

# **2011 BRDI - Instructions**

## **General guidelines for reporting inter-company transactions in this survey:**

**Reporting for 'worldwide' activities-** The reporting unit includes all domestic and foreign subsidiaries that are more than 50% owned by your company for financial reporting purposes. All transactions between subdivisions within this reporting unit should be eliminated as inter-company transactions. Include transactions with unrelated third parties, affiliates that your company has a less than a 50% ownership stake in, and your foreign owner in your report.

**Reporting for 'domestic' operations-** In this survey “domestic operations” refers to your company’s operations located in the 50 United States and D.C. When reporting for your domestic operations, include transactions with foreign subsidiaries. For example, Question 1-9 asks how much of your company’s total sales and revenues were from your company’s domestic operations. All revenue from the domestic operations, including sales to subsidiaries or affiliated companies overseas, should be reported in this question.

## **Section 1: Company Information**

### **1-1 Did another company other than a holding company own more than 50 percent of your company during 2011?**

Question 1-1 asks about the ownership of the company receiving the survey. Special reporting instructions apply to companies that have been acquired by another company. If your answer is “No” skip to question 1-3. If your answer is “Yes” continue to question 1-2.

### **1-2 If you answered “Yes” to Question 1-1, is your company’s owner a foreign company?**

If your company is owned by a foreign company, check “Yes” and follow these instructions: If your company is foreign-owned, the reporting unit for this survey is your U.S.-based company, including all its majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign owner and any foreign affiliates your company does not own should be treated the same as any other customer or business partner you do not own.

If you pay your foreign owner for R&D services, those costs should be included in your responses in Section 2 as “costs for purchased R&D services.”

If your foreign owner pays or reimburses your company for R&D services, the costs for this R&D should be included in your responses in Section 3 as “costs funded, paid for, or reimbursed by others.”

Report your survey data using U.S. generally accepted accounting principles (U.S. GAAP) as recognized by the Financial Accounting Standard Board (FASB). If your company follows

International Financial Reporting Standards (IFRS), we request that you make adjustments in order to conform to U.S. GAAP.

If your company is owned by a U.S. based company, check “No” and enter the owner’s EIN. If your company was purchased before April 1, 2011, answer question 1-6 on page 5 and return the survey to the Census Bureau. If your company was purchased between April 1, 2011 and December 31, 2011, report only for the period January 1, 2011 to the date of purchase.

Example 1: Company A was acquired by Company P (a US company) on Feb. 1, 2011. Because Company A was acquired by a US company prior to April 1, 2011, Company A is not required to complete this survey. Company A will answer question 1-6 and return the form to the Census Bureau. Company P is instructed to include in its survey response the results of Company A’s operations from the date of purchase onward.

Example 2: Company B is acquired by Company P (a US company) on July 1, 2011. Because Company B was acquired by a US company on or after April 1, 2011, Company A is instructed to complete the survey, reporting data for the period January 1, 2011 through July 1, 2011. Company P is instructed to include in its survey response the results of Company A’s operations from the date of purchase onward.

#### Why April 1?

The Census Bureau has determined that for this survey the benefit of collecting data from a company for a period less than one quarter of a year does not outweigh the burden placed on the company to report the data.

#### Why is this important?

Companies are asked this question for three reasons: to eliminate double counting in cases where both parties in a business acquisition receive the survey; to guide foreign-owned companies to special instructions; and to reduce the burden on companies who would otherwise be reporting data for a period less than one quarter of the year.

See also: Foreign owned companies, Partial Year Reporters

### **1-3 Did your company own more than 50 percent of any company operations or subsidiaries outside the 50 United States and D.C. during 2011?**

Companies are instructed to include/consolidate data for their foreign subsidiaries on this survey. The reporting unit for this survey includes all domestic and foreign subsidiaries.

Although your company may consolidate entities that you do not have a 50% ownership stake in for external reporting purposes, their activities should not be included in this report and transactions with them should be reported as if they were unrelated, third parties.

Why is this important? This information is needed in order to accurately measure the impact of globalization on R&D and innovation.

#### **1-4 Has your company ceased operations?**

Scenario 1: Your company ceased operations before April 1, 2011. Complete questions 1-1 through 1-4 and question 1-6 on page 5 and return the survey to the Census Bureau.

Scenario 2: Your company ceased operations between April 1, 2011 and December 31, 2011. You should complete the survey as instructed and report for the period from January 1, 2011 to the date your company ceased operations.

##### Why April 1?

The Census Bureau has determined that for this survey the benefit of collecting data from a company for a period less than one quarter of a year does not outweigh the burden placed on the company to report the data.

##### Why is this important?

Data from companies that have ceased operations during 2011 are needed in order to accurately measure the total activity of companies operating in the United States during 2011.

#### **1-5 Did your company have discontinued operations in 2011?**

Companies are instructed to include data for discontinued operations on this survey.

##### Why is this important?

This information is needed in order to accurately measure the total activity of companies operating in the United States in 2011.

#### **1-6 Who is the survey coordinator?**

The survey coordinator is the person who is in charge of managing your company's responses to this survey and submitting the survey to the U.S. Census Bureau. The survey coordinator will need to collaborate with employees from other divisions/departments within your company such as the product development, R&D, human resources, finance and legal departments.

##### Why is this important?

This information gives the Census Bureau a single point of contact at each company surveyed in case questions arise about survey responses. The point of contact for this survey may differ from that for other Census Bureau surveys.

## Business codes

### **1-7 Do the business code(s) listed below reflect all applicable codes from the list on pages 42-43 in which your company operated worldwide during 2011?**

Question 1-7 asks the company receiving the survey to identify all of its worldwide businesses in 2011 (Form BRDI-1) or identify the one business that accounted for the most of its worldwide activity in 2011 (Forms BRDI-1A and BRDI-1B). Most companies only have one business (such as making engine parts or providing tax preparation services) and so would only report one code for Question 1-7. Larger companies, however, sometimes operate in more than one business. These larger companies should pick the business codes from the list that best match how they define their various businesses.

If more than one of the company's businesses falls under one of the listed business codes, the company should group those businesses together on the survey. For example, a company may have an office software business and a video game software business. For the purpose of this survey the company would group those two businesses together and report using the code for "Software publishers (except Internet)" (51120).

If more than one of the listed business codes applies to one of the company's businesses the company should estimate what percentage of its business falls under each applicable codes. If this is not possible the company may pick the one code that is the closest match or that accounts for the largest share of its business. In either case, companies should note what action was taken in the space for "Remarks" at the end of the survey.

Scenario 1: The business code(s) provided are incorrect. Check the "no" box, then find the correct code(s) on pages 42-43 and write them in the boxes. Draw a line through the ones that are incorrect.

Scenario 2: No business code(s) are provided. Find the correct code(s) on pages 42-43 and write them in the boxes.

For further assistance on identifying the appropriate business codes, visit the "Business Code Search Page" located on the Business Help Site at <http://www.census.gov/econhelp/brdis>

#### Why is this important?

This information is needed in order to tabulate more accurate and useful industry-level data.

### **1-8 What was the amount of your company's worldwide net sales and revenues during 2011?**

Your company's worldwide net sales and revenue would include sales by your foreign operations and subsidiaries, as well as, revenues from domestic operations. If your company is

owned by a foreign parent, report sales to your parent and those affiliates not owned by your company.

Include sales and operating revenues for discontinued operations.

Exclude non-operating income such as dividends and interest as well as excise, sales, and other revenue-based taxes.

**1-9 How much of the amount reported in Question 1-8 was attributable to or originated from domestic operations?**

Question 1-9 asks for the company's net sales and revenues generated by domestic operations regardless of where the customers are located. "Domestic net sales" does not mean sales to customers located in the United States. If your company is owned by a foreign parent, then sales to your parent and those affiliates not owned by your company are included.

**1-10 How much of the 2011 net sales and operating revenue amounts was for each business code listed or amended in Question 1-7?**

Report the sales and operating revenues generated by your company's different businesses as reflected in the business codes identified in Question 1-7.

Transactions between one business code and another should be reported as would normally be reflected in segmental reporting. Use Line i to eliminate inter-company sales.

See also:  
Question 1-7.

## **Innovation**

**1-11 Did your company introduce any of the following during the three-year period, 2009 to 2011?**

Question 1-11 asks whether the company engaged in a variety of innovative activities over the past three years. For the purpose of this question, "new of significantly improved" is in reference to the company's prior experience. For example, a computer manufacturer that introduces its first cell phone in 2009 would answer, "Yes" to line a, "New or significantly improved goods".

**1-12 If you answered "yes" to either 1-11, line a, or 1-11, line b, were any of those new or significantly improved goods or services?**

Question 1-12 asks whether any of the new or significantly improved goods or services indicated in Question 1-11, lines a and b, were new or significantly improved to one of the company's markets (i.e. first to market with a new or significantly improved product) or were only new to the company.

**1-13 Using the definitions above, please give the percentage of your total sales in 2011.**

Question 1-13 asks how much of the company's total worldwide sales in 2011 are attributable to different types of product innovations. Specifically, it asks what percent of the company's total worldwide sales in 2011 that were from:

- a. Goods and services introduced during 2009 to 2011 that were new to one of your markets
- b. Goods and services introduced during 2009 to 2011 that were only new to your firm
- c. Goods and services that were unchanged or only marginally modified during 2009 to 2011 (include the resale of new goods or services purchased from other companies).

**1-14 During the three years 2009 to 2011, did your company introduce: [This question applies to Form BRDI-1B only]**

Question 1-14 asks whether the company introduced any product (good or service) innovations over the past three years. For the purpose of this question, "new or significantly improved" is in reference to the company's prior experience. For example, a computer manufacturer that introduces its first cell phone in 2009 would answer, "Yes" to line a, "New or significantly improved goods".

**1-15 If you answered "yes" to either 1-14, line a, or 1-14, line b, were any of your product innovations during the three years 2009 to 2011: [This questions applies to Form BRDI-1B only]**

Question 1-15 asks whether any of the new or significantly improved goods or services indicated in Question 1-14 were new or significantly improved to one of the company's market (i.e. first to market with a new or significantly improved product) or were only new to the company.

**1-16 Using the definitions above, please give the percentage of your total sales in 2011 from: [This questions applies to Form BRDI-1B only]**

Question 1-16 asks how much of the company's total worldwide sales in 2011 are attributable to different types of product innovations. Specifically, it asks what percent of the company's total worldwide sales in 2011 that were from:

- a. Goods and services introduced during 2009 to 2011 that were new to your market
- b. Goods and services introduced during 2009 to 2011 that were only new to your firm

c. Goods and services that were unchanged or only marginally modified during 2009 to 2011 (include the resale of new goods or services purchased from other companies).

**1-17 During the three years 2009 to 2011, did your company introduce: [This question applies to Form BRDI-1B only]**

Question 1-17 asks whether the company introduced any process innovations over the past three years. For the purpose of this question, “new of significantly improved” is in reference to the company’s prior experience.

## Section 2: Financial Schedule A

**2-1 What was the total worldwide R&D expense for your company in 2011?**

Question 2-1 requests reporting for 'worldwide' activities, the reporting unit includes all domestic and foreign subsidiaries that are more than 50% owned by your company for financial reporting purposes and all transactions between subdivisions within this reporting unit should be eliminated as inter-company transactions. Transactions with unrelated third parties, affiliates that your company has a less than a 50% ownership stake in and a foreign owner would be reported.

Scenario 1: Your company is **publicly traded**. Report worldwide R&D expense as reported on SEC Form 10-K and in annual reports to shareholders.

Scenario 2: Your company is **foreign-owned**. Report the R&D expense figure for the U.S.-based company, including all its majority-owned subsidiaries and divisions regardless of location. For reporting purposes, the company’s foreign owner and other foreign affiliates the U.S. company does not own should be treated the same as any other non-affiliated customer or business partner.

Scenario 3: Your company is **privately owned**. You should follow the same procedures as public companies when reporting R&D expense and follow the guidance of FASB No. 2, “Accounting for Research and Development Costs” ([http://www.fasb.org/pdf/aop\\_FAS2.pdf](http://www.fasb.org/pdf/aop_FAS2.pdf)). Privately held companies that cannot report on this basis should note their reporting difficulties in the space for "Remarks" at the end of the survey.

Exclude:

- o Costs for R&D that was paid for by a 3<sup>rd</sup> party such as R&D performed under contract.
- o Costs incurred in the development or acquisition of computer software for internal use (see note below).
- o For medical products companies, exclude costs for phase IV clinical trials since these trials take place after products have achieved technical and market feasibility.

Note that software developed for internal use is excluded from the definition of R&D used by this survey unless that software is part of an R&D project and has no alternative future use. In general, software developed for administrative purposes (such as software to track timesheets for the company's employees) is excluded from the definition of R&D. For further guidance on accounting for software development costs see the AICPA's Statement of Position No. 98-1, *Accounting for Costs of Computer Software Developed or Obtained for Internal Use*; FASB Statement No. 86 (Accounting for the Costs of Computer Software to Be Sold, Leased); and FASB Interpretation No. 6 (Applicability of FASB Statement No. 2 to Computer Software).

See also:

Definition of Research and Development; Foreign owned companies

## **2-2** Does the amount reported in Question 2-1 include any of the following costs?

Although most companies share a general framework for R&D, we request that certain items be excluded for the sake of consistency. Certain costs and expenses are to be reported in Section 3 reflecting your company's R&D activities that was paid for by others.

Question 2-2 asks whether the company's R&D expense figure reported in Question 2-1 included costs for five specific categories:

- a. Collaborative research and development that was reimbursed by business partners, such as through cost-sharing agreements
  - o These agreements are very common in the biotechnology and pharmaceutical industries, but less so in other industries.
- b. R&D paid for by government or private foundation grants
  - o Examples include Small Business Innovation and Research (SBIR) grants, Department of Energy demonstration grants, and Gates Foundation research grants.
- c. Technical services not an integral part of an R&D project (such as product support provided by R&D employees)
  - o This category most often applies to software and service companies where R&D staff also provide technical support and/or services to customers
- d. Bid and proposal costs
  - o This category represents the costs a company incurs applying to win a contract. Some government contractors group these costs with their R&D spending.
- e. Expense your company claimed resulting from the acquisition of another company with unfinished R&D projects (In-process R&D).

Why is this important?

Not all companies treat the five cost categories listed in this question consistently with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

See also: Question 2-3, Question 2-4



**2-3** If you answered “Yes” to any of the costs in Question 2-2, what was the amount of these costs that was included in your response to Question 2-1?

Question 2-3 asks the company to estimate the amount of its R&D expense figure reported in Question 2-1 that was from the categories listed in Question 2-2.

Why is this important?

The five cost categories listed in Question 2-2 are not treated consistently by all companies with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

See also: Question 2-2, Question 2-4

**2-4** Subtract Question 2-3 from Question 2-1 and enter the result here. This is the total R&D paid for by your company in 2011.

Question 2-4 asks the company to subtract the amount reported in Question 2-3 from the amount reported in Question 2-1. The resulting figure is the starting point for the subsequent questions in Section 2. This survey refers to this amount as “total R&D paid for by your company”.

Why is this important?

The five cost categories listed in Question 2-2 are not treated consistently by all companies with respect to their inclusion or exclusion from R&D expense figures. This question allows the survey to measure and correct for these inconsistencies.

See also: Question 2-2, Question 2-3

**2-5** Is the amount entered in Question 2-4 greater than zero?

Question 2-5 instructs the company to skip to Section 3 on page 20 if its response to Question 2-4 is zero.

## **R&D paid for by your company**

**2-6** Of the amount reported in Question 2-4, what were the costs for each business code listed or amended on page 6 of this form?

Question 2-6 asks the company to report the total R&D paid for by the company for each of the business codes it reported in Question 1-7.

If the company does not track its R&D costs by line of business or product line, it should make a reasonable estimate.

If the company has R&D that applies to more than one business code, such as basic or applied research conducted by a central R&D group, it should allocate this R&D to all applicable business codes on a reasonable basis. Examples of allocation methods include allocating in proportion to sales by business code and allocating in proportion to R&D employees working for each business code.

See also: Question 1-7.

**2-7** Of the amount reported in Question 2-4, what costs were incurred by your company in the following locations?

Question 2-8 asks how much of the total R&D paid for by the company were costs incurred in the domestic United States and how much were costs incurred in all other locations. This question requires the company to report where R&D costs were incurred, even in the case of purchased R&D services where the R&D may be performed in a different location.

This survey defines the domestic United States as the 50 states and the District of Columbia only. Costs incurred in Puerto Rico, Guam, and other U.S. territories should be reported in the category for “All other countries”.

Report R&D performed by domestic operations that are paid for by foreign subsidiaries in line a (Domestic U.S.).

Report R&D performed by foreign subsidiaries that are paid for by domestic operations in line b (All other countries).

Scenario 1: Your company has R&D operations in Washington state and in your subsidiary in Canada. All of the R&D costs (such as salaries of R&D employees) from the Washington R&D operations should be reported in the line for “Domestic U.S.” even if a portion of this R&D is for the benefit of your Canadian subsidiary.

**2-8** Copy the amount from Question 2-7, line a. This is the total domestic R&D paid for by your company in 2011.

Question 2-8 asks the company to copy the amount reported in Question 2-7 for R&D costs incurred in the domestic United States. This survey defines this amount as “total domestic R&D paid for by your company in 2011”.

**2-9** Copy the amount from Question 2-7, line b. This is the total foreign R&D paid for by your company in 2011.

Question 2-9 asks the company to copy the amount reported in Question 2-7 for R&D costs incurred in countries outside the domestic United States. This survey defines this amount as “total foreign R&D paid for by your company in 2011”.

**2-10** How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company in 2011 was for each of the following types of costs?

Question 2-10 asks the company to report its domestic, foreign, and total worldwide R&D that it paid for in 2011 broken into 12 categories:

- a. Salaries, wages, and fringe benefits
  - o Except for stock-based compensation, this category includes costs for all compensation and benefits of R&D employees and officers that are included in the R&D paid for by the company.
  - o Include payroll taxes such as Social Security and Medicare
- b. Stock-based compensation
  - o Includes the cost of both stock options and stock grants.
- c. Temporary staffing including on-site consultants
  - o Includes costs paid to Professional Employer Organizations (PEOs), staffing agencies, and on-site consultants for personnel contributing to R&D.
- d. Expensed equipment
  - o Includes all equipment purchases for R&D that are beneath the company’s capitalization threshold.
- e. Materials and supplies
  - o Costs for materials and supplies consumed for R&D.
- f. Leased facilities and equipment
  - o Costs for leased facilities and equipment used in the company’s R&D.
- g. Depreciation and amortization on R&D property and equipment
  - o Includes depreciation on tangible R&D assets such as buildings or equipment as well as the amortization of intangible assets such as patents and capitalized in-process R&D used only for the company’s R&D activities.
- h. Payments to business partners for collaborative R&D
  - o This category collects payments made to business partners for collaborative R&D, including milestone payments and payments made under cost sharing agreements for joint R&D projects.
  - o Payments made to contract research organizations or other parties performing R&D under contract for the company are reported in line i, “Purchased R&D services”.
- i. Purchased R&D services
  - o This category collects payments made to contract research organizations or other parties performing R&D under contract for the company.
- j. All other purchased services except R&D
  - o This category collects payments for purchased services that support the company’s R&D, but are not themselves R&D.

- o Examples of costs to report in this category include hazardous waste disposal services at the company’s R&D lab and purchased computing time to run simulations for the company’s R&D.
- k. All other costs
  - o This category collects all other costs supporting the R&D the company paid for.
  - o Examples of costs to report in this category include: travel and training, journal subscriptions, royalties or licenses paid for patents or software used in the company’s R&D.

**2-11** Add 2-10, lines h and i for each column, and enter the result here. This is R&D performed by others.

Question 2-11 asks the company to add the amounts reported in Question 2-10, lines h and i for each column. This survey defines this amount as “R&D performed by others”.

Why is this important?

The costs reported in lines h and i of Question 2-10 represent payments to 3<sup>rd</sup> parties (outsourcing) for R&D. Because the reporting company is not directly involved in the conduct of this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the nature of collaborative and contract R&D.

See also: Question 2-10

**2-12** Subtract 2-11 from 2-10, line l, for each column and enter the result here. This is R&D performed by your company.

Question 2-12 asks the company to subtract the amounts reported in Question 2-11 from those reported in Question 2-10, line l for each column. This survey defines this amount as “R&D performed by your company”.

Why is this important?

The costs reported in lines h and i of Question 2-10 represent payments to 3<sup>rd</sup> parties (outsourcing) for R&D. Because the reporting company is not directly involved in the conduct of this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the differences between R&D companies perform themselves versus R&D that is performed by collaborators and contractors.

See also: Question 2-11

**2-13** Copy the amount from Question 2-12, column 2. This is the foreign R&D paid for and performed by your company in 2011.

Question 2-13 asks the company to copy the amount reported in Question 2-12 for foreign R&D costs performed by the company. This survey defines this amount as “foreign R&D performed by your company in 2011”.

**2-14** Of the amount reported in Question 2-13, how much R&D was performed in the following locations?

Question 2-14 asks the company to report how much of the foreign R&D performed by the company in 2011 was performed in specific countries, including Puerto Rico.

Why is this important?

This information is needed in order to accurately measure the impact of globalization on R&D and innovation.

**2-15** Copy the amount from Question 2-12, column 1. This is the domestic R&D paid for and performed by your company in 2011.

Question 2-15 asks the company to copy the amount reported in Question 2-12 for domestic R&D costs performed by the company. This survey defines this amount as “domestic R&D performed by your company in 2011”.

”**Domestic R&D paid for and performed by your company**” is the portion of your company’s total R&D expense associated with R&D performed by your company’s full-time, part-time, and temporary employees in the domestic United States. This amount excludes R&D performed by others not owned by your company, such as contract research organizations and universities.

**2-16** How much of the amount reported in Question 2-15 was performed in each state (including D.C.) in 2011?

Question 2-16 asks the company to report how much of the domestic R&D it performed in 2011 was performed in each state (including D.C.) in 2011. If the company is unable to assign all its R&D costs to specific states, it should use a reasonable allocation method to report R&D by state. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

Why is this important?

This information is very important to policy makers who are interested in the geographic distribution of R&D activity and its role in regional economic development.

**2-17** At what domestic location did your company perform the largest dollar amount of R&D in 2011?

Question 2-17 asks the company to identify the location where the largest dollar value of the domestic R&D it performed in 2011 took place.

**2-18** How much of the amount reported in Question 2-15 was from the location identified in Question 2-17?

Question 2-18 asks the company to report how much of the domestic R&D it performed in 2011 was performed at the location identified in Question 2-17. If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

**2-19** At what domestic location did your company perform the second largest dollar amount of R&D in 2011?

Question 2-19 asks the company to identify the location where the second largest dollar value of the domestic R&D it performed in 2011 took place.

**2-20** How much of the amount reported in Question 2-15 was from the location identified in 2-19?

Question 2-20 asks the company to report how much of the domestic R&D it performed in 2011 was performed at the location identified in Question 2-19. If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

**2-21** How much of the R&D paid for by your company for each business code reported in Question 2-6 was: Domestic R&D performed by your company reported in Question 2-15

Question 2-21 asks the company to report the amount for each of the business codes it reported in Question 2-6: Domestic R&D performed by the company.

If the company does not track its R&D costs by line of business or product line it should make a reasonable estimate.

If the company has R&D that applies to more than one business code, such as basic or applied research conducted by a central R&D group, it should allocate this R&D to all applicable business codes on a reasonable basis. Examples of allocation methods include allocating in proportion to sales by business code and allocating in proportion to R&D employees working for each business code.

See also: Question 1-7; Question 2-6

## R&D paid for by foreign subsidiaries

**2-22** How much of the amount reported in Question 2-15 was paid for by your company's foreign subsidiaries?

Question 2-22 asks the company to report how much of the domestic R&D costs incurred by the company were paid for, billed or charged to the company's foreign operations or foreign subsidiaries.

Foreign Owned Company instruction: Do not include payments from your company's foreign parent. R&D costs associated with these payments should be reported in Section 3.

## Foreign R&D paid for by domestic operations

**2-23** How much of the amount reported in Question 2-14 was paid for by your company's domestic operations?

Question 2-23 asks the company to report how much of the foreign R&D cost incurred by the company was paid for, billed or charged to domestic operating units of the company.

Many firms conduct R&D activities in locations around the globe. Questions 2-8 thru 2-11 seek to collect data on where the enterprise's R&D activities are being performed. Questions 2-22 and 2-23 seek to identify where R&D expenses are charged (U.S. domestic versus foreign operating units). Example: If an R&D activity were performed by employees in Texas, USA and charged to operating units in the US and Belgium, then the costs would be reported as 'domestic' in 2.8-2.11 with the total being split between the 'domestic' and 'foreign' operating expenses in 2.22/23.

## R&D performed by others

**2-24** Copy the amount from Question 2-12, column 1. This is the domestic R&D paid for by your company in 2011 that was performed by others.

## Projected R&D for 2011

**2-25** What are your company's projected 2012 costs for (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company?

Question 2-25 asks the company to project its domestic, foreign, and total worldwide R&D costs for 2012.

**2-26** How much of the amount reported in Question 2-25, column 1, is for projected purchased R&D services and projected payments to business partners for collaborative R&D?

Question 2-26 asks the company to project how much of the domestic R&D paid for by the company 2012 will be for purchased R&D services and payments to business partners for collaborative R&D.

**2-27** What was the amount of your company's capital expenditures in the domestic United States in 2011?

Question 2-27 asks the company to report its capital expenditures in the domestic United States in 2011.

Exclude the cost of purchased land.

Assets acquired through merger and acquisition activities would not be included in your report.

**2-28** How much of the amount reported in Question 2-27 was for R&D operations?

Question 2-28 asks the company how much of its domestic capital expenditures in 2011 were for R&D operations.

Companies should allocate capital expenditures that benefit both R&D operations and other company operations on a reasonable basis. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

## **Reporting Information**

**2-29** Is the information in this section reported for the 2011 calendar year?

If your company is reporting on a fiscal year that does not end Dec. 31, 2011, write what time period you are covering in the designated boxes.



## Section 3: Financial Schedule B

**3-1** What were your company's total worldwide costs (both direct and indirect) in 2011 for the following that were funded, paid for, or reimbursed by others not owned by your company?

Question 3-1 asks the company to report its total worldwide costs for nine categories of activities that were funded, paid for, or reimbursed by 3<sup>rd</sup> parties. Costs should be considered “funded, paid for, or reimbursed by others” if the company has been or expects to be paid for the costs by a customer, business partner, or grant-making organization.

**Note: Foreign-owned companies should reports costs that are funded, paid for, or reimbursed by their foreign owner in this question.**

**Exclude payments in excess of the actual cost of the work performed (such as profits or fees).**

**Costs that were reported in Question 2-4 should not be double counted in this question.**

If your company administers a federally-funded research and development center (FFRDC) for an agency of the federal government, all such R&D costs should be excluded for reporting to this survey. For a complete list of FFRDCs, see <http://www.nsf.gov/statistics/ffrdclist/>.

The categories in this question, listed below, define what the survey terms, “R&D paid for by others”:

- a. R&D that was reimbursed by your company's foreign owner, if your company is foreign owned
- b. Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements
  - o These agreements are very common in the biotechnology and pharmaceutical industries, but less so in other industries.
- c. R&D paid for by government or private foundation grants
  - o Examples include Small Business Innovation and Research (SBIR) grants, Department of Energy demonstration grants, and Gates Foundation research grants.
- d. Defense R&D services provided to the government and/or government contractors
  - o This category most often applies to defense contractors and subcontractors performing tasks such as designing, building, and testing prototypes of new military weapon systems and developing custom software for defense applications.
- e. Medical nonclinical R&D services provided to others not owned by your company
  - o Nonclinical (also known as preclinical) research and development involves research on potential medical products that does not involve human subjects. This R&D consists of both *in vitro* studies as well as studies using animal subjects.
- f. Phase I – III medical clinical trial services provided to others not owned by your company (include pass-through costs)

- o This category involves the testing of potential medical products in human subjects. Phase I – III clinical trials must be successfully passed in order for a product to be approved for use in the general population.
- o Exclude costs for Phase IV clinical trials. Because these trials take place after a product has been approved for sale.
- g. Non-defense custom software development and/or computer systems design for others not owned by your company
  - o This category includes the development of new or significantly improved software, both as an end product and for use embedded in other products.
  - o Exclude: Software development that does not depend on a scientific or technological advance such as adding functionality to existing application programs, debugging systems, and adapting existing software.
  - o Software development for defense-related applications should be reported in line d.
- h. Developing, producing, and testing prototypes of customers' products prior to their introduction to the market (excluding defense-related prototyping reported in line d)
  - o Exclude quality control testing and other testing services for products already on the market.
- i. All other R&D services provided to others not owned by your company

**3-2 Copy the amount from 3-1, line j. This is the total R&D paid for by others in 2011.**

Question 3-2 asks the company to copy the amount reported in Question 3-1, line j. This survey defines this amount as “total R&D paid for by others” in 2011.

**3-3 Is the amount entered in Question 3-2 greater than zero?**

Question 3-3 instructs the company to skip to Section 4 on page 32 if its response to Question 3-2 is zero.

**R&D paid for by others**

**3-4 Of the amount reported in Question 3-2, what costs were incurred by your company in the following locations?**

Question 3-4 asks how much of the total R&D paid for by others were costs incurred in the domestic United States and how much were costs incurred in all other locations. This question requires the company to report where R&D costs were incurred, even in the case of purchased R&D services where the R&D may be performed in a different location.

This survey defines the domestic United States as the 50 states and the District of Columbia only. Costs incurred in Puerto Rico, Guam, and other U.S. territories should be reported in the category for “All other countries”.

**3-5 Copy the amount from Question 3-4, line a. This is the total domestic R&D paid for by others in 2011.**

Question 3-5 asks the company to copy the amount reported in Question 3-4 for R&D costs in the domestic United States. This survey defines this amount as “total domestic R&D paid for by others” in 2011.

**3-6 Copy the amount from Question 3-4, line b. This is the total foreign R&D paid for by others in 2011.**

Question 3-6 asks the company to copy the amount reported in Question 3-4 for R&D costs in countries outside the domestic United States. This survey defines this amount as “total foreign R&D paid for by others” in 2011.

**3-7 How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by others in 2011 was for each of the following types of costs?**

Question 3-7 asks the company to report its domestic, foreign, and total worldwide R&D paid for by others in 2011 broken into 12 categories:

- a. Salaries, wages, and fringe benefits
  - o Except for stock-based compensation, this category includes costs for all compensation and benefits of R&D employees and officers that are included in the R&D paid for by others.
  - o Include payroll taxes such as Social Security and Medicare
- b. Stock-based compensation
  - o Includes the cost of both stock options and stock grants.
- c. Temporary staffing including on-site consultants
  - o Includes costs paid to Professional Employer Organizations (PEOs), staffing agencies, and on-site consultants for personnel contributing to R&D
- d. Expensed equipment
  - o Includes all equipment purchases for R&D that are beneath the company’s capitalization threshold.
- e. Materials and supplies
  - o Costs for materials and supplies consumed for R&D.
- f. Leased facilities and equipment
  - o Costs for leased facilities and equipment used in the R&D.
- g. Depreciation and amortization on R&D property and equipment

- o Includes depreciation on tangible R&D assets such as buildings or equipment as well as the amortization of intangible assets such as patents and capitalized in-process R&D used only for the company's R&D activities.
- h. Payments to business partners for collaborative R&D
  - o This category collects payments made to business partners for collaborative R&D, including milestone payments and payments made under cost sharing agreements for joint R&D projects.
  - o Payments made to contract research organizations or other parties performing R&D under contract for the company are reported in line i, "Purchased R&D services".
- i. Purchased R&D services
  - o This category collects payments made to contract research organizations or other parties performing R&D under contract for the company.
- j. All other purchased services except R&D
  - o This category collects payments for purchased services that support the company's R&D, but are not themselves R&D.
  - o Examples of costs to report in this category include hazardous waste disposal services at the company's R&D lab and purchased computing time to run simulations for the company's R&D.
- k. All other costs
  - o This category collects all other costs supporting the R&D the company paid for.
  - o Examples of costs to report in this category include: travel and training, journal subscriptions, royalties or licenses paid for patents or software used in the company's R&D.

**3-8 Add 3-7, lines h and i for each column, and enter the result here. This is R&D performed by others (e.g. subcontracted/passed-through R&D costs).**

Question 3-8 asks the company to add the amounts reported in Question 3-7, lines h and i for each column. This survey defines this amount as "R&D performed by others".

Why is this important?

The costs reported in lines h and i of Question 3-7 represent payments to 3<sup>rd</sup> parties for R&D. Because the reporting company is not directly involved in the conduct of this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the nature of collaborative and contract R&D.

See also: Question 3-7, Question 3-9

**3-9 Subtract 3-8 from 3-7, line l, for each column and enter the result here. This is R&D performed by your company that was paid for by others.**

Question 3-9 asks the company to subtract the amounts reported in Question 3-8 from those reported in Question 3-7, line m for each column. This survey defines this amount as “R&D performed by your company that was paid for by others”.

Why is this important?

The costs reported in lines h and i of Question 3-7 represent payments to 3<sup>rd</sup> parties for R&D. Because the reporting company is not directly involved in the conduct of this R&D, it may not be able to provide the same amount of information on these costs as it could for the R&D it performs itself. This question allows the survey to address this limitation as well as address an interest in the differences between R&D companies perform themselves versus R&D that is performed by collaborators and contractors.

See also: Question 3-7, Question 3-8

**3-10** Copy the amount from Question 3-9, column 2. This is the foreign R&D performed by your company that was paid for by others.

Question 3-10 asks the company to copy the amount reported in Question 3-9 for foreign R&D costs performed by the company. This survey defines this amount as “foreign R&D performed by your company that was paid for by others”.

**3-11** Of the amount reported in Question 3-10, how much R&D was performed in the following locations?

Question 3-11 asks the company to report how much of the foreign R&D performed by the company that was paid for by others was performed in specific countries, including Puerto Rico.

Why is this important?

This information is needed in order to accurately measure the impact of globalization on R&D and innovation.

**Domestic R&D performed by your company that was paid for by others**

**3-12** Copy the amount from Question 3-9, column 1. This is the domestic R&D performed by your company that was paid for by others.

Question 3-12 asks the company to copy the amount reported in Question 3-9 for domestic R&D costs performed by the company that was paid for by others. This survey defines this amount as “domestic R&D performed by your company that was paid for by others”.

**3-13 How much of the amount reported in Question 3-12 was paid for by each of the following?**

Question 3-13 asks the company to report the sources of funding for the R&D it performed in the domestic U.S. that was paid for by others. If the company performed R&D as a subcontractor or sub grantee, it should report the original source of funding.

Foreign-owned companies that performed R&D in the domestic United States that was paid for or reimbursed by their foreign owners should report the cost of this R&D in line b.

**3-14 How much of the domestic R&D performed by your company that was paid for by others reported in Question 3-12 was for each business code listed or amended on page 6 of this form?**

Question 3-14 asks the company to report the total R&D performed by your company that was paid for by others for each of the business codes it reported in Question 1-7.

If the company does not track its R&D costs by line of business or product line, it should make a reasonable estimate.

If the company has R&D that applies to more than one business code, such as basic or applied research conducted by a central R&D group, it should allocate this R&D to all applicable business codes on a reasonable basis. Examples of allocation methods include allocating in proportion to sales by business code and allocating in proportion to R&D employees working for each business code.

**3-15 How much of the amount reported in Question 3-13 was paid for by the following agencies?**

Question 3-15 asks the company to report the amount of R&D it performed in the domestic U.S. that was paid for by the U.S. Federal Government specific funding agencies.

**3-16 Copy the amount from Question 3-15, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.**

Question 3-16 asks the company to copy the amount reported in Question 3-15, line d. This survey defines this amount as “domestic R&D performed by your company that was paid for by the U.S. federal government”.

**3-17 Subtract Question 3-15 from Question 3-12 and enter the result here. This is the domestic R&D performed by your company that was paid for by nonfederal sources.**

Question 3-17 asks the company to subtract the amount reported in Question 3-15 from that reported in Question 3-12. This survey defines this amount as “domestic R&D performed by your company that was paid for by nonfederal sources”.

**3-18 How much of the following three amounts was performed in each state (including D.C.): (1) Domestic R&D paid for by the U.S. federal government reported in Question 3-15, (2) Domestic R&D paid for by nonfederal sources reported in Question 3-18, (3) Total domestic R&D performed by your company that was paid for by others reported in Question 3-12.**

Question 3-18 asks the company to report how much of the domestic R&D it performed that was paid for by others was performed in each state (including D.C.) in 2011. The question asks the company to report how much of the R&D in each state was paid for by the U.S. federal government as opposed to all other sources. If the company is unable to assign all its R&D costs to specific states, it should use a reasonable allocation method to report R&D by state. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

Why is this important?

This information is very important to policy makers who are interested in the geographic distribution of R&D activity and its role in regional economic development.

**3-19 At what domestic location did your company perform the largest dollar amount of R&D that was paid for by others in 2011?**

Question 3-19 asks the company to identify the location where the largest dollar value of the domestic R&D it performed that was paid for by others in 2011 took place.

**3-20 How much of the amount reported in Question 3-12 was from the location identified in Question 3-19?**

Question 3-20 asks the company to report how much of the domestic R&D it performed that was paid for by others in 2011 was performed at the location identified in Question 3-19. If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

**3-21 At what domestic location did your company perform the second largest dollar amount of R&D that was paid for by others in 2011?**

Question 3-21 asks the company to identify the location where the second largest dollar value of the domestic R&D it performed that was paid for by others in 2011 took place.

**3-22 How much of the amount reported in Question 3-12 was from the location identified in Question 3-21?**

Question 3-22 asks the company to report how much of the domestic R&D it performed that was paid for by others in 2011 was performed at the location identified in Question 3-21. If the company is unable to allocate its R&D costs to a specific location, it should provide a reasonable estimate. Companies should note their allocation method in the space for "Remarks" at the end of the survey.

## Projected R&D paid for by others in 2011

**3-23 What are your company's projected 2012 costs for R&D that will be paid for by others?**

Question 3-23 asks the company to project its 2012 costs for R&D that will be paid for by others.

**3-24 How much of the projected costs in 2012 for R&D that will be paid for by others reported in Question 3-23 will be performed by your company in the United States?**

Question 3-24 asks the company to project its 2012 costs for R&D it will perform in the domestic U.S. that will be paid for by others.

**3-25 How much of the projected costs in 2012 for domestic R&D performed by your company that will be paid for by others reported in Question 3-24 will be paid for by the U.S. federal government?**

Question 3-25 asks the company to project its 2012 costs for R&D it will perform in the domestic U.S. that will be paid for by the U.S. federal government.

## Section 4: Management and Strategy of R&D

**4-1 Copy the amount from Question 2-4. This is the total R&D paid for by your company in 2011.**

This number can be found on page 10 of Form BRDI-1.

**4-2 Is the amount entered in Question 4-1 greater than zero?**



If no, the questions between 4-3 and 4-9 do not apply to your company. Please do not complete these questions. Skip to question 4-10 on page 33.

## Characteristics of R&D paid for by your company and performed by your company in the domestic U.S.

**4-3** Copy the amount from Question 2-15. This is the domestic R&D paid for and performed by your company.

This number can be found on page 13 of Form BRDI-1.

**4-4** How much of the amount reported in Question 4-3 was for the following categories?

Question 4-4 asks the company to report what percent of the domestic R&D it performed in 2011 was research as opposed to development.

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Research may be either “basic”, where the goal is primarily to increase understanding of a given topic without a specific commercial application in mind, or “applied”, where the goal is to solve a specific problem or achieve a specific commercial objective.

Development is defined as the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes. In simple terms, the intended output of research is ideas and the intended output of development is products.

**4-5** If you reported any research in Question 4-4, line a, how much of that research was for the following categories?

Question 4-5 asks the company to report what percent of the domestic research it performed in 2011 was applied research as opposed to basic research. Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Applied research has the goal of solving a specific problem or achieving a specific commercial objective. Basic research has the goal of increasing understanding of a given topic without a specific commercial application in mind.

A project that aims to investigate the influence of different materials on fuel cell efficiency would be classified as basic research. A project that aims to improve fuel cell efficiency using new materials would be classified as applied research.

## Areas of application for domestic R&D paid for and performed by your company

### **4-6** What percentage of the amount reported in Question 4-3 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?

Question 4-6 asks the company to report what percent of the domestic R&D it performed in 2011 had energy applications (including energy efficiency). The intent of this question is to measure the amount of R&D companies are investing in energy-related applications.

Only include costs for R&D projects where energy was an intended area of application from its inception. Do not include costs for R&D projects where energy was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with energy applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4-6 and 4-7 could add to more than 100%.

### **4-7** What percentage of the amount reported in Question 4-3 had environmental protection applications, including pollution abatement?

Question 4-7 asks the company to report what percent of the domestic R&D it performed in 2011 had environmental protection applications (including pollution abatement). The intent of this question is to measure the amounts of R&D companies are investing in environmental protection applications.

Only include costs for R&D projects where environmental protection was an intended area of application from its inception. Do not include costs for R&D projects where environmental protection was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with environmental protection applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4-6 and 4-7 could add to more than 100%.

## Technology focus of domestic R&D paid for and performed by your company

### **4-8** What percentage of the amount reported in Question 4-9 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?

Question 4-8 asks the company to report what percent of the domestic R&D it performed in 2011 was for biotechnology. The following list provides examples of biotechnology techniques. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of biotechnology.

- o **DNA/RNA:** Genomics, pharmacogenomics, gene probes, genetic engineering, DNA/RNA sequencing/synthesis/amplification, gene expression profiling, and use of antisense technology.
- o **Proteins and other molecules:** Sequencing/synthesis/engineering of proteins and peptides (including large molecule hormones); improved delivery methods for large molecule drugs; proteomics, protein isolation and purification, signaling, identification of cell receptors.
- o **Cell and tissue culture and engineering:** Cell/tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- o **Process biotechnology techniques:** Fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation, biofiltration and phytoremediation.
- o **Gene and RNA vectors:** Gene therapy, viral vectors.
- o **Bioinformatics:** Construction of databases on genomes, protein sequences; modeling complex biological processes, including systems biology.
- o **Nanobiotechnology:** Applies the tools and processes of nano/microfabrication to build devices for studying biosystems and applications in drug delivery, diagnostics, etc.

**4-9 What percentage of the amount reported in Question 4-3 was for nanotechnology—science and technology involving work at the nanometer scale?**

Question 4-9 asks the company to report what percent of the domestic R&D it performed in 2011 was for nanotechnology. Nanotechnology can encompass any R&D project involved in the study, creation, or use of objects at the nanoscale, which is generally considered to be 100 nanometers or smaller.

Many technologies related to conventional solid-state semiconductor manufacturing are capable of creating features smaller than 100 nanometers, so R&D involving these technologies should be included in this question.

**Domestic R&D performed by your company that was paid for by others**

**4-10 Copy the amount from Question 3-12. This is the domestic R&D performed by your company that was paid for by others.**

This number can be found on page 24 of your survey.

**4-11 Is the amount entered in Question 4-10 greater than zero?**

If no, the rest of section 4 does not apply to your company. Please skip to section 5 on page 36.

**4-12 How much of the amount reported in Question 4-10 was for the following categories?**

Question 4-12 asks the company to report what percent of the domestic R&D performed by the company that was paid for by others was research as opposed to development.

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Research may be either “basic”, where the goal is primarily to increase understanding of a given topic without a specific commercial application in mind, or “applied”, where the goal is to solve a specific problem or achieve a specific commercial objective.

Development is defined as the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes. In simple terms, the intended output of research is ideas and the intended output of development is products.

**4-13 If you reported any research in Question 4-12, line a, how much of that research was for the following categories?**

Question 4-13 asks the company to report what percent of the domestic research performed by the company that was paid for by others was applied research as opposed to basic research. Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Applied research has the goal of solving a specific problem or achieving a specific commercial objective. Basic research has the goal of increasing understanding of a given topic without a specific commercial application in mind.

**4-14 What percentage of the amount reported in Question 4-10 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?**

Question 4-14 asks the company to report what percent of the domestic R&D it performed in 2011 had energy applications (including energy efficiency). The intent of this question is to measure the amount of R&D companies are investing in energy-related applications.

Only include costs for R&D projects where energy was an intended area of application from its inception. Do not include costs for R&D projects where energy was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with energy applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4-14 through 4-17 could add to more than 100%.

**4-15 What percentage of the amount reported in Question 4-10 had environmental protection applications, including pollution abatement?**

Question 4-15 asks the company to report what percent of the domestic R&D it performed that was paid for by others had environmental protection applications (including pollution abatement).

Only include costs for R&D projects where environmental protection was an intended area of application from its inception. Do not include costs for R&D projects where environmental protection was not an intended area of application until after the project was completed.

Include the total cost of an R&D project with environmental protection applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4-14 through 4-17 could add to more than 100%.

**4-16** What percentage of the amount reported in Question 4-10 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?

Question 4-16 asks the company to report what percent of the domestic R&D it performed in 2011 was for biotechnology. The following list provides examples of biotechnology techniques. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of biotechnology.

- o **DNA/RNA:** Genomics, pharmacogenomics, gene probes, genetic engineering, DNA/RNA sequencing/synthesis/amplification, gene expression profiling, and use of antisense technology.
- o **Proteins and other molecules:** Sequencing/synthesis/engineering of proteins and peptides (including large molecule hormones); improved delivery methods for large molecule drugs; proteomics, protein isolation and purification, signaling, identification of cell receptors.
- o **Cell and tissue culture and engineering:** Cell/tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- o **Process biotechnology techniques:** Fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation, biofiltration and phytoremediation.
- o **Gene and RNA vectors:** Gene therapy, viral vectors.
- o **Bioinformatics:** Construction of databases on genomes, protein sequences; modeling complex biological processes, including systems biology.
- o **Nanobiotechnology:** Applies the tools and processes of nano/microfabrication to build devices for studying biosystems and applications in drug delivery, diagnostics, etc.

Include the total cost of an R&D project with biotechnology applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4-14 through 4-17 could add to more than 100%.

**4-17** What percentage of the amount reported in Question 4-10 was for nanotechnology—the science and technology involving work at the nanometer scale?

Question 4-17 asks the company to report what percent of the domestic R&D it performed in 2011 was for nanotechnology. Nanotechnology can encompass any R&D project involved in the

study, creation, or use of objects at the nanoscale, which is generally considered to be 100 nanometers or smaller.

Many technologies related to conventional solid-state semiconductor manufacturing are capable of creating features smaller than 100 nanometers, so R&D involving these technologies should be included in this question.

Include the total cost of an R&D project with nanotechnology applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4-14 through 4-17 could add to more than 100%.

### **Domestic R&D performed by your company that was paid for by the U.S. federal government**

**4-18** Copy the amount from Question 3-15. This is domestic R&D performed by your company that was paid for by the U.S. federal government.

This number can be found on page 25 of your survey.

**4-19** Is the amount entered in Question 4-18 greater than zero?

If no, skip to section 5 on page 36. The rest of section 4 does not apply to your company; please do not complete these questions.

**4-20** How much of the amount reported in Question 4-18 was for the following categories?

Question 4-20 asks the company to report what percent of the domestic R&D performed by the company that was paid for by the U.S. federal government was research as opposed to development.

Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Research may be either “basic”, where the goal is primarily to increase understanding of a given topic without a specific commercial application in mind, or “applied”, where the goal is to solve a specific problem or achieve a specific commercial objective.

Development is defined as the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes. In simple terms, the intended output of research is ideas and the intended output of development is products.

**4-21** If you reported any research in Question 4-20, line a, how much of that research was for the following categories?

Question 4-21 asks the company to report what percent of the domestic research performed by the company that was paid for by the U.S. federal government was applied research as opposed to basic research. Research is defined as experimental or theoretical work undertaken primarily to acquire new knowledge or understanding of phenomena and observable facts. Applied research has the goal of solving a specific problem or achieving a specific commercial objective. Basic research has the goal of increasing understanding of a given topic without a specific commercial application in mind.

A project that aims to investigate the influence of different materials on fuel cell efficiency would be classified as basic research. A project that aims to improve fuel cell efficiency using new materials would be classified as applied research.

## Section 5: Human Resources

### **5-1 What was the total number of worldwide employees working at your company for the pay period that included March 12, 2011?**

Question 5-1 asks the company to report its total number of employees (both R&D and non-R&D employees) for all locations, both foreign and domestic. In order to collect consistent data from all companies, the employment figure reported should be for the pay period that included March 12, 2011. If this is not possible, companies should report employment for the date closest to March 12, 2011 possible.

Leased and temporary employees and consultants should be excluded from this question because this survey does not consider them employees of the reporting company.

### **5-2 How many of the employees reported in Question 5-1 were employees of your company's domestic operations and foreign operations?**

Question 5-2 asks the company to report, of the employees reported in Question 5-1, the number of employees employed by domestic operations and the number of employees that were employed by operations outside of the United States.

### **5-3 How many employees reported in Question 5-2 were R&D employees?**

Question 5-3 asks the company to report how many of its employees were R&D employees.

R&D employees include employees who work on R&D or who provide direct support to R&D such as researchers, R&D managers, technicians, clerical staff, and others assigned to R&D groups.

R&D employees exclude employees who provide indirect support to R&D, such as corporate personnel, security guards, and cafeteria workers.

The wages of the R&D employees reported in this question are included in the costs reported in sections 2 and 3 of this survey.

**5-4 Copy the numbers from 5-3, line a. These are your company's R&D employees.**

Copy the number from 5-3, line a on page 36.

**5-5 How many of the R&D employees reported in Question 5-4 were female employees and male employees?**

Question 5-5 asks the company to report its total R&D employees based on their sex and location.

**5-6 How many of the R&D employees reported in Question 5-4 worked in the occupations listed below?**

The distinction between the different occupation categories is defined primarily by the nature of the employee's work, not the employee's level of education. The occupation categories "Scientists and their managers" and "Engineers and their managers" can be grouped together under the more generic category "Researchers". Researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems and also in the management of the projects concerned.

Researchers should be reported as either engineers or scientists based on their academic and/or professional credentials.

Technicians are persons whose main tasks require technical knowledge and experience in one or more fields of science or engineering, but who contribute to R&D by performing technical tasks under the supervision of researchers. Biostatisticians supporting clinical trials would be reported in this category even though they may hold PhDs in their field.

The main distinction between researchers and technicians is that researchers contribute more to the creative aspects of R&D whereas technicians provide technical support. For example, a researcher (scientist or engineer) would design an experiment and a technician would run the experiment and assist in analyzing results.

R&D support staff is not directly involved with the conduct of a research project, but support the researchers and technicians. These employees might include clerical staff, report writers, regulatory experts, quality assurance, safety trainers, and other related employees.

Many Contract Research Organizations provide largely technical, regulatory, and administrative support to their customers for clinical trials. Most of these companies' R&D employees would be reported as R&D technicians or R&D support staff.



## Domestic full-time equivalents (FTEs)

**5-7** Of the domestic R&D employees reported in Question 5-6, line d, what was the number of domestic full-time equivalent (FTE) R&D employees?

**5-8** Of the domestic R&D scientists, engineers, and their managers reported in Question 5-6, line a, what was the number of domestic full-time equivalent (FTE) scientists, engineers, and their managers?

## Section 6: Intellectual Property and Technology Transfer

### Patents

**6-1** How many patents did your company apply for in 2011 from the U.S. Patent and Trademark Office (USPTO)?

Question 6-1 asks the company to report the number of U.S. patents it applied for in 2011. The intent of this question is to gather information about the output of companies' patenting activities. It is recognized that companies do not attempt to patent every invention, and that not every patent application results from an organized R&D activity..

**Exclude** the following types of continuing patent applications that do not add subject matter claimed in the parent patent application: continuation applications, requests for continued examination, divisional patent applications, and reissue applications. These types of patent applications are excluded to avoid double counting applications for the same subject matter. Continuation-in-part applications should be included because they add subject matter not claimed in the parent patent application.

**Foreign-owned companies** that apply for U.S. patents on behalf of their foreign parents should only report the patent applications originating from its own operations. Patents filed on behalf of others not owned by the company (such as a foreign parent) should be excluded. In general, the company should only report patent applications for which it (the reporting company) is an assignee.

**6-2** What percentage of the patent applications reported in Question 61 has your company applied for or plans to apply for in foreign jurisdictions?

Question 6-2 asks the company about patent applications in foreign jurisdictions. This information is useful as a measure of innovation both because it is an indicator of the potential global import of an invention and because it may indicate that the subject matter of the patent application is of high value.

**6-3 What percentage of the patent applications reported in Question 61 was for inventions that originated within your company's organized R&D activities?**

Question 6-3 asks the company to report what percent of its USPTO patent applications originated within its organized R&D activities. Exclude patent applications where none of the named inventors are R&D employees.

**6-4 How many patents were issued to your company in 2011 by the USPTO?**

Question 6-4 asks the company to report the number of U.S. patents it was granted in 2011. The intent of this question is to gather information about the output of companies' patenting activities. It is recognized that companies do not attempt to patent every invention, and that not every patent application results from an organized R&D activity..

Foreign-owned companies that apply for U.S. patents on behalf of their foreign parents should only report the patent grants that originated from its own operations. Patents filed on behalf of others not owned by the company (such as a foreign parent) should be excluded. In general, the company should only report patents for which it (the reporting company including its subsidiaries) is an assignee.

**6-5 What percentage of your company's inventions considered for patenting in 2011 resulted in patent applications?**

Question 6-5 asks the company to estimate what percent of the discoveries disclosed to company management resulted in patent applications. Many companies track this information through formal invention disclosure reports. This information is important because it provides a means to evaluate how useful patent applications are as a measure of innovation when comparing industries.

## **Patent Licensing**

**6-6 What was the amount of your company's patent licensing revenue in 2011?**

Question 6-6 asks the company to report the revenue it earned in 2011 from licensing its patents. Companies should only report revenue from the licensing of patents it (the reporting company) owns. Exclude revenue from sub-licensing.

Companies should only report revenue from licensing of patents to companies/organizations not owned by the reporting company. If a reporting company is foreign-owned, it should report revenue generated from licensing patents to its foreign owner and to other affiliated companies it does not own.

**6-7 How many new agreements did your company enter into during 2011 to license patents to others not owned by your company?**

Question 6-7 asks the company to report how many new licensing agreements it entered into in 2011 to license its patents to other parties.

## **Intellectual property transfer activities**

**6-8 Did your company perform the following activities in 2011?**

Question 6-8 asks the company to indicate whether or not it performed any of a specific list of technology transfer activities in 2011.

## **Intellectual property protection**

**6-9 During 2011, how important to your company were the following types of intellectual property protection?**

Question 6-9 asks the company to indicate the importance of different methods of intellectual property protection to its business.