
      - government funding, 7.25
    - science literacy, 7.18*f*
    - R&D
      - academic, 0.9
      - expenditures, 0.5–6
        - academic, 4.53*f*
        - by funding source, 4.48*f*
        - per capita, 4.47*f*
        - by performing sector, 4.47*f*
      - R&D/GDP ratio, 4.45*t*
      - science and technology in, 0.3
      - zoo attendance, 7.16
  - Chiron Corporation, patents, 6.34*t*
  - Citizenship
    - education
      - bachelor's degrees by, 2.20
      - doctoral degrees by, 2.23–24
      - financial support for, 2.16
      - postdoctoral fellowships by, 2.29
      - science and engineering degrees by, 0.16*f*, 2.21
  - Climate Change Science Program, 4.28
  - Cloning, attitudes toward, 7.33–34
  - Colleges and universities, 2.9–10. *See also Degrees; Education; specific universities*
    - associate of arts colleges
      - definition of, 2.8
      - S&E degrees from, 2.17–18
    - Carnegie Classification of, 2.8*f*, 2.9
    - community colleges, 2.8
    - enrollment demographics, 2.10–11
    - industrial learning centers, 2.9–10
    - patents awarded to, 5.50–51
    - private for-profit enrollment, 2.8

- Professional Master's Degree project, 2.22
  - R&D at. *See* Academic research and development research universities
    - S&E degrees awarded, 2.7
    - specialized institutions, 2.18–10
  - Colombia, R&D/GDP ratio, 4.45*t*
  - Colorado. *See* State indicators
  - Communication equipment, 6.13–14
    - exports, by country, 6.16*f*
  - Communication services, 6.18
  - Computer and electronics manufacturing
    - exports, by country, 6.16*f*
    - global market for, 6.13–14
    - R&D, 4.16, 4.17*t*, 4.18
  - Computer-related services, R&D funding sources, 4.17*t*, 4.18
  - Computer science
    - as academic work activity, 5.30*f*
    - Advanced Placement testing, 1.31*t*
    - graduate students and research assistantships, 5.31*t*
    - R&D
      - expenditure
        - academic, 5.12–13
        - on equipment, 5.18*f*
        - federal, 5.15*f*
      - research space, 5.19–20
    - as research activity, 5.34*t*
    - workforce, 8.56–57
  - Computer software
    - U.S. trade, 6.21*t*
    - venture capital disbursement, 6.40*f*
  - Computers
    - educational use
      - home use, 1.44–45, 7.11*t*
      - non-Internet, 1.47*f*
      - teacher training, 1.45–47
  - Connecticut. *See* State indicators
  - Costa Rica, R&D/GDP ratio, 4.45*t*
  - CRADAs, 4.35–36
  - Cuba, R&D/GDP ratio, 4.45*t*
  - Czech Republic
    - basic research/GDP ratio, 4.46*f*
    - education
      - average math/science performance, 1.21*t*, 1.23*t*
      - foreign students, O.14*f*
      - science literacy, O.19*f*
      - undergraduate enrollment, 2.32*f*
    - manufacturing, leading indicators, 6.26*f*
    - R&D expenditure
      - academic, 4.53*f*
      - ICT, 4.51
      - industrial, 4.50*f*
    - R&D/GDP ratio, 4.45*t*
- D**
- Daimler Chrysler Corporation, R&D expenditures, 4.20*t*
  - Defense/aerospace manufacturing
    - DOD funding, 4.21, 4.37*t*
      - by field, 5.15*f*
    - exports, by country, 6.16*f*
    - global market share, 6.14–15
    - R&D
      - funding sources, 4.18, 6.17*t*
      - priority, 4.56*f*
    - trade surpluses, 6.20
    - U.S. trade, 6.21*t*
  - Degrees
    - associate's, S&E, 2.17–18
    - bachelor's
      - NS&E, 8.34–35
      - S&E, 2.18–19
      - share of workforce, 8.46–47
      - by state, 8.32–33
    - certificate programs, 2.8–10
    - doctorates
      - by citizenship status, O.16*f*; 2.4
      - foreign-born students, O.15–16, 2.23–24
        - stay rates of, 2.26–28
      - global comparison, 2.32*f*
      - by race/ethnicity, O.16*f*; 2.23
      - S&E, 2.17, 2.22–24
      - by country, 2.34*f*
      - by state, 8.68–69
      - time to degree, 2.28–29
      - women earning, 5.26
    - engineering, 2.33*f*
    - international mobility conferred by, O.13, O.15*f*
    - master's
      - citizenship, 2.21
      - race/ethnicity, 2.20–21
      - sex, 2.20
    - natural sciences, 2.33*f*
    - number awarded, 2.7
    - postsecondary
      - minorities, 2.5
      - S&E, O.11–12
      - women, 2.5
    - S&E, 2.4, 2.8*f*; 2.31–32
      - advanced, 8.40–41
      - foreign-born proportion, 3.35*t*
      - global comparison, 2.33
      - relation to current occupation, 3.12*t*, 3.13*t*
      - share of total, 8.36–37
  - Delaware. *See* State indicators
  - Denmark
    - basic research/GDP ratio, 4.46*f*
    - education
      - average math/science performance, 1.21*t*, 1.23*t*
      - foreign students, O.14*f*
      - science literacy, O.19*f*
      - undergraduate enrollment, 2.32*f*
    - intellectual property, 5.57*t*
    - R&D expenditure
      - academic, 4.53*f*
      - ICT, 4.51
      - industrial, 4.50*f*
    - R&D/GDP ratio, 4.45*t*
  - Department of Agriculture (USDA)
    - patents, 6.34*t*
      - R&D expenditure, by field, 5.15*f*
  - Department of Defense (DOD)
    - R&D funding, 4.21, 4.37*t*
      - by field, 5.15*f*
  - Department of Energy (DOE)
    - R&D funding, 4.21, 4.37*t*
      - by field, 5.15*f*
  - Department of Health and Human Services (HHS)
    - patents, 6.34*t*
      - R&D funding, 4.21, 4.37*t*
        - by field, 5.15*f*
  - Department of Homeland Security (DHS), 4.38
  - DeVry Institute of Technology, 2.9

District of Columbia. *See* State indicators

Doctoral degree. *See under* Degrees

## E

Earth, atmospheric, and ocean sciences

as academic work activity, 5.30*f*

articles, 5.41*t*, 5.44*f*

graduate students and research assistantships, 5.31*t*

R&D research space, 5.19–20

as research activity, 5.34*t*

Economic Recovery Act of 1981, 4.30

Ecuador, R&D/GDP ratio, 4.45*t*

Education. *See also* Degrees; Students; Teachers

certificate programs, 2.8–10

community colleges, 2.8

graduate

financial debt, 2.17

financial support, 2.15–17

information technology use

home, 1.42–43

by race/ethnicity, 1.43*f*

school, 1.42

mathematics performance

changes in, 1.15*t*

eighth grade, 8.16–17

by family income, 1.17–18

fourth grade, 8.8.9

by race/ethnicity, 1.16–17, 1.28–29, 18*f*

by school poverty rate, 1.28–29

by sex, 1.16, 1.28, 1.30

TIMSS 2003 results, 1.21*t*

postdoctoral fellowships, 2.29–30, 2.31

precollege

Advance Placement completion, 1.28*t*, 1.29–30

expenditures

per pupil, 8.26–27

share of GSP, 8.24–25

information technology use, 1.6–7

mathematics performance, 1.9–10, 1.12–13, 1.19

NAEP assessment, 1.13–14

performance gaps, 1.10–11

public versus private, 1.11

science performance, 1.16

student demographics, 1.20

private for profit, 2.8–9

reforms

China, 2.34

Europe, 2.36

science performance

eighth grade, 8.20–21

by family income, 1.17–18

fourth grade, 8.12–13

by race/ethnicity, 1.16–17, 1.28–29, 18*f*

by school poverty rate, 1.28–29

by sex, 1.16, 1.28, 1.30

undergraduate

age 15+, 0.11*f*

average annual cost, 8.42–43

Carnegie classification, 2.8*f*, 2.9

financial debt, 2.17

international comparisons, 1.49–50

remedial assistance, 1.50–51

student aid, 8.44–45

transition to, 1.7

rate, 1.48–49

tuition costs, 2.12

Education services, 6.18–19

E. I. Du Pont De Nemours and Company, 6.34*t*

El Salvador, R&D/GDP ratio, 4.45*t*

Electronics

trade surpluses, 6.20

U.S. trade, 6.21*t*

Eli Lilly and Company, patents, 6.34*t*

Employment. *See also* Workforce, science and engineering

Age Discrimination Act, 5.25

out of field, 3.25–26

R&D, 0.6, 0.7*f*

S&E

degree production versus occupation growth, 0.13–14

growth rate, 5.23*t*

unemployment, 3.20*t*, 3.25

Engineering

as academic work activity, 5.30*f*

education

bachelor's degrees, 8.34–35

doctoral degrees, 2.34*f*

enrollment trends, 2.11–12

first university degrees, 2.33*f*

graduate students and research assistantships, 5.31*t*

literature

articles, 5.41*t*, 5.44*f*

patents citing, 5.54*t*

R&D

expenditure, 4.54*f*

academic, 5.12–13

on equipment, 5.18*f*

federal, 5.15*f*

research space, 5.19–20

as research activity, 5.34*t*

Engineers, 3.6

share of workforce, 8.52–53

Environmental issues, public attitudes toward, 7.25–26, 7.27*t*

EPSCoR, 5.17

Europe. *See also individual countries*

education

doctoral degrees, 2.25–27

first university degrees, 2.33*f*

reforms, 2.36

museum attendance, 7.16

public interest in S&T, 7.14*f*

government funding, 7.25

R&D expenditures, 4.40

majority-owned affiliates, 4.58*f*

per capita, 4.47*f*

technology alliances, 4.34–35

zoo attendance, 7.16

European Union (EU). *See also individual countries*

article output, 5.38–39

education

postsecondary degrees in S&E, 0.12–13, 0.13*f*

high-technology market share, 0.6–7

journal article output, 0.9–11

manufacturing

high-technology value added, 6.12*f*

R&D

academic, 0.9

expenditure, 0.4

by funding source, 4.52*f*

ICT, 4.51

industrial, 4.50*f*, 4.52*f*

foreign support, 0.4

strategy, 4.42

R&D/GDP ratio, 4.45*t*  
 science and technology, O.3  
 science literacy, 7.18*f*

Evolution, 7.19, 7.20

Experimental Program to Stimulate Competitive Research (EPSCoR), 5.17

Exportation  
 high technology, O.7–8  
 leading indicators of potential, 6.24–27

**F**

Faculty. *See* Teachers

Federal government  
 development funding, 4.13  
 financial support of S&E graduate students, 2.16–17  
 R&D funding, 4.13*f*, 4.19  
 academia, 4.23–24  
 by agency, 4.21–23, 4.23*t*, 4.26*t*, 4.27*f*  
 by budget function, 4.28*f*  
 budget issues, 4.29–30  
 civilian related, 4.29  
 by civilian worker, 8.60–61  
 defense related, 4.5, 4.27–28  
 federal laboratories, 4.22  
 history, 4.19  
 industry, 4.24  
 intramural, 4.24, 4.26*t*  
 by major S&E field, 4.27*f*  
 per civilian worker, 8.60–61  
 per S&E worker, 8.62–63  
 by performing sector, 4.23*t*  
 postdoctoral fellowships, 2.30*t*  
 priority areas, 4.28  
 R&D centers, 4.24, 4.26*t*  
 small business programs, 4.37

Federal Small Business Innovation Research Program, O.22*f*

Federal Technology Transfer Act (1986), 4.32

Federally funded research and development centers (FFRDCs), 4.24

Fellowships, postdoctoral, 2.29–30, 2.31

Financial services, 6.18

Finland  
 education  
 average math/science performance, 1.21*t*, 1.23*t*  
 foreign students, O.14*f*  
 postsecondary degrees in S&E, O.13*f*  
 undergraduate enrollment, 2.32*f*  
 intellectual property, 5.57*t*  
 patent application, 6.30  
 R&D expenditures, 4.6  
 academic, 4.53*f*  
 ICT, 4.51  
 industrial, 4.50*f*  
 R&D/GDP ratio, 4.45*t*

Florida. *See* State indicators

Ford Motor Corporation, R&D expenditures, 4.20*t*

Foreign-born residents  
 in academic R&D, 5.28–29  
 education, O.15*f*  
 S&E degrees, 3.35*t*  
 S&E occupation, O.14, O.15*f*

Foreign students. *See under* Students

France  
 article output, 5.40*f*  
 basic research/GDP ratio, 4.46*f*  
 education

average math/science performance, 1.21*t*, 1.23*t*  
 doctoral degrees, 2.27*f*  
 foreign students, O.14*f*, 2.34  
 science literacy, O.19*f*  
 undergraduate  
 age 15+, O.11*f*, 3.33*f*  
 S&E degrees, O.13*f*  
 undergraduate enrollment, 2.32*f*

GDP composition, 4.43*f*  
 import of advanced technology, 6.21, 6.22*f*  
 intellectual property, 5.57*t*  
 manufacturing of high-technology exports, 6.16*f*  
 patents granted, 6.30*f*

R&D expenditures, 4.40–41  
 academic, 4.53*f*  
 by funding source, 4.48*f*, 4.52*f*  
 ICT, 4.51  
 industrial, 4.50*f*  
 majority-owned affiliates, 4.58*f*  
 by performing sector, 4.47*f*  
 priorities, 4.55, 4.56*f*  
 R&D/GDP ratio, 4.45*t*

Fujitsu Corporation, patents granted, 6.29*t*

**G**

GDP. *See* Gross domestic product (GDP)

Gender comparisons. *See* Sex comparisons

Genentech, Inc., patents, 6.34*t*

General Hospital Corporation, patents, 6.34*t*

General Motors Corporation, R&D expenditures, 4.20*t*

General university fund (GUF), 4.53, 4.56*f*

Genetically modified food, 7.31–33

Georgia. *See* State indicators

Germany  
 education  
 average math/science performance, 1.21*t*, 1.23*t*  
 doctoral degrees, 2.27*f*  
 foreign students, O.14*f*  
 postsecondary, O.11*f*, 3.33*f*  
 degrees in S&E, O.13*f*  
 science literacy, O.19*f*  
 undergraduate enrollment, 2.32*f*

GDP composition, 4.43*f*  
 import of advanced technology, 6.22*f*  
 intellectual property, 5.57*t*

manufacturing  
 high-technology exports, 6.16*f*  
 leading indicators, 6.26*f*  
 pharmaceuticals, 6.18  
 scientific instruments, 6.18

market exchange rate, 4.39

patents granted, 6.30*f*

R&D expenditures, O.4, 4.40–41  
 academic, 4.53*f*  
 by funding source, 4.48*f*, 4.52*f*  
 ICT, 4.51  
 industrial, 4.50*f*, 4.54*f*  
 majority-owned affiliates, 4.58*f*  
 per capita, 4.47*f*  
 by performing sector, 4.47*f*  
 priorities, 4.55, 4.56*f*  
 R&D/GDP ratio, 4.45*t*  
 GlaxoSmithKline Corporation, R&D expenditures, 4.20*t*

Global marketplace, highlights, 6.4–7

Global warming, public attitudes, 7.26

Globalization of science and technology, O.3

Graduate research assistants, 5.30–31

Greece

education

- average math/science performance, 1.21*t*, 1.23*t*
- doctoral degrees, 2.27*f*
- foreign students, O.14*f*
- science literacy, O.19*f*
- undergraduate enrollment, 2.32*f*

R&D expenditure

- academic, 4.53*f*
- R&D/GDP ratio, 4.45*t*

Gross domestic product (GDP)

- basic research share, 4.46–47
- international comparisons, 6.8*f*
- ratio to R&D, 4.45*t*
- as R&D intensity indicator, 4.6

Gross state product (GSP)

- public school expenditure, 8.24–25
- R&D share, 8.58–59
- SBIR program share, 8.84–85
- venture capital share, 8.86–87

## H

Hawaii. *See* State indicators

Health services, 6.18–19

Hewlett-Packard Corporation, R&D expenditures, 4.20*t*

High-technology industries. *See also specific industries*

classification

- data systems, 6.10
- by R&D intensity, 6.11*t*, 6.19

employment share, 8.82–83

exports, O.8*f*

- assessment of future potential, 6.24–27
- by country, 6.16–18
- trends, 6.4–5
- United States, 6.15
- worldwide shares, O.6–7

market shares, 6.12–13

NAICS codes, 8.92*t*

share of state business establishments, 8.78–79

share of total manufacturing value, 6.12*f*

state business formations, 8.80–81

Hispanic Americans. *See also* Race/ethnicity

education

- college enrollment, 2.10*f*
- coursetaking, 1.28–29
- mathematics performance gap, 1.10–11, 1.19
- postsecondary completion, 2.5
- school-age population, 1.20
- S&E degrees, 2.19–20

salary, 3.21*t*

unemployment rate, 3.20*t*

Hitachi Corporation, patents, 6.29*t*

Hoechst Aktiengesellschaft, patents, 6.34*t*

Hoffman-La Roche Inc., patents, 6.34*t*

Home computers, 7.11*t*. *See also* Computers

Honda Motor Corporation, R&D expenditures, 4.20*t*

Human capital, 4.41

Hungary

basic research/GDP ratio, 4.46*f*

education

- average math/science performance, 1.21*t*, 1.23*t*
- foreign students, O.14*f*
- science literacy, O.19*f*
- undergraduate enrollment, 2.32*f*

manufacturing, leading indicators, 6.26*f*

R&D expenditure

- academic, 4.53*f*
- R&D/GDP ratio, 4.45*t*

Hydrogen fuel, 4.28

## I

Iceland

education

- average math/science performance, 1.21*t*, 1.23*t*
- foreign students, O.14*f*
- science literacy, O.19*f*
- undergraduate enrollment, 2.32*f*

intellectual property, 5.57*t*

R&D expenditures, 4.6

academic, 4.53*f*

R&D/GDP ratio, 4.45*t*

ICT. *See* Information and communication technology

Idaho. *See* State indicators

Illinois. *See* State indicators

R&D performance, 4.14*t*, 4.16*t*

Importation of advanced technology, 6.21, 6.22*f*

Income

differentials, 3.23–24

doctoral degree recipients, 3.28

by educational degree, 3.16*f*

as labor market indicator, 3.9–11

over working life, 3.11

S&E graduates, 3.22

women, 3.20, 3.21*t*

Incyte Pharmaceuticals, Inc., patents, 6.34*t*

India

education

doctoral degrees, 2.24–25

foreign students, O.14*f*

postsecondary, O.11*f*, 3.33*f*

degrees in S&E, O.13*f*

undergraduate enrollment, 2.32*f*

GDP composition, 4.43*f*

manufacturing, leading indicators, 6.26*f*

patent application, 6.30

Indiana. *See* State indicators

Indonesia

education

foreign students, O.14*f*

undergraduate enrollment, 2.32*f*

manufacturing, leading indicators, 6.26*f*

Industrial research and development. *See also* Research and

development (R&D)

computer-related services, 4.18*t*

contracted out, 4.33

cooperative research agreements, 4.34

cross-border, O.4–5

domestic net sales, 4.18*t*

expenditures

by character of work, 4.13*f*

federal government. *See under* Federal government

share of private-industry output, 8.64–65

source, 4.12*f*, 4.49–50

performance

by business sector, 4.16, 4.17*t*

by state, 4.14–15

by performing sector, 4.12*f*

public corporations, 4.20

- tax credit claims, 4.30–31
- technology alliances, 4.33–34
- technology transfer legislation, 4.32
- Industrial Research Institute (IRI), 4.21
- Industrial technology alliances, 4.33–34
- Information and communication technology
  - in precollege education, 1.6–7
    - access trends, 1.42–43
    - by race/ethnicity, 1.43*f*
    - teacher use, 1.45–47
  - R&D, 4.51
  - trade deficits, 6.20
  - U.S. investment, 6.14
  - U.S. trade, 6.21*t*
- InnoCentive, 4.11
- Institut Pasteur, patents, 6.34*t*
- Intel Corporation
  - patents granted, 6.29*t*
  - R&D expenditures, 4.20*t*
- Intellectual property
  - OECD countries, 5.57*t*
  - patent system review, 6.33
  - protection, 4.41
  - royalties and fees, 6.23–24
- Intelligent design, 7.20
- International alliances in research and development, O.4, O.5*f*
- International Business Machines Corporation
  - patents granted, 6.29*t*
  - R&D expenditures, 4.20*t*
- Internet
  - China, 7.11
  - connection speed, 5.21–22
  - impact on public attitudes, 7.3, 7.7*f*
  - as news source, 7.10–11
    - broadband versus online, 7.11*t*
    - by type, 7.13*t*
  - use by precollege students, 1.6–7, 1.44–45
  - venture capital
    - disbursement, 6.40*f*
    - investment, 6.39
- Invention disclosures, 5.54. *See also* Patents
- Inventors
  - foreign
    - avored fields, 6.31
    - patents, 6.28–30
  - United States
    - avored fields, 6.31
    - patents, 6.28–30
- Iowa. *See* State indicators
- Iran, doctoral degrees, 2.24*f*
- Ireland
  - basic research/GDP ratio, 4.46*f*
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - foreign students, O.14*f*
    - science literacy, O.19*f*
    - undergraduate enrollment, 2.32*f*
  - intellectual property, 5.57*t*
  - manufacturing
    - high-technology value added, 6.12*f*
    - leading indicators, 6.26*f*
  - R&D expenditure
    - academic, 4.53*f*
    - ICT, 4.51
    - industrial, 4.50*f*
  - R&D/GDP ratio, 4.45*t*
- Isis Pharmaceuticals, Inc., patents, 6.34*t*
- Israel
  - basic research/GDP ratio, 4.46*f*
  - high-technology exports, 6.5
  - manufacturing, leading indicators, 6.26*f*
  - patent application, 6.30
  - R&D expenditure
    - academic, 4.53*f*
    - R&D/GDP ratio, 4.45*t*
- IT. *See* Information and communication technology
- Italy
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - doctoral degrees, 2.27*f*
    - foreign students, O.14*f*
    - postsecondary degrees in S&E, O.13*f*
    - science literacy, O.19*f*
    - undergraduate enrollment, 2.32*f*
  - GDP composition, 4.43*f*
  - intellectual property, 5.57*t*
  - R&D expenditures, 4.40–41
    - academic, 4.53*f*
    - by funding source, 4.52*f*
    - ICT, 4.51
    - industrial, 4.50*f*
    - by performing sector, 4.47*f*
    - priorities, 4.56*f*
  - R&D/GDP ratio, 4.45*t*
- J**
- Japan
  - basic research/GDP ratio, 4.46*f*
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - doctoral degrees, 2.24–25
    - foreign students, O.14*f*, 2.34–35
    - postsecondary, O.11*f*, 3.33*f*
      - degrees in S&E, O.13*f*
      - enrollment, 2.32*f*
    - science literacy, O.19*f*
  - GDP composition, 4.43*f*
  - high-technology market share, O.6–7
  - imports
    - advanced technology, 6.20, 6.22*f*
    - manufacturing know-how, 6.24
  - information sources on S&T, 7.10
  - intellectual property, 5.57*t*
  - journal article output, O.9–11
  - literature
    - article output, 5.38–39
    - collaboration, 5.44
  - manufacturing
    - aerospace industries, 6.17
    - communication equipment, 6.13–14
    - high-technology exports, 6.16*f*
    - high-technology value added, 6.12*f*
    - leading indicators, 6.26*f*
    - pharmaceuticals, 6.15
    - scientific instruments, 6.18
  - market exchange rate, 4.39
  - migration of labor, 3.34
  - patents granted, 6.30*f*
  - public interest in S&T, 7.14*f*
    - government funding, 7.25
    - science literacy, 7.18*f*



- R&D expenditures, O.4, 4.6, 4.40–41
  - academic, 4.53f
  - by funding source, 4.48f, 4.52f
  - ICT, 4.51
  - industrial, 4.50f, 4.54f
  - majority-owned affiliates, 4.58f
  - per capita, 4.47f
  - by performing sector, 4.47f
  - priorities, 4.55, 4.56f
- R&D/GDP ratio, 4.45t
- technology alliances, 4.34–35
- zoo attendance, 7.16
- Johns Hopkins University, patents, 6.34t
- Johnson & Johnson Corporation, R&D expenditures, 4.20t
- Jordan
  - education
    - foreign students, O.14f
    - undergraduate enrollment, 2.32f
- Journals. *See* Literature, scientific and technical
- K**
- Kansas. *See* State indicators
- Kentucky. *See* State indicators
- Knowledge-intensive service industries
  - data classification systems, 6.10
  - global revenues, 6.18f
- Koninklijke Philips Electronics, patents, 6.29t
- L**
- Labor force. *See* Workforce, science and engineering
- Laboratories
  - federal
    - CRADAs, 4.35–36
    - justification, 4.35
    - technology transfer, 4.35–36
- Leading indicators, 6.24–27
- Legislation, on technology transfer, 4.32
- Library use, 7.14, 7.16
- Licensing options, 5.54–57. *See also* Patents
  - characteristics of, 5.56f
- Life and physical sciences
  - as academic work activity, 5.30f
  - degree holders
    - share of workforce, 8.54–55
  - graduate students and research assistantships, 5.31t
  - as research activity, 5.34t
- Life science technologies, 6.19
  - U.S. trade, 6.21t
- Lisbon Strategy, 4.42
- Literature, scientific and technical
  - article output
    - by field, 5.40–41
    - international collaboration, 5.6–7
    - intra-regional, 5.48f
    - number of, O.9–10
    - by publishing region, 5.38f, 5.40t, 5.47f
    - as ratio of total R&D expenditure, 8.72–73
    - by R&D growth quartile, 5.48t
    - by sector, 5.48t
    - by state, 8.70–71
    - by type of authorship, 5.43f
    - by type of control, 5.49t
    - in United States, 5.38–39
    - worldwide trends, 5.38
  - citations
    - on foreign scientific articles, 5.51f
    - prominence, 5.52t
    - by region, 5.46, 5.51f
    - United States, 5.46–47
    - in U.S. patents, 5.48–50
    - volume, 5.46
    - worldwide, 5.50f
  - collaboration
    - by country, 5.43f
    - EU, 5.43–44
    - Japan, 5.44
    - United States, 5.42–43
  - terminology, 5.37
  - U.S. articles
    - citations in, 5.46–47
    - citations of, worldwide, 5.52f
    - citations on U.S. patents, 5.48–50
    - collaboration, 5.44–45
    - by field, 5.41t
    - foreign coauthorship, 5.49f
    - multiple authorship, 5.44f
    - nonacademic sectors, 5.49f
    - trends, 5.39
    - by type of authorship, 5.43f
- Lithuania, postsecondary degrees in S&E, O.13f
- Louisiana. *See* State indicators
- Low-technology industries, 6.11t
- Lucent Technologies Corporation, patents, 6.29t
- Luxembourg
  - education
    - average math/science performance, 1.21t, 1.23t
    - science literacy, O.19f
  - R&D/GDP ratio, 4.45t
- M**
- Mad cow disease, 7.32
- Maine. *See* State indicators
- Malaysia
  - education
    - foreign students, O.14f
    - undergraduate enrollment, 2.32f
  - import of advanced technology, 6.22f
  - manufacturing, leading indicators, 6.26f
  - public interest in S&T, 7.14f
    - government funding, 7.25
    - science literacy, 7.18f
- Manufacturing. *See also specific industries*
  - classification by R&D intensity, 6.11t
  - flexible, 6.19, 6.21t
  - high-technology share of total value, 6.12f
  - sales, average annual growth rate, 6.12f
  - United States, value added to gross output, 6.12f
- Manufacturing know-how, 6.23–24
- Manufacturing output, world, O.6–7
- Market exchange rates, 4.39
- Marketplace, global, 6.4–7
- Markets, high technology, O.6–7
- Maryland. *See* State indicators
- Massachusetts. *See also* State indicators
  - R&D performance, 4.5, 4.14t, 4.16t
- Master's degree. *See under* Degrees
- Mathematics/mathematical sciences
  - as academic work activity, 5.30f
  - articles, 5.41t, 5.44f
  - graduate students and research assistantships, 5.31t

- postsecondary students in S&E majors, 2.11
  - precollege students
    - coursetaking, 1.5, 1.23–24, 1.51–52
      - availability of advanced, 1.24–25
      - by community type, 1.26*f*, 1.27*f*
      - by race/ethnicity, 1.28–29
      - by school poverty rates, 1.28–29
      - by school size, 1.26*f*, 1.27*f*
      - by sex, 1.28, 1.30
    - international comparisons, 1.20–23
    - performance
      - assessment, 1.13, 1.21–23
      - eighth grade, 8.16–17
      - fourth grade, 8.8–9
      - gaps, 1.10–11
    - proficiency
      - eighth grade, 8.18–19
      - fourth grade, 8.10–11
  - precollege teachers, 1.6
  - R&D
    - expenditure
      - equipment, 5.18*f*
      - federal, 5.15*f*
      - research space, 5.19–20
    - as research activity, 5.34*t*
  - Matsushita Electric Industrial Corporation, R&D expenditures, 4.20*t*
  - Medical sciences
    - literature
      - articles, 5.41*t*, 5.44*f*
      - patents citing, 5.54*t*
    - R&D
      - expenditure, 4.54*f*
        - academic, 5.12–13
        - equipment, 5.18*f*
        - research space, 5.19–20
      - venture capital disbursement, 6.40*f*
  - Merck and Co., Inc., patents, 6.34*t*
  - Methuselah Mouse Prize, 4.11
  - Mexico
    - basic research/GDP ratio, 4.46*f*
    - education
      - average math/science performance, 1.21*t*, 1.23*t*
      - doctoral degrees, 2.24–25, 2.27*f*
      - foreign students, O.14*f*
      - postsecondary science literacy, O.19*f*
      - undergraduate enrollment, 2.32*f*
    - import of advanced technology, 6.20, 6.22*f*
    - intellectual property, 5.57*t*
    - manufacturing, leading indicators, 6.26*f*
    - R&D expenditure
      - academic, 4.53*f*
    - R&D/GDP ratio, 4.45*t*
  - Michigan. *See also* State indicators
    - R&D performance, 4.14*t*, 4.16*t*
  - Micron Technology, Inc., patents, 6.29*t*
  - Microsoft Corporation, R&D expenditures, 4.20*t*
  - Migration of labor, 3.33–38
  - Miles Inc., patents, 6.34*t*
  - Minnesota. *See* State indicators
  - Minorities. *See also* Race/ethnicity
    - education
      - S&E degrees earned by, O.17–18, 2.5, 2.18*f*
  - Mississippi. *See* State indicators
  - Missouri. *See* State indicators
  - Mitsubishi Denki Corporation, patents, 6.29*t*
  - Mobility of educated persons, O.13, O.15*f*
  - Montana. *See* State indicators
  - Motorola Corporation
    - patents granted, 6.29*t*
      - R&D expenditures, 4.20*t*
  - Motorola University, 2.9
  - Multinational corporations
    - R&D
      - direct investment, 4.57
      - location, O.4–5
      - U.S. affiliates, 4.56–58
  - Museum attendance, 7.14, 7.16
- ## N
- NAICS codes, 8.92
  - Nanotechnology, 4.28
    - public attitudes toward, 7.35–36
  - National Aeronautics and Space Administration (NASA)
    - Centennial Challenges Program, 4.11
    - R&D funding, 4.21, 4.37*t*
      - by field, 5.15*f*
  - National Assessment Governing Board (NAGB), 1.12
  - National Assessment of Educational Progress (NAEP), 1.12
  - National Center for Education Statistics (NCES), 1.12
  - National Competitiveness Technology Transfer Act (1989), 4.32
  - National Cooperative Research Act (1984), 4.32
  - National Cooperative Research and Production Act (1993), 4.32
  - National orientation indicator, 6.25
  - National Science Foundation (NSF)
    - R&D funding, 4.21, 4.23
      - by field, 5.15*f*
    - satellite account project, 4.43
  - National Technological University (NTU), 2.10
  - Natural sciences
    - education
      - bachelor's degrees, 8.34–35
      - doctoral degrees, 2.34*f*
      - first university degrees, 2.33*f*
      - R&D expenditure, 4.54*f*
  - Nebraska. *See* State indicators
  - NEC Corporation, patents, 6.29*t*
  - Netherlands
    - article output, 5.40*f*
    - education
      - average math/science performance, 1.21*t*, 1.23*t*
      - foreign students, O.14*f*
      - science literacy, O.19*f*
      - undergraduate enrollment, 2.32*f*
    - import of advanced technology, 6.22*f*
    - intellectual property, 5.57*t*
    - R&D expenditure
      - academic, 4.53*f*
      - ICT, 4.51
      - industrial, 4.50*f*
      - majority-owned affiliates, 4.58*f*
    - R&D/GDP ratio, 4.45*t*
  - Networking and Information Technology Research and Development program, 4.28
  - Nevada. *See* State indicators
  - New Hampshire. *See* State indicators
  - New Jersey. *See* State indicators
  - New Mexico. *See* State indicators
  - New York. *See* State indicators

## New Zealand

- basic research/GDP ratio, 4.46f
- education
  - average math/science performance, 1.21t, 1.23t
  - foreign students, O.14f
  - science literacy, O.19f
  - undergraduate enrollment, 2.32f
- R&D academic expenditure, 4.53f
- R&D/GDP ratio, 4.45t

News stories. *See also* Public attitudes about science and technology

- Internet as source, 7.10–11, 7.13t
- public interest, 7.15

## Nicaragua, R&amp;D/GDP ratio, 4.45t

## No Child Left Behind Act of 2001, 1.8

## Nokia Corporation, R&amp;D expenditures, 4.20t

North America. *See also specific countries*

- R&D expenditures per capita, 4.47f

## North American Industrial Classification System (NAICS), 8.92

North Carolina. *See* State indicatorsNorth Dakota. *See* State indicators

## Norway

- education
  - average math/science performance, 1.21t, 1.23t
  - foreign students, O.14f
  - science literacy, O.19f
  - undergraduate enrollment, 2.32f
- intellectual property, 5.57t
- R&D expenditure
  - academic, 4.53f
  - ICT, 4.51
  - industrial, 4.50f
- R&D/GDP ratio, 4.45t

## Nova Southeastern University, 2.8

## Novartis Corporation, R&amp;D expenditures, 4.20t

## Novo Nordisk A/S, patents, 6.34t

## Nuclear technology, 6.19

- U.S. trade, 6.21t

**O**

## Occupational prestige, 7.38t

Ohio. *See* State indicators

- R&D performance, 4.16t
- service sector, 4.15

Oklahoma. *See* State indicators

## Omnibus Trade and Competitiveness Act (1988), 4.32

## Optoelectronics, 6.19

- trade deficits, 6.20
- U.S. trade, 6.21t

Oregon. *See* State indicators

## Organisation for Economic Cooperation and Development (OECD)

- intellectual property, 5.57t
- labor migration to, 3.38
- R&D, academic, O.9
- R&D expenditures, O.4, 4.40–41
  - academic, 4.53f
  - by funding source, 4.48f
  - industrial, 4.52f, 4.54f
- R&D/GDP ratio, 4.45t
- researchers, 3.33f

**P**Pacific Islanders. *See also* Race/ethnicity

- in academic R&D, 5.27–28
- education
  - college enrollment, 2.10f
  - coursertaking, 1.28–29
  - mathematics performance gap, 1.10–11
  - postsecondary completion, 2.5
- salary, 3.21t
- unemployment rate, 3.20t

## Panama, R&amp;D/GDP ratio, 4.45t

## Paranormal phenomena, 7.22f

## Patents

- academic institutions, 5.51–54, 5.55t
  - foreign, 5.56–57
  - income, 5.56t
  - United States, 5.50–51
- applications
  - citations in, 6.35
  - cost, 6.34
  - by country of residence, 6.30f
  - trends, 6.29–30
- biotechnologies, 6.31–34
- citations in, to S&E literature, 5.48–50
  - by inventor's nationality, 5.53f
  - by publishing region, 5.54t
- by class, 6.31t
- data classification systems, 6.10
- filings, O.8, O.9f
- global trends, 6.5–6
- granted
  - to corporations, 6.29
  - by country of origin, 6.28f
  - to foreign inventors, 6.28–29, 6.30f
  - to U.S. inventors, 6.28
- intellectual property rights, 6.33
- protection, 5.52–53
- by state
  - ratio to S&E doctorate holders, 8.75t
  - ratio to S&E occupational workforce, 8.77t
- triadic patent families, 6.6, 6.34–36
  - by inventor's residence, 6.37f

Pennsylvania. *See* State indicators

## Peru, R&amp;D/GDP ratio, 4.45t

## Pfizer Corporation, R&amp;D expenditures, 4.20t

## Pharmaceuticals

- manufacturing
  - exports, by country, 6.16f, 6.17–18
  - global market share, 6.15
  - value added, 6.14f
- R&D expenditure sources, 4.49–52

## Philippines

- education
  - foreign students, O.14f
  - postsecondary, O.11f, 3.33f
  - undergraduate enrollment, 2.32f
- manufacturing, leading indicators, 6.26f

## Physical sciences

- as academic work activity, 5.30f
- graduate students and research assistantships, 5.31t
- R&D
  - expenditure on equipment, 5.18f/research space, 5.19–20
  - as research activity, 5.34t

## Physics

Advanced Placement testing, 1.31*t*

## literature

articles, 5.41*t*, 5.44*f*

patents citing, 5.54*t*

precollege coursetaking, 1.28

Pioneer Hi-Bred International, Inc., patents, 6.34*t*

PISA. *See* Programme for International Student Assessment (PISA)

## Poland

basic research/GDP ratio, 4.46*f*

## education

average math/science performance, 1.21*t*, 1.23*t*

foreign students, O.14*f*

postsecondary degrees in S&E, O.13*f*

science literacy, O.19*f*

undergraduate enrollment, 2.32*f*

intellectual property, 5.57*t*

manufacturing, leading indicators, 6.26*f*

## R&amp;D expenditure

academic, 4.53*f*

ICT, 4.51

industrial, 4.50*f*

R&D/GDP ratio, 4.45*t*

## Portugal

## education

average math/science performance, 1.21*t*, 1.23*t*

science literacy, O.19*f*

R&D academic expenditure, 4.53*f*

R&D/GDP ratio, 4.45*t*

Postdoctoral fellowships, 2.29–30, 2.31

by citizenship, 2.29

reasons for taking, 3.27

Postsecondary degree. *See under* Degrees

Postsecondary education. *See also* Education

age 15+, O.11*f*

S&E, O.12–13

Productive capacity indicators, 6.26–27

Programme for International Student Assessment (PISA), 1.20–23

Project BioShield, 4.11

Pseudoscience, 7.21–22

## Psychology

as academic work activity, 5.30*f*

graduate students and research assistantships, 5.31*t*

## R&amp;D

## expenditure

academic, 5.12–13

equipment, 5.18*f*

federal, 5.15*f*

research space, 5.19–20

as research activity, 5.34*t*

Public attitudes about science and technology

astrology, 7.23*f*

biotechnology and medical research, 7.29–31

by country, 7.24*f*

environmental issues, 7.25–26

governmental policy, 7.27–28

evolution, 7.19, 7.20

genetically modified food, 7.31–33

global warming, 7.26

government funding, 7.25human cloning, 7.33–34

information sources, 7.7*f*, 7.10*f*

in other countries, 7.10

interest levels, 7.12–14

by news story, 7.15

mad cow disease, 7.32

nanotechnology, 7.35–36

paranormal phenomena, 7.22*f*

pseudoscience, 7.21–22

science literacy, by country, 7.18*f*

science occupations, 7.37–39

scientific process, 7.19

stem cell research, 7.34–35

surveys on, 7.6

technological development, 7.28–29

worldwide, 7.12–14

## Puerto Rico

academic article output, 8.71*t*, 8.73*t*

## high technology

business formation, 8.81*t*

employment, 8.83*t*

share of business establishments, 8.79*t*

## patent awards

ratio to S&E doctorate holders, 8.75*t*

ratio to S&E occupational workforce, 8.77*t*

public school expenditure share of GSP, 8.25*t*

## R&amp;D

federal obligation, 8.61*t*, 8.63*t*

share of GSP, 8.59*t*

SBIR program award dollars, 8.85*t*

S&E degrees awarded, 8.37*t*

advanced, 8.41*t*

doctoral, 8.69*t*

S&E graduate students, 8.39*t*

S&E occupational workforce

computer specialists, 8.57*t*

doctorate holders, 8.49*t*

engineers, 8.53*t*

life and physical scientists, 8.55*t*

student aid expenditures, 8.43*t*

## venture capital

disbursed, 8.87*t*

per deal, 8.91*t*

high-technology companies, 8.89*t*

Purchasing power parities, 4.39

**R**

## Race/ethnicity

academic doctoral S&E workforce, O.19–20

## education

college enrollment, 2.10–11

doctoral degrees, 2.23

information technology use, 1.43–44

mathematics performance, 1.16–17, 18*f*

performance gaps, 1.10–11

precollege coursetaking, 1.5

science performance, 1.16–17, 18*f*

S&E bachelor's degrees, 2.19–20

S&E master's degree, 2.20–21

S&E doctorates, O.16*f*

R&D. *See* Research and development (R&D)

## Research

applied, 4.13

## funding

by character of work, 5.11*f*

by proportion, 5.9*f*

## basic

academic, 4.12

federally funded, 4.13

- funding
      - by character of work, 5.11*f*
      - by proportion, 5.9*f*
      - by source, 4.12*f*
    - by performing sector, 4.12*f*
    - share of GDP, 4.46–47
    - public attitudes on government funding, 7.25
  - Research and development (R&D)
    - academic. *See* Academic research and development
    - business sector, 4.5
    - by character of work, 4.12*f*
    - Chinese, O.5–6
    - classification of manufacturing industries, 6.11*t*
    - contract, 4.33
    - cooperative research agreements, 4.34
    - definitions of, 4.8
    - expenditure
      - by business sector, 4.10
      - by character of work, 4.10*t*
      - development, 4.13
      - external partnerships, O.21
      - by funding source, O.20, O.21*f*, 4.8*f*, 4.9*f*, 4.10*t*, 4.12*f*, 4.47–49
    - government funding, O.4
      - academia, 4.23–24
      - by agency, 4.21–23, 4.23*t*, 4.26*t*, 4.27*t*
      - by budget function, 4.28*f*
      - by civilian worker, 8.60–61
      - defense related, 4.27–28, 4.55*f*
      - federal laboratories, 4.22
      - history, 4.19
      - industry, 4.24
      - intramural, 4.24, 4.26*t*
      - by major S&E field, 4.27*f*
      - non–defense related, 4.29, 4.55*f*
      - nondefense, 4.45
      - per worker in S&E occupation, 8.62–63
      - by performing sector, 4.23*t*
      - priorities, 4.28, 4.54–56
      - for R&D Centers, 4.24, 4.26*t*
      - small business programs, O.21, 4.37
    - incentives, 4.11
    - industrial. *See* Industrial research and development
    - industrial investments, O.4
    - information and communication technology sector, 4.51
    - international comparisons
      - intensity indicators, 4.41–42
      - market exchange rates, 4.39
      - qualitative, 4.41
    - multinational corporations, 4.56–62
    - number of researchers, O.6
    - per capita, 4.47
    - performance, 4.9–10
      - by state, 4.14–15
      - unmeasured, 4.9
    - performer versus source reported, 4.25
    - by performing sector, 4.8*f*, 4.9*f*, 4.10*t*, 4.12*f*, 4.47–49
    - ratio to GDP, 4.42–45
    - ratio to GSP, 8.58–59
    - by state, 4.14
    - tax credit, 4.30
    - worker distribution, 3.17
    - worldwide, O.4, 4.40
  - Research assistantships, 2.15–17
  - Researchers
    - federal support, O.20
    - OECD countries, 3.33*f*
    - postdoctoral fellowships, 2.29–30, 2.31
    - rising employment, O, O.6, 7*f*
  - Retirement
    - academic workforce, 5.25–26
    - S&E workforce, O.17, 3.28–31, 3.32*t*
  - Rhode Island. *See* State indicators
  - Roche Holding Corporation, R&D expenditures, 4.20*t*
  - Romania
    - R&D academic expenditure, 4.53*f*
    - R&D/GDP ratio, 4.45*t*
  - Russia/Russian Federation
    - basic research/GDP ratio, 4.46*f*
    - education
      - average math/science performance, 1.21*t*, 1.23*t*
      - foreign students, O.14*f*
      - postsecondary, O.11*f*, 3.33*f*
        - degrees in S&E, O.13*f*
      - undergraduate enrollment, 2.32*f*
    - GDP composition, 4.43*f*
    - information sources on S&T, 7.10
    - R&D expenditure
      - academic, 4.53*f*
      - by funding source, 4.48*f*, 4.52*f*
      - by performing sector, 4.47*f*
      - priorities, 4.55, 4.56*f*
    - R&D/GDP ratio, 4.45*t*
    - science literacy, 7.18*f*
    - zoo attendance, 7.16
- ## S
- Salary. *See* Income
  - Samsung Electronics Corporation, patents, 6.29*t*
  - SBIR program award dollars, 8.85*t*
  - Schmookler, Jacob, 4.7
  - Science and engineering (S&E)
    - education
      - degrees conferred
        - advanced, 8.40–41
        - share of total, 8.36–37
        - by state, 8.68–69
      - enrollment
        - foreign, O.17, 2.5
        - graduate, 2.13–14
        - by race/ethnicity, 2.14
        - by sex, 2.14, 2.32–33
        - undergraduate, 2.10–11
      - postsecondary degrees
        - women and minorities, O.17–18, 2.5
    - workforce
      - academic
        - postdoc positions, 2.29*f*, 2.30*f*, 3.27
        - tenure track, 3.26
      - age distribution, 3.29–31
      - bachelor's degree holder share, 8.46–47
      - demand, 3.8–9
      - distribution
        - educational, 3.16
        - geographic, 3.14–16
      - doctorate holder share, 8.50–51
      - education
        - financial debt, 2.5, 2.17
        - financial support, 2.4, 2.15–17
        - graduate students, 8.36–37
        - institutions providing, 2.7

- postsecondary degrees, O.11–12, O.14
    - worldwide, 2.6
  - education level, 3.6*t*
  - employment, O.13–14
    - average growth rate, 3.8*f*
    - foreign born, O.14–15
    - share of workforce, 8.48–49
  - foreign born, 3.35*t*
    - origin, 3.36*t*
    - stay rates, 3.36, 3.38
  - growth, 3.7–8
  - highlights, 3.4
  - labor market conditions, 3.22–26
  - labor migration
    - to Japan, 3.34
    - to United States, 3.33–34
  - minorities
    - age distribution, 3.20–21
    - salaries, 3.21*t*
    - unemployment, 3.20*t*
  - out-of-field employment, 3.25–26
  - in R&D, 3.17
  - retention rates, 2.12–13
  - retirement patterns, 3.28–31, 3.32*t*
  - salary
    - differentials, 3.23–24
    - doctoral degree recipients, 3.28
    - by educational degree, 3.16*f*
    - as labor market indicator, 3.9–11
    - over working life, 3.11
    - recent graduates, 3.22
  - share of total workforce, 8.48–49
  - size, 3.5–7
  - unemployment, 3.13–14
    - by race/ethnicity, 3.20*t*
  - women
    - age distribution, 3.19
    - salaries, 3.20, 3.21*t*
    - unemployment, 3.20*t*
    - work experience, 3.19
    - work responsibilities, 3.12, 3.13*t*
- Science and technology (S&T)
- collaborative efforts, O.10–11
  - employment, 3.7*f*
  - globalization, O.3
  - public attitudes
    - astrology, 7.23*f*
    - biotechnology and medical research, 7.29–31
    - by country, 7.24*f*
    - environmental issues, 7.25–26
      - governmental policy, 7.27–28
    - genetically modified food, 7.31–33
    - global warming, 7.26
    - government funding, 7.25
    - human cloning, 7.33–35
    - information sources, 7.7*f*, 7.10*f*
      - in other countries, 7.10
    - interest levels, 7.12–14
      - by news story, 7.15
    - mad cow disease, 7.32
    - nanotechnology, 7.35–36
    - paranormal phenomena, 7.22*f*
    - pseudoscience, 7.21–22
    - science literacy, by country, 7.18*f*
    - science occupations, 7.37–39
    - scientific process, 7.19
    - stem cell research, 7.34–35
    - surveys on, 7.6
    - technological development, 7.28–29
    - worldwide, 7.12–14
    - television programs, 7.8–9

Science(s)

    - precollege students
      - coursetaking, 1.5, 1.23–24, 1.51–52
        - availability of advanced, 1.24–25
        - by community type, 1.26*f*, 1.27*f*
        - by race/ethnicity, 1.28–29
        - by school poverty rate, 1.28–29
        - by school size, 1.26*f*, 1.27*f*
        - by sex, 1.28, 1.30
      - international comparisons, 1.20–23
      - literacy, O.19*f*
      - performance
        - curriculum based, 1.21–23
        - eighth grade, 8.20–21
        - fourth grade, 8.12–13
        - gaps, 1.10–11
      - proficiency
        - eighth grade, 8.22–23
        - fourth grade, 8.14–15
      - television programs, 7.8–9
    - Scientific expertise, growth, O.9–11
    - Scientific instruments
      - manufacturing
        - exports, by country, 6.16*f*, 6.18
        - global market share, 6.15
        - value added, 6.14*f*
    - Scientific journals. *See* Literature, scientific and technical
    - Scientists, 3.6
    - Scopes trial, 7.20
    - Scotland. *See also* United Kingdom
      - average math/science performance, 1.21*t*, 1.23*t*
    - S&E. *See* Science and engineering
    - Sense About Science, 7.21
    - September 11, 2001
      - R&D investments after, O.4
      - visas affected, O.16–17
    - Sex comparisons
      - academic doctoral S&E workforce, O.20*f*
      - academic R&D, 5.26
      - education
        - first university degrees, 2.32–33
        - postsecondary students, S&E enrollment, 2.14
        - precollege students
          - coursetaking, 1.5
          - mathematics performance, 1.16
          - science performance, 1.16
        - knowledge of S&T issues, 7.16
        - salary differentials, 3.23–24
      - Siemens Corporation, R&D expenditures, 4.20*t*
      - Singapore
        - basic research/GDP ratio, 4.46*f*
        - postsecondary degrees in S&E, O.13*f*
        - R&D academic expenditure, 4.53*f*
        - R&D/GDP ratio, 4.45*t*
      - Slovak Republic
        - education
          - average math/science performance, 1.21*t*, 1.23*t*
          - foreign students, O.14*f*
          - science literacy, O.19*f*
          - undergraduate enrollment, 2.32*f*

- R&D academic expenditure, 4.53f
- R&D/GDP ratio, 4.45t
- Slovenia
  - R&D academic expenditure, 4.53f
  - R&D/GDP ratio, 4.45t
- Small Business Innovation Development Act (1982), 4.32, 4.37
- Small Business Innovation Research program (SBIR), 8.84–85
- Small businesses
  - federal R&D funding, 0.21–22, 4.37
  - SBIR program, 8.84–85
- Smithkline Beecham Corporation, patents, 6.34t
- Social sciences and humanities
  - as academic work activity, 5.30f
  - articles, 5.41t, 5.44f
  - graduate students and research assistantships, 5.31t
  - R&D
    - expenditure, 4.54f
      - academic, 5.12–13
      - on equipment, 5.18f
      - federal, 5.15f
    - research space, 5.19–20
  - as research activity, 5.34t
- Socioeconomic infrastructure indicator, 6.25
- Sony Corporation
  - patents granted, 6.29t
  - R&D expenditures, 4.20t
- South America
  - R&D expenditures, 4.40
  - per capita, 4.47f
- South Carolina. *See* State indicators
- South Dakota. *See* State indicators
- South Korea
  - basic research/GDP ratio, 4.46f
  - education
    - average math/science performance, 1.21t, 1.23t
    - doctoral degrees, 2.24–25
    - foreign students, 0.14f
    - postsecondary, 0.11f, 3.33f
      - degrees in S&E, 0.13f
    - science literacy, 0.19f
    - undergraduate enrollment, 2.32f
  - GDP composition, 4.43f
  - imports
    - advanced technology, 6.22f
    - manufacturing know-how, 6.24
  - information sources on S&T, 7.10
  - intellectual property, 5.57t
  - journal article output, 0.10
  - manufacturing, high-technology value added, 6.12f
  - market exchange rate, 4.39
  - patent classes, 6.32t
  - patents granted, 6.30f
  - public interest in S&T, 7.14f
    - government funding, 7.25
    - science literacy, 7.18f
  - R&D expenditures
    - academic, 4.53f
    - by funding source, 4.48f
    - ICT, 4.51
    - industrial, 4.50f
    - by performing sector, 4.47f
    - priorities, 4.55, 4.56f
  - R&D/GDP ratio, 4.45t
- Spain
  - basic research/GDP ratio, 4.46f
  - education
    - average math/science performance, 1.21t, 1.23t
    - foreign students, 0.14f
    - science literacy, 0.19f
    - undergraduate enrollment, 2.32f
  - R&D expenditure
    - academic, 4.53f
    - ICT, 4.51
    - industrial, 4.50f
  - R&D/GDP ratio, 4.45t
- State indicators
  - academic article output, 8.70–71, 8.72–73
  - academic patents awarded, 8.74–75
    - per S&E occupation, 8.76–77
  - education
    - Advanced Placement Exam
      - high scorers, 8.30–31
      - participation, 8.28–29
    - bachelor's degrees, 8.32–33
      - in NS&E, 8.34–35
    - mathematics performance
      - eighth grade, 8.16–17
      - fourth grade, 8.8–9
    - mathematics proficiency
      - eighth grade, 8.18–19
      - fourth grade, 8.10–11
    - public school expenditure
      - per pupil, 8.26–27
      - share of GSP, 8.24–25
    - S&E degrees
      - advanced, 8.40–41
      - doctoral, 8.68–69
      - share of all degrees, 8.36–37
  - S&E graduate students, 8.38–39
  - science performance
    - eighth grade, 8.20–21
    - fourth grade, 8.12–13
  - science proficiency
    - eighth grade, 8.22–23
    - fourth grade, 8.14–15
  - student aid, 8.44–45
  - undergraduate costs, 8.42–43
- high technology
  - business formation, 8.80–81
  - employment, 8.82–83
  - share of business establishment, 8.78–79
  - venture capital, 8.88–89
- R&D
  - academic, 8.66–67
  - federal obligation
    - per civilian worker, 8.60–61
    - per S&E occupation, 8.62–63
  - industry performed, 8.64–65
  - share of GSP, 8.58–59
- SBIR program award dollars, 8.84–85
- venture capital
  - disbursed, 8.86–87
  - per deal, 8.90–91
  - high-technology companies, 8.88–89

- workforce
  - bachelor's degree holders, 8.46–47
  - computer specialists, 8.56–57
  - doctorate holders, 8.50–51
  - engineers, 8.52–53
  - life and physical scientists, 8.54–55
  - S&E occupations, 8.48–49
- Statistics, Advanced Placement testing, 1.31*t*
- Stem cell research, attitudes toward, 7.34–35
- Stevenson-Wydler Technology Innovation Act (1980), 4.32
- Strayer College, 2.9
- Students. *See also* Education; *specific academic fields*
  - foreign, O.13, O.14*f*
    - college enrollment, 2.10–11, 2.32*f*
      - S&E, 2.14–15
    - competition, 2.6
    - doctorates earned, O.15–16
    - S&E degrees earned, 2.5
    - stay rate, O.16*f*, 2.26–28
    - visa categories, O.16–17
  - global mobility, 2.33–35
  - graduate, 5.31*t*
    - financial debt, 2.17
    - financial support, 2.15–17
  - information technology use
    - home, 1.42–43
    - by race/ethnicity, 1.43*f*
    - school, 1.42
  - mathematics performance
    - changes in, 1.15*t*
    - eighth grade, 8.16–17
    - by family income, 1.17–18
    - fourth grade, 8.8–9
    - by race/ethnicity, 1.16–17, 1.28–29, 18*f*
    - by school poverty rate, 1.28–29
    - by sex, 1.16, 1.28, 1.30
  - postdoctoral fellowships, 2.29–30, 2.31
  - precollege
    - Advance Placement completion, 1.28*t*, 1.29–30
    - expenditures
      - per pupil, 8.26–27
      - share of GSP, 8.24–25
    - information technology use, 1.6–7
    - performance
      - gaps, 1.10–11
      - mathematics, 1.9–10, 1.12–13, 1.19
      - science, 1.16
    - student demographics, 1.20
  - science literacy, O.19*f*
  - science performance
    - eighth grade, 8.20–21
    - by family income, 1.17–18
    - fourth grade, 8.12–13
    - by race/ethnicity, 1.16–17, 1.28–29, 18*f*
    - by school poverty rate, 1.28–29
    - by sex, 1.16, 1.28, 1.30
  - undergraduate
    - age 15+, O.11*f*
    - financial debt, 2.17
    - international comparisons, 1.49–50
    - remedial assistance, 1.50–51
    - student aid, 8.44–45
    - transition to, 1.7
      - rate, 1.48–49
    - tuition costs, 2.12
- Survey of the American Freshman, national norms, 2.11
- Sweden
  - article output, 5.40*f*
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - foreign students, O.14*f*
    - science literacy, O.19*f*
    - undergraduate enrollment, 2.32*f*
  - intellectual property, 5.57*t*
  - R&D expenditures, 4.6
    - academic, 4.53*f*
    - ICT, 4.51
    - industrial, 4.50*f*
  - R&D/GDP ratio, 4.45*t*
- Switzerland
  - basic research/GDP ratio, 4.46*f*
  - education
    - average math/science performance, 1.21*t*, 1.23*t*
    - foreign students, O.14*f*
    - science literacy, O.19*f*
    - undergraduate enrollment, 2.32*f*
  - R&D expenditure
    - academic, 4.53*f*
    - majority-owned affiliates, 4.58*f*
  - R&D/GDP ratio, 4.45*t*
- T**
- Taiwan
  - basic research/GDP ratio, 4.46*f*
  - education
    - doctoral degrees, 2.24–25
    - postsecondary degrees in S&E, O.12–13
  - import of advanced technology, 6.22*f*
  - manufacturing, high-technology value added, 6.12*f*
  - market exchange rate, 4.39
  - patent classes, 6.32*t*
  - patents granted, 6.30*f*
  - R&D academic expenditure, 4.53*f*
  - R&D/GDP ratio, 4.45*t*
- Takeda Chemical Industries Ltd., patents, 6.34*t*
- Tax credits
  - for research and experimentation, 4.5–6, 4.30
    - claims, 4.30–31
- Teachers
  - instructional practices, 1.36
  - precollege
    - attrition, 1.38–39, 1.52
    - certification, 1.34–1.35
    - education, 1.33
    - information technology use, 1.45–47
    - job satisfaction, 1.41*t*
    - mathematics and science, 1.6
    - occupation of former, 1.40
    - out-of-field assignment, 1.33
    - preparation, 1.33
    - professional development, 1.35–1.37
    - quality, 1.32
    - retention, 1.39–41
    - salaries
      - international comparisons, 1.38
      - trends, 1.37
    - standards, 1.32
  - S&E doctorate holders, 5.30*f*
  - teaching assistantships, 2.15–17
  - tenure track, 3.26
- Teaching assistantships, 2.15–17



- Technical journals. *See* Journals; Literature, scientific and technical
- Technological infrastructure indicator, 6.25–26
- Technology alliances, 4.34–35
- Technology transfer, 4.32  
by CRADAs, 4.35–36
- Technology Transfer Commercialization Act (2000), 4.32
- Television  
science programs, 7.8–9  
source of S&T information, 7.7–10
- Temporary work visas. *See* Visa issuance
- Tennessee. *See* State indicators
- Tenure-track positions, 3.26
- Terrorism, 4.28
- Texas. *See* State indicators
- Thailand  
education  
doctoral degrees, 2.24–25  
foreign students, O.14f  
postsecondary, O.11f, 3.33f  
undergraduate enrollment, 2.32f  
manufacturing, leading indicators, 6.26f
- TIMSS. *See* Trends in International Mathematics and Sciences Study (TIMSS)
- Toshiba Corporation, patents, 6.29t
- Toyota Motor Corporation, R&D expenditures, 4.20t
- Trade  
in advanced-technology products, 6.21t  
export markets, 6.22f  
suppliers, 6.22f  
in manufacturing know-how, 6.23–24
- Trade balance  
intellectual property, 6.23–24
- United States  
erosion of, 6.20  
by product type, 6.20f  
technology products, 6.19
- Trends in International Mathematics and Sciences Study (TIMSS), 1.20–23
- Triadic patent families, 6.6, 6.34–36  
inventor's residence, 6.37f
- Trigonometry, precollege coursetaking, 1.28
- Trinidad and Tobago, R&D/GDP ratio, 4.45t
- Tuition costs, 2.12
- Tunisia  
education  
foreign students, O.14f  
undergraduate enrollment, 2.32f
- Turkey  
education  
average math/science performance, 1.21t, 1.23t  
doctoral degrees, 2.24–25  
foreign students, O.14f  
science literacy, O.19f  
undergraduate enrollment, 2.32f  
R&D academic expenditure, 4.53f  
R&D/GDP ratio, 4.45t
- U**
- Unemployment, 3.20t, 3.25
- United Kingdom  
article output, 5.40f  
education  
average math/science performance, 1.21t, 1.23t  
doctoral degrees, 2.27f  
foreign students, O.14f, 2.34  
postsecondary, O.11f, 3.33f  
degrees in S&E, O.13f  
undergraduate enrollment, 2.32f  
GDP composition, 4.43f  
import of advanced technology, 6.21  
intellectual property, 5.57t  
manufacturing, high-technology exports, 6.16f  
patents granted, 6.30f  
R&D  
expenditures, 4.40–41  
academic, 4.53f  
by funding source, 4.48f, 4.52f  
ICT, 4.51  
industrial, 4.50f  
majority-owned affiliates, 4.58f  
by performing sector, 4.47f  
priorities, 4.56f  
foreign support, O.4  
R&D/GDP ratio, 4.45t
- United States. *See also* Federal government; State indicators  
article output, 5.38–39, 5.40f  
basic research/GDP ratio, 4.46f  
education  
college-age cohort, O.18  
degrees  
S&E, O.12, O.13f  
versus occupation growth, O.13–14  
elementary and secondary, O.18  
foreign students, O.13, O.14f  
remaining after degree, O.16  
postsecondary, O.11f  
science literacy, O.19f  
undergraduate enrollment, 2.32f  
employment of foreign born, O.14–15  
GDP composition, 4.43f  
high-technology manufacturing, O.6–7  
trade balance, O.8f  
intellectual property, 5.57t  
journal article output, O.9–11  
manufacturing  
aerospace industry, 6.14–15  
communication equipment, 6.13–14  
export of know-how, 6.23–24  
high-technology exports, 6.16f  
high-technology value added, 6.12f  
leading indicators, 6.26f  
migration of labor, 3.33–34  
public interest in S&T, 7.14f  
stem cell research, 7.35  
R&D  
academic, O.9  
expenditures, O.4, 4.40–41  
academic, 4.53f  
by funding source, 4.48f  
ICT, 4.51  
industrial, 4.50f, 4.54f  
per capita, 4.47f  
by performing sector, 4.47f  
priorities, 4.56f  
by foreign companies, O.4–5  
overseas, O.5f  
researchers, O.6, O.7f  
R&D/GDP ratio, 4.45t
- United States Open University, 2.10
- University of California, patents, 6.34t
- University of Phoenix, 2.9
- University of Texas, patents, 6.34t
- University(ies). *See* Colleges and universities; *specific universities*

Uruguay, R&D/GDP ratio, 4.45*t*

Utah. *See* State indicators

## V

Venezuela, manufacturing, leading indicators, 6.26*f*

Venture capital

average investment, 8.90

data classification systems, 6.10

disbursements, 6.38–39

by financing stage, 6.40–41

by industry, 6.40*f*

by state, 8.86–87

by deal, 8.90–91

global trends, 6.6–7

Internet, 6.39

new capital committed, 6.38*t*

risk aversion, O.22

seed money, 6.41

share of GSP, 8.86–87

value of average investment, 6.41*f*

Vermont. *See* State indicators

Virginia. *See* State indicators

Visa issuance

affect of September 11, 2001, O.16–17

H-1B, 3.36*t*

postdoctoral fellows, 2.29

scientists and engineers, 3.37

S&E graduate students, 2.5–6

stay rates, 3.36, 3.38

temporary work, 3.34–36

Volkswagen Corporation, R&D expenditures, 4.20*t*

## W

Wales. *See* United Kingdom

Washington (state) . *See* State indicators

Weapons technology, 6.19

U.S. trade, 6.21*t*

West Virginia. *See* State indicators

Western Governors University, 2.10

Whites. *See also* Race/ethnicity

in academic R&D, 5.27–28

education

college enrollment, 2.10*f*

S&E, 2.14

coursetaking by, 1.28–29

financial support, 2.16

mathematic performance, 1.18*f*

school-age population, 1.20

S&E degrees, 2.19–20

Wisconsin. *See* State indicators

Women. *See also* Sex comparisons

academic employment, 5.27*t*

doctoral workforce, 5.26–27

education

financial support, 2.16–17

S&E degrees earned, O.17–18

doctoral, 2.22–23

undergraduate, 2.5

in S&E workforce

age distribution, 3.19

income, 3.20, 3.21*t*

unemployment, 3.20*t*

work experience, 3.19

Workforce, science and engineering

academic

postdoc positions

at federally funded R&D centers, 2.30*f*

by field, 2.29*f*

reasons for taking, 3.27

tenure track, 3.26

age distribution, 3.29–31

bachelor's degree holder share of, 8.46–47

demand for, 3.8–9

distribution

educational, 3.16

geographic, 3.14–16

doctorate holder share of, 8.50–51

educational level, 3.6*t*

foreign born, 3.35*t*

origin of, 3.36*t*

stay rates, 3.36, 3.38

growth, 3.7–8

labor market conditions, 3.22–26

labor migration

to Japan, 3.34

to United States, 3.33–34

minorities

age distribution, 3.20–21

salaries, 3.21*t*

unemployment, 3.20*t*

out-of-field employment, 3.25–26

in R&D, 3.17

retirement patterns, 3.28–31, 3.32*t*

salary

differentials, 3.23–24

doctoral degree recipients, 3.28

by educational degree, 3.16*f*

as labor market indicator, 3.9–11

over working life, 3.11

recent graduates, 3.22share of total workforce, 8.48–49

size, 3.5–7

unemployment, 3.13–14

by race/ethnicity, 3.20*t*

women

age distribution, 3.19

salaries, 3.20, 3.21*t*

unemployment, 3.20*t*

work experience, 3.19

work responsibilities, 3.12, 3.13*t*

Working Families Tax Relief Act of 2004, 4.30

Wyoming. *See* State indicators

## Y

Yoder Brothers, Inc., patents, 6.34*t*

## Z

Zoo attendance, 7.14, 7.16