U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. CENSUS BUREAU

FORM

**BRDI-1** (11-24-2014)

## 2014 BUSINESS R&D AND INNOVATION SURVEY

OMB No. 0607-0912: Approval Expires 07/31/2015

#### **DUE DATE:**

#### Report electronically:

https://econhelp.census.gov/brdis User ID:

Password:

Reporting electronically allows you to save your work as you go through the form and could save you time.

#### Report by mail:

If you report online, please do **not** mail in the paper form.

U.S. CENSUS BUREAU 1201 East 10th Street Jeffersonville, IN 47132-0001

## For information or assistance:

- https://econhelp.census. gov/brdis
- Call 1-800-772-7851, option "5" (8 a.m.– 5 p.m. EST, M-F)
- Write to the address above. Include your 11-digit ID printed on the mailing label.

INFORMATION COPY PORT

(Please correct any errors in this mailing address)

#### Your Response is Required by Law

Title 13, United States Code, requires businesses and other organizations that receive this questionnaire to answer the questions and return the report to the U.S. Census Bureau.

Respondents are not required to respond to any information collection unless it displays a valid approval number from the Office of Management and Budget (OMB). The OMB number appears at the top of this page.

#### Your Response is Confidential by Law

Title 13, United States Code, requires that your response be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. The law also provides that copies retained in your company's files are immune from legal process.

#### **About the Business R&D and Innovation Survey**

The Business R&D and Innovation Survey is a national survey that collects critical information about research and development (R&D) and innovation at businesses operating in the U.S. Policy makers and data users in industry and academia make use of this information for short- and long-term planning.

Better information about R&D and innovation in the U.S. business sector will help leaders make better decisions to strengthen American competitiveness.

#### **Thank You - Your Response is Important**

Accurate and timely statistical information could not be produced without your continued cooperation and goodwill. Thank you.

~ This survey is jointly conducted by the U.S. Census Bureau and the National Science Foundation ~



#### **Table of Contents**

#### **Survey Overview and Table of Contents**

The survey is divided into six sections. Each section asks questions about different aspects of R&D or innovation at your company. Due to the specialized nature of each section, it may be necessary to collaborate with colleagues in different departments to answer the questions. The sections are color coded and cover the following topical areas:

Section 1: Company	Intormation			ρ.4
Tonics: company owno	rehin business(es) rov	onuge and innovati	ion	

**Topics:** company ownership, business(es), revenues, and innovation

Requires: knowledge of the company's sales and revenues

## 

Topics: R&D expenses and capital expenditures for R&D

Requires: knowledge of your company's accounting concepts and access to financial records

### Section 3: Financial Schedule B.....p.21

Topics: costs for work that was funded, paid for, or reimbursed by others

Requires: knowledge of your company's financial records related to R&D activities

### 

**Topics:** characteristics of R&D reported in Sections 2 and 3

Requires: familiarity with the technical and strategic aspects of your company's R&D

## 

**Topics:** your company's employees, focusing on those who work on R&D activities **Requires:** familiarity with human resources (HR) concepts and access to HR records

### Section 6: Intellectual Property and Technology Transfer . . . . . . . . . . . . . . . . p.44

Topics: intellectual property and technology transfer

Requires: knowledge of your company's general business strategy, patenting, and licensing

#### Changes from the 2013 survey

On the basis of extensive conversations with many of the 2013 survey respondents, the 2014 survey has been improved. Sections and questions have been modified to make the concepts presented easier to understand. For a list of specific changes, go to **https://econhelp.census.gov/brdis**.

#### Filing electronically

You may submit your survey online via a secure website. Online submission allows you to save the data on secure Census Bureau servers as you go, so you can save, exit, and resume later without losing any of your data. It also allows you to save a paper or electronic copy of your completed survey. To submit online, follow the instructions at <a href="https://econhelp.census.gov/brdis">https://econhelp.census.gov/brdis</a>.

#### **Electronic materials**

Electronic versions of the questionnaire and related documents are available to print or share with others in your company via e-mail. They can be found at https://econhelp.census.gov/brdis.

#### You can:

- Print and download copies of the questionnaire in PDF format
- Download Excel worksheets for each section
- Get question-by-question instructions, definitions, and examples that provide clarification
- · Get answers to frequently asked questions, including how the data will be used



#### What is Research and Development (R&D)?

R&D is planned, creative work aimed at discovering new knowledge or developing new or significantly improved goods and services. This includes a) activities aimed at acquiring new knowledge or understanding without specific immediate commercial applications or uses (basic research); b) activities aimed at solving a specific problem or meeting a specific commercial objective (applied research); and c) systematic use of research and practical experience to produce new or significantly improved goods, services, or processes (development).

The term R&D does NOT include expenditures for:

- Costs for routine product testing, quality control, and technical services unless they are an integral
  part of an R&D project
- Market research
- Efficiency surveys or management studies
- Literary, artistic, or historical projects, such as films, music, or books and other publications
- Prospecting or exploration for natural resources

#### Does R&D include development of software and Internet applications?

Research and development activity in software and Internet applications refers only to activities with an element of uncertainty and that are intended to close knowledge gaps and meet scientific and technological needs. Report in this survey all software R&D as defined here regardless of the eventual user (internal or external).

R&D activity in software includes:

- · Software development or improvement activities that expand scientific or technological knowledge
- · Construction of new theories and algorithms in the field of computer science

R&D activity in software EXCLUDES:

- · Software development that does not depend on a scientific or technological advance, such as
  - supporting or adapting existing systems
  - adding functionality to existing application programs, and
  - routine debugging of existing systems and software
- Creation of new software based on known methods and applications
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process

#### Reporting unit

The reporting unit is your company, including all subsidiaries and divisions regardless of location. Include only subsidiary companies where there is more than 50 percent ownership. If you are owned by a foreign parent, the reporting unit for the survey is your U.S.-located company, including all your majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign parent and any foreign affiliates your company does not own should be treated the same as any business partner, customer, or supplier you do not own.

#### Reporting period

Report data for the calendar year 2014, if possible, or for your company's fiscal year ending between April 2014 and March 2015.

#### **Estimates are acceptable**

Please report all items to the best of your ability.

## To speak with a survey specialist, call 1-800-772-7851, option '1' for English, then option '5'.

Survey specialists are available 8 a.m. to 5 p.m. EST, M-F to help with any questions you may have.



		Company Information
1-1	Was	your company a majority-owned subsidiary of a foreign company in 2014?
		Yes → Please provide the following information and then skip to Question 1-3:
		Name of parent company
		<b>REPORTING INSTRUCTIONS FOR FOREIGN-OWNED COMPANIES:</b> If you are owned by a foreign parent, the reporting unit for the survey is your U.Slocated company, including all your majority-owned subsidiaries and divisions regardless of location. For reporting purposes, your foreign parent and any foreign affiliates your company does not own should be treated the same as any business partner, customer, or supplier you do not own.
		If you pay your foreign parent 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 parent 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 estimate any adjustments that would be required to conform to U.S. GAAP.
		No
1-2		another U.S. company other than a holding company own more than 50 percent e voting interest in your company during 2014?
		Yes <b>→ Please provide the following information</b> :
		Name of parent company
		EIN of owner (9 digits) (MM) (DD) (YYYY)
		EIN of owner (9 digits)  Date parent company purchased your company  (MM) (DD) (YYYY)
		Date parent company purchased
		Date parent company purchased your company  REPORTING INSTRUCTIONS FOR U.SOWNED COMPANIES:  If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, complete Question 1-6 and return this form to the Census Bureau – you are not required to complete the rest of this survey unless your owner instructs you to complete this
		REPORTING INSTRUCTIONS FOR U.SOWNED COMPANIES: If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, complete Question 1-6 and return this form to the Census Bureau – you are not required to complete the rest of this survey unless your owner instructs you to complete this survey.
		REPORTING INSTRUCTIONS FOR U.SOWNED COMPANIES: If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, complete Question 1-6 and return this form to the Census Bureau – you are not required to complete the rest of this survey unless your owner instructs you to complete this survey.



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 2014?
	☐ Yes → Include data for these operations/subsidiaries in your survey responses
	□ No
1-4	Has your company ceased operations?
	Yes → Please provide the following information:
	(MM) (DD) (YYYY)
	Date your company ceased operations
	REPORTING INSTRUCTIONS:  If your company ceased operations between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date your company ceased operations. If your company ceased operations before April 1, 2014, complete Question 1-6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.
	□ No
DOI:	Did in 20142
1-5	Did your company have discontinued operations in 2014?
	Yes → Include data for these operations in your survey responses
	□ No
1-6	Who is the survey coordinator?  The survey coordinator is the person at your company responsible for gathering all requested information, ensuring instructions are followed, and submitting the completed survey. The survey coordinator may not be able to personally complete the entire survey and may need to request information from other knowledgeable resources concerning your company's R&D, accounting, human resources, and legal matters.  Name
	Title
	Telephone Fax Area code Number Extension Area code Number
	E mail address
	E-mail address

Business Codes	
Do the business code(s) listed below reflect all applicable codes from pages 46-47 in which your company operated worldwide during 2014?	the list on
<b>NOTE:</b> These codes will be used to describe both business activities and R&I may differ from industry codes used by other government surveys and report	
If no business codes are printed below, please write in the codes from that apply to your company.	n pages 46-47
☐ Yes → Continue with Question 1-8	
No → Draw a line through codes that are incorrect. As needed, en codes and descriptions from pages 46-47 in the spaces prove	ter additional rided.
Business code (see pages 46-47)  Description	

4.0	Milest was the emount	t of ways company		and novem		
1-8	What was the amount during 2014?	t or your company	S <u>Worldwide Said</u>	\$Bil.	Mil.	Thou.
	<ul><li>Include:</li><li>Sales and operating re</li></ul>	wenues from discontinu	ed operations			
	• Jaies and operating to	venues nom discontinu	–			
1-9	Haw much of the ame	aumt reported in O	-cotion 1 Q was	-44vihutahla	to or origin	2424
1-5	How much of the ame from domestic operat		lestion 1-0 was	attributable	to or origin	lateu
	<ul><li>Include:</li><li>Sales and operating re including foreign subsite</li></ul>		omers,			
	<b>Example:</b> U.S. Manufactucustomers around the wo			\$Bil.	Mil.	Thou.
	operations are located ins of its sales in this questio	side the United States it				
	01 1.0 00.00 III 1.110 qui		_			
1-10	How much of the 201			ounts was fo	r each busi	ness
	code listed or amende (1) Worldwide sales	and operating rever	nues reported in			
	(2) Domestic sales a	(1)	-		(2)	
	Business code	Worldwide sa operating re	venues	opera	estic sales and ating revenues	s
	(see page 6)	\$Bil. Mil.	Thou.	\$Bil.	Mil.	Thou.
	a					
	b					
	с.					
	d					
	e.					
	f.					
	g.					
	h					
	i. Less eliminations – the sales and revenues that are eliminated in order to consolidate the business codes					
	j. <b>Total</b>					
	,	Total equals Que	estion 1-8	Total equ	ıals Question	1-9

### **Product (good or service) innovation**

A product innovation is the market introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.

- Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.
- Product innovations could have been originally developed by your company or by other companies.

companies.			
1-11 During the three years 2012 to 2014, did your company introduce:			
a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)?	□ Y	es 🗆	No
b. New or significantly improved services?	□ Y	es	No
1-12 If you answered "yes" to either 1-11, line a, or 1-11, line b, were ar innovations during the three years 2012 to 2014:	y of you	ır produ	ıct
a. New to your market?	□ Y	es 🗆	No
Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets.)			
b. New only to your company?	□ Y	es 🗆	No
Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.			
1-13 Using the definitions above, please give the percentage of your total sales in 2014 from:	:al		
a. New or significantly improved goods and services introduced during 2012 to 2014 that were <b>new to your market</b>			%
b. New or significantly improved goods and services introduced during 2012 to 2014 that were <b>new only to your company</b>			%
c. Goods and services that were unchanged or only marginally modified during 2012 to 2014 (include the resale of new goods or services purchased from other companies)			%
d. <b>Total sales in 2014</b>		1 0 0	%



### **Process innovation**

A process innovation is the implementation of a **new** or **significantly** improved production process, distribution method, or support activity for your goods or services.

- Process innovations must be new to your company, but they do not need to be new to your market.
- The innovation could have been originally developed by your company or by other companies.
- Exclude purely organizational innovations.

1-14	D	uring the three years 2012 to 2014, did your company introduce:		
	a.	New or significantly improved methods of manufacturing or producing goods or services?	Yes	No
	b.	New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services?	Yes	No
	c.	New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing?	Yes	No

## Financial Schedule A

#### Who should answer this section?

Persons familiar with accounting concepts and with access to financial records related to your company's R&D activities should complete this section.

#### What does this section cover?

This section requests financial information about your company's R&D expenses and capital expenditures for R&D. This section requests information about your company's R&D at multiple levels of detail: for your worldwide consolidated enterprise, for units or parts of your company defined by geography (countries, states, specific location), and for parts of your company defined by business code.

(countri	es, states, specific location), and for parts of your company defin	ned by busin	ess code.	<b>,</b>	
2-1	What was the total worldwide R&D expense for your con-	npany in 20	14?		
	If your company is publicly traded, this amount is equivalent to that disclosed on SEC Form 10-K as defined in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, "Accounting for Research and Development Costs.")  If your company is foreign-owned, refer to the instructions on page 4. Additional guidance, such as for privately owned	\$Bil.	Mil.	Thou.	
	<b>companies</b> , is available online at https://econhelp.census.gov/brdis.				
	<b>NOTE:</b> Report your company's R&D expense even if the amount is not considered material for your company's financial statements.				
2-2	Does the amount reported in Question 2-1 include any of	the follow	ing costs?		
	a. Collaborative R&D that was reimbursed by business partner such as through cost-sharing agreements		□ Yes		No
	b. R&D paid for by government or private foundation grants		□ Yes		No
	c. Technical services not an integral part of an R&D project (su product support provided by R&D employees)		□ Yes		No
	d. Bid and proposal costs		□ Yes		No
	e. Expense your company claimed resulting from the acquisition another company with unfinished R&D projects (in-process I		□ Yes		No
2-3	If you answered "Yes" to any of the costs in Question	\$Bil.	Mil.	Thou.	. ,
	2-2, what was the amount of these costs that was included in your response to Question 2-1?				
		\$Bil.	Mil.	Thou.	
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	фы.		Tilou.	
	company in 2014.				
2-5	Is the amount entered in Question 2-4 greater than zero?				
	Yes → Continue with Question 2-6				
	No → Skip to Question 2-31 on page 20				

R&D	paid for by your company			
2-6	Of the amount reported in Question 2-4, what were the cocode listed or amended on page 6 of this form?	sts for	each busin	ess
	Allocate R&D that is applicable to more than one business code Allocation in proportion to operating revenues is acceptable unless so basis is more appropriate.			
	Business code (see page 6)	\$Bil.	Mil.	Thou.
	a			
	b			
	c			
	d			
	e			
	f			
	g			
	h			
	i. <b>Total</b> (equals Question 2-4)			
2-7	Of the amount reported in Question 2-4, what costs were company in the following locations?			
	a. Domestic United States (50 states and D.C.) [Include R&D performed by domestic operations that is paid for by foreign subsidiaries]	\$Bil.	Mil.	Thou.
	b. All other countries (also, Puerto Rico) [Include R&D performed by foreign subsidiaries that is paid for by domestic operations]			
	c. <b>Total</b> (equals Question 2-4)			
2-8	Copy the amount from Question 2-7, line a. This is the total domestic R&D paid for by your company in 2014.	\$Bil.	Mil.	Thou.
2-9	Copy the amount from Question 2-7, line b. This is the total foreign R&D paid for by your company in 2014.	\$Bil.	Mil.	Thou.



2			e (1) domest 2014 was f					R&D paid for second	or by
		(1) Domestic			(2) Foreign			(3) Total worldwide	_
	<u>\$Bil.</u>	Mil.	Thou.	\$Bil.	Mil.	Thou.	<u>\$Bil.</u>	Mil.	Thou.
a.	Salaries, w	ages, and fr	inge benefits						
b.	Stock-base	d compensa	tion						
c.	Temporary	staffing, inc	cluding on-sit	e consultar	nts				
d.	Expensed	equipment							
e.	Materials a	and supplies							
f.	Leased fac	ilities and ec	quipment						
g.	Depreciation	on and amor	tization on R	&D proper	ty and equi	ipment			
h.	Payments	to business <sub> </sub>	partners for o	ollaborativ	e R&D				
i.	Purchased	R&D service	es (if your com	pany is forei	gn-owned, in	iclude payme	nts to you	r foreign owner	for R&D)
i.	All other p	urchased sei	rvices except	R&D					
,.									
k.	All other co	osts							
I.	Total								
	Total	equals Quest	ion 2-8	Total ed	quals Questi	on 2-9	Tota	l equals Questi	on 2-4

This is R8	kD perfo	and i for e		mn, and en _ (2)	ter the re		(3)	
	omestic Iil.	Thou.	\$Bil.	Foreign Mil.	Thou.	\$Bil.	Total world Mil.	<b>wide</b> Thou.
				ach columi	n and ente	r the resu	ılt here.	
D	(1) omestic	ormed by y  Thou.	\$Bil.	(2) Foreign Mil.	Thou.	\$Bil.	(3) Total world Mil.	<b>wide</b> Thou.
φbii.		Thou.	ΨΒΠ.		mod.	ΨΒΠ.		Thou.
12 Comy the		. f O	otion 2 1	2		\$Bil.	Mil.	Thou.
This is th	e <u>foreig</u>	n R&D paid		2, column 2 performed				
your com	pany in	2014.						
				2-13, how				
following	locatio \$Bil.	ns? For full list Mil.	of countries in Thou.	each region see C	luestion by Ques	tion Guidance a	t https://econhel	p.census.gov/bro Thou.
	ΨΒ.Π.		Thou.			ΨΒ		Thou.
. Canada				j. Italy				
. Puerto Rico				k. Luxe	embourg			
Europe	\$Bil.	Mil.	Thou.	No.				
. Austria				I. Netr	nerlands			
				m. Norv	way			
. Belgium								
Crook Don				n. Pola	nd			
c. Czech Rep				O Russ	sia			
l. Denmark				O. Hust	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
				p. Spai	n			
e. Finland								
France				q. Swe	den			
. Hulloo				r, Swit	zerland			
g. Germany								
				s. Turk	ey			
n. Hungary				t. Unit				
				King	dom			
Ireland								

2-14 (Continued	<b>d)</b> \$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
u. Other Europe				h. New Zealand			
Latin America/ Other Western Hemisphere	\$Bil.	Mil.	Thou.	i. Singapore			
a. Argentina				j. South Korea			
b. Brazil				k. Taiwan			
c. Chile				I. Thailand			
d. Mexico				m. Other Asia/ Pacific			
e. Other Latin America/OWH				Middle East	\$Bil.	Mil.	Thou.
Asia and Pacific	\$Bil.	Mil.	Thou.	a. Israel			
a. Australia				b. Other Middle East			
b. China				Africa	\$Bil.	Mil.	Thou.
c. Hong Kong				a. South Africa			
d. India				b. Other Africa			
e. Indonesia				<b>Total</b> (equals Question 2-13)			
f. Japan							
g. Malaysia							
		from Ques			\$Bil.	Mil.	Thou.
This is the	domes ompany	stic R&D pa in 2014.	nid for and	<u>performed</u>			

2-16 How much (including			eported in C	ີນuestion 2-15 was p	erform	ed in each	state
	\$Bil.	Mil.	Thou.	I.	\$Bil.	Mil.	Thou.
Alabama				Maine			
Alaska				Maryland			
Arizona				Massachusetts			
Arkansas				Michigan			
California				Minnesota			
Colorado				Mississippi			
Connecticut				Missouri			
Delaware				Montana			
District of Columbia				Nebraska			
Florida				Nevada			
Georgia				New Hampshire			
Hawaii				New Jersey			
Idaho				New Mexico			
Illinois				New York			
Indiana				North Carolina			
lowa				North Dakota			
Kansas				Ohio			
Kentucky				Oklahoma			
Louisiana				Oregon			
		Qı	estion conti	nues on next page			

2-16	(Continue	d)						
		\$Bil.	Mil.	Thou.	I	\$Bil.	Mil.	Thou.
Penn	sylvania				Vermont			
Rhod	le Island				Virginia			
Sout	h Carolina				Washington			
Sout	h Dakota				West Virginia			
Tenn	essee				Wisconsin			
Texa	s				Wyoming			
Utah					<b>Total</b> (equals Question 2-15)			
2-17	R&D in 20 Address 1	omestic 014?	location di	d your co	mpany perform the	largest d	ollar amo	ount of
	Address 2							
	City					State	ZIP	
2-18					Question 2-15	\$Bil.	Mil.	Thou.

Address 1	2014?				
Address 2					
City			•	State ZIP	
			\$Bil	. Mil.	Tho
How much of the a	amount reported in tion identified in Q	Question 2-15			
					mpany
Business code (see page 6)			\$Bil		Tho
(see page 6)			\$Bil		Tho
			\$Bil		Tho
(see page 6)			\$Bil		Tho
a. (see page 6) b.			\$Bil		Tho
a. (see page 6)			\$Bil		Tho
a. (see page 6) b.			\$Bil		Tho
a. (see page 6) b. c.			\$Bil		Tho
(see page 6)  a.  b.  c.  d.  e.			\$Bil		Tho
a. (see page 6) b. c. d.			\$Bill		Tho
(see page 6)  a.  b.  c.  d.  e.			\$Bil		Tho
(see page 6)  a.  b.  c.  d.  e.  f.			\$Bit		
(see page 6)  a  b  c  d  f  g			\$Bill		

R&D transactions between legal entities under comm	on ow	nership	
2-22 How much of the amount reported in Question 2-15 (dome paid for by your company's foreign subsidiaries through i			
<b>Example:</b> Company Y owns a subsidiary in France. In order to complete the development of a product in 2014, the French subsidiary paid for R&D performed at Company Y's U.S. R&D center. The cost of the U.S. R&D that was paid for by the French subsidiary would be included in this item.	\$Bil.	Mil.	Thou.
2-23 How much of the amount reported in Question 2-13 (forei paid for by your company's domestic operations through			
<b>Example:</b> Company Z owns a subsidiary in France. In order to complete the development of a product in 2014, the domestic operations paid for R&D performed at its subsidiary's R&D center in France. The cost of the French subsidiary's R&D that was paid for by the domestic operations would be included in this item.	\$Bil.	Mil.	Thou.
R&D performed by others			
2-24 Copy the amount from Question 2-11, column 1.  This is the domestic R&D paid for by your company in 2014 that was performed by others.	\$Bil.	Mil.	Thou.
How much of the amount reported in Question 2-24, was performed by the following types of organizations?	\$Bil.	Mil.	Thou.
a. Companies located <u>inside</u> the United States			
b. Your company's foreign parent (if you are owned by a foreign parent)			
c. Other companies located <u>outside</u> the United States			
d. U.S. federal government agencies or laboratories			
e. U.S. state and local government agencies or laboratories			
f. Foreign government agencies or laboratories			
g. All other organizations <u>inside</u> the United States			
h. All other organizations outside the United States			
<ul> <li>Total domestic R&amp;D paid for by your company that was performed by others (equals Question 2-24)</li> </ul>			



Activities with academia	
2-26 In addition to the amount reported in Question 2-24, did yo gifts to U.S. universities or colleges in 2014 that included	
Yes → Continue with Question 2-27	
No → Skip to Question 2-28	
	ADU 1411 TI
What was the amount of monetary gifts made by your company to U.S. universities or colleges in 2014 that was for R&D?	\$Bil. Mil. Thou.
Indirect R&D charges	
2-28 How much of the amount reported in Question 2-4 was for R&D costs your company plans to recoup through indirect charges on U.S. federal government contracts (IR&D or independent R&D)?	\$Bil. Mil. Thou.
Projected R&D for 2015	
2-29 What are your company's projected 2015 costs for (1) don (3) total worldwide R&D paid for by your company?	nestic, (2) foreign, and
(e, total from the para for by your company.	
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.	nounts
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.	(3)
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.	
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1) (2) Domestic Foreign	(3) Total worldwide
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1) (2) Domestic Foreign	(3) Total worldwide
NOTE: These amounts are the 2015 projections for the amreported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.	(3) Total worldwide
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services	(3) Total worldwide \$Bil. Mil. Thou.
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  2-30 How much of the amount reported in Question 2-29,	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic
NOTE: These amounts are the 2015 projections for the am reported in Question 2-10, line I.  (1)  Domestic  \$Bil. Mil. Thou. \$Bil. Mil. Thou.  How much of the amount reported in Question 2-29, column 1, is for projected purchased R&D services and projected payments to business partners for	(3) Total worldwide \$Bil. Mil. Thou.  Domestic

Capital expenditures			
2-31 What was the amount of your company's capital expenditures in the domestic United States in 2014?	\$Bil.	Mil.	Thou.
2-32 How much of the amount reported in Question 2-31 was for R&D operations?	\$Bil.	Mil.	Thou.
2-33 How much of the amount reported in Question 2-32 was for the following?  a. Structures	\$Bil.	Mil.	Thou.
b. Equipment			
d. All other capital expenditures for R&D operations			
Reporting information			
2-34 Is the information in this section reported for the 2014 cal  ☐ Yes ☐ No → Enter time period covered below:  ☐ (MM) (YYYY) (MM) (YYYY)  From to		ar?	

## **Financial Schedule B**

#### Who should answer this section?

Persons familiar with accounting concepts and with access to financial records related to your company's R&D activities should complete this section.

#### What does this section cover?

This section requests financial information about your company's costs for work that was funded, paid for, or reimbursed by others. This section requests information about these costs at multiple levels of detail: for your worldwide consolidated enterprise, for units or parts of your company defined by geography (countries, states), and for parts of your company defined by business code.

3-1	fo	hat were your company's <u>total worldwide costs</u> (both r the following that were funded, paid for, or reimbu our company?				
	•	<b>xclude:</b> Costs that were paid for by your company, such as those reported in Question 2-4 Payments in excess of the actual cost of the work performed (such as profit or fees)		\$Bil.	Mil.	Thou.
	a.	R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent)				
	b.	Collaborative R&D that was reimbursed by business partners, such as through cost-sharing agreements	••			
	c.	R&D paid for by government or private foundation grants				
	d.	Defense RDT&E goods or services (including DOD 6.1 through 6.7 funding), provided as a prime or as a sub, to the government and/or government contractors				
	e.	Medical nonclinical R&D services provided to others not owned by your company				
	f.	Medical clinical trial Phase I-III services provided to others not owned by your company (include pass-through costs)				
	g.	Nondefense custom software development and/or computer systems designed for others not owned by your company				
		<ul> <li>Exclude:</li> <li>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</li> </ul>				
	h.	Prototype development, production, and testing for customer's products prior to their introduction to the market (excluding defense-related prototyping reported in line d)				
	i.	All other R&D services, not included above, provided to the Federal Government or to others not owned by your company				
	j.	Total				



3-2	Copy the amount from Question 3-1, line j. This is the total R&D paid for by others in 2014.	\$Bil.	Mil.	Thou.
3-3	Is the amount entered in Question 3-2 greater than zero?  ☐ Yes → Continue with Question 3-4  ☐ No → Skip to Section 4 on page 35			
R&D	paid for by others			
3-4	Of the amount reported in Question 3-2, what costs were company in the following locations?	incurred	l <b>by your</b> Mil.	Thou.
	a. Domestic United States (50 states and D.C.)			
	b. All other countries (also, Puerto Rico)			
	c. <b>Total</b> (equals Question 3-2)			
3-5	Copy the amount from Question 3-4, line a. This is the total domestic R&D paid for by others in 2014.	\$Bil.	Mil.	Thou.
3-6	Copy the amount from Question 3-4, line b. This is the total foreign R&D paid for by others in 2014.	\$Bil.	Mil.	Thou.

3-7 How much of others in 2014						R&D paid fo	or by
(1)			(2) Foreign		_	(3)	
\$Bil. Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	otal worldwide Mil.	Thou.
a. Salaries, wages, and	d fringe benefits	5					
b. Stock-based compe	nsation						
00 000							
c. Temporary staffing,	including on-si	te consultar	nts				
d. Expensed equipmer	nt						
e. Materials and suppl	ies						
f. Leased facilities and	l equipment						
00 000							
g. Depreciation and an	nortization on R	&D propert	y and equip	oment			
h. Payments to busine	ss partners for	collaborativ	e R&D				
i. Purchased R&D serv	vices (if your com	npany is foreig	gn-owned, in	clude payme	nts to your f	oreign owner	or R&D)
j. All other purchased	services except	t R&D					
00 000							
k. All other costs							
l. Total							
00 000							
Total equals Qu	uestion 3-5	Total ed	quals Questic	on 3-6	Total	equals Questic	on 3-2

D.	(1) omestic			(2) Foreign		(3) Total world	lwide
\$Bil. M		Thou.	\$Bil.	•	ou. \$Bil.	Mil.	Thou.
				n column and e eany that was   (2)			
\$Bil. M	mestic	Thou.	\$Bil.	Foreign	ou. \$Bil.	Total world	<b>lwide</b> Thou.
φDII. IVI			<b>Ф</b> ВП.		ou. \$Bii.		) Indu.
10 Copy the	amount	from Que	stion 3-9,	column 2. Thi	\$Bil.	Mil.	Thou.
	ign R&	D perform		r company tha			
was paid	JI DY U						
11 Of the am	ount re	ported in C	Question 3	3-10, how muc	h R&D was n	erformed in	the
	locatio	ns? For full list	of countries in e	each region see Question	n by Question Guidan	ce at https://econhe	lp.census.gov/bro
	\$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
Canada				j. Italy			
Cariada I I I I				j. reary			
Puerto Rico				k. Luxemb	ourg		
Europe	\$Bil.	Mil.	Thou.	I Neste ente	ndo		
Austria				I. Netherla	ilus		
Austria							
Austria				m. Norway			
Austria Belgium				m. Norway			
Belgium				m. Norway			
Belgium				m. Norway n. Poland.			
Belgium Czech Rep				m. Norway n. Poland.			
Belgium Czech Rep				m. Norway n. Poland. o. Russia.			
Belgium  Czech Rep  Denmark				m. Norway n. Poland. o. Russia.			
Belgium  Czech Rep  Denmark				m. Norway n. Poland. o. Russia. p. Spain.			
Belgium  Czech Rep  Denmark  Finland				m. Norway n. Poland. o. Russia. p. Spain.			
Belgium  Czech Rep  Denmark  Finland				m. Norway n. Poland. o. Russia. p. Spain q. Sweden			
Belgium  Czech Rep  Denmark  Finland  France				m. Norway n. Poland. o. Russia. p. Spain q. Sweden			
Belgium  Czech Rep  Denmark  Finland  France				m. Norway n. Poland. o. Russia. p. Spain q. Sweden r. Switzerla			



3-11 (Continued	<b>d)</b> \$Bil.	Mil.	Thou.		\$Bil.	Mil.	Thou.
u. Other Europe				h. New Zealand			
Latin America/ Other Western Hemisphere	\$Bil.	Mil.	Thou.	i. Singapore			
a. Argentina				j. South Korea			
b. Brazil				k. Taiwan			
c. Chile				I. Thailand			
d. Mexico				m. Other Asia/ Pacific			
e. Other Latin America/OWH				Middle East	\$Bil.	Mil.	Thou.
Asia and Pacific	\$Bil.	Mil.	Thou.	a. Israel			
a. Australia				b. Other Middle East			
b. China				Africa	\$Bil.	Mil.	Thou.
c. Hong Kong				a. South Africa			
d. India				b. Other Africa			
e. Indonesia				<b>Total</b> (equals Question 3-10)			
f. Japan				Queenen e 10,111			
g. Malaysia							
Domestic R&I	D perf	ormed by	your cor	mpany that was	paid fo	r by oth	ers
3-12 Copy the a	amount	from Ques	stion 3-9, co	olumn 1.	\$Bil.	Mil.	Thou.
	domes	tic R&D pe	erformed by				

Business code (see page 6)			ative alloca	sis. tion
		\$Bil.	Mil.	Т
,				
	-			
l				
	_			
,				
h				
Total (equals Question 3-12)	-			
low much of the amount reported in Question ollowing?  If your company is a subcontractor or subgrantee, r  Example: Company Sub Inc. performs custom software of a subcontractor on a contract with the U.S. Dept. of Defer	eport the original eport the original epoch the ori	<b>ginal so</b> or a larg gh Sub	e defense c Inc. is work	nds. ompani
for the defense company, it reports the cost of this develoned was the original source of funds.		\$Bil.	Mil.	Т
		ΦЫ1.		
was the original source of funds.		φЫ.		
was the original source of funds.  Other companies located <u>inside</u> the United States	_	фЫI.		
was the original source of funds.	by a	фЫI.		
was the original source of funds.  Double the United States of the United States of the United States of Your company's foreign parent (if you are owned)	by a	фБII.		



3-14	(Cc	nti	nue	ed)				\$Bil.	Mil.	Thou.		
	e.	U.S	. sta	ate								
	f.	Fore	eigr	n go								
	g. All other organizations <u>inside</u> the United States											
	h.	All (	othe	er o								
	i.	Tot	al (	equ	ıals							
2_15	3-15 Add Question 3-14, lines a, b, and c, and enter the											
3-13	3-15 Add Question 3-14, lines a, b, and c, and enter the result here. This is the R&D that was paid for by other companies.											
3-16	Us	ina	the	e lis	st o	f bu	siness codes printed below, allocate th	ne amou	nt reporte	d in		
3-16 Using the list of business codes printed below, allocate the amount reported in Question 3-15 based on the industries of the companies that paid for the R&D. As needed, enter additional codes from pages 46-47 in the spaces provided.										&D.		
	Business code Description								Mil.	Thou.		
	a.	3	2	5	4	1	Pharmaceutical, medicinal, and botanical products manufacturing					
	b.	3	3	9	1	0	Medical equipment and supplies manufacturing					
	2 2 0 0 Fabricated metal products						Fabricated metal products manufacturing					
	d.	3	2	6	0	0	Plastics and rubber products manufacturing					
	e.	3	3	5	0	0	Electrical equipment, appliances, and components manufacturing					
	f.	5	1	1	2	0	Software publishers (except Internet)					
	g.											
	h.											
	i.											
	j.						Question continues on next page					

n.  O. Total (equals Question 3-15)  Copy the amount from Question 3-14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.  How much of the amount reported in Question 3-17 was for by the following agencies?  a. Department of Defense.	\$Bil.	Mil.	Thou
n.  o. Total (equals Question 3-15)	\$Bil.		
n.  O. Total (equals Question 3-15)	\$Bil.		
Copy the amount from Question 3-14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.  How much of the amount reported in Question 3-17 was for by the following agencies?	\$Bil.		
n.  O. Total (equals Question 3-15)	\$Bil.		
o. Total (equals Question 3-15)	\$Bil.		
Copy the amount from Question 3-14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.  How much of the amount reported in Question 3-17 was for by the following agencies?	\$Bil.		
Copy the amount from Question 3-14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.  How much of the amount reported in Question 3-17 was for by the following agencies?	\$Bil.		
is domestic R&D performed by your company that was paid for by the U.S. federal government.  How much of the amount reported in Question 3-17 was for by the following agencies?	s paid \$Bil.		
paid for by the U.S. federal government.  How much of the amount reported in Question 3-17 was for by the following agencies?	\$Bil.	Mil.	Thou
for by the following agencies?	\$Bil.	Mil.	Thou
for by the following agencies?	\$Bil.	Mil.	Thou
		Mil.	Thou
a. Department of Defense	. 🖳		
b. Department of Energy			
c. National Aeronautics and Space Administration			
d. National Institutes of Health			
e. Department of Homeland Security			
f. Department of Transportation			
g. Environmental Protection Agency			
h. National Science Foundation	. 📖		
i. All other, please specify:			
	. <u>UU</u>		
j. <b>Total</b> (equals Question 3-17)			

3-19 How much of the amount reported in Question 3-17 was p following types of agreements?	erforme	ed under the					
	\$Bil.	Mil.	Thou.				
a. Contracts (include direct or prime contracts and subcontracts)							
b. Grants, reimbursements, and all other agreements							
c. <b>Total</b> (equals Question 3-17)							
3-20 Subtract Question 3-17 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.	\$Bil.	Mil.	Thou.				
3-21 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 3-17 (2) Domestic R&D paid for by nonfederal sources reported in Question 3-20 (3) Total domestic R&D performed by your company that was paid for by others reported in Question 3-12							
(1) (2)		(3)					
Federal Nonfederal \$Bil. Mil. Thou. \$Bil. Mil. Thou.	\$Bil.	<b>Total</b> Mil.	Thou.				
<u>\$Bil.</u> <u>Mil.</u> <u>Thou.</u> <u>\$Bil.</u> <u>Mil.</u> <u>Thou.</u>	<u>ФЫІ.</u>	<u>IVIII.</u>	IIIou.				
Alabama							
Alaska							
Arizona							
<u>00 000 000 00 000 000 </u>							
Arkansas							
<u>00 000 000 00 000 000 </u>							
California							
Colorado							
00 000 000 00 000							
Connecticut							
00 000 000 00 000							
Question continues on next page							

3-21 (Continued) (1) Fede	)		(2) Nonfederal			(3) Total	
\$Bil. Mil.	eral Thou.	<u>\$Bil.</u>	Nonfederal Mil.	Thou.	\$Bil.	Total <u>Mil.</u>	Thou.
Delaware							
District of Columbia							
Florida							
Georgia							
Hawaii							
Idaho							
Illinois							
Indiana							
Iowa							
Kansas							
Kentucky							
Louisiana							
Maine							
	Q	uestion c	ontinues on n	ext page			

3-21 (Continued)							
(1) Federal	Thou	¢D:I	(2) Nonfederal	Thou	¢D:I	(3) Total	Thou
\$Bil. Mil. Maryland	<u>Thou.</u>	<u>\$Bil.</u>	<u>Mil.</u>	Thou.	\$Bil.	<u>Mil.</u>	<u>Thou.</u>
Massachusetts							
Michigan							
Minnesota							
Mississippi							
Missouri							
Montana							
Nebraska							
Nevada							
New Hempshire							
New Hampshire							
New Jee							
New Jersey							
New Mexico							
New Mexico							
New York							
	Q	uestion co	ontinues on n	ext page			

3-21 (Continued) (1) Federa			(2) Nonfederal			(3) Total	
\$Bil. Mil. North Carolina	Thou.	\$Bil.	Nonfederal Mil.	Thou.	<u>\$Bil.</u>	Total Mil.	Thou.
North Dakota							
Ohio							
Oklahoma							
Oregon							
Pennsylvania							
Rhode Island							
South Carolina							
Courtle Delegate							
South Dakota							
Tennessee							
Texas							
Utah							
Vermont							
	Q	uestion c	ontinues on no	ext page			

3-21 (Cd	ontinued)							
	(1)			(2)			(3)	
¢D:I	Federal	Thau	¢D:I	(2) Nonfederal		¢D:I	(3) Total	Thou
\$Bil. Virginia	Mil.	Thou.	\$Bil.	Mil.	Thou.	\$Bil.	Mil.	<u>Thou.</u>
Virginia					اممم			
Washingto	n .							
ruomigio					اممم			
West Virgi	nia							
Wisconsin								
Wyoming		1						
Total								
To	otal equals Ques	stion 3-17	Tota	l equals Quest	ion 3-20	Total	equals Ques	tion 3-12
3-22 At	what domes	tic location	did your	company r	orform the	larget	dollar amo	unt of
R8	kD that was p	aid for by	others in	2014?	erioriii tiit	argest	uonar amo	unt or
Ad	dress 1							
Ad	dress 2							
Cit	У					State	e ZIP	
						ARII		
3-23 Ho	w much of th	ne amount	reported	in Question	3-12	\$Bil.	Mil.	Thou.
3-23 Ho wa	ow much of the	ne amount ocation ider	reported	in Question Question 3-	3-12 -22?	\$Bil.	Mil.	Thou.
3-23 Ho wa	w much of the lo	ne amount ocation ider	reported ntified in	in Question Question 3-	3-12 22?	\$Bil.	Mil.	Thou.
3-23 Ho wa	w much of the lo	ne amount ocation ider	reported ntified in	in Question Question 3-	3-12 -22?	\$Bil.	Mil.	Thou.
3-23 Ho wa	w much of the lo	ne amount ocation iden	reported ntified in	in Question Question 3-	3-12 -22?	\$Bil.	Mil.	Thou.
3-23 Ho wa	w much of the lo	ne amount location ider	reported ntified in	in Question Question 3-	3-12 -22?	\$Bil.	Mil.	Thou.
3-23 Ho wa	w much of the lo	ne amount pocation ider	reported ntified in	in Question Question 3-	3-12 -22?	\$Bil.	Mil.	Thou.
3-23 Ho wa	w much of the lo	ne amount ocation ider	reported ntified in	in Question Question 3-	3-12 22?	\$Bil.	Mil.	Thou.

	Address 2			
	City	State	ZIP	
25	How much of the amount reported in Question 3-12	\$Bil.	Mil.	Thou.
	was from the location identified in Question 3-24?			
roje	ected R&D paid for by others in 2015			
26	What are your company's projected 2015 costs for R&D	<b>AD:</b>		
	that will be paid for by others?	\$Bil.	Mil.	Thou.
	NOTE: This amount is the 2015 projection for what is reported in Question 3-2.			
27	How much of the projected costs in 2015 for R&D that wi be paid for by others reported in Question 3-26 will be	II		
	performed by your company in the United States?	\$Bil.	Mil.	Thou.
	NOTE: This amount is the 2015 projection for what is reported in Question 3-12.			
28	How much of the projected costs in 2015 for domestic R8 performed by your company that will be paid for by others	d S		
	reported in Question 3-27 will be paid for by the U.S. federal government?	\$Bil.	Mil.	Thou.
	NOTE: This amount is the 2015 projection for what is reported in Question 3-17.			

## **Management and Strategy of R&D**

#### Who should answer this section?

Persons familiar with the technical, managerial, and strategic aspects of your company's R&D should complete this section.

#### What does this section cover?

This section requests information about the characteristics of the R&D reported in Sections 2 and 3. This section requests information about your company's worldwide consolidated R&D and the R&D your company performs in the domestic United States.

- 4-1 Copy the amount from Question 2-4. This is the total R&D paid for by your company in 2014.
- \$Bil. Mil. Thou.
- 4-2 Is the amount entered in Question 4-1 greater than zero?
  - ☐ Yes → Continue with Question 4-3
  - No → Skip to Question 4-17 on page 37
- 4-3 What percentage of the amount reported in Question 4-1 was directed toward business areas or product lines that are new to your company?

**Example:** Company A manufactures laptop computers. In 2014 Company A's management decided to attempt to enter the cellular phone market and used a portion of the company's R&D budget to develop cellular phones. Because this was a new line of business in 2014, Company A reports this R&D in this question.

	%

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

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

\$Bil.	Mil.	Thou.

4-5 How much of the amount reported in Question 4-4 was for the following categories?

ΨΒι	•		111041		

N/III

\$Ril

a. Research—the planned, systematic pursuit of new knowledge or understanding.....
 b. Development—the systematic use of research and

						1
T				ĭ	ľ	



4-6	If you reported any research in Question 4-5, line a, how much of that research was for the following categories?	\$Bil.	Mil.	Thou.							
	a. Applied research—the activity aimed at solving a specific problem or meeting a specific commercial objective										
	b. Basic research—the activity aimed at acquiring new knowledge or understanding without specific immediate commercial application or use										
	c. <b>Total</b> (equals Question 4-5, line a)										
Areas of application for domestic R&D paid for and performed by your company											
NOTE: You may report the same R&D in multiple areas for Questions 4-7 to 4-11.											
4-7	What percentage of the amount reported in Question 4-4 had <a href="energy applications">energy applications</a> , including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?										
	<b>Example:</b> Company B is a semiconductor manufacturer. Its products as specifically for energy applications. In 2014, 10% of the domestic R&D particle the company was focused on improving the energy efficiency of its prothis, Company B reports "10%" for this question.		%								
4-8	What percentage of the amount reported in Question 4-4 henvironmental protection applications, including pollution abatement?			%							
4-9	What percentage of the amount reported in Question 4-4 hadelense applications, including military applications and great security-related R&D?			%							
4-10	What percentage of the amount reported in Question 4-4 halth or medical applications?	nad		%							
4-11	What percentage of the amount reported in Question 4-4 hagricultural applications?	nad		%							
Technology focus of domestic R&D paid for and performed by your company											
NOTE: You may report the same R&D in multiple areas for Questions 4-12 to 4-16.											
4-12	What percentage of the amount reported in Question 4-4 vesoftware products or software embedded in other projects		<u>ts</u> ?	%							
4-13	What percentage of the amount reported in Question 4-4 voltics and photonics—science and technology involving the processing, and detection of light, or of the information can be approximately as a second control of the information of the in	he emissior		%							



4-14 What percentage of the amount reported in Question 4-4 was for other projects or products enabled by optics and photonics science and technology?  4-15 What percentage of the amount reported in Question 4-4 was for
4.15 What percentage of the amount reported in Question 4.4 was for
biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?
What percentage of the amount reported in Question 4-4 was for nanotechnology—the science and technology involving work at the nanometer scale?
Domestic R&D performed by your company that was paid for by others
4-17 Copy the amount from Question 3-12. This is the domestic R&D performed by your company that was paid for by others.  \$Bil. Mil. Thou.
4-18 Is the amount entered in Question 4-17 greater than zero?
☐ Yes → Continue with Question 4-19
No → Skip to Section 5 on page 40
4-19 How much of the amount reported in Question 4-17 was for the following categories? \$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\\$\
a. Research-the planned, systematic pursuit of new knowledge or understanding
b. <u>Development</u> -the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes
c. <b>Total</b> (equals Question 4-17)
4-20 If you reported any research in Question 4-19, line a, how much of that research was for the following categories?  \$\text{\text{Bil.}} \text{\text{Mil.}} \text{\text{Thou.}}
much of that received was for the following estagories?
much of that research was for the following categories? \$\text{\$Bil.}\$ Mil. Thou.  a. Applied research—the activity aimed at solving a specific
much of that research was for the following categories?  a. Applied research—the activity aimed at solving a specific problem or meeting a specific commercial objective
much of that research was for the following categories?  a. Applied research—the activity aimed at solving a specific problem or meeting a specific commercial objective
much of that research was for the following categories?  a. Applied research—the activity aimed at solving a specific problem or meeting a specific commercial objective



NOTE: You may report the same R&D in multiple areas for Questions 4-21 to 4-25.
What percentage of the amount reported in Question 4-17 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?
4-22 What percentage of the amount reported in Question 4-17 had environmental protection applications, including pollution abatement?
What percentage of the amount reported in Question 4-17 had defense applications, including military applications and general security-related R&D?
4-24 What percentage of the amount reported in Question 4-17 had health or medical applications?
4-25 What percentage of the amount reported in Question 4-17 had agricultural applications?
Technology focus of domestic R&D performed by your company that was paid for by others
NOTE: You may report the same R&D in multiple areas for Questions 4-26 to 4-30.
4-26 What percentage of the amount reported in Question 4-17 was for software products or software embedded in other projects or products?
4-27 What percentage of the amount reported in Question 4-17 was for optics and photonics—science and technology involving the emission, processing, and detection of light, or of the information carried by light?
4-28 What percentage of the amount reported in Question 4-17 was for other projects or products enabled by optics and photonics science and technology?
4-29 What percentage of the amount reported in Question 4-17 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?
4-30 What percentage of the amount reported in Question 4-17 was for nanotechnology—the science and technology involving work at the nanometer scale?

Domestic R&D performed by your company that was U.S. federal government	paid fo	r by the	
4-31 Copy the amount from Question 3-17. This is domestic R&D performed by your company that was paid for by the U.S. federal government.	\$Bil.	Mil.	Thou.
4-32 Is the amount entered in Question 4-31 greater than zero?  ☐ Yes → Continue with Question 4-33 ☐ No → Skip to Section 5 on page 40	•		
4-33 How much of the amount reported in Question 4-31 was for the following categories?	\$Bil.	Mil.	Thou.
a. Research-the planned, systematic pursuit of new knowledge or understanding			
b. <u>Development</u> -the systematic use of research and practical experience to produce new or significantly improved goods, services, or processes			
c. <b>Total</b> (equals Question 4-31)			
4-34 If you reported any research in Question 4-33, line a, how much of that research was for the following categories?	\$Bil.	Mil.	Thou.
a. Applied research—the activity aimed at solving a specific problem or meeting a specific commercial objective			
b. Basic research—the activity aimed at acquiring new knowledge or understanding without specific immediate commercial application or use			
c. <b>Total</b> (equals Question 4-33, line a)			
4-35 What percentage of the amount reported in Question 4-31 software products or software embedded in other project			%

### **SECTION 5**

### **Human Resources**

#### Who should answer this section?

Persons familiar with human resources concepts and with access to records related to your company's employees should complete this section.

#### What does this section cover?

This section requests information about your company's employees, focusing on those who worked on

R&D act	tivities either full-time or part your company owned more th	-time. Include employme		
5-1	What was the total number your company for the pay			
	<ul><li>Include:</li><li>Full- and part-time employed</li></ul>	es		Number
	Exclude:  • Leased or temporary employ	yees and consultants		
5-2	How many of the employe your company's domestic			ees of
	<b>Domestic operations emplo</b> first quarter filing of IRS Form			orted on the
		(1) Domestic operations	(2) Foreign operations	(3) Total employees
	Employees			
				Total equals Question 5-1
5-3	How many employees rep were all other employees		were <b>R&amp;D</b> employe	es and how many
	<b>R&amp;D</b> employees include all et to R&D, such as researchers, R to R&D groups. <b>Exclude</b> employers personnel, security g	&D managers, technicians, byees who provide only inc	clerical staff, and others direct support to R&D, su	assigned

	(1) Domestic operations	(2) Foreign operations	(3) Total employees
a. R&D employees			
b. All other employees			
c. Total employees			

Total line equals Question 5-2



R&D	employees			
5-4	Copy the numbers from Q R&D employees.	uestion 5-3, line a. Th	nese are your compan	ıy's
		(1) Domestic	(2) Foreign	(3) Total R&D
		operations	operations	employees
	D0D 1			
	R&D employees			
	Harry manner of the DOD and			
-5	How many of the R&D em and male employees?		westion 5-4 were <u>ten</u>	<u>iaie</u> empioyees
		(1) Domestic	(2) Foreign	(3) Total R&D
		operations	operations	employees
	E   D0D			
	a. Female R&D employees			
	b. Male R&D employees			
	c. Total R&D employees			
		Tot	al line equals Question 5-4	4
0	II (4 DOD			41
-6	How many of the R&D em occupations listed below?		luestion 5-4 worked i	n tne
		(1) Domestic	(2) Foreign	(3) Total R&D
	a P&D coiontista	operations	operations	employees
	a. R&D scientists, engineers, and			
	managers			
	b. R&D technicians and			
	b. Hab toominoland and			
	technologists			
	technologists			
	technologists			
	technologists			
	c. R&D support staff (clerical and other)	Tot	ral line equals Question 5-4	
	c. R&D support staff (clerical and other)	Tot	ral line equals Question 5-4	
-7	technologists	entists, engineers, an	·	
-7	technologists	entists, engineers, an evel of education?	d managers reported	in Question 5-6,
-7	technologists	entists, engineers, an evel of education? (1) Domestic	d managers reported (2) Foreign	
-7	technologists	entists, engineers, an evel of education? (1)	d managers reported	in Question 5-6,
-7	technologists	entists, engineers, an evel of education? (1) Domestic	d managers reported (2) Foreign	in Question 5-6,
-7	technologists	entists, engineers, an evel of education? (1) Domestic	d managers reported (2) Foreign	in Question 5-6,
-7	technologists	entists, engineers, an evel of education? (1) Domestic	d managers reported (2) Foreign	in Question 5-6,
-7	technologists	entists, engineers, an evel of education? (1) Domestic	d managers reported (2) Foreign	in Question 5-6,



Domes	stic full-time equivalents (FTEs)
n	f the domestic R&D employees reported in Question 5-4, column 1, what was the umber of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, ther full-time employees not working solely on R&D, and part-time employees?
	Number
a.	FTEs for full-time R&D employees
	Count the number of full-time employees who work only on R&D
	Example: 50 full-time R&D employees worked only on R&D = 50 FTEs
b	FTEs for other full-time employees not working solely on R&D
	Use the share of the time they work on R&D to calculate the number of FTEs.
	Example: 60 full-time employees averaged one-fourth of their time on R&D = 15 FTEs
C.	FTEs for part-time employees working on R&D
	Use the share of a full-time week (such as 40 hours) that they work on R&D to calculate the FTEs
	Example: 20 part-time employees averaged 20 hours a week on R&D activities = 10 FTEs
d	Total FTEs
	Total FTEs should not exceed Question 5-4, column 1.



5-9	ro ac	f the domestic R&D scientists, engineers, and managers reported in Question 5-6, w a, column 1, what was the number of full-time equivalents (FTEs) for R&D stivity for full-time R&D employees, other full-time employees not working solely R&D, and part-time employees?
	a.	FTEs for full-time R&D scientists, engineers, and managers  Count the number of full-time employees who work only on R&D
		Example: 50 full-time R&D scientists worked only on R&D = 50 FTEs
	b.	FTEs for other full-time scientists, engineers, and managers not working solely on R&D  Use the share of the time they work on R&D to calculate the number of FTEs
		<b>Example:</b> 60 full-time managers averaged one-fourth of their time on R&D = 15 FTEs
	C.	FTEs for part-time scientists, engineers, and managers working on R&D  Use the share of a full-time week (such as 40 hours) that they work on R&D to calculate the FTEs
		Example: 20 part-time employees averaged 20 hours a week on R&D activities = 10 FTEs
	d.	Total FTEs should not exceed Question 5-6, line a, column 1.
5-10	lir	ow many of the R&D scientists, engineers, and managers reported in Question 5-6, ne a, column 1, were non-U.S. citizens employed in the United States under a mporary visa, such as H-1B or L-1?    Operation
		&D scientists, engineers, and managers employed under temporary visa



### **SECTION 6**

### **Intellectual Property and Technology Transfer**

#### Who should answer this section?

Persons with an understanding of your company's general business strategy and knowledge of its patenting, licensing, and other activities related to intellectual property should complete this section.

#### What does this section cover?

This section requests information about intellectual property and technology transfer activities such as:

- Patents
- Patent licensing
- Protection of intellectual property
- Transfer of intellectual property

#### Are responses to this survey confidential?

Yes. Your responses are completely confidential under Title 13, United States Code, and are seen only by persons sworn to uphold the confidentiality of Census Bureau information. Data provided will be used only to publish summary statistics that do not identify individual companies. Title 13 also provides that copies of reports retained in your files are immune from legal process. In addition, reported data are exempt from requests made under the Freedom of Information Act.

Pate	ents			
6-1	How many patents did your company apply for in 2014 frou.S. Patent and Trademark Office (USPTO)?	om the		Number
6-2	What percentage of the patent applications reported in Qu 6-1 has your company applied for or plans to apply for in f jurisdictions?			%
6-3	What percentage of the patent applications reported in Qu 6-1 was for inventions that originated within your companorganized R&D activities?			%
6-4	How many patents were <u>issued</u> to your company in 2014 b	oy the USP	TO?	Number
6-5	What percentage of your company's inventions considered in 2014 resulted in patent applications?	l for paten	ting	%
Pate	ent sales and licensing to others			
6-6	How much revenue did your company receive in 2014 from the sale of patents?	\$Bil.	Mil.	Thou.
6-7	How much revenue did your company receive in 2014 from patent licensing?	\$Bil.	Mil.	Thou.



Pate	ent purchases and licensing <u>from others</u>			
6-8	How much did your company pay others in 2014	\$Bil.	Mil.	Thou.
0-0	to purchase patents?			
6-9	How much did your company pay others in 2014	\$Bil.	Mil.	Thou.
	to license patents?			
Inte	llectual property transfer activities			
6-10	Did your company perform the following activities in 201	4?		
	a. Transferred intellectual property (IP) to others not owned by company through participation in technical assistance or	your		
	"know how" agreements		Yes	□ No
	<ul> <li>Received IP from others not owned by your company throug participation in technical assistance or "know how" agreement</li> </ul>		☐ Yes	□ No
	c. Transferred IP to a spin-off or spin-out of your company		Yes	□ No
	d. Received IP from a parent company as part of a spin-off or spin	pin-out	□ Yes	□ No
	e. Acquired more than 50% ownership in another company for primary purpose of acquiring their IP		☐ Yes	□ No
	f. Acquired any financial interest in another company in order to gain access to their IP		☐ Yes	□ No
	g. Participated in cross-licensing agreements—the agreements i two or more parties grant a license to each other for the use			
	the subject matter claimed in one or more of the patents own by each party.	ned	Yes	□ No
	h. Allowed free use of patents or other IP owned by your comp (for example, allowing free use of software patents by the opsource community)	en	☐ Yes	□ No
	Made use of open source patents or other freely available IP owned by your company	not	☐ Yes	□ No
Inte	llectual property protection			
6-11	During 2014, how important to your company were the	Very	Somewhat	Not
	following types of intellectual property protection?	important	important	important
	a. Utility patents (patents for invention)			
	b. Design patents (patents for appearance)	📙		
	c. Trademarks	📙		
	d. Copyrights			
	e. Trade secrets			
	f. Mask works (copyright protection for semiconductor products	s)		



Busir	ness codes	Consu	mer Goods
	in Sections 1, 2, and 3)	33333	Digital cameras manufacturing
I '	pace and Defense	33430	Audio and video equipment manufacturing
33642	Aircraft engine and engine parts manufacturing	31210	Beverage manufacturing
33641	Aircraft manufacturing	33200 31100	Fabricated metal products manufacturing Food manufacturing
33644	Guided missiles, space vehicles, and parts	33700	Furniture and related products manufacturing
22602	manufacturing	32300	Printing and related support activities
33692	Military armored vehicle, tank, and tank components manufacturing	32591	Soap, cleaning compound, and toilet
33452	Search, detection, navigation, guidance,	21000	preparations manufacturing
	aeronautical, and nautical system and	31990	Textile, apparel, and leather products manufacturing
00000	instruments manufacturing	31220	Tobacco manufacturing
33660 33643	Ship and boat building Other aircraft parts and auxiliary equipment	33990	Miscellaneous manufacturing not listed
550-5	manufacturing		elsewhere (games, office supplies,
<b>.</b> .	•		slot machines, etc.)
	obiles, Motorcycles, and Components	Fneray	<i>,</i> and Mining
33620 33630	Motor vehicle body and trailer manufacturing	33360	Engine, turbine, and power transmission
33610	Motor vehicle parts manufacturing Motor vehicles manufacturing	33300	equipment manufacturing
33691	Motorcycle, bicycle, and parts manufacturing	21200	Mining
33651	Railroad rolling stock manufacturing	33319	Mining, oil, and gas field machinery and
33660	Ship and boat building	21100	equipment manufacturing Oil and gas extraction
33699	All other transportation equipment manufacturing	32401	Petroleum refineries
	•	21300	Support activities for mining,
	I Equipment		including oil and gas
33311	Agricultural machinery and equipment manufacturing	Financ	e, Insurance, and Real Estate
33332	Commercial, service industry, temperature	52200	Finance: banking and credit intermediation
	control, and airflow control machinery	52400	Insurance carriers and related activities
33312	manufacturing Construction machinery manufacturing	53100 52310	Real estate Securities, commodity contracts, and other
33500	Electrical equipment, appliances, and	52310	financial investments and related activities
	components manufacturing		(including funds and trusts)
33360	Engine, turbine, and power transmission equipment manufacturing		
33322	Industrial machinery manufacturing, except	Health	
	semiconductor machinery	32543	Biotechnology-based pharmaceutical and biological products (except diagnostics)
33390	Metalworking and other general purpose	33451	Electromedical, electrotherapeutic, and
33319	machinery manufacturing Mining, oil, and gas field machinery and		irradiation apparatus manufacturing
33313	equipment manufacturing	62200	Hospitals and nursing care facilities
33331	Photographic and photocopying equipment	32542 62150	In vitro diagnostic substances manufacturing Medical and diagnostic laboratories
	manufacturing	33910	Medical equipment and supplies manufacturing
Chemi	cals and Materials	62110	Offices of physicians
32402	Asphalt paving, roofing, and saturated	32541	Pharmaceutical, medicinal, and botanical
	materials manufacturing	54173	products manufacturing Research and development services
32510	Basic chemicals manufacturing	34173	in biotechnology
32790	Cement, concrete, lime, gypsum, and other nonmetallic mineral product manufacturing	54174	Research and development services
32710	Clay and glass products manufacturing		in physical, engineering, and life sciences
21200	Mining	62199	(except biotechnology) Other ambulatory health care services
32592	Paint, adhesive, and other chemical	02133	(ambulance, dental, home health care)
32200	manufacturing Paper manufacturing		(ambalance) actual, nome neutra care,
32530	Pesticide, fertilizer, and other agricultural		
	chemical manufacturing		
32600	Plastics and rubber products manufacturing		
33100 32520	Primary metal manufacturing Resin, synthetic rubber, and artificial		
32320	synthetic fibers and filaments manufacturing		
32591	Soap, cleaning compound, and toilet		
00100	preparations manufacturing		
32100 32403	Wood products manufacturing Other petroleum and coal products		
32403	manufacturing, including motor oil,		
	hydraulic fluid, and charcoal		



Informa	ation Technology - Goods and Services
33333	Digital cameras manufacturing
51801	Cloud computing applications and internet
	based software services
54150	Computer systems design and related services
33412	Computers and peripheral equipment
	manufacturing, including magnetic and
	optical media
51800	Data processing, hosting, and related services
33500	Electrical equipment, appliances, and
	components manufacturing
45411	Electronic shopping and electronic auctions
33459	Measuring and control instruments
	manufacturing (not listed elsewhere)
33422	Radio, television, and wireless
	communication equipment manufacturing
33440	Semiconductor and other electronic
	components manufacturing
33321	Semiconductor machinery manufacturing
51120	Software publishers (except Internet)
33421	Telephone apparatus manufacturing
	including routers, modems, and gateways
42500	Wholesale electronic markets and
	agents and brokers (business to business)
33429	Other communication equipment
	manufacturing (except radio, television,
	and wireless communication equipment)
51910	Other information services, including
	Internet publishing, broadcasting,
	and web search portals

#### **Professional, Scientific, and Technical Services**

54180	Advertising and related services
54130	Architectural, engineering, and related services
54150	Computer systems design and related services
54111	Legal, accounting, tax preparation,
	bookkeeping and payroll services
54160	Management, scientific, and
	technical consulting services
54190	Professional, scientific, and technical services
	(not listed elsewhere)
54173	Research and development services in
	biotechnology
54174	Research and development services in
	physical, engineering, and life sciences
	(except biotechnology)
54172	Research and development services in
	social sciences and humanities
54140	Specialized design services

#### **Telecommunications and Utilities**

51500	Broadcasting (except Internet)
51740	Satellite telecommunications
22100	Utilities
56200	Waste management and remediation services
51710	Wired telecommunications carriers
51720	Wireless telecommunications carriers
	(except satellite)
51790	Other telecommunications (not listed elsewhere)

#### **Other Services**

72000	Accommodation and food services
56100	Administrative and support services
71000	Arts, entertainment, and recreation
23000	Construction
49200	Couriers, messengers, and express delivery services
53300	Lessors of nonfinancial intangible assets (including patent licensing)
55100	Management of companies and enterprises
42300	Merchant wholesalers, durable goods
42400	Merchant wholesalers, nondurable goods
51200	Motion picture and sound recording
	(except Internet)
51110	Newspaper, periodical, book, and
	directory publishers (except Internet)
53200	Rental and leasing services
44000	Retail trade, except electronic shopping
	and electronic auctions
62400	Social assistance services
21300	Support activities for mining,
	including oil and gas
48000	Transportation
49300	Warehousing and storage
81000	Other services (not listed elsewhere)



This includes time to read instructions, develop or assemble materials, conduct tests, organize and review the information, and maintain and report the information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to:  Paperwork Project 0607-0912  U.S. Census Bureau  4600 Silver Hill Road  AMSD-3K138  Washington, D.C. 20233	Remarks (Please use the space below for any explanations that may help us understand your reported dat
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	~ Thank you for completing your 2014 Business R&D and Innovation Survev ~



### 2014 BRDI-1 - Guidelines

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

**Reporting for "worldwide activities"-** The reporting unit is your company, including 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. For reporting purposes, your foreign parent (if you are foreign owned) and any foreign affiliates your company does not own by more than 50% should not be treated as part of 'your company' in your report. Transactions with these units should be treated the same as with any unrelated third parties such as business partners, customers, or suppliers you do not own.

**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 Was your company a majority-owned subsidiary of a foreign company in 2014?

Question 1.1 asks about the ownership of the company receiving the survey. Special reporting instructions apply to companies that were majority-owned by a foreign company. If your answer is "No" continue to Question 1.2. If your answer is "Yes", enter the name of the parent company and skip to Question 1.3.

#### REPORTING INSTRUCTIONS FOR FOREIGN-OWNED COMPANIES:

If your company is foreign-owned, the reporting unit for the survey is your U.S.-located company, including all your 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 business partner, customer, or supplier 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 estimate any adjustments that would be required to conform to U.S. GAAP.

### **1.2** Did another U.S. company other than a holding company own more than 50 percent of the voting interest in your company during 2014?

Question 1.2 asks about the majority of the ownership of the voting interest of the company receiving the survey. Special reporting instructions apply to companies that have been acquired by another company. If your answer is "No", continue to Question 1.3. If your answer is "Yes", enter the name of the parent company, the EIN of the owner, and the date that your parent company purchased your company.

#### REPORTING INSTRUCTIONS FOR U.S.-OWNED COMPANIES:

If your company was purchased between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date of purchase. If your company was purchased before April 1, 2014, complete Question 1.6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.

Example 1: Company A was acquired by Company P (a U.S. company) on Feb. 1, 2014. Because Company A was acquired by a U.S. company prior to April 1, 2014, Company A is not required to complete this survey. Company A will answer Question 1.6 and return the form to the Census Bureau.

<u>Example 2:</u> Company B is acquired by Company P (a U.S. company) on July 1, 2014. Because Company B was acquired by a U.S. company on or after April 1, 2014, Company B must complete the survey, reporting data for the period January 1, 2014 through July 1, 2014.

#### 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.

### 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 2014?

Companies are instructed to include/consolidate data for their foreign subsidiaries on this survey. The reporting unit is your company, including all domestic and foreign subsidiaries in which your company owns more than 50 percent of the voting interest.

Entities in which your company does not have more than 50% ownership stake should not be included in this report as part of 'your company'. Transactions with entities in which your company does not have more than 50% ownership stake should be reported as if they were unrelated, third parties.

If your answer is "Yes", include data for these operations/subsidiaries in your survey responses, and continue to Question 1.4. If your answer is "No", continue to Question 1.4.

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?

If your answer is "Yes", enter the date that your company ceased operations.

If your company ceased operations between April 1, 2014 and December 31, 2014, report only for the period January 1, 2014 to the date your company ceased operations. If your company ceased operations before April 1, 2014, complete Question 1.6 and return this form to the Census Bureau – you are not required to complete the rest of this survey.

<u>Scenario 1:</u> Your company ceased operations before April 1, 2014. 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, 2014 and December 31, 2014. You should complete the survey as instructed and report for the period from January 1, 2014 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 2014 are needed in order to accurately measure the total activity of companies operating in the United States during 2014.

#### 1.5 Did your company have discontinued operations in 2014?

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

If your answer is "Yes", include data for these operations in your survey responses, and continue to Question 1.6. If your answer is "No", continue to Question 1.6.

#### Why is this important?

This information is needed in order to accurately measure the total activity of companies operating in the United States in 2014.

#### **1.6** Who is the survey coordinator?

The survey coordinator is the person at your company responsible for gathering all requested information, ensuring instructions are followed, and submitting the completed survey. The survey coordinator may not be able to personally complete the entire survey and may need to request information from other knowledgeable resources concerning your company's R&D, accounting, human resources, and legal matters.

Enter the following contact information for the survey coordinator: name, title, telephone number, fax number, and email address.

#### 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 46-47 in which your company operated worldwide during 2014?

Question 1.7 asks the company receiving the survey to identify all of its worldwide businesses in 2014 (Form BRDI-1). 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.

**NOTE:** These codes will be used to describe both business activities and R&D activities and may differ from industry codes used by other government surveys and reports.

If no business codes are printed below, please write in the codes from pages 46-47 that apply to your company.

If your answer is "Yes", continue to Question 1.8. If your answer is "No", draw a line through the code(s) that are incorrect, and, as needed, enter additional codes and descriptions from pages 46-47. Use the Remarks at the end of the survey to describe your business(es) if the provided codes do not accurately represent them.

Scenario 1: The business code(s) provided are incorrect. Check the "no" box, then find the correct code(s) on pages 46-47 and write the codes and descriptions in the boxes. Draw a line through the ones that are incorrect.

<u>Scenario 2</u>: No business code(s) are provided. Find the correct code(s) on pages 46-47 and write the codes and descriptions 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 https://econhelp.census.gov/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 sales and revenues during 2014?

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?

"Domestic 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.

Include sales and operating revenues to foreign customers, including foreign subsidiaries.

**Example:** U.S. Manufacturing Corporation sells parts to customers around the world. However, because all its operations are located inside the United States, it reports 100% of its sales in this question.

### 1.10 How much of the 2014 sales and operating revenue amounts was for each business code listed or amended in Ouestion 1.7:

- (1) Worldwide sales and operating revenues reported in Question 1.8
- (2) Domestic sales and operating revenues reported in Question 1.9

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.

#### Product (good or service) innovation

A product innovation is the market introduction of a **new** or **significantly** improved good or service with respect to its capabilities, user friendliness, components, or sub-systems.

- Product innovations (new or improved) must be new to your company, but they do not need to be new to your market.
- Product innovations could have been originally developed by your company or by other companies.

#### 1.11 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved goods (Exclude the simple resale of new goods purchased from other companies and changes of a solely aesthetic nature)?
- b. New or significantly improved services?

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 introduced its first cell phone in 2012 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 your product innovations during the three years 2012 to 2014:

Question 1.12 asks whether any of the new or significantly improved good or service 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.

- a. New to your market?
   Your company introduced a new or significantly improved good or service to your market before your competitors. (It may have been available in other markets).
- b. New only to your company?

Your company introduced a new or significantly improved good or service that was already available from your competitors in your market.

### 1.13 Using the definitions above, please give the percentage of your total sales in 2014 from:

Question 1.13 asks how much of the company's total worldwide sales in 2014 are attributable to different types of product innovations. Specifically, it asks what percent of the company's total worldwide sales in 2014 that were from:

- a. New or significantly improved goods and services introduced during 2012 to 2014 that were **new to your market**
- b. New or significantly improved goods and services introduced during 2012 to 2014 that were **new only to your company**
- c. Goods and services that were **unchanged or only marginally modified** during 2012 to 2014 (include the resale of new goods or services purchased from other companies).

#### **Process innovation**

A process innovation is the implementation of a new or significantly improved production process, distribution method, or support activity for your goods or services.

- Process innovations must be new to your company, but they do not need to be new to your market.
- The innovation could have been originally developed by your company or by other companies.
- Exclude purely organizational innovations.

### 1.14 During the three years 2012 to 2014, did your company introduce:

- a. New or significantly improved methods of manufacturing or producing goods or services?
- b. New or significantly improved logistics, delivery or distribution methods for your inputs, goods, or services?
- c. New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing?

Question 1.14 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 2014?

Question 2.1 requests total worldwide R&D expense. The reporting unit is your company, including all domestic and foreign subsidiaries that are more 50% owned by your company for financial reporting purposes. All transactions between subdivisions within this reporting unit should be eliminated as inter-company transactions. Total worldwide R&D expense also includes payments by your company for R&D services performed by (i) unrelated third parties, (ii) affiliates for which your company has less than a 50% ownership stake and/or (iii) your foreign parent, if your company is foreign owned.

<u>Scenario 1</u>: Your company is publicly traded. Report worldwide R&D expense as reported on SEC Form 10-K as defined in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, Accounting for Research and Development Costs.)

Scenario 2: Your company is foreign-owned. Report the R&D expense figure of the U.S.-located company and domestic and foreign subsidiaries that are more than 50% owned by your U.S.-located company, if any. Do not include expenses by your foreign parent or by any foreign affiliate your U.S.-located company does not own. For reporting purposes, these entities should be treated the same as any unrelated third party such as a customer or supplier you do not own.

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 in FASB ASC Topic 730, Research and Development (FASB Statement No. 2, Accounting for Research and Development Costs.). Privately held companies that cannot report on this basis should note reporting principles and difficulties in the space for "Remarks" at the end of the survey.

The following are examples of activities that typically would be **excluded** from research and development in accordance with FASB Statement No. 2, "Activities Constituting Research and Development" (http://www.fasb.org/pdf/fas2.pdf):

- a. Engineering follow-through in an early phase of commercial production.
- b. Quality control during commercial production including routine testing of products.
- c. Trouble-shooting in connection with break-downs during commercial production.
- d. Routine, on-going efforts to refine, enrich, or otherwise improve upon the qualities of an existing product.
- e. Adaptation of an existing capability to a particular requirement or customer's need as part of a continuing commercial activity.
- f. Seasonal or other periodic design changes to existing products.
- g. Routine design of tools, jigs, molds, and dies.
- h. Activity, including design and construction engineering, related to the construction, relocation, rearrangement, or start-up of facilities or equipment other than (1) pilot plants (see paragraph 9(h)) and (2) facilities or equipment whose sole use is for a particular research and development project (see paragraph 11(a)).

i. Legal work in connection with patent applications or litigation, and the sale or licensing of patents.

#### Exclude from worldwide R&D expense:

- Costs for R&D that was paid for by a third party such as R&D performed under contract.
- For medical products companies, exclude costs for phase IV clinical trials since these trials take place after products have achieved technical and market feasibility.

#### Research and development activity in software:

Does R&D include development of software and Internet applications?

- Yes, as long as the research and development activities include an element of uncertainty, are intended to close knowledge gaps, and meet scientific and technological needs.
- Report in this survey all software R&D as defined here regardless of the eventual user (internal or external).

#### R&D activity in software INCLUDES:

- Software development or improvement activities that expand scientific or technological knowledge
- Construction of new theories and algorithms in the field of computer science

#### R&D activity in software EXCLUDES:

- Software development that does not depend on a scientific or technological advance, such as:
  - o supporting or adapting existing systems
  - o adding functionality to existing application programs, and
  - o routine debugging of existing systems and software
- Creation of new software based on known methods and applications
- Conversion or translation of existing software and software languages
- Adaptation of a product to a specific client, unless knowledge that significantly improved the base program was added in that process

For further guidance on accounting for software development costs see 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).

### 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 were 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 R&D that was reimbursed by business partners, such as through costsharing 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.

# 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 these inconsistencies.

# 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 2014.

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.

#### 2.5 Is the amount entered in Question 2.4 greater than zero?

Question 2.5 instructs the company to skip to Question 2.31 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?

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.

### 2.7 Of the amount reported in Question 2.4, what costs were incurred by your company in the following 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 2014.

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 2014".

### 2.9 Copy the amount from Question 2.7, line b. This is the total foreign R&D paid for by your company in 2014.

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 2014".

# **2.10** How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company in 2014 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 2014 broken into 11 categories:

- a. Salaries, wages, and fringe benefits
  - o Include 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 Stock-based compensation should be reported in line b
  - o Include payroll taxes such as Social Security and Medicare.
- b. Stock-based compensation
  - o Include the cost of both stock options and stock grants.
- c. Temporary staffing including on-site consultants
  - o Include costs paid to Professional Employer Organizations (PEOs), staffing agencies, and on-site consultants for personnel contributing to R&D.
- d. Expensed equipment
  - o Include 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 Include milestone payments and payments made under cost sharing agreements for joint R&D projects.

Payments made to contract research organizations or other parties performing R&D under contract for the company should be reported in line i, "Purchased R&D services".

#### i. Purchased R&D services

- o Include 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 Include payments for purchased services that support the company's R&D, but are not themselves R&D.
  - 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 Include all other costs supporting the R&D the company paid for.
- 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.

The domestic total should equal Question 2.8, foreign total should equal Question 2.9, and total worldwide should equal Question 2.4.

### **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 third 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.

# 2.12 Subtract 2.11 from 2.10, line I, 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 1 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 third 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.

# 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 2014.

Question 2.13 asks the company to copy the amount reported in Question 2.12 for foreign R&D costs paid for and performed by the company. This survey defines this amount as "foreign R&D paid for and performed by your company in 2014".

### **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 2014 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.

Country/Territory Name Region

Afghanistan Asia and Pacific

Albania Europe Algeria Africa

American Samoa (U.S.) Asia and Pacific

Andorra Europe Angola Africa

Antigua and Barbuda
Argentina
Armenia
Aruba (Neth.)
Australia
Latin America/OWH
Asia and Pacific
Latin America/OWH
Asia and Pacific

Austria Europe

Azerbaijan Asia and Pacific
Bahamas, The Latin America/OWH

Bahrain Middle East
Bangladesh Asia and Pacific
Barbados Latin America/OWH

Belarus Europe Belgium Europe

Belize Latin America/OWH

Benin Africa

Bermuda (U.K.) Latin America/OWH

Bhutan Asia and Pacific
Bolivia Latin America/OWH

Bosnia and Herzegovina Europe Botswana Africa

Brazil Latin America/OWH
Brunei Asia and Pacific

Bulgaria Europe Burkina Faso Africa

Burma Asia and Pacific

Burundi Africa

Cambodia Asia and Pacific

Cameroon Africa

Canada Not assigned to a region in this survey.

Cape Verde Africa

Cayman Islands (U.K.) Latin America/OWH

Central African Republic Africa Chad Africa

Chile Latin America/OWH
China Asia and Pacific
Colombia Latin America/OWH

Comoros Africa
Congo (Brazzaville) Africa
Democratic Republic of the Congo Africa

Costa Rica Latin America/OWH

Côte d'Ivoire/Ivory Coast Africa Croatia Europe

Cuba Latin America/OWH

Cyprus Europe
Czech Republic Europe
Denmark Europe
Djibouti Africa

Dominica Latin America/OWH
Dominican Republic Latin America/OWH
Ecuador Latin America/OWH

Egypt Africa

El Salvador Latin America/OWH

Equatorial Guinea Africa
Eritrea Africa
Estonia Europe
Ethiopia Africa

Fiji Asia and Pacific

Finland Europe
France Europe
Gabon Africa
Gambia, The Africa
Georgia Europe

Germany Europe
Ghana Africa
Greece Europe
Greenland (Denmark) Europe

Grenada Latin America/OWH
Guam (U.S.) Asia and Pacific
Guatemala Latin America/OWH

Guinea Africa Guinea-Bissau Africa

Guyana Latin America/OWH Haiti Latin America/OWH

Holy See Europe

Honduras Latin America/OWH Hong Kong Asia and Pacific

Hungary Europe Iceland Europe

India Asia and Pacific
Indonesia Asia and Pacific
Iran Middle East
Iraq Middle East
Ireland Europe
Israel Middle East
Italy Europe

Jamaica Latin America/OWH
Japan Asia and Pacific
Jordan Middle East
Kazakhstan Asia and Pacific

Kenya Africa

Kiribati Asia and Pacific

Kosovo Europe
Kuwait Middle East
Kyrgyzstan Asia and Pacific
Laos Asia and Pacific

Latvia Europe Lebanon Middle East Lesotho Africa Africa Liberia Libya Africa Liechtenstein Europe Lithuania Europe Luxembourg Europe

Macau Asia and Pacific

Macedonia Europe Madagascar Africa Malawi Africa

Malaysia Asia and Pacific

Maldives Asia and Pacific

Mali Africa Malta Europe

Marshall Islands Asia and Pacific

Mauritania Africa Mauritius Africa

Mexico Latin America/OWH Micronesia, Federated States of Asia and Pacific

Moldova Europe Monaco Europe

Mongolia Asia and Pacific

MontenegroEuropeMoroccoAfricaMozambiqueAfricaNamibiaAfrica

Nauru Asia and Pacific Nepal Asia and Pacific

Netherlands Europe

New Zealand Asia and Pacific
Nicaragua Latin America/OWH

Niger Africa Nigeria Africa

North Korea Asia and Pacific

Norway Europe Oman Middle East Pakistan Asia and Pacific Palau Asia and Pacific Latin America/OWH Panama Papua New Guinea Asia and Pacific Latin America/OWH Paraguay Peru Latin America/OWH

Philippines Asia and Pacific
Poland Europe
Portugal Europe

Puerto Rico (U.S.)

Not assigned to a region in this survey.

Qatar Middle East
Romania Europe
Russia Europe
Rwanda Africa

Saint Kitts and Nevis

Saint Lucia

Saint Vincent and the Grenadines

Latin America/OWH

Latin America/OWH

Latin America/OWH

Asia and Pacific

San Marino Europe
Sao Tome and Principe Africa
Saudi Arabia Middle East

Senegal Africa
Serbia Europe
Seychelles Africa
Sierra Leone Africa

Singapore Asia and Pacific

Slovakia Europe Slovenia Europe

Solomon Islands Asia and Pacific

Somalia Africa South Africa Africa

South Korea Asia and Pacific

South Sudan Africa Spain Europe

Sri Lanka Asia and Pacific

Sudan Africa

Suriname Latin America/OWH

Swaziland Africa
Sweden Europe
Switzerland Europe
Syria Middle East
Taiwan Asia and Pacific
Tajikistan Asia and Pacific

Tanzania Africa

Thailand Asia and Pacific Timor-Leste Asia and Pacific

Togo Africa

Tonga Asia and Pacific
Trinidad and Tobago Latin America/OWH

Tunisia Africa
Turkey Europe

Turkmenistan Asia and Pacific
Turks and Caicos Islands (U.K.)

Tuvalu Asia and Pacific
Latin America/OWH
Asia and Pacific

Uganda Africa
Ukraine Europe
United Arab Emirates Middle East
United Kingdom Europe

Uruguay
Uzbekistan
Asia and Pacific
Vanuatu
Asia and Pacific
Venezuela
Vietnam
Asia and Pacific
Latin America/OWH
Vietnam
Asia and Pacific
Latin America/OWH
Virgin Islands (U.K.)
Latin America/OWH
Virgin Islands (U.S.)

Yemen Middle East

Zambia Africa

Zimbabwe Africa

Note: OWH = Other Western Hemisphere. 'Latin America/OWH' includes Bermuda and the geographical regions of the Caribbean, Central America, and South America.

### 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 2014.

Question 2.15 asks the company to copy the amount reported in Question 2.12 for domestic R&D costs paid for and performed by the company. This survey defines this amount as "domestic R&D paid for and performed by your company in 2014".

"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 2014?

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 2014?

Question 2.17 asks the company to identify the location where the largest dollar value of the domestic R&D it performed in 2014 took place.

# 2.18 How much of the amount reported in Question 2.15 was from 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.

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### **2.19** At what domestic location did your company perform the second largest dollar amount of R&D in 2014?

Question 2.19 asks the company to identify the location where the second largest dollar value of the domestic R&D it performed in 2014 took place.

### **2.20** How much of the amount reported in Question 2.15 was from 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 Of the domestic R&D performed by your company reported in Question 2.15, how much was for each business code reported in Question 2.6?

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.

### R&D transactions between legal entities under common ownership

Questions 2.22 and 2.23 are intended only for companies that own more than 50 percent of any operations or subsidiaries located outside the 50 United States and D.C. during 2014 (that is, your company provided a "Yes" response to Question 1.3).

# 2.22 How much of the amount reported in Question 2.15 (domestic R&D performance) was paid for by your company's foreign subsidiaries through inter-company transactions?

Example: Company Y owns a subsidiary in France. In order to complete the development of a product in 2014, the French subsidiary paid for R&D performed at Company Y's U.S. R&D center. The cost of the U.S. R&D that was paid for by the French subsidiary would be included in this item.

<u>Special Instruction for Foreign Owned Companies:</u> Do not include payments from your company's foreign parent. R&D costs associated with these payments should be reported in Section 3.

### 2.23 How much of the amount reported in Question 2.13 (foreign R&D performance) was paid for by your company's domestic operations through inter-company transactions?

Example: Company Z owns a subsidiary in France. In order to complete the development of a product in 2014, the domestic operations paid for R&D performed at its subsidiary's R&D center in France. The cost of the French subsidiary's R&D that was paid for by the domestic operations would be included in this item.

#### **R&D** performed by others

# 2.24 Copy the amount from Question 2.11, column 1. This is the domestic R&D paid for by your company in 2014 that was performed by others.

This survey defines this amount as "total R&D performed by others in 2014". This amount represents the R&D that your company outsourced or paid to third parties during 2014.

### 2.25 How much of the amount reported in Question 2.24 was performed by the following types of organizations?

Question 2.25 asks the company to report how much of the domestic R&D paid for by your company in 2014 that was performed by eight specific types of organizations:

- a. Companies located <u>inside</u> the United States
  - o Include for-profit hospitals
- b. Your company's foreign parent (if you are owned by a foreign parent)
- c. Other companies located outside the United States
- d. U.S. federal government agencies or laboratories
- e. U.S. state and local government agencies or laboratories
- f. Foreign government agencies or laboratories
- g. All other organizations inside the United States
- h. All other organizations outside the United States

The total domestic R&D paid for by your company that was performed by others should equal the amount reported in Question 2.24.

#### **Activities with academia**

# 2.26 In addition to the amount reported in Question 2.24, did your company make monetary gifts to U.S. universities or colleges in 2014 that included support for R&D?

If you answer "Yes", continue to Question 2.27. If you answer "No", skip to Question 2.28.

2.27 What was the amount of monetary gifts made by your company to U.S. universities or colleges in 2014 that was for R&D?

#### **Indirect R&D charges**

2.28 How much of the amount reported in Question 2.4 was for R&D costs your company plans to recoup through indirect charges on U.S. federal government contracts (IR&D or independent R&D)?

Question 2.28 asks how much of the amount reported in Question 2.4 was a special category of R&D costs tracked by government contractors. In order to encourage business R&D in certain areas of interest to the government, federal agencies such as the Department of Defense allow companies to recoup certain R&D costs through indirect charges on government contracts. These R&D costs, called IR&D or independent R&D should only apply to Federal government contractors.

#### Projected R&D for 2015

2.29 What are your company's projected 2015 costs for (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by your company?

Question 2.29 asks the company to project its domestic, foreign, and total worldwide R&D costs for 2015.

2.30 How much of the amount reported in Question 2.29, column 1, is for projected purchased R&D services and projected payments to business partners for collaborative R&D?

Question 2.30 asks the company to project how much of the domestic R&D paid for by the company in 2015 will be for purchased R&D services and payments to business partners for collaborative R&D.

### Capital expenditures

2.31 What was the amount of your company's capital expenditures in the domestic United States in 2014?

Exclude the cost of purchased land.

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

### 2.32 How much of the amount reported in Question 2.31 was 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.

#### 2.33 How much of the amount reported in Question 2.32 was for the following? Question

2.33 asks the company to report how much of the domestic capital expenditures for R&D operations may be classified in four specific types or capital expenditures:

- a. Structures
  - o Include the costs of purchased or improved buildings and other facilities such as signal towers or windmills that are fixed to the land.
- b. Equipment
- c. Capitalized software
- d. All other capital expenditures for R&D operations
  - o Include the costs of purchased patents or other intangible assets.

The total domestic capital expenditures for R&D should equal what was reported in Question 2.32.

#### **Reporting Information**

#### 2.34 Is the information in this section reported for the 2014 calendar year?

If your company is reporting on a fiscal year that does not end Dec. 31, 2014, 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 2014 for the following that were funded, paid for, or reimbursed by others not owned by your company?

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 report costs that are funded, paid for, or reimbursed by their foreign parent in this question.

Exclude: payments in excess of the actual cost of the work performed (such as profits or fees), and costs that were paid for by your company, such as those 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 the survey term, "R&D paid for by others":

a. R&D that was reimbursed by your company's foreign parent (if you are owned by a foreign parent)

- 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 RDT&E goods or services (including DOD 6.1 through 6.7 funding), provided as a prime or as a sub, 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.
  - o Include all defense R&D funded by the Department of Defense (DOD), the Department of Energy's weapons programs, the Department of Homeland Security, and other Federal agencies.
  - o R&D funds from DOD include all funds for research, development, test, and evaluation (RDT&E) activities (6.1 through 6.7 budget appropriations).
  - o Include defense R&D performed as a prime contractor and/or as a subcontractor.
- 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. Medical clinical trial Phase I-III 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 completed in order for a product to be approved for use in the general population.
  - o Include pass-through/out-of-pocket costs paid to investigators and patients participating in clinical trials.
  - o Exclude costs for Phase IV clinical trials because these trials take place after a product has been approved for sale.
  - Offices of physicians, dentists, and other health practitioners with employees acting as investigators for clinical trials generally should report 0 (zero) to this item. These companies should only report compensation for sponsored studies if the investigators' role in the study extends beyond monitoring his/her own patients to the development and management of overall study protocols.
- g. Nondefense custom software development and/or computer systems designed for others not owned by your company
  - See definitions in "Research and development activity in software" under guidance for Question 2.1.
  - o This category includes the development of new or significantly improved software, both as an end product and for use embedded in other products.
  - 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. Prototype development, production, and testing for customer's products prior to their introduction to the market (excluding defense-related prototyping reported in line d)
  - Exclude quality control testing and other testing services for products already on the market.
- i. All other R&D, not included above, provided to the Federal Government or 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

**2014.** 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 2014.

#### 3.3 Is the amount entered in Question 3.2 greater than zero?

Question 3.3 instructs the company to skip to Section 4 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?

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 2014.

Question 3.5 asks the company to copy the amount reported in Question 3.4, line a, for R&D costs in the domestic United States. This survey defines this amount as "total domestic R&D paid for by others" in 2014.

#### 3.6 Copy the amount from Question 3.4, line b. This is the total foreign R&D paid for by others in 2014.

Question 3.6 asks the company to copy the amount reported in Question 3.4, line b, 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 2013.

### 3.7 How much of the (1) domestic, (2) foreign, and (3) total worldwide R&D paid for by others in 2014 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 2014 broken into 11 categories:

- a. Salaries, wages, and fringe benefits
  - o Include costs for all compensation and benefits of R&D employees and officers that are included in the R&D paid for by others.
  - o Stock-based compensation should be reported in line b.
  - 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 Include costs paid to Professional Employer Organizations (PEOs), staffing agencies, and on-site consultants for personnel contributing to R&D.
- d. Expensed equipment
  - o Include 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
  - Include 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
  - Include payments made to business partners for collaborative R&D, including milestone payments and payments made under cost sharing agreements for joint R&D projects.
  - Payments made to contract research organizations or other parties performing R&D under contract for the company should be reported in line i, "Purchased R&D services".
- i. Purchased R&D services (if your company is foreign-owned, include payments to your foreign owner for R&D)
  - o Include payments made to contract research organizations or other parties performing R&D under contract for the company.
  - If your company is a contract research organization managing clinical trials, do not include compensation of medical professionals, investigators, and human subjects participating in clinical trials or reimbursement of out-of-pocket costs in this category please report these costs in line j (all other purchased services except R&D).

- o Include defense R&D funding that your company received as a prime that is subcontracted to others not owned by your company
- j. All other purchased services except R&D
  - o Include payments for purchased services that support the company's R&D, but are not themselves R&D.
  - 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.
  - o If your company is a contract research organization managing clinical trials, include compensation of medical professionals, investigators, and human subjects participating in clinical trials or reimbursement of out-of-pocket costs in this category.
- k. All other costs
  - o Include all other costs supporting the R&D the company paid for.

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 third 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.

## 3.9 Subtract 3.8 from 3.7, line I, 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 1 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 line 1 of Question 3.7 represent payments by third parties for R&D. Because the reporting company is directly involved in the conduct of this R&D, it may be able to provide accurate information on these costs.

### 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.

#### Countries and territories by region

As defined by the Business R&D and Innovation Survey

Country/Territory Name Region

Afghanistan Asia and Pacific

Albania Europe Algeria Africa

American Samoa (U.S.) Asia and Pacific

Andorra Europe Angola Africa

Antigua and Barbuda
Argentina
Armenia
Aruba (Neth.)
Australia
Latin America/OWH
Asia and Pacific
Latin America/OWH
Asia and Pacific

Austria Europe

Azerbaijan Asia and Pacific Bahamas, The Latin America/OWH

Bahrain Middle East
Bangladesh Asia and Pacific
Barbados Latin America/OWH

Belarus Europe Belgium Europe

Belize Latin America/OWH

Benin Africa

Bermuda (U.K.)

Bhutan

Asia and Pacific
Bolivia

Latin America/OWH

Bosnia and Herzegovina Europe

Botswana Africa

Brazil Latin America/OWH
Brunei Asia and Pacific

Bulgaria Europe Burkina Faso Africa

Burma Asia and Pacific

Burundi Africa

Cambodia Asia and Pacific

Cameroon Africa

Canada Not assigned to a region in this survey.

Cape Verde Africa

Cayman Islands (U.K.) Latin America/OWH

Central African Republic Africa Chad Africa

Chile Latin America/OWH
China Asia and Pacific
Colombia Latin America/OWH

Comoros Africa
Congo (Brazzaville) Africa
Democratic Republic of the Congo Africa

Costa Rica Latin America/OWH

Côte d'Ivoire/Ivory Coast Africa Croatia Europe

Cuba Latin America/OWH

Cyprus Europe
Czech Republic Europe
Denmark Europe
Djibouti Africa

Dominica Latin America/OWH
Dominican Republic Latin America/OWH
Ecuador Latin America/OWH

Egypt Africa

El Salvador Latin America/OWH

Equatorial Guinea Africa
Eritrea Africa
Estonia Europe
Ethiopia Africa

Fiji Asia and Pacific

Finland Europe France Europe Gabon Africa Gambia, The Africa Georgia Europe Germany Europe Ghana Africa Greece Europe

Greenland (Denmark) Europe

Grenada Latin America/OWH
Guam (U.S.) Asia and Pacific
Guatemala Latin America/OWH

Guinea Africa Guinea-Bissau Africa

Guyana Latin America/OWH Haiti Latin America/OWH

Holy See Europe

Honduras Latin America/OWH Hong Kong Asia and Pacific

Hungary Europe Iceland Europe

India Asia and Pacific
Indonesia Asia and Pacific
Iran Middle East
Iraq Middle East
Ireland Europe
Israel Middle East
Italy Europe

JamaicaLatin America/OWHJapanAsia and PacificJordanMiddle EastKazakhstanAsia and Pacific

Kenya Africa

Kiribati Asia and Pacific

Kosovo Europe
Kuwait Middle East
Kyrgyzstan Asia and Pacific
Laos Asia and Pacific

Latvia Europe Lebanon Middle East Lesotho Africa Africa Liberia Libya Africa Liechtenstein Europe Lithuania Europe Luxembourg Europe

Macau Asia and Pacific

Macedonia Europe Madagascar Africa Malawi Africa

Malaysia Asia and Pacific Maldives Asia and Pacific

Mali Africa Malta Europe Marshall Islands Asia and Pacific

Mauritania Africa Mauritius Africa

Mexico Latin America/OWH Micronesia. Federated States of Asia and Pacific

Moldova Europe Monaco Europe

Mongolia Asia and Pacific

Montenegro Europe
Morocco Africa
Mozambique Africa
Namibia Africa

Nauru Asia and Pacific Nepal Asia and Pacific

Netherlands Europe

New Zealand Asia and Pacific
Nicaragua Latin America/OWH

Niger Africa Nigeria Africa

North Korea Asia and Pacific

Norway

Oman

Middle East

Pakistan

Asia and Pacific

Palau

Asia and Pacific

Latin America/OWH

Papua New Guinea

Paraguay

Latin America/OWH

Peru Latin America/OWH
Philippines Asia and Pacific

Poland Europe Portugal Europe

Puerto Rico (U.S.) Not assigned to a region in this survey.

Qatar Middle East
Romania Europe
Russia Europe
Rwanda Africa

Saint Kitts and Nevis

Saint Lucia

Saint Vincent and the Grenadines

Latin America/OWH

Latin America/OWH

Latin America/OWH

Asia and Pacific

San Marino Europe
Sao Tome and Principe Africa
Saudi Arabia Middle East
Senegal Africa
Serbia Europe
Seychelles Africa

Sierra Leone Africa

Singapore Asia and Pacific

Slovakia Europe Slovenia Europe

Solomon Islands Asia and Pacific

Somalia Africa South Africa Africa

South Korea Asia and Pacific

South Sudan Africa Spain Europe

Sri Lanka Asia and Pacific

Sudan Africa

Suriname Latin America/OWH

Swaziland Africa
Sweden Europe
Switzerland Europe
Syria Middle East
Taiwan Asia and Pacific
Tajikistan Asia and Pacific

Tanzania Africa

Thailand Asia and Pacific Timor-Leste Asia and Pacific

Togo Africa

Tonga Asia and Pacific
Trinidad and Tobago Latin America/OWH

Tunisia Africa Turkey Europe

Turkmenistan Asia and Pacific
Turks and Caicos Islands (U.K.) Latin America/OWH
Tuvalu Asia and Pacific

Uganda Africa
Ukraine Europe
United Arab Emirates Middle East
United Kingdom Europe

Uruguay Latin America/OWH
Uzbekistan Asia and Pacific
Vanuatu Asia and Pacific
Venezuela Latin America/OWH
Vietnam Asia and Pacific

Virgin Islands (U.K.)

Latin America/OWH

Virgin Islands (U.S.)

Latin America/OWH

Yemen Middle East

Zambia Africa Zimbabwe Africa

Note: OWH = Other Western Hemisphere. 'Latin America/OWH' includes Bermuda and the geographical regions of the Caribbean, Central America, and South America.

#### 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 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?

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.

# **3.14** How much of the amount reported in Question 3.12, was paid for by each of the following?

Question 3.14 asks the company to report how much of the domestic R&D paid for by your company in 2014 that was performed by nine specific types of organizations:

Example: Company Sub Inc. performs custom software development for a large defense company as a subcontractor with the U.S. Dept. of Defense. Even though Sub Inc. is working directly for the defense company, it reports the cost of this development in line d because the Dept. of Defense was the original source of funds.

- a. Other companies located inside the United States
  - o Include for-profit hospitals
- b. Your company's foreign parent (if you are owned by a foreign parent)
- c. Other companies located outside the United States
- d. U.S. federal government agencies or laboratories
- e. U.S. state government agencies or laboratories
- f. Foreign government agencies or laboratories
- g. All other organizations inside the United States
- h. All other organizations located outside the United States

### 3.15 Add Question 3.14, lines a, b, and c, and enter the result here. This is the R&D that was paid for by other companies.

Question 3.15 asks the company to enter the sum of Question 3.14, lines a, b, and c. This survey defines this amount as "R&D that was paid for by other companies".

# 3.16 Using the list of business codes printed below, allocate the amount reported in Question 3.15 based on the industries of the companies that paid for the R&D. As needed, enter additional codes from pages 46-47 in the spaces provided.

These business codes should represent the industry of the company that is funding the R&D.

For example, if Company A specializes in R&D services in biotechnology (business code 54173) and is performing research and development for Company B, a pharmaceutical company (business code 32541), Company B's business code (32541) should be listed here.

Enter the total, which should be equal to Question 3.15.

## 3.17 Copy the amount from Question 3.14, line d. This is domestic R&D performed by your company that was paid for by the U.S. federal government.

Question 3.17 asks the company to copy the amount reported in Question 3.14, 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".

## 3.18 How much of the amount reported in Question 3.17 was paid for by the following agencies?

Question 3.18 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.

## 3.19 How much of the amount reported in Question 3.17 was performed under the following types of agreements?

- a. Contracts (include direct or prime contracts and subcontracts)
- b. Grants, reimbursements, and all other agreements

Question 3.19 asks the company to identify the amounts by type of agreements used for the company's domestic R&D paid for by the U.S. federal government.

# **3.20** Subtract Question 3.17 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 3.20 asks the company to subtract the amount reported in Question 3.17 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".

# 3.21 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 3.17
- (2) Domestic R&D paid for by nonfederal sources reported in Question 3.20
- (3) Total domestic R&D performed by your company that was paid for by others reported in Question 3.12

Question 3.21 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 2014. 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.

### 3.22 At what domestic location did your company perform the largest dollar amount of R&D that was paid for by others in 2014?

Question 3.22 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 2014 took place.

#### 3.23 How much of the amount reported in Question 3.12 was from the location identified in Question 3.22?

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.

## 3.24 At what domestic location did your company perform the second largest dollar amount of R&D that was paid for by others in 2014?

Question 3.24 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 2014 took place.

#### 3.25 How much of the amount reported in Question 3.12 was from the location identified in Ouestion 3.24?

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 2015

### **3.26** What are your company's projected 2015 costs for R&D that will be paid for by others?

Question 3.26 asks the company to project its 2015 costs for R&D that will be paid for by others. This amount is the 2015 projection for what is reported in Question 3.2.

## 3.27 How much of the projected costs in 2015 for R&D that will be paid for by others reported in Question 3.26 will be performed by your company in the United States?

Question 3.27 asks the company to project its 2015 costs for R&D it will perform in the domestic U.S. that will be paid for by others. This amount is the 2015 projection for what is reported in Question 3.12.

# 3.28 How much of the projected costs in 2015 for domestic R&D performed by your company that will be paid for by others reported in Question 3.27 will be paid for by the U.S. federal government?

Question 3.28 asks the company to project its 2015 costs for R&D it will perform in the domestic U.S. that will be paid for by the U.S. federal government. This amount is the 2015 projection for what is reported in Question 3.17.

#### 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 2014.

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", Questions 4.3 through 4.16 do not apply to your company. Skip to Question 4.17.

## 4.3 What percentage of the amount reported in Question 4.1 was directed toward business areas or product lines that are new to your company?

Question 4.3 asks what percent of the R&D the company paid for in 2014 was aimed at expanding the company's areas of business or product lines outside of its existing areas of expertise. The characteristics that define a business area or product line as "new" may differ from company to company and industry to industry, but they generally involve technologies and customers that are new to the company.

Example: Company A manufactures laptop computers. In 2014, Company A's management decided to attempt to enter the cellular phone market and used a portion of the company's R&D budget to develop cellular phones. Because this was a new line of business in 2014, Company A reports this R&D in this question.

The following are examples of R&D projects that would be reported in this question:

- A pharmaceutical company that specializes in anti-viral medications invests in a research project to develop a cancer treatment.
- A computer manufacturer invests in a project to develop a smart phone.
- A software company that specializes in anti-virus software invests in an R&D project to develop office productivity software.
- A semiconductor company that specializes in central processing units for computers invests in an R&D project to develop graphics processors.
- A manufacturer and distributor of beer invests in an R&D project to develop an energy drink.

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

# 4.4 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 14 of Form BRDI-1.

#### 4.5 How much of the amount reported in Question 4.4 was for the following categories?

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", there the goal is to solve a specific problem or

achieve a specific commercial objective. It is the planned, systematic pursuit of new knowledge or understanding.

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.

### **4.6** If you reported any research in Question 4.5, line a, how much of that research was for the following categories?

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.

For example, 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

NOTE: You may report the same R&D in multiple areas for Questions 4.7 to 4.11.

# 4.7 What percentage of the amount reported in Question 4.4 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?

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 4.7 through 4.11 could sum to more than 100%.

Example: Company B is a semiconductor manufacturer. Its products are not designed specifically for energy applications. In 2014, 10% of the domestic R&D performed by the company was focused on improving the energy efficiency of its products. Based on this, Company B reports "10%" for this question.

### 4.8 What percentage of the amount reported in Question 4.4 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 4.7 through 4.11 could sum to more than 100%.

## 4.9 What percentage of the amount reported in Question 4.4 had defense applications, including military applications and general security-related R&D?

The intent of this question is to measure the amount of R&D companies are investing in defense applications. Defense applications include military applications and other national security applications. Exclude R&D for computer security applications such as anti-virus software unless it is intended for military/national security use.

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

Include the total cost of an R&D project with defense applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

# **4.10** What percentage of the amount reported in Question 4.4 had health or medical applications?

Question 4.10 asks the company to report what percent of the domestic R&D it performed in 2014 had health or medical applications. The intent of this question is to measure the amount of R&D companies are investing in health-related applications.

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

Include the total cost of an R&D project with health/medical applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

Note: Include clinical trials.

### **4.11** What percentage of the amount reported in Question 4.4 had agricultural applications?

This includes R&D into new and significantly improved fertilizers, pesticides, farm equipment, and crop management techniques. The intent of this question is to measure the amount of R&D companies are investing in agricultural-related applications.

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

Include the total cost of an R&D project with agricultural applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.7 through 4.11 could sum to more than 100%.

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

NOTE: You may report the same R&D in multiple areas for Questions 4.12 to 4.16.

## 4.12 What percentage of the amount reported in Question 4.4 was for software products or software embedded in other projects or products?

See definitions in "Research and development activity in software" under guidance for Question 2.1. Include R&D in software for both packaged software that is sold/licensed to consumers as well as R&D in software for internet applications that generate revenue. This includes R&D in software developed specifically for an R&D project that has no alternative future use as well as R&D in software that is developed to be installed or run in other products sold by the company.

Include the total cost of an R&D project with software applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

# 4.13 What percentage of the amount reported in Question 4.4 was for optics and photonics-science and technology involving the emission, processing, and detection of light, or the information carried by light?

Optics and photonics can encompass any R&D project involved in the study of the emission, processing, and detection of light, or of the information carried by light. This includes the

spectrum ranging from the far infrared to x-rays. The R&D may be directed at the manufacturing of the optics and photonics product itself, or to any level of the application supply chain in which they are used (from materials studies to systems development or even the end-use application). The following list provides examples of optics and photonics technologies. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of optics and photonics.

- Optical semiconductor components, such as LEDs, laser diodes, image sensors, focal plane arrays, point detectors, and integrated photonics
- Solar (photovoltaic) cells and panels
- Displays, display components and subassemblies
- Lasers and laser systems
- LEDs, LED backlights, LED lamps, and LED lighting
- Optical fiber, cabled fiber, and optical fiber devices, such as fiber sensors
- Passive optics, such as lenses, mirrors, prisms, and crystals
- Coatings and coating services for optics and optical devices
- Optical assemblies, such as lens systems, sensor subsystems, and camera modules
- Hardware and software design of the above products

Include the total cost of an R&D project with optics and photonics applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

## 4.14 What percentage of the amount reported in Question 4.4 was for other projects or products enabled by optics and photonics science and technology?

This is meant to include any R&D investment that goes toward the design of photonics in a way that fundamentally enables a product or service. This definition is to be inclusive, not overly restrictive, and the product may be fundamentally dependent on other factors, too (such as electronics and software). It would not include R&D investment that adds no new value from the optics and photonics.

For example, it would include R&D invested to develop new LED lighting products, medical imaging systems based on new optical methods, or optical networking equipment. However, it would not include R&D for designing equipment that uses commodity LEDs as indicator lights, conventional displays that are used in conventional ways, or electronics and software development for IT systems that use optical transceivers only in a peripheral, conventional manner.

Include the total cost of an R&D project with optics and photonics enabled applications in the calculation for this question, even if the project has other applications. This means that the percentages reported in Questions 4.12 through 4.16 could sum to more than 100%.

### **4.15** What percentage of the amount reported in Question 4.4 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?

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.

- DNA/RNA: Genomics, pharmacogenomics, gene probes, genetic engineering,
   DNA/RNA sequencing/synthesis/amplification, gene expression profiling, and use of antisense technology.
- 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.
- Cell and tissue culture and engineering: Cell/tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- **Process biotechnology techniques**: Fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation, biofiltration and phytoremediation.
- Gene and RNA vectors: Gene therapy, viral vectors.
- **Bioinformatics**: Construction of databases on genomes, protein sequences; modeling complex biological processes, including systems biology.
- **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 4.12 through 4.16 could sum to more than 100%.

## **4.16** What percentage of the amount reported in Question 4.4 was for nanotechnology—the science and technology involving work at the nanometer scale?

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 4.12 through 4.16 could sum to more than 100%.

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

## 4.17 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 25 of your survey.

#### **4.18** Is the amount entered in Question 4.17 greater than zero?

If "No", the rest of Section 4 does not apply to your company. Please skip to Section 5 on page 40.

## **4.19** How much of the amount reported in Question 4.17 was for the following categories?

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", there 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.

### **4.20** If you reported any research in Question 4.19, line a, how much of that research was for the following categories?

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.

NOTE: You may report the same R&D in multiple areas for Questions 4.21 to 4.25.

# **4.21** What percentage of the amount reported in Question 4.17 had energy applications, including energy production, distribution, storage, and efficiency (excluding exploration and prospecting)?

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 4.21 through 4.25 could sum to more than 100%.

## 4.22 What percentage of the amount reported in Question 4.17 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 4.21 through 4.25 could sum to more than 100%.

## 4.23 What percentage of the amount reported in Question 4.17 had defense applications, including military applications and general security-related R&D?

Defense applications include military applications and other national security applications. Exclude R&D for computer security applications such as anti-virus software unless it is intended for military/national security use.

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

Include the total cost of an R&D project with defense applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

## **4.24** What percentage of the amount reported in Question 4.17 had health or medical applications?

The intent of this question is to measure the amount of R&D companies are investing in health-related applications.

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

Include the total cost of an R&D project with health/medical applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

Note: Include clinical trials.

### **4.25** What percentage of the amount reported in Question 4.17 had agricultural applications?

Question 4.25 asks the company to report what percent of the domestic R&D performed in 2014 that was paid for by others had agricultural applications. This includes R&D into new and significantly improved fertilizers, pesticides, farm equipment, and crop management techniques. The intent of this question is to measure the amount of R&D companies are investing in agricultural-related applications.

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

Include the total cost of an R&D project with agricultural applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.21 through 4.25 could sum to more than 100%.

# Technology focus of domestic R&D performed by your company that was paid for by others

NOTE: You may report the same R&D in multiple areas for Questions 4.26 to 4.30.

### **4.26** What percentage of the amount reported in Question 4.17 was for software products or software embedded in other projects or products?

See definitions in "Research and development activity in software" under guidance for Question 2.1. Include R&D in software for both packaged software that is sold/licensed to consumers as well as R&D in software for internet applications that generate revenue. This includes R&D in software developed specifically for an R&D project that has no alternative future use as well as R&D in software that is developed to be installed or run in other products sold by the company.

Include the total cost of an R&D project with software applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

# 4.27 What percentage of the amount reported in Question 4.17 was for optics and photonics-science and technology involving the emission, processing, and detection of light, or the information carried by light?

Optics and photonics can encompass any R&D project involved in the study of the emission, processing, and detection of light, or of the information carried by light. This includes the spectrum ranging from the far infrared to x-rays. The R&D may be directed at the manufacturing of the optics and photonics product itself, or to any level of the application supply chain in which they are used (from materials studies to systems development or even the end-use application). The following list provides examples of optics and photonics technologies. The list is not intended to be exhaustive, but it is indicative of the types of activities included in the definition of optics and photonics.

- Optical semiconductor components, such as LEDs, laser diodes, image sensors, focal plane arrays, point detectors, and integrated photonics
- Solar (photovoltaic) cells and panels
- Displays, display components and subassemblies
- Lasers and laser systems
- LEDs, LED backlights, LED lamps, and LED lighting
- Optical fiber, cabled fiber, and optical fiber devices, such as fiber sensors
- Passive optics, such as lenses, mirrors, prisms, and crystals
- Coatings and coating services for optics and optical devices
- Optical assemblies, such as lens systems, sensor subsystems, and camera modules
- Hardware and software design of the above products

Include the total cost of an R&D project with optics and photonics applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

## 4.28 What percentage of the amount reported in Question 4.17 was for other projects or products enabled by optics and photonics science and technology?

This is meant to include any R&D investment that goes toward the design of photonics in a way that fundamentally enables a product or service. This definition is to be inclusive, not overly restrictive, and the product may be fundamentally dependent on other factors, too (such as electronics and software). It would not include R&D investment that adds no new value from the optics and photonics.

For example, it would include R&D invested to develop new LED lighting products, medical imaging systems based on new optical methods, or optical networking equipment. However, it would not include R&D for designing equipment that uses commodity LEDs as indicator lights, conventional displays that are used in conventional ways, or electronics and software development for IT systems that use optical transceivers only in a peripheral, conventional manner.

Include the total cost of an R&D project with optics and photonics applications in the calculation for this question even if the project has other applications. This means that the percentages reported in Questions 4.26 through 4.30 could sum to more than 100%.

### **4.29** What percentage of the amount reported in Question 4.17 was for biotechnology—the use of cellular and bio-molecular processes to solve problems or make useful products?

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.

- **DNA/RNA**: Genomics, pharmacogenomics, gene probes, genetic engineering, DNA/RNA sequencing/synthesis/amplification, gene expression profiling, and use of antisense technology.
- **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.
- Cell and tissue culture and engineering: Cell/tissue culture, tissue engineering (including tissue scaffolds and biomedical engineering), cellular fusion, vaccine/immune stimulants, embryo manipulation.
- **Process biotechnology techniques**: Fermentation using bioreactors, bioprocessing, bioleaching, biopulping, biobleaching, biodesulphurisation, bioremediation, biofiltration and phytoremediation.
- Gene and RNA vectors: Gene therapy, viral vectors.
- **Bioinformatics**: Construction of databases on genomes, protein sequences; modeling complex biological processes, including systems biology.
- 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 4.26 through 4.30 could sum to more than 100%.

### **4.30** What percentage of the amount reported in Question 4.17 was for nanotechnology—the science and technology involving work at the nanometer scale?

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 4.26 through 4.30 could sum to more than 100%.

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

### 4.31 Copy the amount from Question 3.17. 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 28 of your survey.

#### **4.32** Is the amount entered in Question 4.31 greater than zero?

If "No", skip to Section 5 on page 40. The rest of section 4 does not apply to your company.

# **4.33** How much of the amount reported in Question 4.31 was for the following categories?

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", there 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.

# **4.34** If you reported any research in Question 4.33, line a, how much of that research was for the following categories?

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.

For example, 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.

## 4.35 What percentage of the amount reported in Question 4.31 was for software products or software embedded in other projects or products?

See definitions in "Research and development activity in software" under guidance for Question 2.1. Include R&D in software for both packaged software that is sold/licensed to consumers as well as R&D in software for internet applications that generate revenue. This includes R&D in software developed specifically for an R&D project that has no alternative future use as well as R&D in software that is developed to be installed or run in other products sold by the company.

#### **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, 2014?

In order to collect consistent data from all companies, the employment figure reported should be for the pay period that included March 12, 2014. If this is not possible, companies should report employment for the date closest to March 12, 2014 possible.

Leased or 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 and how many were all other employees?

R&D employees include all 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.

**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.

#### **R&D** Employees

#### 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 40.

### 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 "R&D scientists, 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.

R&D technicians and technologists 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 should 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 should be reported as R&D technicians or R&D support staff.

### 5.7 How many of the R&D scientists, engineers, and managers reported in Question 5.6, line a, had the following level of education?

Question 5.7 asks the company to specify how many of the employed R&D scientists, engineers, and managers have a PhD.

#### **Domestics full-time equivalents (FTEs)**

5.8 Of the domestic R&D employees reported in Question 5.4, column 1, what was the number of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, other full-time employees not working solely on R&D, and part-time employees?

The headcount of full-time equivalent R&D employees should be adjusted to account for employees who work part time as well as those employees who split their time between R&D and other activities. The purpose of this question is to accurately measure the amount of effort employees are devoting to R&D in the business sector.

5.9 Of the domestic R&D scientists, engineers, and their managers reported in Question 5.6, row a, column 1, what was the number of full-time equivalents (FTEs) for R&D activity for full-time R&D employees, other full-time employees not working solely on R&D, and part-time employees?

The headcount of scientists and engineers should be adjusted to account for employees who work part time as well as those employees who split their time between R&D and other activities. The purpose of this question is to accurately measure the amount of effort scientists, engineers, and their managers are devoting to R&D in the business sector.

5.10 How many of the R&D scientists, engineers, and managers reported in Question 5.6, line a, column 1, were non-U.S. citizens employed in the United States under a temporary visa, such as H-1B or L-1?

Question 5.10 asks how many domestic R&D employees are employed under a temporary visa.

#### Section 6: Intellectual Property and Technology Transfer

#### **Patents**

#### 6.1 How many patents did your company apply for in 2014 from the U.S. Patent and Trademark Office (USPTO)?

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 <u>included</u> because they add subject matter not claimed in the parent patent application.

Exclude provisional patent applications.

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.

# 6.2 What percentage of the patent applications reported in Question 6.1 has your company applied for or plans to apply for 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 6.1 was for inventions that originated within your company's 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 2014 by the USPTO?

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 2014 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.

Exclude provisional patent applications.

#### Patent sales and licensing to others

#### **6.6** How much revenue did your company receive in 2014 from the sale of patents?

Question 6.6 asks the company to report the revenue it earned in 2014 from the sale of 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 much revenue did your company receive in 2014 from patent licensing? Question 6.7 asks the company to report how much revenue it received in 2014 to license its patents to other parties.

#### Patent purchases and licensing from others

#### **6.8** How much did your company pay others in 2014 to purchase patents?

Question 6.8 asks the company to report how much it paid to others to purchase patents in 2014.

#### **6.9** How much did your company pay others in 2014 to license patents?

Question 6.9 asks the company to report how much it paid to others to license patents in 2014.

#### **Intellectual property transfer activities**

#### **6.10** Did your company perform the following activities in 2014?

Question 6.10 asks the company to indicate whether or not it performed any of a specific list of technology transfer activities in 2014.

#### **Intellectual property protection**

## **6.11** During 2014, how important to your company were the following types of intellectual property protection?

Question 6.11 asks the company to indicate the importance of different methods of intellectual property protection to its business.