

Table 5

U.S. R&D expenditures, by type of R&D and source of funds: Selected years, 1970–2023

(Billions of current and constant 2017 dollars and percent)

Type of R&D and source of funds	1970	1975	1980	1985	1990	1995	2000	2005	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 ^a	2023 ^b	
Current \$billions																								
Research	9.3	13.0	22.5	40.1	57.9	70.5	98.5	129.7	145.2	155.4	155.4	160.6	167.2	174.5	181.5	197.0	203.4	216.0	235.0	244.0	262.3	291.9	308.6	
Business	3.0	4.2	8.0	16.1	23.6	31.1	45.4	50.7	56.2	58.6	58.7	63.0	67.2	70.9	74.5	85.4	87.7	93.7	107.4	113.0	129.9	145.2	153.1	
Federal government	5.6	7.5	12.4	20.3	27.8	30.5	39.7	58.9	63.1	69.7	68.7	68.3	68.6	70.3	71.7	75.0	77.5	82.5	86.6	89.4	89.4	100.2	105.7	
Other nonfederal	0.8	1.2	2.1	3.7	6.5	8.9	13.4	20.0	26.0	27.1	28.0	29.3	31.5	33.3	35.3	36.6	38.2	39.8	41.0	41.6	43.0	46.5	49.8	
Nonfederal government	0.2	0.3	0.5	0.8	1.3	1.6	2.1	2.8	3.8	3.8	3.7	3.7	3.7	3.7	3.8	4.3	4.4	4.6	4.7	4.9	4.9	5.2	5.5	
Higher education	0.3	0.4	0.9	1.6	3.0	3.8	5.9	8.9	11.1	11.1	11.8	12.8	13.7	14.5	15.4	16.7	17.7	18.7	19.6	20.2	21.3	23.8	26.0	
Nonprofit organizations	0.3	0.5	0.8	1.3	2.3	3.4	5.4	8.3	11.0	12.2	12.4	12.8	14.0	15.1	16.1	15.6	16.0	16.5	16.6	16.5	16.8	17.5	18.3	
Constant 2017 \$billions																								
Research	46.3	46.6	57.1	79.0	97.7	105.4	135.5	159.0	165.0	173.3	169.9	172.4	176.5	181.0	186.5	200.5	203.4	211.2	226.0	231.6	238.1	247.3	252.4	
Business	14.7	15.2	20.3	31.7	39.9	46.5	62.5	62.2	63.8	65.4	64.2	67.6	70.9	73.6	76.5	86.9	87.7	91.6	103.3	107.3	117.9	123.1	125.2	
Federal government	27.7	27.1	31.5	40.0	46.8	45.6	54.7	72.3	71.7	77.7	75.1	73.3	72.4	72.9	73.7	76.3	77.5	80.7	83.3	84.8	81.1	84.9	86.4	
Other nonfederal	3.9	4.3	5.3	7.3	11.0	13.3	18.4	24.5	29.5	30.2	30.6	31.5	33.2	34.5	36.3	37.3	38.2	38.9	39.4	39.5	39.1	39.4	40.7	
Nonfederal government	1.1	1.2	1.2	1.5	2.2	2.4	2.8	3.5	4.3	4.2	4.1	3.9	3.9	3.9	3.9	4.4	4.4	4.5	4.6	4.7	4.5	4.4	4.5	
Higher education	1.2	1.5	2.2	3.2	5.0	5.7	8.1	10.9	12.7	12.4	12.9	13.8	14.5	15.0	15.8	17.0	17.7	18.3	18.9	19.2	19.3	20.2	21.3	
Nonprofit organizations	1.5	1.7	1.9	2.6	3.8	5.1	7.4	10.2	12.5	13.7	13.6	13.8	14.8	15.7	16.6	15.9	16.0	16.1	16.0	15.6	15.3	14.8	14.9	
Percent distribution																								
Research	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Business	31.7	32.6	35.5	40.1	40.8	44.1	46.1	39.1	38.7	37.7	37.8	39.2	40.2	40.6	41.0	43.3	43.1	43.4	45.7	46.3	49.5	49.8	49.6	
Federal government	59.9	58.2	55.2	50.7	47.9	43.3	40.3	45.5	43.4	44.9	44.2	42.5	41.0	40.3	39.5	38.1	38.1	38.2	36.8	36.6	34.1	34.3	34.2	
Other nonfederal	8.4	9.3	9.3	9.2	11.3	12.6	13.6	15.4	17.9	17.4	18.0	18.3	18.8	19.1	19.5	18.6	18.8	18.4	17.4	17.1	16.4	15.9	16.1	
Nonfederal government	2.5	2.5	2.1	1.9	2.2	2.3	2.1	2.2	2.6	2.4	2.4	2.3	2.2	2.1	2.1	2.2	2.2	2.1	2.0	2.0	1.9	1.8	1.8	
Higher education	2.7	3.1	3.8	4.0	5.1	5.4	6.0	6.8	7.7	7.1	7.6	8.0	8.2	8.3	8.5	8.5	8.7	8.7	8.3	8.3	8.1	8.1	8.4	
Nonprofit organizations	3.2	3.6	3.4	3.3	3.9	4.9	5.5	6.4	7.6	7.9	8.0	8.0	8.4	8.7	8.9	7.9	7.9	7.6	7.1	6.8	6.4	6.0	5.9	
Current \$billions																								
Experimental development	16.9	22.7	40.7	74.5	94.1	113.1	169.4	195.6	259.6	251.2	270.8	273.1	287.0	301.4	313.0	324.7	350.1	387.8	430.3	472.5	526.4	600.0	631.0	
Business	7.5	11.6	22.9	41.9	59.6	79.7	140.5	157.1	201.8	189.5	207.7	212.7	230.0	247.5	258.8	274.9	298.8	332.7	374.8	407.3	461.0	527.9	556.1	
Federal government	9.4	11.0	17.6	32.3	33.9	32.4	27.5	36.5	54.5	56.9	58.3	55.6	51.5	48.1	47.8	43.2	44.9	48.5	49.1	58.6	57.9	64.3	66.7	
Other nonfederal	0.1	0.1	0.2	0.4	0.6	0.9	1.4	2.1	3.2	4.8	4.8	4.8	5.4	5.9	6.4	6.6	6.4	6.6	6.4	6.5	7.5	7.8	8.3	
Nonfederal government	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.9	
Higher education	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	1.2	1.3	1.5	1.6	1.7	1.9	2.0	2.1	2.2	2.3	2.3	2.5	2.8	3.0	
Nonprofit organizations	0.0	0.1	0.1	0.2	0.3	0.5	0.9	1.4	2.2	3.0	2.9	2.9	3.3	3.6	4.0	3.9	3.6	3.6	3.4	3.5	4.2	4.2	4.4	
Constant 2017 \$billions																								
Experimental development	83.8	81.7	103.5	146.6	158.6	168.9	233.0	239.9	294.9	280.3	296.0	293.1	302.8	312.6	321.6	330.5	350.1	379.1	413.8	448.5	477.8	508.3	516.0	
Business	37.1	41.7	58.3	82.4	100.4	119.1	193.3	192.6	229.3	211.5	227.1	228.3	242.7	256.7	265.9	279.9	298.8	325.3	360.5	386.6	418.5	447.3	454.8	
Federal government	46.5	39.5	44.7	63.6	57.1	48.5	37.8	44.7	62.0	63.5	63.7	59.6	54.4	49.9	49.2	44.0	44.9	47.4	47.2	55.7	52.5	54.5	54.5	

Table 5**U.S. R&D expenditures, by type of R&D and source of funds: Selected years, 1970–2023**

(Billions of current and constant 2017 dollars and percent)

Type of R&D and source of funds	1970	1975	1980	1985	1990	1995	2000	2005	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022 ^a	2023 ^b	
Other nonfederal	0.3	0.4	0.5	0.7	1.1	1.4	1.9	2.6	3.6	5.3	5.2	5.2	5.7	6.1	6.6	6.7	6.4	6.4	6.2	6.2	6.8	6.6	6.8	
Nonfederal government	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.5	0.6	0.7	0.5	0.6	0.5	0.5	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Higher education	0.0	0.1	0.2	0.2	0.4	0.4	0.5	0.6	0.7	1.3	1.4	1.6	1.7	1.8	1.9	2.1	2.1	2.2	2.2	2.2	2.3	2.4	2.5	
Nonprofit organizations	0.2	0.2	0.3	0.4	0.5	0.7	1.2	1.8	2.5	3.4	3.1	3.1	3.5	3.8	4.2	4.0	3.6	3.5	3.3	3.3	3.8	3.6	3.6	
	Percent distribution																							
Experimental development	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Business	44.2	51.1	56.3	56.2	63.3	70.5	83.0	80.3	77.8	75.4	76.7	77.9	80.1	82.1	82.7	84.7	85.3	85.8	87.1	86.2	87.6	88.0	88.1	
Federal government	55.4	48.4	43.2	43.3	36.0	28.7	16.2	18.6	21.0	22.7	21.5	20.3	18.0	16.0	15.3	13.3	12.8	12.5	11.4	12.4	11.0	10.7	10.6	
Other nonfederal	0.3	0.5	0.5	0.5	0.7	0.8	0.8	1.1	1.2	1.9	1.8	1.8	1.9	1.9	2.0	2.0	1.8	1.7	1.5	1.4	1.4	1.3	1.3	
Nonfederal government	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	
Higher education	0.0	0.1	0.2	0.2	0.2	0.3	0.2	0.3	0.2	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	
Nonprofit organizations	0.2	0.3	0.3	0.2	0.3	0.4	0.5	0.7	0.8	1.2	1.1	1.1	1.2	1.2	1.3	1.2	1.0	0.9	0.8	0.7	0.8	0.7	0.7	

^a Some data for 2022 are preliminary and may be revised later.^b The data for 2023 include estimates and are likely to be revised later.**Note(s):**

Other nonfederal includes nonfederal government, higher education, and nonprofit organizations.

Source(s):

National Center for Science and Engineering Statistics, National Patterns of R&D Resources (annual series).