



National Center for Science and
Engineering Statistics

InfoBrief

Three-Quarters of U.S. Businesses that Performed or Funded R&D Viewed Trade Secrets as Important in 2018

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Brandon Shackelford and John Jankowski

Many companies that perform or fund research and development do so with the intent of creating intellectual property (IP) they can use to gain an advantage in the marketplace. The competitive advantage that IP can give a company is diminished if others can easily copy and use the IP. For this reason, businesses use a variety of strategies to protect their IP. The Business Research and Development Survey (BRDS) asked respondents to report the importance of several types of IP protection to their company. More companies viewed trade secrets as important than any other type of IP protection, with 51.7% of U.S. businesses that performed or funded R&D reporting trade secrets as very important to their company in 2018 and 76.2% reporting them as very or somewhat important ([table 1](#), [figure 1](#)). Trade secrets are defined under U.S. law as all forms and types of financial, business, scientific, technical, economic, or engineering information that (a) the owner has taken reasonable measures to keep secret, and (b) derives independent economic value, actual or potential, from not being generally known to the public (18 U.S.C. § 1839). The remaining types of IP protection covered by BRDS (utility patents, design patents, trademarks, copyrights, and mask works) were each viewed as very or somewhat important by fewer businesses. This InfoBrief presents an overview of the degree of importance of each of these types of IP protection to R&D-active U.S. businesses, including comparisons to the population of all for-profit businesses and observations on variations by industry and size of company.

Table 1**Importance of intellectual property protection to companies that performed or funded R&D, by type: 2018**

(Percent)

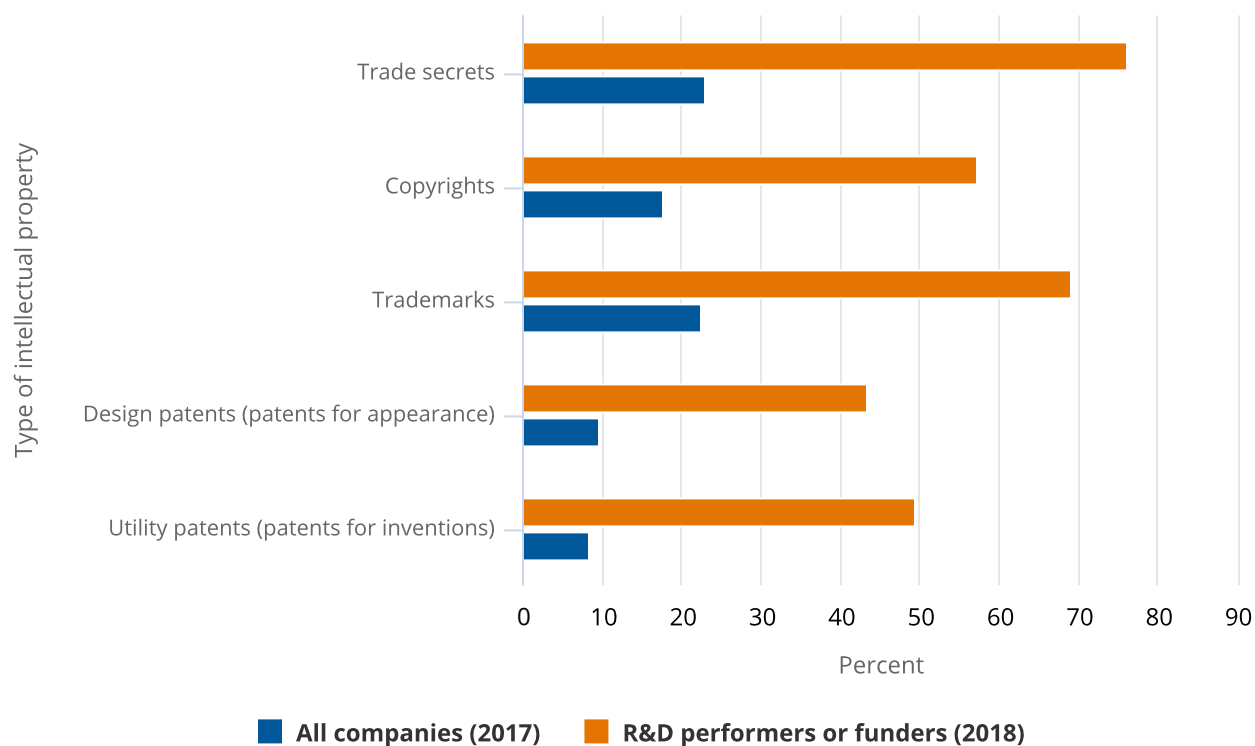
| Type of intellectual property protection | Very important | Somewhat important | Not at all important |
|--|----------------|--------------------|----------------------|
| Trade secrets | 51.7 | 24.5 | 23.8 |
| Trademarks | 39.8 | 29.4 | 30.8 |
| Copyrights | 27.8 | 29.5 | 42.7 |
| Utility patents (patents for inventions) | 31.3 | 18.1 | 50.5 |
| Design patents (patents for appearance) | 20.3 | 23.1 | 56.6 |
| Mask works | 7.2 | 10.1 | 82.7 |

Note(s):

Detail may not add to 100% because of rounding. Statistics are representative of companies located in the United States with at least 10 employees that performed or funded \$50,000 or more of R&D.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2018.

Figure 1**Companies indicating intellectual property protection is very or somewhat important, by type for all companies and R&D-active companies: 2017 and 2018****Note(s):**

Statistics for *all companies* are representative of companies located in the United States with at least 10 employees. There were estimated to be 1.1 million such companies in 2017. Statistics for R&D-active companies are representative of companies located in the United States with at least 10 employees that performed or funded \$50,000 or more of R&D in 2018. There were estimated to be 26,871 such companies in 2018.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Annual Business Survey, 2017, and Business Research and Development Survey, 2018.

Comparison to All Companies

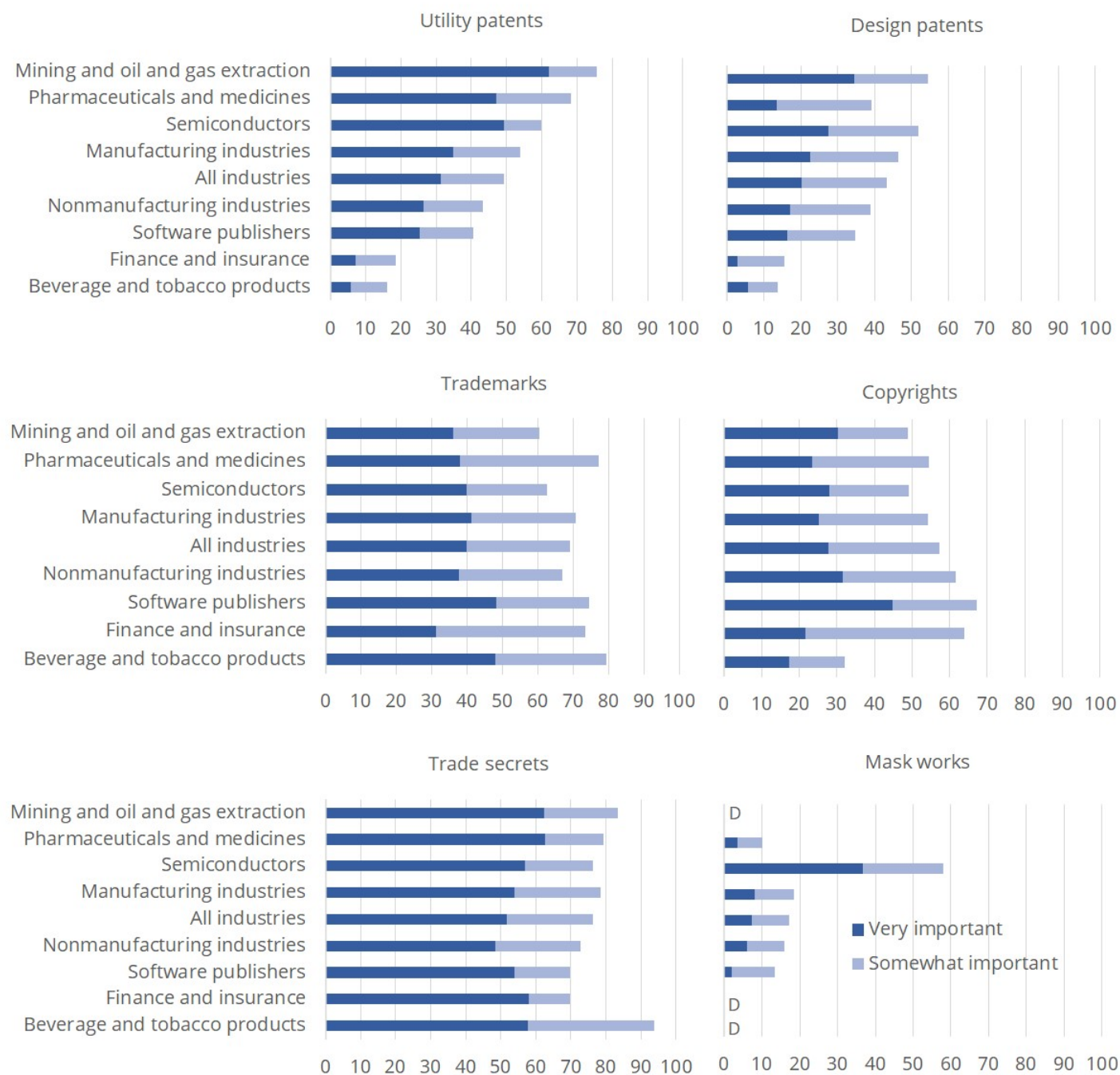
Analysis of survey data from 2008 revealed that businesses with R&D activity (those that perform or fund R&D) reported IP protection as important in greater proportions compared to the population of all businesses—of which the vast majority are not R&D active (Jankowski 2012). This finding holds when comparing estimates from the 2018 BRDS to the 2017 Annual Business Survey (ABS), which asked all U.S. businesses—regardless of R&D activity—about the importance of IP protection (Shackelford and Kindlon 2021). [Figure 1](#) presents the share of all companies from the 2017 ABS and the share of R&D-active companies from the 2018 BRDS that viewed each type of IP protection as very or somewhat important. For each type of IP that was covered by both surveys, the share of R&D-active companies that viewed IP protection as important was at least three times that of all companies. Almost half of R&D-active companies viewed utility patents as very or somewhat important compared to less than 10% of all companies. Utility patents, commonly known as patents for invention, are IP rights granted to inventors in a legal jurisdiction that gives them the sole right to use the invention for a limited time in exchange for public disclosure of the invention when the patent is granted.

Industry

For all but one type of IP protection, in 2018 a higher share of R&D-active businesses classified in manufacturing industries consider IP protection important (very or somewhat) than do R&D-active businesses in nonmanufacturing industries ([figure 2](#)).¹ For example, 54.0% of manufacturing businesses viewed utility patents to be important (34.8% very important and 19.2% somewhat important) compared to 43.2% of nonmanufacturing businesses (26.5% very and 16.7% somewhat). Other data collected by BRDS show that the percentage of R&D-active businesses in manufacturing industries that report filing for patents and being issued patents is greater than the percentage of nonmanufacturing businesses that did so ([table 2](#)). A larger share of nonmanufacturing businesses both reported allowing others to use their patents for free (akin to open-source software) and reported making use of open-source patents or other freely available IP.

Copyrights is the only type of IP protection covered by BRDS with a greater share of nonmanufacturing businesses viewing it as important (31.5% very and 30.1% somewhat) than manufacturing businesses (25.1% very and 29.2% somewhat). This is a form of IP protection that covers original software programs as well as other works of authorship, including literary works, art, motion pictures, and sound recordings (15 U.S.C. § 102).

Within the broad subsectors of manufacturing and nonmanufacturing, there is significant variation between industries in how important businesses view different types of IP protection to be. For example, mask works, a copyright-like form of IP protection defined in the Semiconductor Chip Protection Act of 1984 (17 U.S.C. §§ 901 and 908), is viewed as important by a much greater share of semiconductor manufacturing businesses (36.6% very and 21.3% somewhat) than other industries. Even for less industry-specific forms of IP protection, there are notable differences between industries. Utility patents, for example, are viewed as important by 68.3% of pharmaceuticals and medicines manufacturers compared to 16.1% of beverage and tobacco manufacturing businesses. A larger percentage of beverage and tobacco manufacturers viewed trade secrets as important (57.7% very and 36.0% somewhat) than utility patents (5.9% very and 10.2% somewhat). While it is possible to receive a patent for a food or beverage recipe or manufacturing process, many inventors choose to protect these types of IP with trade secrets, which do not expire, do not require publicly disclosing the details of the recipe, and can be used as a marketing tool (Tarazano 2013).

Figure 2**Importance of intellectual property protection for R&D active businesses, by type and selected industry: 2018**

D = data withheld to avoid disclosing operations of individual companies.

Note(s):

Statistics are representative of companies located in the United States with at least 10 employees that performed or funded \$50,000 or more of R&D.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2018.

An outlier among nonmanufacturing industries when it comes to perceptions of IP protection is the mining and oil and gas extraction sector, which had a very large share of companies report utility patents as important (61.9% very and 13.8% somewhat). Several factors have contributed to a strong emphasis on developing and protecting IP in this sector, including volatility in the prices for oil and other commodities, concerns over depleting finite reserves, and a growing response to environmental considerations (Daly, Valacchi, and Raffo 2019; Deloitte 2017). In contrast, only 18.6% of businesses in the finance and insurance sector considered utility patents to be important (7.3% very and 11.3% somewhat). A larger percentage of businesses in this sector found trade secrets and trademarks to be important. A trademark includes any word, name, symbol, or device or any combination thereof that identifies and distinguishes the source of the goods or services of one person from those of others.²

Design patents are viewed as important by fewer R&D-active companies compared to utility patents. Design patents, also known as patents for appearance, may be granted to anyone who invents a new, original, and ornamental design for a good. Design patents were viewed as very important by 13.3% and somewhat important by 25.8% of businesses in the pharmaceuticals and medicines industry. Although they are viewed as important by less than half of pharmaceutical companies, these companies do make use of design patents, particularly as an additional layer of protection to prevent competitors with drugs that treat the same condition or generic drug makers from too closely imitating the look of a brand-name pill (Misthal 2015).

Table 2**Intellectual property activity of R&D active companies located in the United States, by type of activity and industrial sector: 2018**

(Number and percent)

| Total and type of intellectual property (IP) activity | Industrial sector | | |
|--|-------------------|---------------|------------------|
| | All | Manufacturing | Nonmanufacturing |
| Total R&D active companies (number) | 26,817 | 15,445 | 11,372 |
| Applied for patent(s) from U.S. Patent and Trademark Office (USPTO) | 22 | 26 | 17 |
| Applied for nonprovisional patent(s) from USPTO | 17 | 21 | 12 |
| Applied for or plan to apply for patent(s) in foreign jurisdictions | 10 | 13 | 6 |
| Issued utility patent(s) by USPTO | 15 | 18 | 10 |
| Allowed free use of patents or other IP owned by your company (e.g., allowing free use of software patents by the open-source community) | 3 | 2 | 4 |
| Made use of open-source patents or other freely available IP not owned by your company | 10 | 6 | 14 |

Note(s):

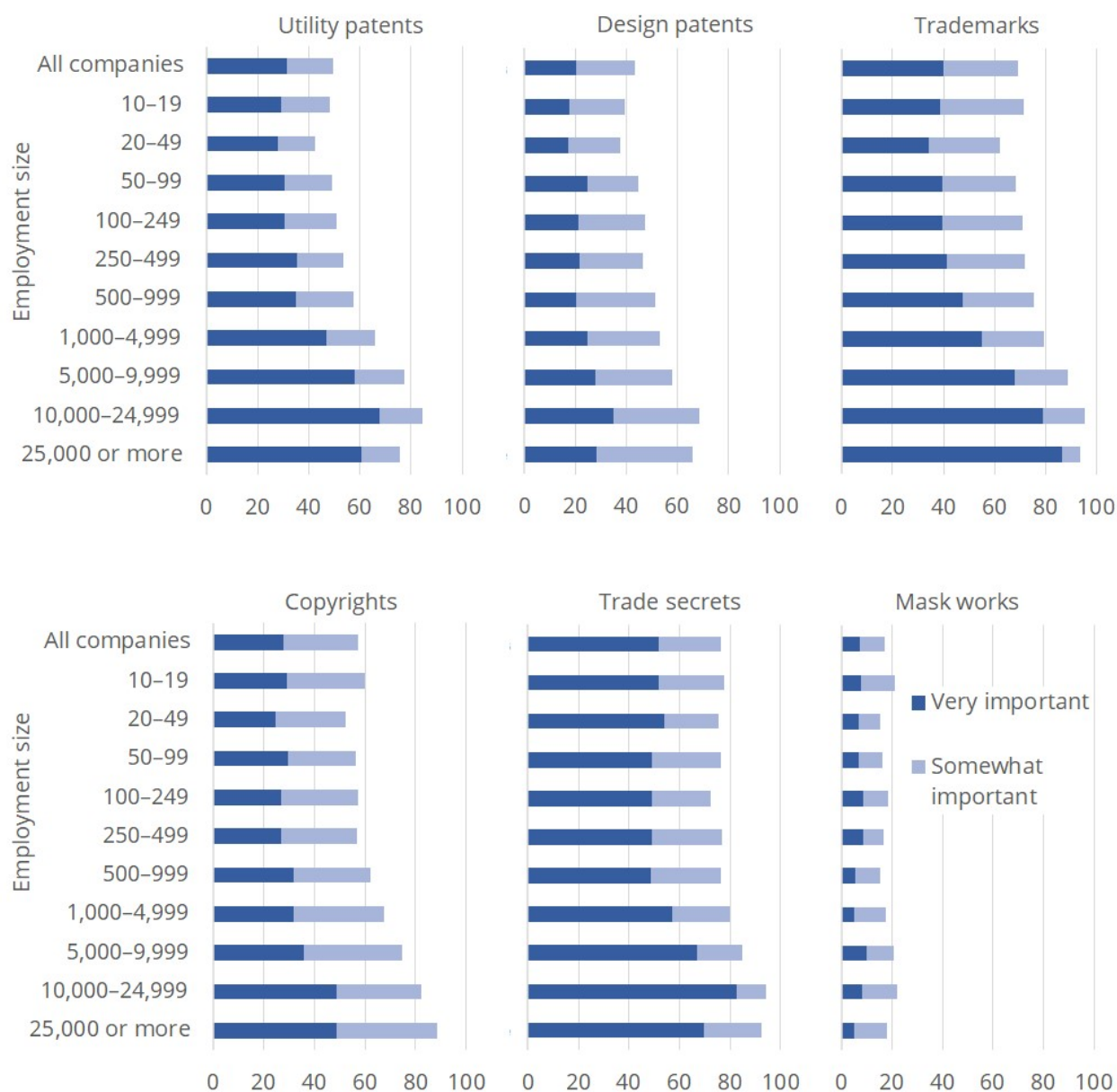
Detail may not add to total because of rounding. *Industrial sector* is based on the dominant business code for domestic R&D performance, where available. For companies that did not report business codes, the classification used for sampling was assigned. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates with estimates published for years prior to 2018. Statistics are based on companies in the United States that reported to the survey. No systematic item imputation was applied. Beginning in survey year 2018, these statistics include an adjustment to the weight to account for unit nonresponse.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2018.

Size of company

For each type of IP protection other than mask works, the share of R&D-active businesses reporting them as important is greater among larger companies (as measured by number of U.S. employees) compared to smaller companies ([figure 3](#)). For example, 84.7% of businesses with 10,000–24,999 employees viewed utility patents as important (67.5% very and 17.2% somewhat) compared to 42.7% of businesses with 20–49 employees (27.7% very and 15.0% somewhat). The relative differences between size categories are smaller for R&D-active businesses than what was observed for all businesses in the 2017 ABS (Shackelford and Kindlon 2021).

Figure 3**Importance of intellectual property protection for R&D active businesses, by type and company size: 2018****Note(s):**

Statistics are representative of companies located in the United States with at least 10 employees that performed or funded \$50,000 or more of R&D.

Source(s):

National Center for Science and Engineering Statistics and Census Bureau, Business Research and Development Survey, 2018.

Data Sources and Limitations

In this InfoBrief, money amounts are expressed in current U.S. dollars and are not adjusted for inflation. A company is defined as a business organization located in the United States, either U.S. owned or a U.S. affiliate of a foreign parent company, of one or more establishments under common ownership or control.

The sample for BRDS is selected to represent all for-profit, nonfarm companies that were publicly or privately held and had 10 or more employees in the United States. Beginning in survey year 2018, statistics are representative of companies located in the United States that performed or funded \$50,000 or more of R&D. This change has affected the comparability of these estimates with estimates published for years prior to 2018. Because the statistics from the surveys are based on samples, they are subject to both sampling and nonsampling errors (see “Technical Notes” in the data tables reports at <https://www.nsf.gov/statistics/srvyindustry/>).

Notes

- 1 Some businesses operate in more than one industry, but BRDS classifies companies into one industry based on R&D performance.
- 2 The term *trademark* is used here to refer to both trademarks and service marks. As defined in the Lanham Act (the U.S. Trademark Act), a trademark refers to goods, and a *service mark* assigns similar rights to the source of a service rather than goods (15 U.S.C. § 1127).

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Contact Us

Report Authors

John Jankowski
Program Director
Research and Development Statistics Program, NCSES
Tel: (703) 292-7781
E-mail: jjankows@nsf.gov
Brandon Shackelford
Twin Ravens Consulting, under contract to NCSES

NCSES

National Center for Science and Engineering Statistics
Directorate for Social, Behavioral and Economic Sciences
National Science Foundation
2415 Eisenhower Avenue, Suite W14200
Alexandria, VA 22314
Tel: (703) 292-8780
FIRS: (800) 877-8339
TDD: (800) 281-8749
E-mail: ncsesweb@nsf.gov