

## **Appendix C**

### **Questionnaires and Protocols, Version 3**





## **NATIONAL SCIENCE FOUNDATION**

ARLINGTON, VA 22230

# **HIGHER EDUCATION RESEARCH AND DEVELOPMENT SURVEY FY 2009**

### **INTRODUCTION**

This survey collects data on research and development (R&D) activities at higher education institutions. Previously this collection was known as the Survey of Research and Development Expenditures at Universities and Colleges. The revised name reflects the survey's expanded focus on measures of R&D activities in addition to expenditures. All questions refer to R&D activities and expenditures within your institution's 2009 fiscal year.

General survey definitions and instructions are provided on pages 2 and 3.

### **YOUR SURVEY PARTICIPATION**

Your participation in this survey provides important information on the national level of research activity. NSF is authorized to collect this information under the National Science Foundation Act of 1950, as amended. Your institution's response is entirely voluntary; your failure to provide some or all of the information will in no way adversely affect your institution.

### **QUESTIONS?**

Ronda Britt  
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(703) 292-7765

TBD  
Westat  
tbd@nsfherdsurvey.org  
1-800-937-8281

Response to this survey is estimated to require (TBD) hours. If you wish to comment on this burden, please contact Suzanne H. Plimpton of NSF at (703) 292-7556, or e-mail [splimpto@nsf.gov](mailto:splimpto@nsf.gov).

**Please submit your survey data by January 29, 2010.**

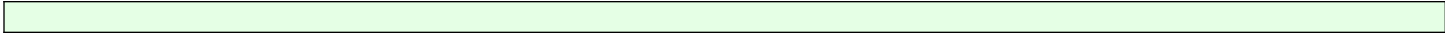
The web address for submitting your data:

<http://www.nsfherdsurvey.org>

Or mail this form to:

ATTN: NSF HERD Survey  
Westat  
1650 Research Blvd. Room TA2062  
Rockville, MD 20850

**Thank you for your participation.**



## Survey Definitions and Instructions

### **Research and development (R&D)**

includes “organized research” as defined by **2 CFR 220 (OMB Circular A-21)**. Please include all R&D activities of an institution that are ***separately budgeted and accounted for*** (see definition below). R&D includes both “sponsored research” activities (sponsored by Federal and non-Federal agencies and organizations) and “university research” (separately budgeted under an internal application of institutional funds).

### **Research**

is the systematic study directed toward fuller knowledge or understanding of the subject studied. Research is classified as either basic or applied, according to the objectives of the investigator.

**Basic research** – is research directed toward an increase of knowledge; it is research where the primary aim of the investigator is a fuller knowledge or understanding of the subject under study rather than a specific application thereof.

**Applied research** – is research conducted to gain the knowledge or understanding to meet a specific, recognized need.

### **Development**

is the ***systematic*** use of the knowledge or understanding gained from research, directed toward the production of useful materials, devices, systems, or methods, including design and development of prototypes and processes.

### **Separately budgeted R&D**

includes all funds expended for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. Such expenditures include, among others, all those funded from unrestricted gifts and restricted current funds to the extent that such funds were expended for current operating purposes. Exclude capital projects.

### **Change in reporting: All fields of R&D now included in all survey items**

Please note that this revised questionnaire includes all fields of R&D in all survey items. Responses to all survey items should include R&D within science and engineering fields as in the past, and also should include R&D within all other fields such as humanities, education, law, and the arts. See question 9 for a complete listing of all fields of R&D.

Please <b>include</b>	Please do <b>not</b> include
<ul style="list-style-type: none"> <li>• Direct and indirect costs</li> <li>• Research equipment purchased from R&amp;D project accounts</li> <li>• Research funds passed through to a subrecipient organization, educational or other</li> <li>• Clinical trial research expenditures (for Phases I, II, and III)</li> <li>• Research training grants (such as NIH K awards and T32 grants)</li> </ul>	<ul style="list-style-type: none"> <li>• Non-research training grants</li> <li>• Public service grants</li> <li>• Demonstration projects</li> <li>• Departmental research expenditures that are not separately budgeted</li> <li>• Research conducted by university faculty or staff at outside institutions that is not accounted for in your financial records</li> <li>• Phase IV clinical trial expenditures (studies done after the drug or treatment has been marketed - see question 4 for full definition)</li> </ul>

Please include these <b>components of your institution</b>	Please do <b>not</b> include
<ul style="list-style-type: none"> <li>• All branches of your institution included in or with your financial statements or notes to your financial statements, such as <ul style="list-style-type: none"> <li>◦ Agricultural experiment stations</li> <li>◦ Medical schools</li> <li>◦ Hospitals or clinics integrated operationally with the clinical programs of your medical school</li> <li>◦ Research centers and facilities</li> <li>◦ A university 501(c)3 research foundation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Federally funded R&amp;D centers (FFRDCs). This information is collected separately.</li> <li>• Other organizations or institutions, such as teaching hospitals or research institutes, with which your institution has an affiliation or relationship, but which are <u>not</u> components of your institution.</li> </ul>

NOTE: All financial data should be reported in thousands of dollars; for example, an expenditure of \$25,342 should be rounded to the nearest thousand and reported as \$25.

**Question 1.** How much of your total current fund expenditures for separately budgeted research and development (R&D) came from the following sources in FY 2009? (See definition of R&D on previous pages.)

- Include both **direct** and **recovered indirect costs** in rows a, b, c, d, and f.
- Report the **original source** of funds, when possible. For example, if you received **federal** funds from another university, report that amount under "U.S. federal government."
- Include all fields of R&D: sciences, engineering, humanities, education, law, arts, etc. See full listing in Question 9.

SOURCE OF FUNDS	R&D Expenditures (Dollars in thousands)
<p><b>a. U.S. federal government</b> Any agency of the United States government.</p>	\$ _____
<p><b>b. State and local government</b> Any state, county, municipality, or other local government entity in the United States, including state health agencies. Include state funds that support R&amp;D at agricultural and other experiment stations.</p>	\$ _____
<p><b>c. Industry</b> Domestic or foreign for-profit organizations. (Report funds from a company's nonprofit foundation in row d.)</p>	\$ _____
<p><b>d. Nonprofit organizations</b> Nonprofit foundations and organizations.</p>	\$ _____
<p><b>e. Institutional funds</b></p> <p>1. Institutionally financed organized research Include direct expenditures separately-budgeted for organized research. Include expenditures funded from <b>unrestricted</b> sources such as:</p> <ul style="list-style-type: none"> <li>• General-purpose state and local government appropriations</li> <li>• General-purpose awards from industry, foundations, etc.</li> <li>• Tuition and fees</li> <li>• Endowment income and gifts</li> <li>• Other institutional funds, such as recovered indirect costs</li> </ul>	\$ _____ (Confidential <sup>1</sup> )
<p>2. Cost sharing Include mandatory and voluntary cost sharing other than unrecovered indirect costs. Report unrecovered indirect costs in row e3.</p>	\$ _____ (Confidential <sup>1</sup> )
<p>3. Unrecovered indirect costs You may calculate this amount as follows for your externally funded R&amp;D (preferably on a project-specific basis) using the appropriate cost rate—on-campus, off-campus, etc.</p> <ul style="list-style-type: none"> <li>• First, multiply the <u>negotiated</u> rate by the corresponding base.</li> <li>• Second, subtract recovered indirect costs.</li> </ul>	\$ _____ (Confidential <sup>1</sup> )
<p>4. Total institutional funds</p>	\$ <b>TOTAL</b> <input style="width: 100px; height: 20px;" type="text"/>
<p><b>f. All other sources</b> Other sources not reported above, such as funds from foreign governments.</p>	\$ _____
<p><b>g. Total <sup>2</sup></b></p>	\$ <b>TOTAL</b> <input style="width: 100px; height: 20px;" type="text"/>

<sup>1</sup> Information from confidential items is NOT published or released for individual institutions; only aggregate totals will appear in

publications.

<sup>2</sup> Row and column totals are automatically generated on the web survey.



**Question 2.** How much of the total R&D expenditures reported in Question 1, rows c, d, and f came from **foreign sources**?

- **Foreign sources** include foreign governments, industry, and nonprofit organizations located outside the U.S.
- Use the address where the project award originated to classify a source as foreign. Foreign sources do not include Puerto Rico or other territories of the United States.

**R&D Expenditures**  
**(Dollars in thousands)**

Total R&D expenditures from foreign sources

\$ \_\_\_\_\_

**Question 3.** Of the total R&D expenditures reported in Question 1, row g, how much was expended for R&D projects in your medical school?

If your institution does **not** have a medical school (that is, a school that awards the M.D. or D.O. degree), check here and go to Question 4.

- Include projects for which the principal investigator's primary appointment is in your medical school,

**R&D Expenditures**  
**(Dollars in thousands)**

Total R&D expenditures in the university's medical school

\$ \_\_\_\_\_

**Question 4.** Of the total R&D expenditures reported in Question 1, row g, how much was expended for Phase I, Phase II, and Phase III clinical trials? Do not include expenditures for Phase IV clinical trials.

Phase IV clinical trials are studies done after the drug or treatment has been marketed to gather information on the drug's effect in various populations and any side effects associated with long-term use.

**R&D Expenditures**  
**(Dollars in thousands)**

Total R&D expenditures for clinical trials

\$ \_\_\_\_\_

Did you include R&D expenditures for clinical trials in your FY 2008 survey response?

Yes  No

**Question 5.** Of the total R&D expenditures that were externally funded (all sources other than the institutional funds reported in Question 1, row e4), how much was received under each of the following types of agreements?

		<b>R&amp;D Expenditures</b>
		(Dollars in thousands)
a. Contracts (including direct or prime contracts and subcontracts)		\$ <input type="text"/>
b. Grants, reimbursements, and all other agreements		\$ <input type="text"/>
c. <b>Total</b> <sup>1</sup>		\$ <u>TOTAL</u>

Total should match Question 1, row g minus row e4.

<sup>1</sup> Row and column totals are automatically generated on the web survey.

**Question 6.** What amounts of your FY 2009 R&D expenditures were for basic research, applied research, and development? Please report this information for federal funds and total funds.

		<b>R&amp;D Expenditures</b>	
		(1)	(2)
		Federal	Total
		(Dollars in thousands)	
a. <b>Basic research</b>		\$ <input type="text"/>	\$ <input type="text"/>
Research directed toward an increase of knowledge; it is research where the primary aim of the investigator is a fuller knowledge or understanding of the subject under study rather than a specific application thereof.			
b. <b>Applied research</b>		\$ <input type="text"/>	\$ <input type="text"/>
Research conducted to gain the knowledge or understanding to meet a specific, recognized need.			
c. <b>Development</b>		\$ <input type="text"/>	\$ <input type="text"/>
The systematic use of the knowledge or understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.			
d. <b>Total</b> <sup>1</sup>		\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

Column 1 total should match Question 1, row a; Column 2 total should match Question 1, row g.

<sup>1</sup> Row and column totals are automatically generated on the web survey.

**Question 7.** How much of your total and federal R&D expenditures reported in Question 1, rows a and g, did your institution **receive as a subrecipient**?

The **subrecipient** for an award carries out the work but receives the funds from a pass-through entity rather than directly from the original funding source. See OMB Circular A-133, Section 105 for the federal definition. Subrecipients tend to be the co-authors of publications, writers of technical reports discussing findings, inventors, etc.

Do **not** include vendor relationships. A vendor supplies goods and services. See OMB Circular A-133, Section 210.

Source of pass-through funding	R&D expenditures	
	(1)	(2)
	Federal (Dollars in thousands)	Total
a. From higher education institutions Academic colleges and universities and units owned, operated, and controlled by such institutions.	\$ _____	\$ _____
b. From other sources	\$ _____	\$ _____
<b>c. Total</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

<sup>1</sup> Row and column totals are automatically generated on the web survey.

**Question 8.** How much of your total and federal R&D expenditures reported in Question 1, rows a and g, were **passed through by your institution** to subrecipients?

Do **not** include vendor relationships. A vendor supplies goods and services. See OMB Circular A-133, Section 210.

Type of subrecipient	R&D expenditures	
	(1)	(2)
	Federal (Dollars in thousands)	Total
a. To higher education institutions Academic colleges and universities and units owned, operated, and controlled by such institutions.	\$ _____	\$ _____
b. To other organizations	\$ _____	\$ _____
<b>c. Total</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

<sup>1</sup> Row and column totals are automatically generated on the web survey.

**Question 9.** What were your FY 2009 R&D expenditures for the federal agencies below in each field of R&D? (Expenditures funded by nonfederal sources will be reported in Question 12.)

- The total for the last row (row K, page 13) should match total federal sources reported in Question 1, row a.
- Examples of the disciplines included in each field are listed below.
- If an individual project involves more than one of the 36 fields of R&D, please prorate expenditures when possible and report the amount for each field involved. (Note: Question 11 asks for expenditures for interdisciplinary and multidisciplinary R&D regardless of whether you prorate the expenditures.)

R&D Fields	Federal departments and agencies <sup>1</sup>							TOTAL <sup>2</sup>
	(a) USDA	(b) DoD	(c) DOE	(d) HHS, includes NIH	(e) NASA	(f) NSF	(g) Other	
<b>A. ENGINEERING (Dollars in thousands)</b>								
1. Aeronautical/ Astronautical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Bioengineering/ Biomedical eng.	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Chemical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Civil	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. Electrical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
6. Mechanical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
7. Metallurgical/ Materials	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
8. Other engineering	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
9. TOTAL <sup>2</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL

<sup>1</sup> **KEY:** USDA, Department of Agriculture; DoD, Department of Defense; DOE, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NSF, National Science Foundation. "Other" includes all other federal agencies.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

**Examples of Disciplines: Engineering Fields of R&D**

<p><b>1. Aeronautical/ astronautical</b> Aerodynamics Aerospace engineering Space technology</p> <p><b>2. Bioengineering/biomedical engineering</b> Biomaterials Biomechanics Medical instrumentation Neuroengineering</p> <p><b>3. Chemical</b> Petroleum Petroleum refining process Plastics Polymer Wood science</p>	<p><b>4. Civil</b> Architectural Architecture Environmental Environmental Health Geotechnical Hydraulic Hydrologic Sanitary Structural Transportation Electronics Power</p> <p><b>5. Electrical</b> Communication Computer</p>	<p><b>6. Mechanical</b> Mechanics</p> <p><b>7. Metallurgical/Materials</b> Ceramic Geological Geophysical Materials science Metallurgy Mining and mineral Textile Welding</p> <p><b>8. Other engineering</b> Agricultural Engineering design Engineering management</p>	<p><b>8. Other engineering (cont.)</b> Engineering physics Engineering science Industrial Industrial management Manufacturing Marine Naval architecture Nuclear Ocean Systems Other engineering fields not listed separately above</p> <p><b>9. Total engineering</b> Sum of entries in each column for rows A1 to A8</p>
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Question 9 continues on next page.

**Question 9. (continued)**

R&D Fields	Federal departments and agencies <sup>1</sup>							TOTAL <sup>2</sup>
	(a) USDA	(b) DoD	(c) DOE	(d) HHS, includes NIH	(e) NASA	(f) NSF	(g) Other	
<b>B. PHYSICAL SCIENCES (Dollars in thousands)</b>								
1. Astronomy	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
2. Chemistry	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
3. Physics	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
4. Other physical sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
5. TOTAL <sup>2</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

<sup>1</sup> **KEY:** USDA, Department of Agriculture; DoD, Department of Defense; DOE, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NSF, National Science Foundation. "Other" includes all other federal agencies.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

**Examples of Disciplines: Physical Sciences Fields of R&D**

<p><b>1. Astronomy</b></p> <ul style="list-style-type: none"> <li>Astrophysics</li> <li>Gamma-ray astronomy</li> <li>Neutrino astronomy</li> <li>Optical astronomy</li> <li>Radio astronomy</li> <li>X-ray astronomy</li> </ul>	<p><b>2. Chemistry</b> (except biochemistry—see Biological sciences)</p> <ul style="list-style-type: none"> <li>Analytical chemistry</li> <li>Inorganic chemistry</li> <li>Organic chemistry</li> <li>Organo-metallic chemistry</li> <li>Pharmaceutical chemistry</li> <li>Physical chemistry</li> <li>Polymer sciences</li> </ul>	<p><b>3. Physics</b></p> <ul style="list-style-type: none"> <li>Acoustics</li> <li>Atomic physics</li> <li>Chemical physics</li> <li>Condensed matter physics</li> <li>Elementary particle physics</li> <li>Mathematical physics</li> <li>Molecular physics</li> <li>Nuclear structure</li> <li>Optics</li> <li>Plasma physics</li> <li>Theoretical physics</li> </ul>	<p><b>4. Other physical sciences</b></p> <p>Other physical sciences not listed separately above</p> <p><b>5. Total for physical sciences</b></p> <p>Sum of entries in each column for rows B1 to B4</p>
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Question 9. (continued)

R&D Fields	Federal departments and agencies <sup>1</sup>							(h) TOTAL <sup>2</sup>
	(a) USDA	(b) DoD	(c) DOE	(d) HHS, includes NIH	(e) NASA	(f) NSF	(g) Other	
<b>C. ENVIRONMENTAL SCIENCES</b>								
(Dollars in thousands)								
1. Atmospheric	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Earth sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Oceanography	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Other environ. sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. TOTAL <sup>2</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL
<b>D. MATHEMATICAL SCIENCES</b>	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
<b>E. COMPUTER SCIENCES</b>	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL

<sup>1</sup> KEY: USDA, Department of Agriculture; DoD, Department of Defense; DOE, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NSF, National Science Foundation. "Other" includes all other federal agencies.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

**Examples of Disciplines: Environmental Sciences, Mathematics, and Computer Science Fields of R&D**

<p><b>ENVIRONMENTAL SCIENCES</b></p> <p><b>1. Atmospheric sciences</b></p> <ul style="list-style-type: none"> <li>Aeronomy</li> <li>Extraterrestrial atmospheres</li> <li>Meteorology</li> <li>Weather modification</li> </ul>	<p><b>ENVIRONMENTAL SCIENCES (CONTINUED)</b></p> <p><b>2. Earth sciences</b></p> <ul style="list-style-type: none"> <li>Cartography</li> <li>Earth and planetary sciences</li> <li>Geochemistry</li> <li>Geodesy and gravity</li> <li>Geology</li> <li>Geomagnetism</li> <li>Geophysics</li> <li>Hydrology</li> <li>Paleomagnetism</li> <li>Paleontology</li> <li>Physical geography</li> </ul>	<p><b>ENVIRONMENTAL SCIENCES (CONTINUED)</b></p> <p><b>3. Oceanography</b></p> <ul style="list-style-type: none"> <li>Biological oceanography</li> <li>Chemical oceanography</li> <li>Geological oceanography</li> <li>Physical oceanography</li> <li>Marine oceanography</li> </ul> <p><b>4. Other earth, atmospheric, and ocean sciences</b></p> <ul style="list-style-type: none"> <li>Other environmental sciences not listed</li> </ul>	<p><b>D. MATHEMATICAL SCIENCES</b></p> <ul style="list-style-type: none"> <li>Algebra</li> <li>Analysis</li> <li>Applied mathematics</li> <li>Foundations and logic</li> <li>Geometry</li> <li>Mathematical statistics</li> <li>Numerical analysis</li> <li>Operations research</li> <li>Topology</li> </ul> <p><b>E. COMPUTER SCIENCES</b></p> <ul style="list-style-type: none"> <li>Computer systems analysis</li> </ul>
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	Earth and planetary sciences Seismology Surveying	separately above <b>5. Total for environmental sciences</b> Sum of entries in each column for rows C1 to C4	Data processing Information sciences Information technology Management information systems
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Question 9 continues on next page.



**Question 9. (continued)**

R&D Fields	Federal departments and agencies <sup>1</sup>							(h) TOTAL <sup>2</sup>
	(a) USDA	(b) DoD	(c) DOE	(d) HHS, includes NIH	(e) NASA	(f) NSF	(g) Other	
<b>F. LIFE SCIENCES</b>								
<b>(Dollars in thousands)</b>								
1. Agricultural	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Biological	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Medical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Other life sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. TOTAL <sup>2</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL

<sup>1</sup> **KEY:** USDA, Department of Agriculture; DoD, Department of Defense; DOE, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NSF, National Science Foundation. "Other" includes all other federal agencies.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

**Examples of Disciplines: Life Sciences Fields of R&D**

1. Agricultural sciences	Biological sciences (continued)	Medical sciences (continued)	Medical sciences (continued)
Agricultural chemistry Agricultural economics — see Social sciences, Economics Agricultural engineering — see Engineering Agricultural production Agronomy Animal science Aquaculture Conservation Fish and wildlife Forestry Horticulture International agriculture Landscape architecture Plant sciences Renewable natural resources Soil science	Botany Cellular biology Ecology Entomology Epidemiology Foods and nutrition studies Genetics, plant and animal Medical microbiology Medical pathology Medical physiology Medical toxicology Medical anatomy Medical biochemistry Medical immunology Microbiology Molecular biology Nutritional sciences Parasitology Pathology, human and animal Pharmacology, human and animal Physical anthropology Physiology, human and animal Toxicology Virology Zoology	Dentistry Dermatology Family medicine Gastroenterology General surgery Geriatric medicine Gynecology Hematology Internal medicine Mental Health Neonatal-perinatal medicine Neurological surgery Neurology Neurosciences Nuclear medicine Nuclear radiology Obstetrics Oncology Ophthalmology Optometry Oral surgery Orthopedic surgery Orthopedics Osteopathic medicine Otorhinolaryngology Pediatrics Pharmacology	Psychiatric nursing Psychiatry Public health Radiation biology/ Radiobiology Thoracic surgery Urology Veterinary medicine <i>(See note below)</i>
<b>2. Biological sciences</b> Allergies and immunology Anatomy Bacteriology Biochemistry Biogeography Biology, general Biometrics			<b>4. Other life sciences</b> Gerontology Communication disorders sciences and services Health and medical administrative services Health laboratory technologies Health professions and related services, other Medical laboratory technologies Nursing technologies Occupational therapy Physical therapy Rehabilitation services Therapeutic services

Biophysics Biostatistics Biotechnology	<b>3. Medical sciences</b> Anesthesiology Cardiology Colon and rectal surgery Dental surgery	Pharmacy Physical and rehabilitative medicine Plastic surgery Podiatry Preventive medicine	Other life sciences not listed separately above <b>5. Total for life sciences</b> Sum of entries in each column for rows F1 to F4
Note: Institutions with schools of <b>veterinary medicine</b> should distribute R&D among the appropriate disciplines (e.g., agricultural, medical, and biological) rather than only in medical sciences.			

Question 9 continues on next page.

**Question 9. (continued)**

		<b>Federal departments and agencies <sup>1</sup></b>							
		(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)
<b>R&amp;D Fields</b>		USDA	DoD	DOE	HHS, includes NIH	NASA	NSF	Other	<b>TOTAL <sup>2</sup></b>
		<b>(Dollars in thousands)</b>							
<b>G. PSYCHOLOGY</b>		\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	
									\$ <u>TOTAL</u>
<b>H. SOCIAL SCIENCES</b>		\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	
1. Economics									\$ <u>TOTAL</u>
2. Political science		\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	
									\$ <u>TOTAL</u>
3. Sociology		\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	
									\$ <u>TOTAL</u>
4. Other social sciences		\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	
									\$ <u>TOTAL</u>
5. <b>Total <sup>2</sup></b>		\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>
<b>I. OTHER SCIENCES</b>		\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	
									\$ <u>TOTAL</u>

<sup>1</sup> **KEY:** USDA, Department of Agriculture; DoD, Department of Defense; DOE, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NSF, National Science Foundation. "Other" includes all other federal agencies.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

**Examples of Disciplines: Psychology and Social Sciences Fields of R&D**

<p><b>G. PSYCHOLOGY</b>  Animal behavior  Clinical psychology  Educational psychology  Experimental psychology  Human development and personality  School psychology  Social psychology</p> <p><b>H. SOCIAL SCIENCES</b></p> <p><b>1. Economics</b></p> <p>Agricultural economics  Applied economics  Business development  Econometrics  Industrial economics  International economics  Labor economics  Managerial development  Public finance and fiscal policy  Quantitative economics  Resource economics</p>	<p><b>SOCIAL SCIENCES</b>  (CONTINUED)</p> <p><b>2. Political science</b></p> <p>Comparative government  Government  International relations and affairs  Legal systems  Political theory  Public administration  Public policy analysis  Regional studies</p> <p><b>3. Sociology</b></p> <p>Anthropology (social and cultural only)  Comparative and historical sociology  Complex organizations  Cultural and social structure  Demography  Group interactions  Population studies  Social problems and welfare theory</p>	<p><b>SOCIAL SCIENCES</b>  (CONTINUED)</p> <p><b>4. Other social sciences</b></p> <p>Archaeology  Area and ethnic studies  City and community planning  Community services  Corrections  Criminal justice  Geography  History of science  Linguistics  Urban and regional planning  Urban affairs  Urban studies</p> <p><b>5. Total for social sciences</b>  Sum of entries in each column across rows H1 to H4</p>	<p><b>I. OTHER SCIENCES</b></p> <p>Use this category when multidisciplinary, interdisciplinary, or other aspects make classification under one of the primary S&amp;E fields (rows A to H) impossible</p>
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Question 9 continues on next page.

**Question 9.** (continued)

R&D Fields	Federal departments and agencies <sup>1</sup>							(h) TOTAL <sup>2</sup>
	(a) USDA	(b) DoD	(c) DOE	(d) HHS, includes NIH	(e) NASA	(f) NSF	(g) Other	
<b>J. NON-SCIENCE &amp; ENGINEERING (NON S&amp;E) FIELDS</b>								
(Dollars in thousands)								
1. Education	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Law	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Humanities	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Visual and performing arts	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. Business and management	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
6. Communication, journalism, and library science	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
7. Social work	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
8. Other non-S&E fields	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
9. TOTAL <sup>2</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL
<b>K. TOTAL FOR ALL FIELDS OF R&amp;D <sup>2</sup></b>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL

Total for row K, column h should equal Total for Question 1, row a.

<sup>1</sup> KEY: USDA, Department of Agriculture; DoD, Department of Defense; DOE, Department of Energy; HHS, Department of Health and Human Services; NASA, National Aeronautics and Space Administration; NSF, National Science Foundation. "Other" includes all other federal agencies.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

Examples of Disciplines: Non-Science & Engineering (Non S&E) Fields of R&D			
1. Education	Humanities (continued)	6. Communication, journalism,	9. Total for Non-S&E

<p>(no specific examples)</p> <p><b>2. Law</b> Legal studies</p> <p><b>3. Humanities</b> Foreign languages and literature English language and literature Letters Liberal arts and sciences General studies and humanities Philosophy and religion</p>	<p>Theological studies and religious vocations History (except history of science—see Other social sciences)</p> <p><b>4. Visual and performing arts</b> (no specific examples)</p> <p><b>5. Business and management</b> Business management and administrative services Marketing operations Marketing distribution</p>	<p><b>and library science</b> Communications Library science Communications technologies</p> <p><b>7. Social work</b> (no specific examples)</p> <p><b>8. Other non-S&amp;E fields</b> Parks, recreation, leisure and fitness studies Military technologies Other non S&amp;E fields not listed separately above</p>	<p>Sum of entries in each column for rows 1 to J8</p> <p><b>K. TOTAL FOR ALL FIELDS OF R&amp;D</b> Sum of all rows for Question 9. The total for row K, column h should equal the total for Question 1, row a</p>
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**Question 10.** Of the total R&D expenditures from “other” federal sources reported in Question 9 (row K, column g), which agencies funded this R&D and how much of the reported amount was from each agency?

**Federal agency**

**R&D Expenditures  
(Dollars in thousands)**

a.	<input type="text"/>	\$ <input type="text"/>
b.	<input type="text"/>	\$ <input type="text"/>
c.	<input type="text"/>	\$ <input type="text"/>
d.	<input type="text"/>	\$ <input type="text"/>
e.	<input type="text"/>	\$ <input type="text"/>
f.	<input type="text"/>	\$ <input type="text"/>
g.	<input type="text"/>	\$ <input type="text"/>
h.	<input type="text"/>	\$ <input type="text"/>
i.	<input type="text"/>	\$ <input type="text"/>
j.	<input type="text"/>	\$ <input type="text"/>
k.	<input type="text"/>	\$ <input type="text"/>
l.	Other agencies not listed above or in Question 9	\$ <input type="text"/>
m.	<b>Total</b> (should match Question 9, row K, column g.)	\$ <u>TOTAL</u>

**Question 11.** How much of the federal R&D expenditures reported in Question 9, row K, column h, was for projects that involve two or more of the 36 fields of R&D in Question 9?

**R&D Expenditures  
(Dollars in thousands)**

Total R&D expenditures from federal sources for projects involving two or more fields

\$

**Question 12.** What were your FY 2009 R&D expenditures for the nonfederal sources below in each field of R&D?

- The total for each column in row K should match the corresponding sources reported in Question 1.
- If an individual project involves more than one of the 36 fields of R&D, please prorate expenditures when possible and report the amount for each field involved. (Note: Question 13 asks for expenditures for interdisciplinary and multidisciplinary R&D regardless of whether you prorate the expenditures.)

R&D Fields (See Question 9, pp. 8-9)	Nonfederal sources of funds					TOTAL <sup>1</sup>
	(a) State and local government	(b) Industry	(c) Nonprofit orgs.	(d) Institutional funds	(e) Other nonfederal sources	
<b>(Dollars in thousands)</b>						
<b>A. ENGINEERING</b>						
1. Aeronautical/ Astronautical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Bioengineering/ Biomedical eng.	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Chemical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Civil	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. Electrical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
6. Mechanical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
7. Metallurgical/Materials	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
8. Other engineering	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
9. TOTAL <sup>1</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL
<b>B. PHYSICAL SCIENCES</b>						
1. Astronomy	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Chemistry	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Physics	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Other physical sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. TOTAL <sup>1</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL

<sup>1</sup> Row and column totals are automatically generated on the web survey.



**Question 12.** (continued)

R&D Fields (See Question 9, pp. 10-12)	Nonfederal sources of funds					TOTAL <sup>1</sup>
	(a) State and local government	(b) Industry	(c) Nonprofit orgs.	(d) Institutional funds	(e) Other nonfederal sources	
<b>(Dollars in thousands)</b>						
<b>C. ENVIRONMENTAL SCIENCES</b>						
1. Atmospheric	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Earth sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Oceanography	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Other environmental sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. TOTAL <sup>1</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL
<b>D. MATHEMATICAL SCIENCES</b>						
	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
<b>E. COMPUTER SCIENCES</b>						
	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
<b>F. LIFE SCIENCES</b>						
1. Agricultural	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Biological	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Medical	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Other life sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. TOTAL <sup>1</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL
<b>G. PSYCHOLOGY</b>						
	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
<b>H. SOCIAL SCIENCES</b>						
1. Economics	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
2. Political science	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
3. Sociology	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
4. Other social sciences	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL
5. TOTAL <sup>1</sup>	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL	\$ TOTAL
<b>I. OTHER SCIENCES</b>						
	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ TOTAL

<sup>1</sup> Row and column totals are automatically generated on the web survey.

**Question 12.** (continued)

<b>R&amp;D Fields</b> (See Question 9, p. 13)	<b>Nonfederal sources of funds</b>					<b>TOTAL</b> <sup>1</sup>
	(a) State and local government	(b) Industry	(c) Nonprofit orgs.	(d) Institutional funds	(e) Other nonfederal sources	
<b>J. NON-SCIENCE &amp; ENGINEERING (NON S&amp;E) FIELDS</b>						
	<b>(Dollars in thousands)</b>					
1. Education	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
2. Law	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
3. Humanities	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
4. Visual and performing arts	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
5. Business and management	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
6. Communication, journalism, and library science	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
7. Social work	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
8. Other non-S&E fields	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ <u>TOTAL</u>
9. <b>TOTAL</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>
<b>K. TOTAL FOR ALL FIELDS OF R&amp;D</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

**Totals for row K, should match corresponding sources in Question 1, rows b-f.**

<sup>1</sup> Row and column totals are automatically generated on the web survey.

**Question 13.** How much of the nonfederal R&D expenditures reported in Question 12, row k, column f, was for projects that involve two or more of the 36 fields of R&D in Question 12?

	<b>R&amp;D Expenditures</b> <b>(Dollars in thousands)</b>
Total R&D expenditures from nonfederal sources for projects involving two or more fields	\$ _____

**Question 14.** Of the total amount of R&D expenditures reported in Question 1, row g, what were the amounts for the following types of costs?

- Please report **only direct costs** in rows a to g. Recovered and unrecovered **indirect costs** should be reported in rows h and i.

		<b>R&amp;D Expenditures</b>
		(Dollars in thousands)
<b>DIRECT COSTS FROM ALL SOURCES</b>		
a.	Salaries and wages—compensation to full-time and part-time employees via the institution's payroll system.	\$ _____
b.	Fringe benefits—sick leave and vacation; health insurance, workers' compensation, etc.; and employer contributions for Social Security, pension, or other retirement benefits.	\$ _____
c.	Software purchases—all payments for software. Include both purchases of software packages and license fees for systems.	
1.	Noncapitalized software	\$ _____
2.	Capitalized software	\$ _____
d.	Equipment other than software reported in row c—payments for movable equipment exceeding your institution's capitalization threshold. Include ancillary costs such as delivery and set-up.	\$ _____
e.	Pass-throughs to other universities or organizations (should match the total in Question 8, row c, column 2)	\$ _____
f.	Other direct costs—other costs that do not fit into one of the above categories, including (but not limited to) travel, services such as consulting, computer usage fees, and supplies.	\$ _____
<b>g.</b>	<b>Total Direct Costs</b>	<b>\$ TOTAL</b>
<b>INDIRECT COSTS</b>		
h.	Recovered indirect costs	\$ _____ (Confidential <sup>1</sup> )
i.	Unrecovered indirect costs (should equal Question 1, row e3)	\$ _____ (Confidential <sup>1</sup> )
<b>j.</b>	<b>Total</b> <sup>2</sup> (should match total from Question 1, row g)	<b>\$ TOTAL</b>

<sup>1</sup> Information from confidential items is NOT published or released for individual institutions; only aggregate totals will appear in publications.

<sup>2</sup> Row and column totals are automatically generated on the web survey.

**Question 15.** At the end of FY 2009, what were your institution's dollar capitalization thresholds for software and equipment?

	(1) Software	(2) Equipment
Dollar threshold	\$ _____	\$ _____

**Question 16.** For the fields of R&D below, what portion of your FY 2009 current fund expenditures (federally financed and total) went for *the purchase of R&D equipment*?

R&D Fields (See Question 9, pp. 8-10)	R&D Expenditures	
	(a)	(b)
	Federal	Total
(Dollars in thousands)		
<b>A. ENGINEERING</b>		
1. Aeronautical/Astronautical	\$ _____	\$ _____
2. Bioengineering/Biomedical eng.	\$ _____	\$ _____
3. Chemical	\$ _____	\$ _____
4. Civil	\$ _____	\$ _____
5. Electrical	\$ _____	\$ _____
6. Mechanical	\$ _____	\$ _____
7. Metallurgical/Materials	\$ _____	\$ _____
8. Other engineering	\$ _____	\$ _____
9. <b>TOTAL</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>
<b>B. PHYSICAL SCIENCES</b>		
1. Astronomy	\$ _____	\$ _____
2. Chemistry	\$ _____	\$ _____
3. Physics	\$ _____	\$ _____
4. Other physical sciences	\$ _____	\$ _____
5. <b>TOTAL</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>
<b>C. ENVIRONMENTAL SCIENCES</b>		
1. Atmospheric	\$ _____	\$ _____
2. Earth sciences	\$ _____	\$ _____
3. Oceanography	\$ _____	\$ _____
4. Other environmental sciences	\$ _____	\$ _____
5. <b>TOTAL</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

<sup>1</sup>Totals are automatically generated on the web survey.

**Question 16** (continued)

**R&D Expenditures**

<b>R&amp;D Fields</b> (See Question 9, pp. 10-12)	<b>R&amp;D Expenditures</b>	
	<b>(a) Federal</b>	<b>(b) Total</b>
	<b>(Dollars in thousands)</b>	
<b>D. MATHEMATICAL SCIENCES</b>	\$ _____	\$ _____
<b>E. COMPUTER SCIENCES</b>	\$ _____	\$ _____
<b>F. LIFE SCIENCES</b>		
1. Agricultural	\$ _____	\$ _____
2. Biological	\$ _____	\$ _____
3. Medical	\$ _____	\$ _____
4. Other life sciences	\$ _____	\$ _____
5. <b>TOTAL</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>
<b>G. PSYCHOLOGY</b>	\$ _____	\$ _____
<b>H. SOCIAL SCIENCES</b>		
1. Economics	\$ _____	\$ _____
2. Political science	\$ _____	\$ _____
3. Sociology	\$ _____	\$ _____
4. Other social sciences	\$ _____	\$ _____
5. <b>TOTAL</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>
<b>I. OTHER SCIENCES</b>	\$ _____	\$ _____

<sup>1</sup> Totals are automatically generated on the web survey.

**Question 16** (continued)

R&D Fields (See Question 9, p. 13)	R&D Expenditures	
	(a)	(b)
	Federal (Dollars in thousands)	Total
<b>J. NON-SCIENCE &amp; ENGINEERING (NON S&amp;E) FIELDS</b>		
1. Education	\$ _____	\$ _____
2. Law	\$ _____	\$ _____
3. Humanities	\$ _____	\$ _____
4. Visual and performing arts	\$ _____	\$ _____
5. Business and management	\$ _____	\$ _____
6. Communication, journalism, and library science	\$ _____	\$ _____
7. Social work	\$ _____	\$ _____
8. Other non-S&E fields	\$ _____	\$ _____
9. <b>TOTAL</b> <sup>1</sup>	\$ _____	\$ _____
<b>K. TOTAL FOR ALL FIELDS OF R&amp;D</b> <sup>1</sup>	\$ <u>TOTAL</u>	\$ <u>TOTAL</u>

NOTE: Row K, column b, should match Question 14, row d.

<sup>1</sup>Totals are automatically generated on the web survey.

**Question 17.** How many total full-time equivalents (FTEs) were included in the R&D salaries and wages you reported in Question 14, row a, for your institution's (1) faculty and (2) nonfaculty personnel for each R&D field below? If you cannot classify R&D personnel by field of R&D, please use the academic department.

**Total FTEs allocated to R&D**

(Please round to the nearest whole FTE)

<b>R&amp;D Fields</b> (See Question 9, pp. 8-13)	<b>(1)</b> <b>Faculty</b> Personnel with faculty status as designated by your institution	<b>(2)</b> <b>Non-faculty</b> Personnel without faculty status as designated by the institution, for example, research scientists, research associates, fellows; postdocs; research assistants; technicians, and support personnel.
	<b>A. ENGINEERING</b>	<input type="text"/>
<b>B. PHYSICAL SCIENCES</b> Astronomy, Chemistry, Physics, Other physical sciences	<input type="text"/>	<input type="text"/>
<b>C. ENVIRONMENTAL SCIENCES</b> Atmospheric, Earth sciences, Oceanography, Other environmental sciences	<input type="text"/>	<input type="text"/>
<b>D. MATHEMATICAL SCIENCES</b>	<input type="text"/>	<input type="text"/>
<b>E. COMPUTER SCIENCES</b>	<input type="text"/>	<input type="text"/>
<b>F. LIFE SCIENCES</b> Agricultural, Biological, Medical, Other life sciences	<input type="text"/>	<input type="text"/>
<b>G. PSYCHOLOGY</b>	<input type="text"/>	<input type="text"/>
<b>H. SOCIAL SCIENCES</b> Economics, Political science, Sociology, Other social sciences	<input type="text"/>	<input type="text"/>
<b>I. OTHER SCIENCES</b>	<input type="text"/>	<input type="text"/>
<b>J. NON-SCIENCE &amp; ENGINEERING (NON S&amp;E) FIELDS</b> Education, Law; Humanities; Visual and performing arts; Business and management; Communication, journalism, and library science; Social work, Other non-S&E fields	<input type="text"/>	<input type="text"/>
<b>K. TOTAL FOR ALL FIELDS OF R&amp;D</b> <sup>1</sup>	<u>TOTAL</u>	<u>TOTAL</u>

<sup>1</sup>Totals are automatically generated on the web survey.



**Question 18.** How many people (**headcount**) are included in the R&D FTEs you reported in Question 17?

	(1) Faculty	(2) Nonfaculty	(3) Total <sup>1</sup>
Number of people (headcount)	<input type="text"/>	<input type="text"/>	TOTAL

<sup>1</sup>Totals are automatically generated on the web survey.

**Question 19.** Of the total **number of persons (headcount)** reported in Question 18, column 2, how many are classified as Ph.D. researchers working in positions that are primarily for training in research and designated as temporary positions for a defined period of time, commonly titled as postdoctoral researchers, postdoctoral fellows, and research associates?

Number of postdoctoral researchers (headcount)

<sup>1</sup>Totals are automatically generated on the web survey.

**Question 20.** How many R&D proposals were submitted by your institution to government agencies, foundations, or other funding sources outside of your institution in FY 2009? Include grant or contract proposals and other documents or actions that involved application for R&D funding.

	<b>Number</b>
Proposals submitted in FY 2009	<input type="text"/>

**Question 21.** What was the dollar value (in thousands) of R&D projects awarded to your institution in FY 2009?

In reporting the dollar value, include the total amount awarded for both new and ongoing projects within FY 2009, even if the funding is distributed over more than one year. Please do not include contingent or optional renewal years that have not yet been awarded.

	<b>(1)</b>	<b>(2)</b>
	<b>Number</b>	<b>Dollars</b>
		<b>(in thousands)</b>
R&D awards in FY 2009	<input type="text"/>	\$ <input type="text"/>

**Question 22.** Of the total R&D awards reported in Question 21, how many were collaborative awards? What was the dollar value (in thousands) of these collaborative R&D awards?  
**Collaborative awards** involve two or more higher education institutions.

	<b>(1)</b>	<b>(2)</b>
	<b>Number</b>	<b>Dollars</b>
		<b>(in thousands)</b>
Collaborative R&D awards	<input type="text"/>	\$ <input type="text"/>

<b>Contact Information:</b> Please complete the contact information for the person responsible for the survey and an alternate contact.		
	<b>Primary contact</b>	<b>Alternate contact</b>
Name	<input type="text"/>	<input type="text"/>
Title	<input type="text"/>	<input type="text"/>
Phone number	<input type="text"/>	<input type="text"/>
Fax number	<input type="text"/>	<input type="text"/>
Email address	<input type="text"/>	<input type="text"/>

**Fiscal Year:** In what month does your institution's 2009 fiscal year begin?

**Additional Comments:** Please add any comments here.

**Alternate R&D Personnel Questions**

**Question 17.** Please report the total number (head count) of personnel at your institution who were included in the R&D salaries and wages you reported in Question 14, row a, for your institution's (1) faculty and (2) nonfaculty personnel for each R&D field below. If you cannot classify R&D personnel by field of R&D, please use the academic department.

<b>R&amp;D Fields</b> (See Question 9, pp. 8-13)	<b>Total persons (head count) participating in R&amp;D</b>	
	<b>(1) Faculty</b> Personnel with faculty status as designated by your institution	<b>(2) Non-faculty</b> Personnel without faculty status as designated by the institution, for example, research scientists, research associates, fellows; postdocs; research assistants; technicians, and support personnel.
<b>A. ENGINEERING</b>	<input type="text"/>	<input type="text"/>
<b>B. PHYSICAL SCIENCES</b> Astronomy, Chemistry, Physics, Other physical sciences	<input type="text"/>	<input type="text"/>
<b>C. ENVIRONMENTAL SCIENCES</b> Atmospheric, Earth sciences, Oceanography, Other environmental sciences	<input type="text"/>	<input type="text"/>
<b>D. MATHEMATICAL SCIENCES</b>	<input type="text"/>	<input type="text"/>
<b>E. COMPUTER SCIENCES</b>	<input type="text"/>	<input type="text"/>
<b>F. LIFE SCIENCES</b> Agricultural, Biological, Medical, Other life sciences	<input type="text"/>	<input type="text"/>
<b>G. PSYCHOLOGY</b>	<input type="text"/>	<input type="text"/>
<b>H. SOCIAL SCIENCES</b> Economics, Political science, Sociology, Other social sciences	<input type="text"/>	<input type="text"/>
<b>I. OTHER SCIENCES</b>	<input type="text"/>	<input type="text"/>
<b>J. NON-SCIENCE &amp; ENGINEERING (NON S&amp;E) FIELDS</b> Education, Law; Humanities; Visual and performing arts; Business and management; Communication, journalism, and library science; Social work, Other non-S&E fields	<input type="text"/>	<input type="text"/>
<b>K. TOTAL FOR ALL FIELDS OF R&amp;D <sup>1</sup></b>	<b>TOTAL</b>	<b>TOTAL</b>

### Alternate R&D Personnel Questions

**Question 18.** How many total full-time equivalents (FTEs) were included in the head count you reported in Question 17?

	(1) Faculty	(2) Nonfaculty	(3) Total <sup>1</sup>
Total FTEs allocated to R&D (Please round to the nearest whole FTE)	<input type="text"/>	<input type="text"/>	<input type="text" value="TOTAL"/>

**Question 19.** Of the total **number of persons (headcount)** reported in Question 17, column 2, how many are classified as Ph.D. researchers working in positions that are primarily for training in research and designated as temporary positions for a defined period of time, commonly titled as postdoctoral researchers, postdoctoral fellows, and research associates?

Number of postdoctoral researchers (headcount)

# REDESIGN OF THE SURVEY OF R&D EXPENDITURES AT UNIVERSITIES AND COLLEGES

## FALL/WINTER SITE VISITS 2008/2009 1/23/09

We are in the process of updating the survey of R&D Expenditures at Universities and Colleges. Over the past year, we have been collecting feedback from universities, as well as data users, on ways to improve and update the information that is collected on the survey. For example, earlier this year we visited approximately 15 campuses, asking individuals like yourselves about the data that are collected, the processes they use to fill out the survey and the type of information they might find useful in the future. As a result of this process, we have developed a revised survey instrument, which we sent to you about two weeks ago. This draft survey contains new items, as well as revisions to the way the information is formatted.

We would like to go over the draft survey and get your opinions about the changes to the survey and your ideas on the new items. Since we sent you the questionnaire, we have corrected a few inconsistencies. Here is the updated questionnaire. [HAND OUT UPDATED QUESTIONNAIRE.]

We would like to record this interview so that we have all your comments. Would that be okay? [Have respondents sign consent forms.]

In our e-mail, we asked to meet with you as well as representatives from other places in the university. I'd like to get a sense of who is here for this first meeting and who we might visit with either later today or at another time.

*[Read list of roles and check for who is and is not present; noted abbreviations are used throughout text.]*

1. Senior Administrator on relationship between campuses **[SA]**
2. Medical School Representative **[MS]**
3. Human Resources Representative **[HR]**
4. Sponsored Research office **[SP]**
5. Accounting or Budget office **[AC]**
6. Representative of technology transfer **[IP]**

(Current survey respondent may be either **[SP]** or **[AC]**)

## **QUESTIONS FOR SENIOR ADMINISTRATOR ON REPORTING UNITS**

### **ASK OF MULTI-CAMPUS INSTITUTIONS:**

**SA3.** Currently, some institutions with more than one campus submit more than one survey response, while other systems report as a unit. We are considering asking that each university complete a survey for each campus. Your university has (NUMBER) campuses. Can you tell me about how the administration of the campuses works and how they are related at the university or system level?

IF NOT STATED: It looks like (President/Chancellor NAME) is responsible for the university as a whole, and (Presidents/Chancellors) have administrative responsibility for their campuses. Is that right?

IF APPLICABLE: It looks like (UNIT) is headed by a (Dean/Provost/Other). Does (he/she) report to the (President/Chancellor) of a specific campus, or to the system level (President/Chancellor), or is (his/her) role similar to that of a campus (president/chancellor)?

**SA4.** Do the financial records of your institution allow you to identify which R&D projects and expenditures are associated with each campus?

## **QUESTIONS FOR SURVEY RESPONDENT/FINANCIAL OFFICER**

### **Questions Covering the Survey Instrument**

Now I'd like to go over the questionnaire with you. We are interested in getting your reactions to all aspects of the survey. This includes the questions, the instructions, and the visual layout of the document. Of course we are especially interested in whether there are any issues with providing the survey responses such as difficulty in retrieving the information or sensitivity of the information. We will use the reactions of schools we visit to make changes to the questionnaire.

**I1.** First, please look at page 1. What is your first reaction to this page?

-- What things on this page do we need to rethink or change?

**I2.** Now let's look at page 2. What do you notice here?

-- What is your reaction to the definition of research and development?

-- Is there something we could change to make this easier to use?

-- What about the difference between "sponsored research activities" and "university research" in this definition of R&D— what does that mean to you?

We included an instruction specifying that capital projects should not be reported. What's your reaction to that?

-- Did you see the box at the bottom of the page? What are your thoughts on that?

-- What will be involved for you to include all fields of study in your response to the survey?



**13.** Let's take a look at Page 3 now. What is your reaction to this page?

-- Please look at the box at the top of the page. What is your reaction to these lists?

-- Is there anything that you think is missing?

-- Anything that you think should be taken out?

PROBE IF NEEDED:

-- What about the instructions related to research equipment? Could you tell me what those instructions would mean at this institution?

-- Look at the second box on this page. What do you think of the list?

-- Is there anything that you think is missing?

-- Anything that you think should not be there?

PROBE IF NEEDED:

-- The list of what is included says "...notes to your financial statements." What does this mean to you?

--Does this match what you think should be included in the survey?

-- What do you think about the list of units included here?

-- Any comments on the list of units not included?

-- What about the last bullet in this list of what to exclude? What does it mean for this institution?

--Do you have examples of something that is "affiliated with your institution but is not a component of your institution?"

## **SURVEY QUESTIONS**

### **QUESTION 1 – Source of Funds**

Please turn to page 4 of the questionnaire.

**1a.** Question 1 asks for the sources of funds for R&D expenditures. What is your reaction to page 4?

**1b.** Please look the three bullets under Question 1. What do they mean for this institution?

PROBE IF NEEDED:

-- What about the instruction to “include direct and recovered indirect costs in rows a, b, c, d, f?” What does that mean to you?

-- What about “Report original source of funds?” What does that mean to you?

**1c.** Let’s first look at rows a, b, c, d and f. We will talk about row e in a minute. Look through these definitions and tell me what changes we need to make here to make it easier to see what information we are requesting.

(PROBE IF NEEDED):

-- What about the definition of “State and Local?” What do you think institutions will include here?

-- What about the definition of “Industry?” Is there anything in this definition that is different from what you have been using? Anything we need to change or rethink?

-- What about the definition of “Nonprofit organizations?” Anything we need to change or rethink?

-- What about the “other sources” row? What types of things would you report there for this institution?

**1d.** Let me ask you about how your records match the survey categories. Do any of the categories for rows a, b, c, d, and f pose issues for reporting expenditures this way? Is there additional re-programming you might have to do to provide the data in this way? How much effort do you think will be involved?

**1e.** What about row e, which asks for “institutional funds?” What do you think of how the three categories are defined?

-- What does the term “cost sharing” usually include at this institution?

PROBE IF NEEDED:

-- What about “institutionally financed organized research?”

--What about that definition?

-- What would you include here?

-- What do you think of the list in this definition?

-- Does that help in your understanding?

--What do we need to change or rethink to improve this list?

-- What about the cost sharing row? What would you include here?

--What does the distinction between mandatory and voluntary cost sharing mean to you?

-- Can you report voluntary uncommitted cost sharing?

-- What about unrecovered indirect costs? What changes would improve our instructions?

- Do these instructions differ from what you did on the survey this year?

- Will some of the expenditures you previously reported as unrecovered indirect costs go into the cost sharing category in the future?

-- Did you notice the “CONFIDENTIAL” notation? What does this mean to you?

PROBE IF NEEDED: Did you notice the footnote explaining this?  
(as needed:) What are your thoughts on this?

**1f.** What about your records? Do you have information in your records that identifies each of these categories?

- Is there another source you would need to answer this question?
- How much effort do you think it will take to get this information?
  - Would you have to contact someone else to get this information?
  - How much re-programming would be needed to collect the information for this question?

**1g.** We have included definitions for each source of funds in these questions. Previously, they were on a separate page. What is your reaction to this new layout?

**1h.** (IF NOT COVERED ALREADY) And, what do you think about adding the “cost sharing category for Question 1, row e?

**1i.** Are there any other comments you’d like to make on this question?

## QUESTION 2 – Expenditures Funded by Foreign Sources

**2a.** Now, let's look at Question 2. What do you think of this question?

--What changes should we consider here to make this work better?

PROBE IF NEEDED: What about the first bullet under the question—[READ IT ALOUD]? What are your thoughts on that?

-- Is this how you classify funding sources as foreign?  
[IF NOT: -- How do you do it?]

Do you have foreign industry sources of funding?

--How do you decide whether they are foreign or not?

--What about an office in the U.S. that a foreign company establishes solely for the purpose of managing R&D funding in the U.S.? Have you worked with any situations like that?

--How do you classify that?

**2b.** What about your records? Do you have information in your records that identifies foreign sources?

- Is there another source you would need to answer this question?

- How much effort do you think it will take to get this information?

- Would you have to contact someone else to get this information?
- How much re-programming would be needed to collect the information for this question?

### QUESTION 3 – Medical School R&D

- 3a.** Now, let's look at Question 3. What is your reaction to this question?  
- What about the instructions --- what could we change to make them work better?

CONTINUE FOR INSTITUTIONS WITH MEDICAL SCHOOL; ELSE GO TO THE PROBES FOR QUESTION 4

- 3b.** What do you think of the bullet just above the answer category? Is this instruction appropriate for institutions like yours?

- 3c.** What about your records? How would you identify the medical school expenditures you would need to answer this question?
- How much effort do you think it will take to get this information?
    - Is **all** the information in your records?
    - Would you have to contact someone else to get this information?
    - How much re-programming would be needed to collect the information for this question?
    - What about R&D that involves both the medical school and other parts of your university?
      - Can you identify which ones have a PI in the medical school?
      - What about joint PIs where one is in the medical school?

## QUESTION 4 – Clinical Trials

**4a.** Now, let's look at Question 4. What is your reaction to this question?

What is your reaction to this definition of Phase IV clinical trials?

- Does your institution conduct clinical trials?
  - (IF YES) Will you need to change the way you report Question 1 to include Phase I, II, and III clinical trials, or were they already included?
    - Could you tell me more about that?
  
- Does your institution have Phase IV clinical trials?
  - (IF YES) Will you need to change the way you report Question 1 to exclude Phase IV clinical trials, or were they already excluded?
    - Could you tell me more about that?

We have added a question about whether your last response included clinical trials. Please look at that question and tell me your reaction.

**4b.** What about your records? Do you have information in your records that identifies the phases of clinical trials? Is there another source you would need to answer this question?

- How much effort do you think it will take to get this information?
  - Would you have to contact someone else to get this information?
  - How much re-programming would be needed to collect the information for this question?
  
- (IF R HAS PHASE IV TRIALS:) How difficult will it be to separate out the expenditures for Phase IV clinical trials?

## QUESTION 5 – Contracts and Grants

[NOTE Change to survey instrument : ..including **direct or** prime contracts and subcontracts"]

**5a.** Now, let's look at Question 5. What is your reaction to this question?  
(OBSERVE WHETHER THEY LOOK BACK TO QUESTION 1, ROW G AND ROW E4  
TO UNDERSTAND WHAT WE MEAN BY "EXTERNALLY FUNDED R&D" AND  
RECORD:) YES NO

PROBE IF NEEDED:

-- What about the explanation of what is externally funded? What would you include?

[READ ALOUD AS NEEDED: all sources other than Institutional funds ]

-- What is the difference between rows a and b for your institution?

--Does this seem like a useful distinction for universities?

-- What about the information under row c? What is your reaction to that?

[READ ALOUD AS NEEDED: Total should match Question 1, row g minus row e4.]

**5b.** What about your records? Do you have information in your records to separately identify expenditures under contracts vs. grants?

- Can you identify a source you would need to answer this question?
- How much effort do you think it will take to get this information?
  - Is **all** the information in your records?
  - Would you have to contact someone else to get this information?
  - How much re-programming would be needed to collect the information for this question?



## QUESTION 6 – Character of Work

- 6a.** Let's turn to Question 6. What is your reaction to this question?  
--What about the definitions on this page? What are your thoughts about those?

**PROBE AS NEEDED:**

- What about the distinctions between basic, applied and development? Is there anything we could add to make this easier to understand?
- 6b.** How would you go about responding to this question?
- How would you identify which R&D is basic, applied, and development?
  - How much effort do you think it will take to get this information?
    - Would you have to contact someone else to get this information?
- 6c.** Currently, the information collected on basic research is kept confidential at the institutional level and only national numbers are published that do not specify any particular universities. What are your thoughts on publishing basic, applied, and development expenditures for each institution?
- Why is that?

QUESTIONS 7 AND 8 – Pass Throughs  
[LOWER PRIORITY: FOCUS ON NEW/CHANGED ITEMS]

**7a.** Let's turn to Questions 7 and 8. What is your reaction to these questions?

- What will your institution report for each of these two items?
- 
- What will your institution report for each of the two categories, "higher education" institutions and "other sources"?

PROBE AS NEEDED:

- How would you define subrecipient for this institution? What changes should we make to the definition of a subrecipient?
- Is the reference to OMB circular A-133, Section 105 in Question 7 helpful? Why or why not?
- Is the reference to OMB circular A-133, Section 210 in Question 7 helpful? Why or why not?
- What does your institution consider as the difference between a subrecipient and vendor?
  - Do you think that mentioning this distinction will help respondents understand what we are asking for or is it more confusing?
    - Why is that?

QUESTION 9 – Federal R&D Expenditures by Field

**9a.** Let's look at question 9. What are your thoughts on this question?

DID R NOTICE THERE WERE MULTIPLE PAGES TO THE QUESTION?  
YES NO

IF DID NOT NOTICE, POINT THIS OUT AND HAVE THEM TURN THROUGH  
THE REST OF THE PAGES

-- What about the three bullets at the top of the first page? What is your  
reaction?

PROBE IF NEEDED: How does the third bullet apply for this institution?\_

**9b.** You may have noticed that since we added the definitions of the fields to each page, this question now has multiple pages. What are the advantages and disadvantages of this format?

- (AS NECESSARY:) Would you prefer the single page format without the definitions or do you prefer the format that includes the definitions of fields?

- Could you tell me more about that?

**9d.** [IF NOT ALREADY DISCUSSED:] Did you notice that this question covers R&D by federal agency for the nonscience and engineering fields such as education, law, and humanities? What are your thoughts on that?

[AS NECESSARY, LOOK AT PAGE 13 WITH RESPONDENT.]

**9e.** What would you do with expenditures that cross two or more fields?

- What about two fields within a broad field like chemical and civil engineering?

- What about crossing two separate fields like bioengineering and medical science?

**9f.** Do you have any other comments on Question 9?

### QUESTION 10 – “Other” Federal Agencies

**10a.** Please look at question 10. What are your thoughts on this question?

What would make this question easier to fill out?

Would you be reporting federal agencies here that fund your nonscience and engineering research?

--Which agencies would fund the largest amounts?

**10b.** How would you get this information?

- Is it accessible in your records?
- How difficult would it be to get this?
- Would you need to get it from someone else?

### QUESTION 11 – Federal Inter/Multi-disciplinary R&D

**11a.** Please look at question 11. We revised the wording of this question; here is the new version (HAND OUT PAGE). What are your thoughts on this question?

AS NECESSARY, READ THE QUESTION TEXT: Report projects that involve two or more of the 36 fields of R&D in Question 9.

**11b.** Do you have information in your records that identifies which projects involve two or more fields?

- Is there another source you would need to answer this question?
- How much effort do you think it will take to get this information?
  - Would you have to contact someone else to get this information?
  - How much re-programming would be needed to collect the information for this question?

**11c.** Would it be easier or preferable to report research that involves two or more of the ten broad fields listed in Question 9, rather than the 36 subfields?

**11d.** Could you estimate a percentage of R&D at your university that involves multiple fields?

Are there some units of your institution that cross fields of research?

--How would you report R&D for those units?

If we wanted those units included in the answer to this question, how should we word the question?

**11e.** Would it be possible to identify all faculty working on an R&D project by their home department?

--What about other personnel on the project such as graduate students?

QUESTION 12 – Nonfederal R&D Expenditures

- 12a.** Let's look at question 12. What are your thoughts on this question?  
DID R NOTICE THERE WERE MULTIPLE PAGES TO THE QUESTION?  
YES NO

-- There is a reference to the list of fields in question 9 and examples of fields. Is there a better way to help respondents know what should be included in each field?

(AS NECESSARY:) Should we put the field definitions for this question the way we do in Question 9?

- 12b.** What about your records for Question 12? Would you be able to identify the field of study for all funding sources?

-- Are institutional sources, in column d, accounted for the same way in your records as the other sources?

-- What would producing these data involve for you? Are there some sources that are more difficult than others to tabulate?

-- How much re-programming would be needed to collect the information for this question?

QUESTION 13 – Non-Federal Inter/Multi-disciplinary R&D

- 13c.** Instead of focusing on Question 13 now, we have a question for you on how to approach future changes NSF is considering to the fields of research. The changes will reflect new and emerging research fields. However, we are not likely to have all of these changes in place when we introduce the new survey in 2010. There are two ways we can approach these changes. First, we could hold off making any changes to the list of disciplines until we have all of the changes in place. Or, second, we could make some changes in 2010 and provide the final set in later years. Which is your preference—save all the changes, or make a few changes now.

## QUESTION 14– Types of Costs

**14.** Let's look at question 14. What is your overall reaction to this question?

-- Did you notice the bullet underneath the question?

(AS NECESSARY, READ BULLET:) Please include **only direct costs** in the numbers you report for each direct cost category. Recovered and unrecovered **indirect costs** should be reported in rows h and i.

--What could we change to make this bullet more useful?

Now, I'd like to look at some issues in each of the different categories for this question. For each one, I would like to know what you would report for that category for this institution.

**14a.** Let's start with salaries and wages.

-- What would you report in this category?

-- How would you interpret the phrase "...via the institution's payroll system" for your institution?

-- Some institutions indicate that PIs are only funded by research grants for their summer salary, yet that they may work on the research during the academic year on a voluntary basis. Does this describe any situation that occurs at your institution? How would you track or report costs for the PI's compensation conducting research during the academic year?

-- Would you include the costs of mandatory committed salary cost sharing here? -- What about voluntary committed cost sharing?-- Do you track cost or effort reporting for voluntary uncommitted cost sharing?

**14b.** And, fringe benefits. What would you report in this category?

How does this definition compare with your institution's records for fringe benefits?

How do you classify sick leave and vacation at your institution? Is that classified as salary or fringe?

QUESTION 14– Types of Costs (continued)

**14c.** And, software purchases. What would you report in this category?

-- What about the definition for software purchases? What could we do to improve this definition?

-- Can you break out noncapitalized and capitalized software?

- Under what type of cost does your institution track capitalized software?

-- Do your records allow you to track software as a category charged to R&D project accounts?

**14d.** And, equipment other than software. What would you report in this category?

-- What are your reactions to the description for this category?

-- Is software ever classified as equipment at your institution?  
(If not:) How is it classified?

-- Do your records show particular R&D accounts for equipment expenditures?

-- Where would you report agreements for equipment rentals? Would that be reported here or in another row?

-- How about lease-to-own or lease-purchase arrangements for equipment?  
- Where would you report those?

-- Some universities participate in equipment consortiums, where a large piece of equipment is shared by several institutions. Does your university ever participate in something like that?

(If “yes”) How would you report those costs? PROBE FOR USER FEES IF NOT MENTIONED.

**14e.** And, pass-throughs to other universities or organizations? What would you report here?

-- How would you treat vendor payments?

**14f.** Other direct costs. What would you report here?

**14g.** Total direct costs. Would this number match any number in your records?

Next, we'll look at the two categories for indirect costs

- 14h.** First, recovered indirect costs. What would you report here?
- 14i.** And, unrecovered indirect costs. What would you report here?
- 14j.** And, total. Will you be able to fill in this table so that the total is the same as Question 1?
- Where would you report cost sharing from Question 1, row e2?

#### QUESTION 15 – THRESHOLDS FOR CAPITALIZATION

- 15.** Let's go to question 15 now. What is your reaction to providing the dollar thresholds?

How difficult will it be to get the answers to this question?

#### QUESTION 16 – R&D Equipment

- 16.** Please look at question 16. What are your thoughts on this question?
- What types of expenditures would you include in this question?
    - How about capitalized equipment?
    - How about R&D equipment that is not capitalized?
    - How about R&D equipment that comes from your plant funds?
  - How difficult will it be to make sure the total for this question matches the total for Question 14, row d?



**QUESTIONS FOR HUMAN RESOURCES/INSTITUTIONAL RESEARCH  
OFFICE/RESPONDENT**

QUESTIONS 17, 18, 19 – R&D Personnel

Now I'd like to talk about Questions 17, 18 and 19. When we sent the material to you, we asked if someone could actually fill these particular questions out. Was anyone able to do that?

YES NO

-- (IF YES) Let's look at what you filled out as we get your feedback on this question.

-- (IF NO) That is OK, we can review these questions now and get your reaction to them.

**17a.** Looking at Question 17, what is your reaction to this question?

Could you tell us about the various ways that staff who work on R&D are paid and how you account for their time for R&D activities?

PROBE IF NEEDED: Can you say more about that?

Are you able to include faculty who are working on R&D through a committed cost sharing arrangement?

What about those who are involved through voluntary uncommitted cost sharing? Does your institution have effort reporting that could track that?

**17b.** The instructions say to report only FTEs that are included in the salary and wages row for Question 14.

-- How is an FTE defined at your institution?

--Is your FTE defined on the basis of 12 months or academic year?

[IF DID NOT FILL IT OUT] Are you able to use your record system to identify FTEs in this way?

[IF FILLED IT OUT] Were you able to identify FTE's in this way?

-- What about classifying FTE's by field of study? (Could/Can) you do this with your record system?

-- What is your institution's definition of "faculty status"?

**17c.** (Could/Can) your institution's record system break out FTEs by faculty and nonfaculty, as we have defined these groups on the survey?

-- What types of research personnel (did/would) you report as “faculty” on Question 17?

PROBES:

-What about part-time faculty?

-Adjunct faculty?

-How about temporary faculty such as one-year appointments?

-What about faculty who only get summer salaries for research?

-- What about faculty who are paid through endowed chairs or other institutional funds rather than through the R&D project? Did/Would you include them? [refer back to discussion on Types of Costs]?

**18.** Let’s look at Question 18. What are your thoughts on this question?

[IF DID NOT FILL IT OUT] Can your institution’s record systems provide a headcount for faculty and nonfaculty, based on the FTEs reported in Question 17?

[IF DID FILL IT OUT] Were you able to provide a headcount for faculty and nonfaculty, based on the FTEs reported in question 17?

Which is easier to provide—headcount or FTEs?

**19.** Let’s look at Question 19. What is your reaction to this question?

[IF DID NOT FILL IT OUT] Will you be able to use your institution’s record system to answer this question?

[IF DID FILL IT OUT] Were you able to provide data to answer this question?

-- What types of research personnel (did/would) you include as postdoctoral researchers?

-- Are any of the postdoctoral researchers at your institution classified as faculty?

We prepared an alternate version of the personnel questions, focusing on head counts rather than on FTE. [HAND OUT ALTERNATE PERSONNEL SHEET]. Please take a couple of minutes to look at that and tell me your reaction.

## **QUESTIONS FOR SPONSORED PROGRAMS OFFICE/SURVEY RESPONDENT**

### **QUESTIONS 20, 21, 22 – Proposals and Awards**

**20.** Please look at Question 20. What is your reaction to this question?

- How would you go about responding to this question?
- Where would you obtain the information for this question?
- Is this information difficult to get?

Can you tell how many proposals have more than one PI from different departments?

**21.** And, Question 21 is next. What is your reaction to this question?

- How would you go about responding to this question?
  - Where would you obtain the information for this question?
- Would you be able to provide both the number and the dollars? When reporting the dollars for proposals and awards, how would you handle funds that go to subrecipients?

We clarified the dollars that should be reported in this question. Please read the new wording and tell me your reaction.

Can you tell how many awards have more than one PI from different departments?

**22.** Now, let's look at Question 22. What are your thoughts on this question?

- What comes to mind when you see the term "collaborative awards?"
  - How would that term be interpreted at your institution?
- Does your institution keep records on collaborative awards? Do your records distinguish between collaborative R&D awards and awards with a subrecipient?
- How would you find the information to answer this question?
- Would this information be difficult to get?

**[Administer Intellectual Property Module, If Applicable]**

23. Who would you list as the primary and alternate contacts on page 26?

24. What would you list as your institution's fiscal year on page 26?

### **Closing Questions**

25. What do you think is the most effective way of notifying you of the changes to the survey?

- What about sending a letter in advance which specifies the changes?  
(IF YES) How much in advance do you think we should send this letter?
  
- If you need to make changes to how you compile the information, how much time do you think you will need to do that?
  
- What about putting a special section at the beginning of the survey which points to the changes?





**NATIONAL SCIENCE FOUNDATION**  
ARLINGTON, VA 22230

**Draft Questions on University Intellectual Property and Commercialization**  
**January 23, 2009**

**Question 1.** How many of the following activities involving intellectual property occurred at your institution in FY 2009?

	<b>FY 2009 Number</b>
<b>A. Disclosures received</b> Include the inventions officially disclosed to your institution's technology licensing/transfer office (or designated legal entity).	
<b>B. Material Transfer Agreements (MTAs) executed</b> An MTA protects the intellectual property of unique research materials when they are transferred to another institution.	
<b>C. Licenses and option agreements executed</b> Include exclusive, nonexclusive, and partially exclusive agreements.	
<b>D. Active licenses and options</b> Include the licenses and options active at the end of FY 2009.	

**Question 2.** During FY 2009, how many U.S and non-U.S. patents were (1) filed provisionally, (2) filed, or (3) issued? Non-U.S. patents are those filed outside the United States. Include patents for inventions (utility patents), patents for the aesthetic elements (design patents), and plant patents.

	<b>FY 2009 Number</b>	
	<b>U.S.</b>	<b>Non-U.S.</b>
<b>A. Provisional patent applications filed</b> The provisional patent application provides an early priority date without counting against the twenty-year life of the patent.		(Does not apply)
<b>B. Patent applications filed</b> Include filings for the original patent only. Do NOT include filings for a renewal, continuation, division, or continuation-in-part (CIP).		
<b>C. Patents issued</b>		

**Question 3.** How many of the patents your institution FILED in FY 2009 (Question 2, row B) were for inventions that resulted from federally funded \_\_\_\_\_ patents projects?

**Question 4.** How many startup companies formed in FY 2009 were dependent on licensing your institution's technology for their formation? \_\_\_\_\_ **companies**

**Question 5.** Please use the categories below to describe the startup companies formed in FY 2009 that you reported in Question 4.

Legal name	Location (city, state)	Incorporation date	Technology sector (biotechnology, medicine, engineering, physical sciences, etc.)	Does your institution have an ownership stake? (Check one)	
				Yes	No

**Question 6.** How much income from intellectual property did your institution receive in FY 2009 for each category below?

	FY 2009 Income (in thousands)
<b>A. Licensing</b> Include license issue fees, payments under options, annual minimums, running royalties, and termination payments.	\$ _____
<b>B. Sale of intellectual property</b>	\$ _____
<b>C. Equity positions</b> Include cash dividends and disposition of equity holdings, options, and warrants in start-ups and other companies.	\$ _____
<b>D. Other (please specify)</b>	\$ _____
<b>E. TOTAL</b>	\$ _____

**Question 7. (Version 1)** How many U.S. patents were (1) filed, or (2) issued, in FY 2009 for each field of R&D listed below? If a patent involves inventors in more than one field of R&D, please divide the patent across the fields. For example, report a patent issued for inventors from two R&D fields as .5 for each field.

Field of R&D	FY 2009 Number	
	(1) U.S. patents filed	(2) U.S. patents issued
a. Engineering		
b. Physical sciences		
c. Environmental sciences		
d. Mathematical sciences		
e. Computer sciences		
f. Life sciences		
g. Psychology		
h. Social sciences		
i. Other		
j. <b>TOTAL</b>		



**Question 7. (Version 2)** Considering the academic department of the inventor(s), how many U.S. patents were filed or issued in FY 2009 for each discipline listed below? If a patent involves inventors in more than one discipline, please divide the patent across the disciplines. For example, report a patent issued for inventors from two disciplines as .5 for each discipline.

Discipline	FY 2009 Number	
	(1) U.S. patents filed	(2) U.S. patents issued
a. Engineering		
b. Physical sciences		
c. Environmental sciences		
d. Mathematical sciences		
e. Computer sciences		
f. Life sciences		
g. Psychology		
h. Social sciences		
i. Other		
<b>j. TOTAL</b>		

## Interview Questions for Intellectual Property and Commercialization Module

January 23, 2009

NSF is exploring data collection on intellectual property and commercialization at universities. We'd like to get your ideas today on a draft questionnaire on this topic.

[HAND OUT DRAFT QUESTIONS. NOTE: ALTERNATE THE ORDER OF Version 1 and Version 2 of Q7 BY UNIVERSITY]

I'd like to go through these questions one at a time. I'll ask you to read a question and give me your thoughts on it. Then, I'll have some followup questions. If you have ideas about other questions that we should be asking, please feel free to jump in at any time.

1. Let's start by looking at Question 1.  
(PAUSE FOR RESPONDENT TO READ QUESTION).
  - What is your reaction to this question?
  - How does the term "intellectual property" work for this question?
  - What do you think of the explanations for the categories?
  - How well does the information that we ask for match the information you have available?

### PROBE AS NEEDED FOR EACH ROW:

- What about... [Row A]. What would you need to answer [Row A]?
- What kind of data base or other information do you have to answer this?
- What level of effort would it take?
- Do you already report this somewhere else? [PROBE FOR INTERNAL OR EXTERNAL REPORTING]

**PROBES AS NEEDED FOR ROW A (DISCLOSURES):**

- What does a “disclosure” mean at this institution?
- What is the relationship between a disclosure to your office and filing for a provisional patent?
- How formal or informal is a disclosure?
  - Can a discussion between you and the inventor result in a disclosure if you document it, or does the inventor have to file a form with your office?

**PROBES AS NEEDED FOR ROW B (MTAs):**

- Are MTAs only with other public and nonprofits? Or, can you have an MTA with a private company?
- Are MTAs only for biological materials, or are there other types of materials that use MTAs?

**PROBES FOR ROW C (LICENSES AND OPTIONS):**

- Should we ask institutions to report non-exclusive agreements separately?
- Should we ask for license agreements separately from options agreements?
  
- We are asking for numbers for a specific fiscal year. How does that match the time frame of the information you would use to answer this question?

2. Let's look at Question 2 now.

(PAUSE FOR RESPONDENT TO READ QUESTION).

- What is your reaction to this question?  
Again, I'd like to ask: What do you think of the explanations for the categories?
- How well does the information we request match the information you have available?
- Would it help if we added definitions for any of the terms in row B?  
(As needed: Which ones should we define?)

- What about “continuation-in part,” or CIP?
  - What types of patents would you report here?
  - Do you track utility, design, and plant patents separately?
    - About how many plant patents do you have?
    - Do you have any design patents?
  - What other ways of defining patent applications and patents issued might be more appropriate?
  - How does reporting by fiscal year match the information you would use to answer this question?
3. Let’s look at Question 3 now.  
(PAUSE FOR RESPONDENT TO READ QUESTION).
- What is your reaction to this question?
  - What would be involved in providing this information?
  - What kind of data base or other information source do you have for this?
  - What would you have to do to tie the patents filed to inventions formed under federally funded projects?
  - How about other sources of funding?
  - One last question before we move on to the next question: Has your university entered into master agreements with any companies for IP rights on patents?
- (If YES), Can you tell me more about that?
4. Let’s look at Question 4 now.  
(PAUSE FOR RESPONDENT TO READ QUESTION).
- What is your reaction to this question?
  - What would you have to do to provide this information?
  - What kind of data base or other information source do you have for this information?

5. Let's look at Question 5 now.

(PAUSE FOR RESPONDENT TO READ QUESTION).

- What is your reaction to this question?
  
- What information do you track on startups and how well does it match the information requested here?
  
- Would you be able to provide these types of information?
  
- Are there any startups associated with (UNIVERSITY NAME) that are not located in (STATE)?
  
- Let's talk about the technology sector category. What would be involved in providing this information?
  - What kind of information do you maintain on that?
  - Do you keep information in a database, or is that in paper records?
  
- In the last column, what would the term "ownership stake" mean at this institution?
  
- Would your institution be willing to answer this question?
  - Are there any sensitive issues?

6. Let's look at Question 6 now.

(PAUSE FOR RESPONDENT TO READ QUESTION).

- What is your reaction to this question?
  
- What about the examples of license income? What changes should we make in these examples?
  
- What other sources of license income should we add?
  
- What about the category "Equity positions?" How does this term and description match the way you do things at your institution?
  
- What would be involved for you to answer this question?
  - What kind of data base or other information source do you have for this?

Would your institution be willing to provide this information?

- Are there any sensitive issues?

**[FOR QUESTION 7, ALTERNATE THE ORDER FOR Versions 1 and 2: MARK VERSION USED FIRST:]**

**[\_\_] VERSION 1 - PATENTS BY FIELD OF R&D  
→ Continue**

**[\_\_] VERSION 2 - PATENTS BY DEPARTMENT(S) OF INVENTOR(S)  
→ Skip to Version 2 probes**

**Question 7, Version 1: Field of R&D**

7. Let's look at Question 7. I'm going to show you two versions of this question. Just look at this one for now.

(PAUSE FOR RESPONDENT TO READ QUESTION).

- What is your reaction to this question?
  
- How would you find out the field of R&D to answer this question?
  - What kind of data base or other information source do you have for this?
  
- What would you do if the invention involves more than one field?
  
- What is your impression of this list of fields? What changes could we make to improve this list?
  - Do any fields seem like they should not be on the list?
  
- What else would be involved in providing this information?

**Question 7, Version 2: Academic department**

8. Let's look at Question 7. I'm going to show you two versions of this question. Just look at this one for now.

(PAUSE FOR RESPONDENT TO READ QUESTION).

- What is your reaction to this question?
  
- How would you find out the academic departments of the inventors to answer this question?
  
- What else would you have to do to provide this information?
  - What kind of data base or other information source do you have for this?

### **Comparing Versions 1 and 2**

9. Comparing Version 1 and Version 2, please tell me which you think would be...

- Easier for your institution to respond to?
- Which one would be give us more meaningful or useful information for your institution?
- Would it be easier to list the departments, centers, or institutes associated with your patents rather than group them into our fields?

### **Additional issues**

10. We have talked about a number of measures of intellectual property and commercialization. Please tell me your general reaction to answering these types of questions.

- What other types of information might be more useful?
- Which types of information will be less useful?
- What do you think about NSF publishing this kind of information for individual institutions?
- Are there specific pieces of information that you think should be confidential? What are they?
- What other thoughts or suggestions do you have about collecting information on intellectual property and commercialization?