

TABLE 8-1

U.S. university patent awards, by technology area: 2002 and 2016

(Number and percent)

Rank	Technology area	2002	2016	Average annual change (%)	2016 share (%)
-	All university patents	3,461	6,639	4.8	100
1	Pharmaceuticals	575	1,008	4.1	15.2
2	Biotechnology	710	953	2.1	14.4
3	Medical technology	236	683	7.9	10.3
4	Organic fine chemistry	295	480	3.5	7.2
5	Measurement	216	438	5.2	6.6
6	Computer technology	119	406	9.2	6.1
7	Analysis of biological materials	143	296	5.3	4.5
8	Electrical machinery, apparatus, energy	87	264	8.3	4.0
9	Semiconductors	106	244	6.1	3.7
10	Chemical engineering	70	178	6.9	2.7
11	Optics	140	175	1.6	2.6
12	Microstructural and nanotechnology	65	143	5.7	2.1
13	Basic materials chemistry	51	139	7.4	2.1
14	Macromolecular chemistry, polymers	77	131	3.8	2.0
15	Digital communication	25	113	11.3	1.7
16	Materials, metallurgy	62	111	4.3	1.7
17	Other special machines	78	94	1.3	1.4
18	Surface technology, coating	56	87	3.2	1.3
19	Telecommunications	50	85	3.9	1.3
20	Audio-visual technology	37	79	5.6	1.2
21	Engines, pumps, turbines	25	63	6.8	0.9
22	Basic communication processes	20	62	8.4	0.9
23	Environmental technology	43	56	1.9	0.8
24	Control	22	54	6.6	0.8



Rank	Technology area	2002	2016	Average annual change (%)	2016 share (%)
25	Food chemistry	28	41	2.7	0.6
26	Civil engineering	18	36	4.9	0.5
27	Textile and paper machines	20	32	3.6	0.5
28	Transport	16	29	4.4	0.4
29	Mechanical elements	19	27	2.6	0.4
30	Other consumer goods	9	25	7.9	0.4
31	Handling	7	21	7.9	0.3
32	Thermal processes and apparatus	10	19	4.5	0.3
33	IT methods for management	3	19	15.0	0.3
34	Machine tools	17	17	0.2	0.3
35	Furniture, games	4	17	10.7	0.2
36	Unclassified	1	13	19.8	0.2

IT = information technology.

Note(s)

Patents are allocated according to patent inventorship information. Data include institutions affiliated with academic institutions, such as university and alumni organizations, foundations, university associations, and affiliated hospitals. Universities vary in how patents are assigned (e.g., to boards of regents, individual campuses, or entities with or without affiliation with university). Patents are classified under the World Intellectual Property Organization classification of patents, which classifies International Patent Classification codes under 35 technical fields. Fractional counts of patents were assigned to each technological field on patents to assign the proper weight of a patent to the corresponding technological fields under the classification. For instance, a patent that is classified under five different technological fields will see each of its technological fields receive a 0.2 count of the patent so that the patent accounts for a count of 1.0 across all technological fields. Data across technical fields sum up to the total number of granted academic patents in the United States and also sum up to the total number of U.S. Patent and Trademark Office (USPTO) patents granted to academic institutions. See Appendix Table 8-2 for more years of data.

Source(s)

National Science Foundation, National Center for Science and Engineering Statistics; SRI International; Science-Metrix; USPTO patent data, accessed April 2017.

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