



National Science Foundation  
National Institutes of Health



# FY 2009 Survey of Science and Engineering Research Facilities

## Part 1: Research Space

Your participation in this survey is voluntary. However, your institution's response is important. The information from this survey on individual institutions can be used by your institution and other institutions for decision- and policy-making. The data also describe science and engineering research facilities at the national, regional, and state levels.

Based on pretests, responding to this survey (Part 1 and Part 2 combined) typically requires 41 hours for academic institutions or 7 hours for biomedical institutions, depending on how data are maintained at your institution. If you wish to comment on the burden of completing this survey, contact Suzanne H. Plimpton, Reports Clearance Officer, NSF, via e-mail at [splimpto@nsf.gov](mailto:splimpto@nsf.gov) or call 1-703-292-7556. Or, you may write to the Office of Management and Budget, Paperwork Reduction Project (OMB Number 3145-0101), Washington, DC 20503.

If you have a question, please contact Lorraine Lewis via e-mail at [facilitiesurvey@westat.com](mailto:facilitiesurvey@westat.com) or call 1-888-811-1838. The survey director at the National Science Foundation is Dr. Leslie Christovich.

**Please complete and submit this survey on the web (according to the instructions on page 1) or return it by mail to:**

ATTN: NSF Facilities Survey  
Westat  
1600 Research Boulevard  
Rockville, MD 20850

Thank you for your participation.



## General information

This questionnaire is available on the World Wide Web. Go to [www.facilitiesurvey.org](http://www.facilitiesurvey.org) to access the web version of the questionnaire. You will need to click on “Part 1 and Coordinator Tools” and then enter the Part 1 Coordinator ID and password. These are provided on the label on the front cover of this paper questionnaire.

Please report information for the **institution** named on the label on the front cover.

If you do not have exact figures for any part of this questionnaire, please provide estimates.

## Confidentiality

Information provided on research animal space (Questions 1 row i, 3, 7, 8, 10, 12F, 15, 18, 21, and 24) and on the condition of S&E space (Question 6) will not be publicly available for individual institutions. In accordance with the National Science Foundation Act of 1950, as amended, and other applicable federal laws, your responses will not be disclosed in identifiable form to anyone other than agency employees or authorized persons.

## Changes from previous survey cycle

There are no changes to Part 1 of the survey since the previous cycle.

## Definition of science and engineering (S&E) research and research space

Please use these definitions when answering all questions in this survey.

**Research** is all sponsored research and development activities of your institution that are separately budgeted and accounted for. Research can be funded by your own institution, the federal government, a state government, foundations, corporations, or other sources. It does not include departmental research that is not separately budgeted.

**Research space** is the net assignable square feet of space in buildings within which research activities take place. Research facilities are located within buildings. A **building** is a roofed structure for permanent or temporary shelter of persons, animals, plants, materials, or equipment. Structures should be included if they are (1) attached to a foundation, (2) roofed, (3) serviced by a utility, exclusive of lighting, and (4) a source of significant maintenance and repair activities.

**Net assignable square feet (NASF)** is the sum of all areas on all floors of a building assigned to, or available to be assigned to, an occupant for a specific use, such as research or instruction. NASF is measured from the inside faces of walls.

**Science and engineering (S&E)** includes the following fields: agricultural sciences and natural resources sciences, biological and biomedical sciences, computer and information sciences, engineering, health and clinical sciences, mathematics and statistics, physical sciences, psychology, social sciences, and other science and engineering fields. See Question 2 on pages 5–7 for a detailed list of the disciplines included in each of these fields.

## Definition of science and engineering (S&E) research and research space (continued)

### Research space includes:

- controlled-environment space, such as clean, cold, or white rooms
- technical and laboratory support space, such as equipment areas, preparation areas, darkrooms, carpentry and machine shops, storage areas, etc.
- laboratories, including computer labs, behavior observation rooms, etc.
- core laboratories that serve other laboratories
- laboratories and associated support areas used for research animals, including procedure rooms, bench space, animal production colonies, holding rooms, germ-free rooms, surgical facilities, recovery rooms, etc.
- housing facilities for research animals and associated maintenance areas, including cage rooms, stalls, wards, isolation rooms, exercise rooms, feed storage rooms, cage-washing rooms, holding and storage areas, etc.
- space for clinical trial research
- offices, to the extent that they are used for research activities, including administrative activities for a specific research project
- space with fixed (built-in) equipment such as fume hoods
- space with nonfixed equipment costing \$1 million or more each, such as MRIs
- space that is leased by your institution

### Research space does not include:

- space for the fields of law, business administration/management, humanities, history, the arts, or education
- libraries, unless they are dedicated to a specific research project
- animal field buildings sheltering animals that do not directly support research or that are not subject to government regulations concerning humane care and use of laboratory animals
- Federally Funded Research and Development Centers (FFRDCs)
- in-kind space used by your faculty, staff, or other persons but administered by other organizations, such as research facilities at non-university hospitals or Veterans Administration hospitals
- space administered by your institution but leased to another organization
- outdoor areas such as fish ponds or planting fields

## Question 1: Types of science and engineering (S&E) research space

1. Please indicate whether or not your institution had each type of S&E research space listed below at the end of your FY 2009. See page 2 for the definition of research space and fields of S&E.

**Did your institution have this type of S&E research space at end of FY 2009?**

*(Mark one "X" for each row.)*

| Types of S&E research space                                                                                                                                                                                                                                                                                      | Yes                      | No                       | Uncertain                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| a. Laboratories, wet or dry, including computer laboratories, behavior observation laboratories, etc. ....                                                                                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Laboratory support space, including autoclave rooms, darkrooms, equipment areas, storage areas for research equipment and supplies, etc. ....                                                                                                                                                                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Instructional laboratories that are <i>also</i> used for research.....                                                                                                                                                                                                                                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Core laboratories that serve other laboratories .....                                                                                                                                                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Leased space that is used for research .....                                                                                                                                                                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Offices, to the extent they are used for research .....                                                                                                                                                                                                                                                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. Space used for research containing nonfixed equipment costing \$1 million or more each, such as MRIs.....                                                                                                                                                                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Research space in a medical school that awards the M.D. or D.O. degree .....                                                                                                                                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Research animal space .....                                                                                                                                                                                                                                                                                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Reminder: Please see page 1 for confidentiality of this item.                                                                                                                                                                                                                                                    |                          |                          |                          |
| Laboratories and associated support areas used for research animals that are subject to local, state, and federal government policies and regulations concerning humane care and use of animals. Examples include procedure rooms, holding rooms, recovery rooms, animal production colonies, and storage areas. |                          |                          |                          |
| Space for housing research animals and associated maintenance areas that are subject to local, state, and federal government policies and regulations concerning humane care and use of animals. Examples include animal quarters, cage washing rooms, feed storage areas, isolation rooms, and exercise rooms.  |                          |                          |                          |
| j. Research space that is used for clinical trials .....                                                                                                                                                                                                                                                         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

## Question 2: Amount of research space

2. At the end of your FY 2009, how much net assignable square feet was used for research (based on the definition of research space on page 2) for each of the fields of science and engineering (S&E) below? Please include any research animal space in the relevant fields of S&E. You may provide estimates if you do not have exact figures.

Research space is equivalent to functional category 2 (Research) for facilities inventory systems based on the U.S. Department of Education classification (FICM classification), the Western Interstate Commission for Higher Education (WICHE classification), and the National Association of College and University Business Officers (NACUBO classification).

**Research animal space** includes all departmental and central facilities, such as laboratories, housing, and associated support areas, that are subject to local, state, and federal government policies and regulations concerning humane care and use of laboratory animals.

*If research space was shared among fields or used for other purposes in addition to research*, report the portion of space used for research for each field below. For example, if two fields shared the space equally, report half of the space in one field and half in the other. Or, if an area was used for research one-fourth of the time and for other purposes the rest of the time, report one-fourth of the space as research space.

See pages 29–30 for crosswalk of NSF fields of S&E and NCES CIP codes.

| Field of S&E<br>(Include research animal space.)               | Net assignable square feet<br>of research space at end of<br>FY 2009                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a. Agricultural sciences and natural resources sciences</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Agricultural economics                                         | <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p>Natural resources conservation and research<br/>(includes environmental science)</p> <p>Natural resources economics</p> <p>Plant sciences</p> <p>Soil sciences</p> <p>Wildlife and wildlands science</p> </div> <div style="width: 35%;"> <p>_____ NASF</p> <p><input type="checkbox"/> Check this box if no<br/>research space in this field at<br/>the end of FY 2009</p> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Animal sciences                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Fishing and fisheries sciences                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Food science and technology                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Forestry                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>b. Biological and biomedical sciences</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Anatomical sciences                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p>Genetics</p> <p>Human nutrition</p> <p>Immunology</p> <p>Microbiological sciences</p> <p>Molecular biology</p> <p>Pathology</p> <p>Pharmacology</p> <p>Physiology</p> <p>Plant biology</p> <p>Population biology</p> <p>Toxicology</p> <p>Zoology</p> <p>Biological and biomedical sciences, other</p> </div> <div style="width: 35%;"> <p>_____ NASF</p> <p><input type="checkbox"/> Check this box if no<br/>research space in this field at<br/>the end of FY 2009</p> </div> </div> |
| Animal biology                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Biochemistry                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Bioinformatics                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Biology                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Biomathematics                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Biophysics                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Biotechnology                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Botany                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Cell biology                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Cellular biology                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Ecology                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Evolution                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>c. Computer and information sciences</b>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Computer science                                               | <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 60%;"> <p>Computer software and media applications</p> <p>Computer systems networking and<br/>telecommunications</p> <p>Information science</p> </div> <div style="width: 35%;"> <p>_____ NASF</p> <p><input type="checkbox"/> Check this box if no<br/>research space in this field at<br/>the end of FY 2009</p> </div> </div>                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Computer software and media applications                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Computer systems networking and<br>telecommunications          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Information science                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

**Field of S&E***(Include research animal space.)***Net assignable square feet  
of research space at end of  
FY 2009****d. Engineering**

|                                                           |                                  |
|-----------------------------------------------------------|----------------------------------|
| Aeronautical engineering                                  | Geophysical engineering          |
| Aerospace engineering                                     | Industrial engineering           |
| Agricultural engineering                                  | Manufacturing engineering        |
| Architectural engineering                                 | Marine engineering               |
| Astronautical engineering                                 | Materials engineering            |
| Bioengineering                                            | Materials science                |
| Biological engineering                                    | Mechanical engineering           |
| Biomedical engineering                                    | Medical engineering              |
| Ceramic sciences and engineering                          | Metallurgical engineering        |
| Chemical engineering                                      | Mining and mineral engineering   |
| Civil engineering                                         | Naval architecture               |
| Computer engineering, general                             | Nuclear engineering              |
| Construction engineering                                  | Ocean engineering                |
| Electrical, electronics and<br>communications engineering | Operations research              |
| Engineering mechanics                                     | Petroleum engineering            |
| Engineering physics                                       | Plastics engineering             |
| Engineering science                                       | Polymer engineering              |
| Environmental engineering                                 | Surveying engineering            |
| Environmental health engineering                          | Systems engineering              |
| Forest engineering                                        | Textile sciences and engineering |
| Geological engineering                                    | Engineering, other               |

\_\_\_\_\_ NASF

 Check this box if no  
research space in this field at  
the end of FY 2009
**e. Health and clinical sciences**

|                                                          |                                          |
|----------------------------------------------------------|------------------------------------------|
| Allied health diagnostic, intervention,<br>and treatment | Optometry                                |
| Clinical laboratory science                              | Oral sciences                            |
| Communication disorders sciences                         | Osteopathic medicine                     |
| Dentistry                                                | Osteopathy                               |
| Informatics                                              | Pharmaceutical sciences                  |
| Kinesiology and exercise science                         | Pharmacy                                 |
| Medical clinical sciences                                | Podiatric medicine                       |
| Medical illustration                                     | Podiatry                                 |
| Medical laboratory science                               | Public health                            |
| Medicine                                                 | Rehabilitation and therapeutic subfields |
| Nursing                                                  | Veterinary biomedical sciences           |
|                                                          | Veterinary medicine                      |

\_\_\_\_\_ NASF

 Check this box if no  
research space in this field at  
the end of FY 2009
**f. Mathematics and statistics**

|                                   |
|-----------------------------------|
| Applied mathematics               |
| Mathematics                       |
| Statistics                        |
| Mathematics and statistics, other |

\_\_\_\_\_ NASF

 Check this box if no  
research space in this field at  
the end of FY 2009



**Field of S&E**

*(Include research animal space.)*

**Net assignable square feet  
of research space at end of  
FY 2009**

**g. Physical sciences**

**Group 1:** Atmospheric, earth, and geological sciences; meteorology; and oceanography

\_\_\_\_\_ NASF

Check this box if no research space in this field at the end of FY 2009

**Group 2:** Astronomy, astrophysics, chemistry, and physics

\_\_\_\_\_ NASF

Check this box if no research space in this field at the end of FY 2009

**h. Psychology**

Clinical child psychology  
Clinical psychology  
Cognitive psychology  
Community psychology  
Comparative psychology  
Counseling psychology  
Developmental and child psychology  
Educational psychology  
Environmental psychology  
Experimental psychology  
Family psychology  
Forensic psychology  
Geropsychology

Health psychology  
Industrial and organizational psychology  
Personality psychology  
Physiological psychology  
Psychobiology  
Psycholinguistics  
Psychometrics  
Psychopharmacology  
Quantitative psychology  
School psychology  
Social psychology  
Psychology, other

\_\_\_\_\_ NASF

Check this box if no research space in this field at the end of FY 2009

**i. Social sciences**

Anthropology  
Archeology  
Criminalistics  
Criminal justice  
Criminal science  
Criminology  
Demography  
Economics  
Forensic science and technology

Geography and cartography  
International relations and affairs  
Police science  
Political science and government  
Population studies  
Sociology  
Urban affairs  
Social sciences, other

\_\_\_\_\_ NASF

Check this box if no research space in this field at the end of FY 2009

**j. Other sciences**

Use this category when multidisciplinary, interdisciplinary, or other aspects make classification under one primary field impossible.

\_\_\_\_\_ NASF

*(Please describe.)* \_\_\_\_\_

Check this box if no research space in this field at the end of FY 2009

### Question 3: Research animal space

Reminder: Please see page 1 for confidentiality of this item.

3. At the end of your FY 2009, how much of the research NASF reported in Question 2 was used for research animals?

**Research animal space** includes all departmental and central facilities, such as laboratories, housing, and associated support areas, that are subject to local, state, and federal government policies and regulations concerning humane care and use of laboratory animals.

Research animal portion of the space  
included in Question 2 (*If none, enter "0."*) .....  NASF

### Question 4: Clinical trial research space

4. At the end of your FY 2009, how much of the research NASF reported in Question 2 was used for clinical trials?

Clinical trial portion of the space  
included in Question 2 (*If none, enter "0."*) .....  NASF

### Question 5: Research space in medical school

5. *If your institution had a medical school*, how much of the research NASF reported in Question 2 was located in the medical school at the end of your FY 2009?

**Medical school** is a school that awards the M.D. or D.O. degree.

If your institution did **not** have a medical school,  
check this box and go to Question 6.....

Medical school portion of the space  
included in Question 2 (*If none, enter "0."*) .....  NASF

## Question 6: Condition of research space

Reminder: Please see page 1 for confidentiality of this item.

6. At the end of your FY 2009, what percentage of the research NASF reported in Question 2 fell into each of the four condition categories below? Include research animal space.

|                               |                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Superior condition</b>     | Suitable for the most scientifically competitive research in this field over the next 2 years (your FY 2010 and FY 2011)                                           |
| <b>Satisfactory condition</b> | Suitable for continued use over the next 2 years (your FY 2010 and FY 2011) for most levels of research in this field, but may require minor repairs or renovation |
| <b>Requires renovation</b>    | Will no longer be suitable for current research without undergoing major renovation within the next 2 years (your FY 2010 and FY 2011)                             |
| <b>Requires replacement</b>   | Should stop using space for current research within the next 2 years (your FY 2010 and FY 2011)                                                                    |

For Field of S&E definitions, see Question 2 on pages 5–7.

| Field of S&E<br>(Include research animal space.)                                         | Mark "X" if<br>no research<br>space in this<br>field | Percent of net assignable square feet |                           |                        |                         | Total |
|------------------------------------------------------------------------------------------|------------------------------------------------------|---------------------------------------|---------------------------|------------------------|-------------------------|-------|
|                                                                                          |                                                      | Superior<br>condition                 | Satisfactory<br>condition | Requires<br>renovation | Requires<br>replacement |       |
| <i>(The percentages should sum to 100 within each row.)</i>                              |                                                      |                                       |                           |                        |                         |       |
| a. Agricultural sciences and natural resources sciences.....                             | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| b. Biological and biomedical sciences.....                                               | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| c. Computer and information sciences .....                                               | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| d. Engineering.....                                                                      | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| e. Health and clinical sciences.....                                                     | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| f. Mathematics and statistics .....                                                      | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| g. Physical sciences                                                                     |                                                      |                                       |                           |                        |                         |       |
| Group 1: Atmospheric, earth, and geological sciences; meteorology; and oceanography..... | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| Group 2: Astronomy, astrophysics, chemistry, and physics .....                           | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| h. Psychology.....                                                                       | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| i. Social sciences .....                                                                 | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |
| j. Other sciences.....                                                                   | <input type="checkbox"/>                             | _____ %                               | _____ %                   | _____ %                | _____ %                 | 100%  |

## Question 7: Condition of research animal space

Reminder: Please see page 1 for confidentiality of this item.

7. At the end of your FY 2009, what percentage of the research animal space reported in Question 3 fell into each of the four condition categories below?

**Research animal space** includes all departmental and central facilities, such as laboratories, housing, and associated support areas, that are subject to local, state, and federal government policies and regulations concerning humane care and use of laboratory animals.

|                               |                                                                                                                                                                    |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Superior condition</b>     | Suitable for the most scientifically competitive research in this field over the next 2 years (your FY 2010 and FY 2011)                                           |
| <b>Satisfactory condition</b> | Suitable for continued use over the next 2 years (your FY 2010 and FY 2011) for most levels of research in this field, but may require minor repairs or renovation |
| <b>Requires renovation</b>    | Will no longer be suitable for current research without undergoing major renovation within the next 2 years (your FY 2010 and FY 2011)                             |
| <b>Requires replacement</b>   | Should stop using space for current research within the next 2 years (your FY 2010 and FY 2011)                                                                    |

|                                                                | <i>Mark "X" if<br/>no research<br/>animal<br/>space</i> | <b>Percent of net assignable square feet</b> |                           |                        |                         | Total |
|----------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------|---------------------------|------------------------|-------------------------|-------|
|                                                                |                                                         | <i>(The percentages should sum to 100.)</i>  |                           |                        |                         |       |
|                                                                |                                                         | Superior<br>condition                        | Satisfactory<br>condition | Requires<br>renovation | Requires<br>replacement |       |
| All space for research animals<br>regardless of S&E field..... | <input type="checkbox"/>                                | _____ %                                      | _____ %                   | _____ %                | _____ %                 | 100%  |

## Question 8: Biosafety level of research animal facilities

Reminder: Please see page 1 for confidentiality of this item.

8. For each type of animal listed below, please indicate which types of biosafety level (BL) facilities were available at your institution at the end of your FY 2009.

### Biosafety Levels (BL)

All research animal facilities are BL-1 or higher, depending on the type of research performed.

- BL-1** Involves working with defined and characterized strains of viable microorganisms not known to cause disease in healthy adult humans
- BL-2** Involves working with the broad spectrum of indigenous moderate-risk agents present in the community and associated with human disease of varying severity
- BL-3** Involves working with indigenous or exotic agents with a potential for respiratory transmission, and which may cause serious and potentially lethal infection
- BL-4** Involves working with dangerous and exotic agents that pose a high individual risk of life-threatening disease, that may be transmitted via the aerosol route, and for which there is no available vaccine or therapy

If your institution did *not* have research animal facilities, check this box and go to Question 9.....

| Type of animal                                       | Mark "X" if no facilities for this type of animal | Biosafety levels at end of FY 2009 |                          |                          |                          |
|------------------------------------------------------|---------------------------------------------------|------------------------------------|--------------------------|--------------------------|--------------------------|
|                                                      |                                                   | BL-1                               | BL-2                     | BL-3                     | BL-4                     |
| <i>(Check all that apply for each row.)</i>          |                                                   |                                    |                          |                          |                          |
| <b>Non-mammals</b>                                   |                                                   |                                    |                          |                          |                          |
| a. Fish/Aquatic species .....                        | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Birds .....                                       | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Amphibians.....                                   | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Reptiles .....                                    | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Insects .....                                     | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| f. Other non-mammals ( <i>Please specify.</i> )..... | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="text"/>                                 |                                                   |                                    |                          |                          |                          |
| <b>Mammals</b>                                       |                                                   |                                    |                          |                          |                          |
| g. Rats, guinea pigs, or other rodents .....         | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Cats, dogs, or rabbits .....                      | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| i. Pigs, sheep, cattle, or goats.....                | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Non-human primates .....                          | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| k. Other mammals ( <i>Please specify.</i> ).....     | <input type="checkbox"/>                          | <input type="checkbox"/>           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input type="text"/>                                 |                                                   |                                    |                          |                          |                          |

Note: For additional information on biosafety levels, see the report Biosafety in Microbiological and Biomedical Laboratories, 5<sup>th</sup> Edition, 2007, U.S. Department of Health and Human Services.

## Question 9: Repairs and renovations started in FY 2008 and FY 2009

9. Please provide the completion costs for repair and renovation of S&E research facilities that started during your FY 2008 or FY 2009. Include research animal space in the relevant fields of S&E. Include only projects whose prorated cost was estimated to be \$250,000 or more for at least one field of S&E listed below. For **multi-year projects**, report the entire completion cost even if some work will occur in future years.

**Start date** is the date on which the physical work of the repairs or renovations actually began.

**Repairs and renovations** are activities such as fixing up facilities in deteriorated condition, capital improvements on facilities, conversion of facilities, and the building out of shell space. Include any repairs or renovations to existing space that are performed in combination with new construction projects. **Do not** report building additions since they are reported in this survey under new construction.

**Completion costs** include planning, site preparation, construction, fixed equipment, nonfixed equipment that costs \$1 million or more, and building infrastructure such as plumbing, lighting, air exchange, and safety systems either in the building or within 5 feet of the building foundation.

**If research facilities are shared by two or more fields**, allocate the appropriate share of the costs to each field in order to determine which fields to report. For example, if a field will have one-fourth of the costs for a \$300,000 project, do **not** report that field's share, which is \$75,000. If a \$400,000 project will have two fields with the same costs, do **not** report either field's portion, which is \$200,000 each.

**If research facilities are also used for nonresearch activities**, report the S&E research portion of the costs for the fields listed below if the research portion is \$250,000 or more. For example, if a facility is used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

If your institution had no repair or renovation projects, check this box and go to Question 12.....

For Field of S&E definitions, see Question 2 on pages 5–7.

| <b>Field of S&amp;E</b><br><i>(Include costs for research animal space.)</i>              | <b>Completion costs for projects started in FY 2008 or FY 2009</b> |
|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| a. Agricultural sciences and natural resources sciences .....                             | \$ <input type="text"/>                                            |
| b. Biological and biomedical sciences.....                                                | \$ <input type="text"/>                                            |
| c. Computer and information sciences .....                                                | \$ <input type="text"/>                                            |
| d. Engineering.....                                                                       | \$ <input type="text"/>                                            |
| e. Health and clinical sciences.....                                                      | \$ <input type="text"/>                                            |
| f. Mathematics and statistics .....                                                       | \$ <input type="text"/>                                            |
| g. Physical sciences .....                                                                | \$ <input type="text"/>                                            |
| Group 1: Atmospheric, earth, and geological sciences; meteorology; and oceanography ..... | \$ <input type="text"/>                                            |
| Group 2: Astronomy, astrophysics, chemistry, and physics .....                            | \$ <input type="text"/>                                            |
| h. Psychology.....                                                                        | \$ <input type="text"/>                                            |
| i. Social sciences .....                                                                  | \$ <input type="text"/>                                            |
| j. Other sciences <i>(Please describe.)</i> .....                                         | \$ <input type="text"/>                                            |

**Question 10: For research animal facilities only: repairs and renovations in FY 2008 and FY 2009**

Reminder: Please see page 1 for confidentiality of this item.

10. How much of the completion costs for repair and renovation of research facilities as reported in Question 9 was for research animal facilities?

Research animal portion of the costs included in Question 9 (*If none, enter "0."*) .....\$

**Question 11: For medical schools only: repairs and renovations in FY 2008 and FY 2009**

11. *If your institution had a medical school*, how much of the completion costs for repair and renovation of research facilities as reported in Question 9 was located in the medical school?

**Medical school** is a school that awards the M.D. or D.O. degree.

If your institution did **not** have a medical school, check this box and go to Question 12.....

Medical school portion of the costs included in Question 9 (*If none, enter "0."*) .....\$

## Question 12: New construction started in FY 2008 and FY 2009

12. Please provide the total number of new construction projects that included S&E research facilities that started during your FY 2008 or FY 2009. Include only projects whose prorated cost was estimated to be \$250,000 or more for at least one field of S&E. Include research animal space in the relevant fields of S&E.

**New construction** is the construction of a new building or additions to an existing building.

**Research facilities** are defined on page 2 of the survey questionnaire.

**Start date** is the date on which the physical work of the construction actually began.

**Completion costs** include planning, site preparation, construction, fixed equipment, nonfixed equipment that costs \$1 million or more, and building infrastructure such as plumbing, lighting, air exchange, and safety systems either in the building or within 5 feet of the building foundation.

*If facilities are shared for research and nonresearch activities*, report only projects with completion costs of \$250,000 or more for at least one field of S&E research. For example, if a \$300,000 project involves space used for research only one-fourth of the time, this project of \$75,000 for the research facilities should not be reported.

*If facilities are shared by two or more fields of S&E*, report the new construction project only if at least one field of S&E research has completion costs of \$250,000 or more. For example, if two fields share the costs equally for a research project costing \$400,000, neither field's share of \$200,000 meets the cost minimum.

If your institution had no new construction projects, check this box and go to Question 13 .....

If your institution had one or more new construction projects, enter the number of projects here and fill out a separate Individual Project Form for each one.....  projects



Please make additional copies of this form as needed.

## Individual Project Form for Question 12

Page 1 of 4

Please complete this form for **each** new construction project that started during your FY 2008 or FY 2009. Include only projects that will cost \$250,000 or more for at least one of the S&E fields. Consider the start date to be the date on which the physical work of the new construction began.

12A. What is the name of this project? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12B. During which of your fiscal years did the physical work of new construction begin for this project?

FY 2008.....

FY 2009.....

12C. When this project is completed, what is (a) the entire project's (research and nonresearch) gross square feet; (b) the entire project's net assignable square feet; and (c) the S&E research facilities portion in net assignable square feet?

**For multi-year projects**, report the space expected when the project is completed.

a. Gross square feet (GSF) for entire project (research and nonresearch) .....  GSF

Gross square feet (GSF) is the floor area of a structure within the outside faces of the exterior walls.

b. Net assignable square feet (NASF) for entire project  
(research and nonresearch) .....  NASF

Net assignable square feet (NASF) is the sum of all areas on all floors of a building assigned to, or available to be assigned to, an occupant for a specific use, such as research or instruction. NASF is measured from the inside faces of walls.

*NOTE: If the entire project is S&E research, the answers for row b and row c will be the same.*

c. Net assignable square feet for **S&E research facilities** portion  
(defined on page 2 of the survey questionnaire) .....  NASF

Research facilities are defined on page 2 of the survey questionnaire, including examples of what areas to include and exclude.

**If the research facilities are also used for nonresearch activities**, adjust the amount of space based on the amount of time the area is used for S&E research. For example, if an area is used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the space as S&E research facilities.

Please make additional copies of this form as needed.

## Individual Project Form for Question 12

Page 2 of 4

- 12D. When this project is completed, what are the completion costs for (a) the entire project (research and nonresearch), and (b) the S&E research facilities portion of the project? **For multi-year projects**, report the costs expected when the project is completed.

Completion costs include planning, site preparation, construction, fixed equipment, nonfixed equipment that costs \$1 million or more, and building infrastructure such as plumbing, lighting, air exchange, and safety systems either in the building or within 5 feet of the building foundation.

a. Completion costs for the GSF of the entire project (research and nonresearch) ..... \$

b. Completion costs for the **S&E research facilities** portion  
(defined on page 2 of the survey questionnaire) ..... \$

**If the research facilities are also used for nonresearch activities**, adjust the completion costs based on the amount of time the facilities are used for S&E research. For example, if a facility is used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

Please make additional copies of this form as needed.

## Individual Project Form for Question 12

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- 12E. For the portion of this project used for **S&E research facilities**, what are (1) the completion costs, and (2) the net assignable square feet, for each field listed below? **For multi-year projects**, report costs and NASF expected when the project is completed.

**Report only fields** with costs of \$250,000 or more for research facilities.

**If research facilities are shared by two or more fields**, allocate the appropriate share of the costs to each field in order to determine which fields to report. For example, if a field will have one-fourth of the costs for a \$300,000 project, do not report that field's share, which is \$75,000. If a \$400,000 project will have two fields with the same costs, do not report either field's portion, which is \$200,000 each.

**If research facilities are also used for nonresearch activities**, report the S&E research portion of the cost and net assignable square feet for the fields listed below if the research portion is \$250,000 or more. For example, if a facility will be used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

For Field of S&E definitions, see Question 2 on pages 5–7.

|                                                                                           | Research facilities        |                                      |      |
|-------------------------------------------------------------------------------------------|----------------------------|--------------------------------------|------|
| Field of S&E<br>(Include research animal space.)                                          | (1)<br>Completion<br>costs | (2)<br>Net assignable<br>square feet |      |
| a. Agricultural sciences and natural resources sciences.....                              | \$ _____                   | _____                                | NASF |
| b. Biological and biomedical sciences .....                                               | \$ _____                   | _____                                | NASF |
| c. Computer and information sciences .....                                                | \$ _____                   | _____                                | NASF |
| d. Engineering.....                                                                       | \$ _____                   | _____                                | NASF |
| e. Health and clinical sciences.....                                                      | \$ _____                   | _____                                | NASF |
| f. Mathematics and statistics.....                                                        | \$ _____                   | _____                                | NASF |
| g. Physical sciences                                                                      |                            |                                      |      |
| Group 1: Atmospheric, earth, and geological sciences; meteorology; and oceanography ..... | \$ _____                   | _____                                | NASF |
| Group 2: Astronomy, astrophysics, chemistry, and physics.....                             | \$ _____                   | _____                                | NASF |
| h. Psychology .....                                                                       | \$ _____                   | _____                                | NASF |
| i. Social sciences .....                                                                  | \$ _____                   | _____                                | NASF |
| j. Other sciences (Please describe.).....                                                 | \$ _____                   | _____                                | NASF |
| _____                                                                                     |                            |                                      |      |

Please make additional copies of this form as needed.

## Individual Project Form for Question 12

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Reminder: Please see page 1 for confidentiality of this item.

- 12F. How much of the completion costs and NASF reported in Question 12E are for **research animal space**?

Research animal space includes all departmental and central facilities, such as laboratories, housing, and associated support areas, that are subject to local, state, and federal government policies and regulations concerning humane care and use of laboratory animals.

|                                                                             | Completion costs        | Net assignable square feet |
|-----------------------------------------------------------------------------|-------------------------|----------------------------|
| Research animal portion included in Question 12E (If none, enter "0.")..... | \$ <input type="text"/> | <input type="text"/> NASF  |

- 12G. **If your institution has a medical school**, how much of the completion costs and NASF reported in Question 12E are for research facilities located in the medical school?

Medical school is a school that awards the M.D. or D.O. degree.

If your institution does **not** have a medical school, check this box and go to Question 13.....

|                                                                            | Completion costs        | Net assignable square feet |
|----------------------------------------------------------------------------|-------------------------|----------------------------|
| Medical school portion included in Question 12E (If none, enter "0.")..... | \$ <input type="text"/> | <input type="text"/> NASF  |

### Question 13: Sources of project funding

13. Please provide the completion costs by source of funding for repair and renovation and new construction of S&E research facilities that started during your FY 2008 or FY 2009 as reported in Question 9 and Question 12E.

*Total costs reported in column 1* should match the sum of the costs for repair and renovation of research facilities reported in Question 9 on page 12.

*Total costs reported in column 2* should match the sum of the costs for new construction as reported in Question 12E on all Individual Project Form(s).

| <b>Source of funding</b>                                                                                                                                                                                                              | <b>Completion costs</b>                                            |                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                       | (1)<br>For repairs and<br>renovations<br>reported in<br>Question 9 | (2)<br>For new construction<br>reported in<br>Question 12E<br>(all project forms) |
| a. Federal government .....                                                                                                                                                                                                           | \$ _____                                                           | \$ _____                                                                          |
| b. State or local government .....                                                                                                                                                                                                    | \$ _____                                                           | \$ _____                                                                          |
| c. Institutional funds and other sources<br>Examples: operating funds, endowments, tax-exempt<br>bonds and other debt financing, indirect costs recovered<br>from federal grants/contracts, private donations,<br>other sources ..... | \$ _____                                                           | \$ _____                                                                          |
| <b>Total</b>                                                                                                                                                                                                                          | \$ _____                                                           | \$ _____                                                                          |

## Question 14: Planned repairs and renovations to start in FY 2010 and FY 2011

14. Please provide the estimated completion costs planned for repair and renovation of S&E research facilities that are funded **and** scheduled to start in your FY 2010 or FY 2011. Include research animal space in the relevant fields of S&E. Include only projects whose prorated cost was estimated to be \$250,000 or more for at least one field of S&E listed below. For **multi-year projects**, report the entire completion cost even if some work will occur in future years.

**Start date** is the date on which the physical work of the repairs or renovations is scheduled to begin.

**Repairs and renovations** are activities such as fixing up facilities in deteriorated condition, capital improvements on facilities, conversion of facilities, and the building out of shell space. Include any repairs or renovations to existing space that are performed in combination with new construction projects. **Do not** report building additions since they are reported in this survey under new construction.

**Completion costs** include planning, site preparation, construction, fixed equipment, nonfixed equipment that costs \$1 million or more, and building infrastructure such as plumbing, lighting, air exchange, and safety systems either in the building or within 5 feet of the building foundation.

**If research facilities are shared by two or more fields**, allocate the appropriate share of the costs to each field in order to determine which fields to report. For example, if a field will have one-fourth of the costs for a \$300,000 project, do **not** report that field's share, which is \$75,000. If a \$400,000 project will have two fields with the same costs, do **not** report either field's portion, which is \$200,000 each.

**If research facilities will also be used for nonresearch activities**, report the S&E research portion of the costs for the fields listed below if the research portion is \$250,000 or more. For example, if a facility will be used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

If your institution does **not** have planned repair or renovation projects, check this box and go to Question 17.....

For Field of S&E definitions, see Question 2 on pages 5–7.

| <b>Field of S&amp;E</b><br>(Include costs for research animal space.)                        | <b>Completion costs for<br/>planned repair/renovation<br/>projects to start in<br/>FY 2010 or FY 2011</b> |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| a. Agricultural sciences and natural resources sciences .....                                | \$ <input type="text"/>                                                                                   |
| b. Biological and biomedical sciences.....                                                   | \$ <input type="text"/>                                                                                   |
| c. Computer and information sciences .....                                                   | \$ <input type="text"/>                                                                                   |
| d. Engineering.....                                                                          | \$ <input type="text"/>                                                                                   |
| e. Health and clinical sciences.....                                                         | \$ <input type="text"/>                                                                                   |
| f. Mathematics and statistics.....                                                           | \$ <input type="text"/>                                                                                   |
| g. Physical sciences                                                                         |                                                                                                           |
| Group 1: Atmospheric, earth, and geological<br>sciences; meteorology; and oceanography ..... | \$ <input type="text"/>                                                                                   |
| Group 2: Astronomy, astrophysics, chemistry,<br>and physics .....                            | \$ <input type="text"/>                                                                                   |
| h. Psychology .....                                                                          | \$ <input type="text"/>                                                                                   |
| i. Social sciences.....                                                                      | \$ <input type="text"/>                                                                                   |
| j. Other sciences (Please describe.).....                                                    | \$ <input type="text"/>                                                                                   |
| <input type="text"/>                                                                         |                                                                                                           |

**Question 15: For research animal facilities only: planned repairs and renovations in FY 2010 and FY 2011**

Reminder: Please see page 1 for confidentiality of this item.

15. How much of the completion costs for planned repair and renovation of research facilities as reported in Question 14 will be for research animal facilities?

Research animal portion of the costs  
included in Question 14 (*If none, enter "0."*)..... \$

**Question 16: For medical schools only: planned repairs and renovations in FY 2010 and FY 2011**

16. *If your institution has a medical school*, how much of the completion costs for planned repair and renovation of research facilities as reported in Question 14 will be located in the medical school?

**Medical school** is a school that awards the M.D. or D.O. degree.

If your institution does **not** have a medical school, check this box and go to Question 17 .....

Medical school portion of the costs  
included in Question 14 (*If none, enter "0."*)..... \$

## Question 17: Planned new construction to start in FY 2010 and FY 2011

17. Please provide the estimated completion costs and NASF for planned new construction of S&E research facilities that are funded and scheduled to start in your FY 2010 or FY 2011. Include research animal space in the relevant fields of S&E. Include only projects whose prorated cost was estimated to be \$250,000 or more for at least one field of S&E listed below. For **multi-year projects**, report the entire completion cost even if some work will occur in future years.

**Start date** is the date on which the physical work of the construction is scheduled to begin.

**New construction** is the construction of a new building or additions to an existing building.

**Completion costs** include planning, site preparation, construction, fixed equipment, nonfixed equipment that costs \$1 million or more, and building infrastructure such as plumbing, lighting, air exchange, and safety systems either in the building or within 5 feet of the building foundation.

*If research facilities are shared by two or more fields*, allocate the appropriate share of the costs to each field in order to determine which fields to report. For example, if a field will have one-fourth of the costs for a \$300,000 project, do **not** report that field's share, which is \$75,000. If a \$400,000 project will have two fields with the same costs, do **not** report either field's portion, which is \$200,000 each.

*If research facilities are also used for nonresearch activities*, report the S&E research portion of the costs and net assignable square feet for the fields listed below if the research portion is \$250,000 or more. For example, if a facility will be used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

If your institution does **not** have any planned new construction projects, check this box and go to Question 20.....

For Field of S&E definitions, see Question 2 on pages 5–7.

### Planned new construction scheduled to start in FY 2010 or FY 2011

| Field of S&E<br>(Include costs for research animal space.)                                | Completion costs                              | Net assignable square feet                 |      |
|-------------------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------------|------|
| a. Agricultural sciences and natural resources sciences .....                             | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| b. Biological and biomedical sciences.....                                                | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| c. Computer and information sciences .....                                                | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| d. Engineering .....                                                                      | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| e. Health and clinical sciences.....                                                      | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| f. Mathematics and statistics.....                                                        | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| g. Physical sciences                                                                      |                                               |                                            |      |
| Group 1: Atmospheric, earth, and geological sciences; meteorology; and oceanography ..... | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| Group 2: Astronomy, astrophysics, chemistry, and physics .....                            | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| h. Psychology .....                                                                       | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| i. Social sciences.....                                                                   | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |
| j. Other sciences (Please describe.).....                                                 | \$ <input style="width: 100px;" type="text"/> | <input style="width: 100px;" type="text"/> | NASF |



**Question 18: For research animal facilities only: planned new construction in FY 2010 and FY 2011**

Reminder: Please see page 1 for confidentiality of this item.

18. How much of the completion costs and NASF for the planned new construction of research facilities as reported in Question 17 will be for research animal facilities?

|                                                                                      | <b>Completion costs</b> | <b>Net assignable square feet</b> |
|--------------------------------------------------------------------------------------|-------------------------|-----------------------------------|
| Research animal portion included in Question 17 ( <i>If none, enter "0."</i> ) ..... | \$ <input type="text"/> | <input type="text"/> NASF         |

**Question 19: For medical schools only: planned new construction in FY 2010 and FY 2011**

19. *If your institution has a medical school*, how much of the completion costs and NASF for the planned new construction of research facilities as reported in Question 17 will be located in the medical school?

**Medical school** is a school that awards the M.D. or D.O. degree.

If your institution does *not* have a medical school, check this box and go to Question 20.....

|                                                                                     | <b>Completion costs</b> | <b>Net assignable square feet</b> |
|-------------------------------------------------------------------------------------|-------------------------|-----------------------------------|
| Medical school portion included in Question 17 ( <i>If none, enter "0."</i> ) ..... | \$ <input type="text"/> | <input type="text"/> NASF         |

## Question 20: Deferred repairs and renovations

20. Please provide the estimated costs for any **deferred repair and renovation** projects of S&E research facilities that are needed for current research program commitments, but are not yet funded **and** not yet scheduled to start in your FY 2010 or FY 2011. Include research animal space in the relevant fields of S&E. Include only projects whose prorated cost was estimated to be \$250,000 or more for at least one field of S&E listed below. Please estimate costs separately for projects included in your approved institutional plan and projects not included in this plan. Institutional plans usually will include goals, strategies, and budgets for fulfilling your institution's mission during a specific time period.

**Deferred projects** are those that: (1) are not funded, and (2) are not scheduled for FY 2010 or FY 2011. Do not include projects planned for developing new programs or expanding your current programs.

**Repairs and renovations** are activities such as fixing up facilities in deteriorated condition, capital improvements on facilities, conversion of facilities, and the building out of shell space. Include any repairs or renovations to existing space that are performed in combination with new construction projects. **Do not** report building additions since they are reported in this survey under new construction.

**Current research program commitments** include current faculty and staff or those to whom offers have been made or grants awarded (whether or not research has actually begun) and programs which have been approved.

**If research facilities will be shared by two or more fields**, allocate the appropriate share of the costs to each field in order to determine which fields to report. For example, if a field will have one-fourth of the costs for a \$300,000 project, do **not** report that field's share, which is \$75,000. If a \$400,000 project will have two fields with the same costs, do **not** report either field's portion, which is \$200,000 each.

**If research facilities will also be used for nonresearch activities**, report the S&E research portion of the costs for the fields listed below if the research portion is \$250,000 or more. For example, if a facility will be used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

If your institution does **not** have deferred projects for repair or renovation, check this box and go to Question 23 .....

For Field of S&E definitions, see Question 2 on pages 5–7.

| Field of S&E<br>(Include costs for research animal space.)                                | Estimated costs of deferred repairs and renovations |                                                             |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------|
|                                                                                           | For projects included in your institutional plan    | For projects <i>not</i> included in your institutional plan |
| a. Agricultural sciences and natural resources sciences .....                             | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| b. Biological and biomedical sciences.....                                                | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| c. Computer and information sciences .....                                                | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| d. Engineering .....                                                                      | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| e. Health and clinical sciences.....                                                      | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| f. Mathematics and statistics.....                                                        | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| g. Physical sciences                                                                      |                                                     |                                                             |
| Group 1: Atmospheric, earth, and geological sciences; meteorology; and oceanography ..... | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| Group 2: Astronomy, astrophysics, chemistry, and physics .....                            | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| h. Psychology .....                                                                       | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| i. Social sciences.....                                                                   | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |
| j. Other sciences (Please describe.).....                                                 | \$ <input type="text"/>                             | \$ <input type="text"/>                                     |

**Question 21: For research animal facilities only: deferred repairs and renovations**

Reminder: Please see page 1 for confidentiality of this item.

21. How much of the estimated costs for deferred repair and renovation of research facilities as reported in Question 20 would be for research animal facilities?

|                                                                                                     | <b>For projects<br/>included in your<br/>institutional plan</b> | <b>For projects <i>not</i><br/>included in your<br/>institutional plan</b> |
|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------|
| Research animal portion of the costs<br>included in Question 20 ( <i>If none, enter "0."</i> )..... | \$ <input type="text"/>                                         | \$ <input type="text"/>                                                    |

**Question 22: For medical schools only: deferred repairs and renovations**

22. *If your institution has a medical school*, how much of the estimated costs for deferred repair and renovation of research facilities as reported in Question 20 would be located in the medical school?

**Medical school** is a school that awards the M.D. or D.O. degree.

If your institution does *not* have a medical school,  
check this box and go to Question 23 .....

|                                                                                                    | <b>For projects<br/>included in your<br/>institutional plan</b> | <b>For projects <i>not</i><br/>included in your<br/>institutional plan</b> |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------|
| Medical school portion of the costs<br>included in Question 20 ( <i>If none, enter "0."</i> )..... | \$ <input type="text"/>                                         | \$ <input type="text"/>                                                    |

## Question 23: Deferred new construction

23. Please provide the estimated costs for any **deferred new construction** projects of S&E research facilities that are needed for current program commitments, but are not yet funded **and** not yet scheduled to start in your FY 2010 or FY 2011. Include research animal space in the relevant fields of S&E. Include only projects whose prorated cost was estimated to be \$250,000 or more for at least one field of S&E listed below. Please estimate costs separately for projects included in your approved institutional plan and projects not included in this plan. Institutional plans usually will include goals, strategies, and budgets for fulfilling your institution's mission during a specific time period.

**Deferred projects** are those that: (1) are not funded, and (2) are not scheduled for FY 2010 or FY 2011. Do not include projects planned for developing new programs or expanding your current programs.

**New construction** is the construction of a new building or additions to an existing building.

**Current research program commitments** include current faculty and staff or those to whom offers have been made or grants awarded (whether or not research has actually begun) and programs which have been approved.

*If research facilities will be shared by two or more fields*, allocate the appropriate share of the costs to each field in order to determine which fields to report. For example, if a field will have one-fourth of the costs for a \$300,000 project, do **not** report that field's share, which is \$75,000. If a \$400,000 project will have two fields with the same costs, do **not** report either field's portion, which is \$200,000 each.

*If research facilities will also be used for nonresearch activities*, report the S&E research portion of the costs for the fields listed below if the research portion is \$250,000 or more. For example, if a facility will be used for S&E research one-fourth of the time and for instruction the rest of the time, report one-fourth of the completion costs for S&E research facilities.

If your institution does **not** have deferred projects for new construction, check this box and go to Question 26.....

For Field of S&E definitions, see Question 2 on pages 5–7.

### Estimated costs of deferred new construction

| Field of S&E<br>(Include costs for research animal space.)                                   | For projects<br>included in your<br>institutional plan | For projects <i>not</i><br>included in your<br>institutional plan |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------|
| a. Agricultural sciences and natural resources sciences .....                                | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| b. Biological and biomedical sciences.....                                                   | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| c. Computer and information sciences .....                                                   | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| d. Engineering .....                                                                         | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| e. Health and clinical sciences.....                                                         | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| f. Mathematics and statistics.....                                                           | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| g. Physical sciences                                                                         |                                                        |                                                                   |
| Group 1: Atmospheric, earth, and geological<br>sciences; meteorology; and oceanography ..... | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| Group 2: Astronomy, astrophysics, chemistry,<br>and physics .....                            | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| h. Psychology .....                                                                          | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| i. Social sciences.....                                                                      | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |
| j. Other sciences ( <i>Please describe.</i> ).....                                           | \$ <input type="text"/>                                | \$ <input type="text"/>                                           |



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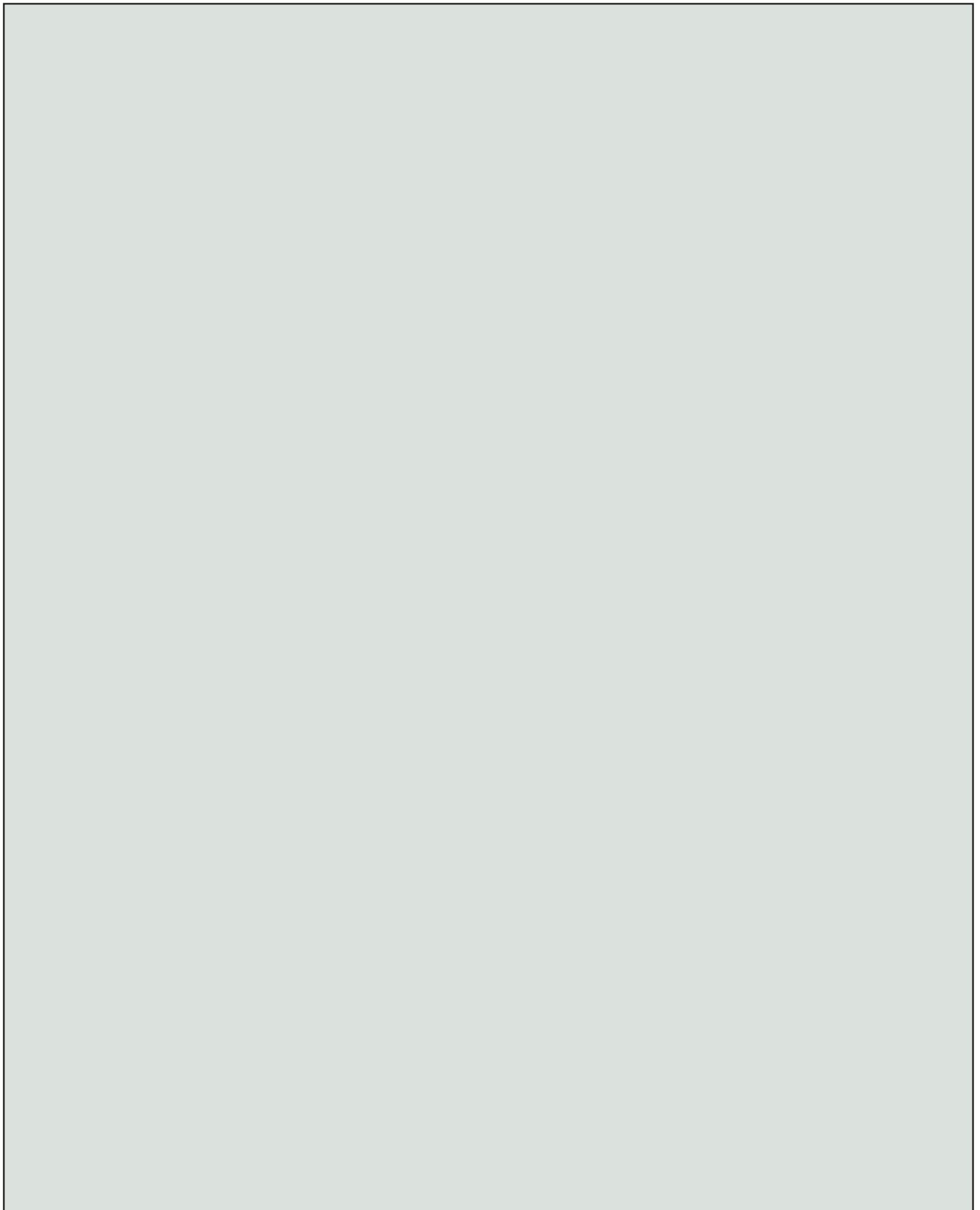
**Crosswalk of NSF Fields of S&E  
to the National Center for Education Statistics (NCES)  
2000 Classification of Instructional Programs (CIP)**

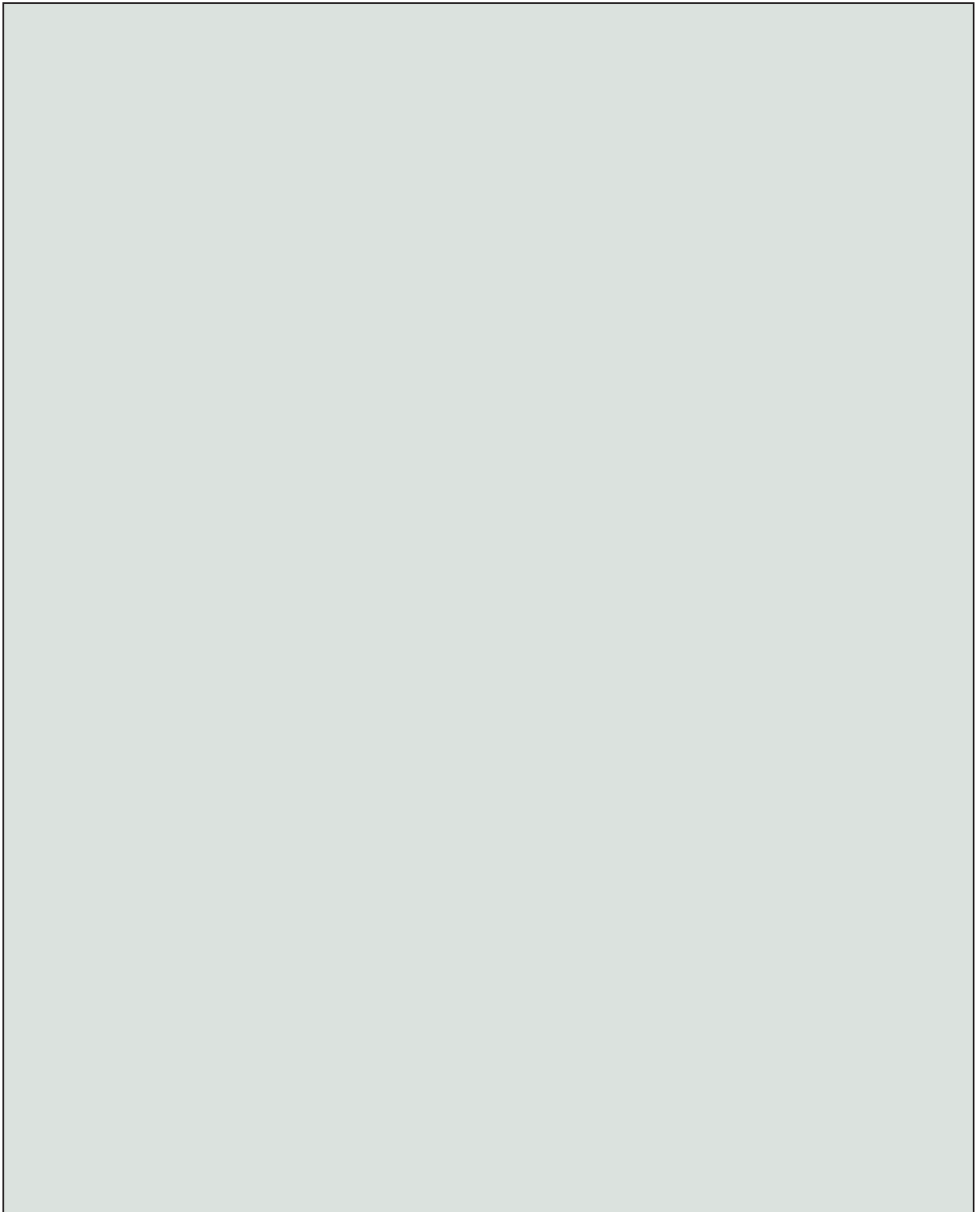
| <b>NSF field of S&amp;E</b>                                 | <b>NCES CIP 2000 classification</b> |                                                                              |                                               |                                                       |
|-------------------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------|
| <b>Agricultural sciences and natural resources sciences</b> | 01.09                               | Animal sciences                                                              | 03.05                                         | Forestry                                              |
|                                                             | 01.10                               | Food science and technology                                                  | 03.06                                         | Wildlife and wildlands science and management         |
|                                                             | 01.11                               | Plant sciences                                                               |                                               |                                                       |
|                                                             | 01.12                               | Soil sciences                                                                |                                               | Also include:                                         |
|                                                             | 03.01                               | Natural resources conservation and research (includes environmental science) | 01.0103                                       | Agricultural economics                                |
|                                                             | 03.03                               | Fishing and fisheries sciences and management                                | 03.0204                                       | Natural resources economics                           |
| <b>Biological and biomedical sciences</b>                   | 26.01                               | Biology, general                                                             | 26.10                                         | Pharmacology and toxicology                           |
|                                                             | 26.02                               | Biochemistry, biophysics and molecular biology                               | 26.11                                         | Biostatistics and bioinformatics                      |
|                                                             | 26.03                               | Botany/plant biology                                                         | 26.12                                         | Biotechnology                                         |
|                                                             | 26.04                               | Cell/cellular biology and anatomical sciences                                | 26.13                                         | Ecology, evolution and population biology             |
|                                                             | 26.05                               | Microbiological sciences and immunology                                      | 26.99                                         | Biological and biomedical sciences, other             |
|                                                             | 26.07                               | Zoology/animal biology                                                       |                                               |                                                       |
|                                                             | 26.08                               | Genetics                                                                     |                                               | Also include:                                         |
|                                                             | 26.09                               | Physiology, pathology, and related sciences                                  | 19.0504                                       | Human nutrition                                       |
|                                                             |                                     |                                                                              |                                               |                                                       |
| <b>Computer and information sciences</b>                    | 11.01                               | Computer and information sciences, general                                   | 11.08                                         | Computer software and media applications              |
|                                                             | 11.04                               | Information science/studies                                                  | 11.09                                         | Computer systems networking and telecommunications    |
|                                                             | 11.07                               | Computer science                                                             |                                               |                                                       |
| <b>Engineering</b>                                          | 14.01                               | Engineering, general                                                         | 14.20                                         | Metallurgical engineering                             |
|                                                             | 14.02                               | Aerospace, aeronautical and astronautical engineering                        | 14.21                                         | Mining and mineral engineering                        |
|                                                             | 14.03                               | Agricultural/biological engineering and bioengineering                       | 14.22                                         | Naval architecture and marine engineering             |
|                                                             | 14.04                               | Architectural engineering                                                    | 14.23                                         | Nuclear engineering                                   |
|                                                             | 14.05                               | Biomedical/medical engineering                                               | 14.24                                         | Ocean engineering                                     |
|                                                             | 14.06                               | Ceramic sciences and engineering                                             | 14.25                                         | Petroleum engineering                                 |
|                                                             | 14.07                               | Chemical engineering                                                         | 14.27                                         | Systems engineering                                   |
|                                                             | 14.08                               | Civil engineering                                                            | 14.28                                         | Textile sciences and engineering                      |
|                                                             | 14.09                               | Computer engineering, general                                                | 14.31                                         | Materials science                                     |
|                                                             | 14.10                               | Electrical, electronics and communications engineering                       | 14.32                                         | Polymer/plastics engineering                          |
|                                                             | 14.11                               | Engineering mechanics                                                        | 14.33                                         | Construction engineering                              |
|                                                             | 14.12                               | Engineering physics                                                          | 14.34                                         | Forest engineering                                    |
|                                                             | 14.13                               | Engineering science                                                          | 14.35                                         | Industrial engineering                                |
|                                                             | 14.14                               | Environmental/environmental health engineering                               | 14.36                                         | Manufacturing engineering                             |
|                                                             | 14.18                               | Materials engineering                                                        | 14.37                                         | Operations research                                   |
|                                                             | 14.19                               | Mechanical engineering                                                       | 14.38                                         | Surveying engineering                                 |
|                                                             |                                     |                                                                              | 14.39                                         | Geological/geophysical engineering                    |
|                                                             |                                     |                                                                              | 14.99                                         | Engineering, other                                    |
|                                                             | <b>Health and clinical sciences</b> | 51.02                                                                        | Communication disorders sciences and services | 51.19                                                 |
| 51.04                                                       |                                     | Dentistry                                                                    | 51.20                                         | Pharmacy, pharmaceutical sciences, and administration |
| 51.05                                                       |                                     | Advanced/graduate dentistry and oral sciences                                | 51.21                                         | Podiatric medicine/podiatry                           |
| 51.09                                                       |                                     | Allied health diagnostic, intervention, and treatment professions            | 51.22                                         | Public health                                         |
| 51.10                                                       |                                     | Clinical/medical laboratory science and allied professions                   | 51.23                                         | Rehabilitation and therapeutic professions            |
| 51.12                                                       |                                     | Medicine                                                                     | 51.24                                         | Veterinary medicine                                   |
| 51.14                                                       |                                     | Medical clinical sciences/graduate medical studies                           | 51.25                                         | Veterinary biomedical and clinical sciences           |
| 51.16                                                       |                                     | Nursing                                                                      | 51.27                                         | Medical illustration and informatics                  |
| 51.17                                                       |                                     | Optometry                                                                    |                                               | Also include:                                         |
|                                                             |                                     |                                                                              | 31.0505                                       | Kinesiology and exercise science                      |

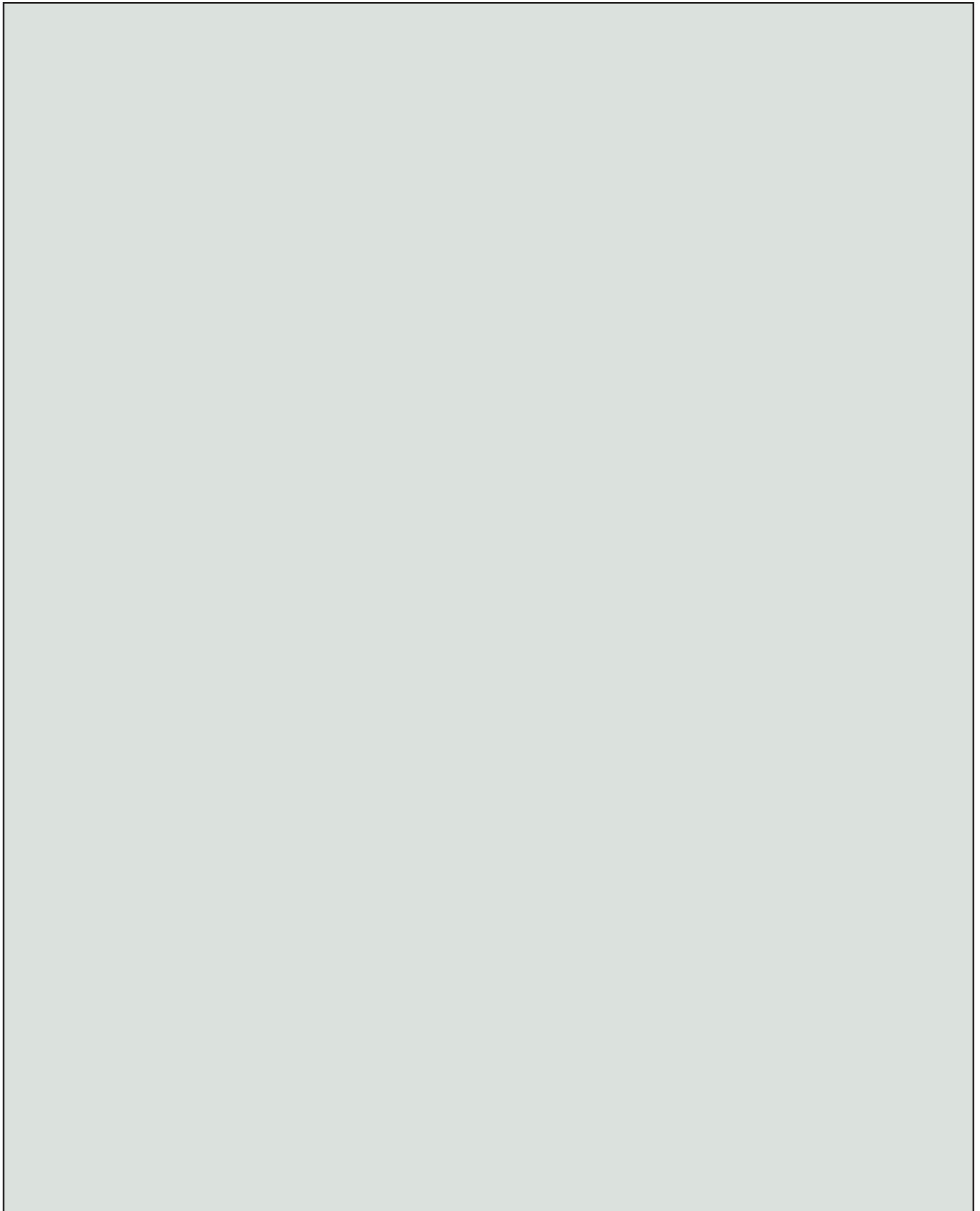
| <b>NSF field of S&amp;E</b>       | <b>NCES CIP 2000 classification</b> |                                                                                                                                       |                          |                                           |                       |
|-----------------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------|-----------------------|
| <b>Mathematics and statistics</b> | 27.01                               | Mathematics                                                                                                                           | 27.05                    | Statistics                                |                       |
|                                   | 27.03                               | Applied mathematics                                                                                                                   | 27.99                    | Mathematics and statistics, other         |                       |
|                                   |                                     |                                                                                                                                       |                          |                                           |                       |
| <b>Physical sciences</b>          | <b>Group 1</b>                      |                                                                                                                                       |                          |                                           |                       |
|                                   | 40.04                               | Atmospheric sciences and meteorology                                                                                                  |                          |                                           |                       |
|                                   | 40.06                               | Geological and earth sciences/geosciences (includes oceanography)                                                                     |                          |                                           |                       |
|                                   | -----                               |                                                                                                                                       |                          |                                           |                       |
|                                   | <b>Group 2</b>                      |                                                                                                                                       |                          |                                           |                       |
|                                   | 40.01                               | Physical sciences, general                                                                                                            |                          |                                           |                       |
|                                   | 40.02                               | Astronomy and astrophysics                                                                                                            |                          |                                           |                       |
|                                   | 40.05                               | Chemistry                                                                                                                             |                          |                                           |                       |
|                                   | 40.08                               | Physics                                                                                                                               |                          |                                           |                       |
|                                   | 40.99                               | Physical sciences, other                                                                                                              |                          |                                           |                       |
| <b>Psychology</b>                 | 42.01                               | Psychology, general                                                                                                                   | 42.17                    | School psychology                         |                       |
|                                   | 42.02                               | Clinical psychology                                                                                                                   | 42.18                    | Educational psychology                    |                       |
|                                   | 42.03                               | Cognitive psychology and psycholinguistics                                                                                            | 42.19                    | Psychometrics and quantitative psychology |                       |
|                                   | 42.04                               | Community psychology                                                                                                                  | 42.20                    | Clinical child psychology                 |                       |
|                                   | 42.05                               | Comparative psychology                                                                                                                | 42.21                    | Environmental psychology                  |                       |
|                                   | 42.06                               | Counseling psychology                                                                                                                 | 42.22                    | Geropsychology                            |                       |
|                                   | 42.07                               | Developmental and child psychology                                                                                                    | 42.23                    | Health psychology                         |                       |
|                                   | 42.08                               | Experimental psychology                                                                                                               | 42.24                    | Psychopharmacology                        |                       |
|                                   | 42.09                               | Industrial and organizational psychology                                                                                              | 42.25                    | Family psychology                         |                       |
|                                   | 42.10                               | Personality psychology                                                                                                                | 42.26                    | Forensic psychology                       |                       |
|                                   | 42.11                               | Physiological psychology/psychobiology                                                                                                | 42.99                    | Psychology, other                         |                       |
|                                   | 42.16                               | Social psychology                                                                                                                     |                          |                                           |                       |
|                                   | <b>Social sciences</b>              | 45.01                                                                                                                                 | Social sciences, general | 45.11                                     | Sociology             |
|                                   |                                     | 45.02                                                                                                                                 | Anthropology             | 45.12                                     | Urban studies/affairs |
| 45.03                             |                                     | Archeology                                                                                                                            | 45.99                    | Social sciences, other                    |                       |
| 45.04                             |                                     | Criminology                                                                                                                           |                          |                                           |                       |
| 45.05                             |                                     | Demography and population studies                                                                                                     |                          | Also include:                             |                       |
| 45.06                             |                                     | Economics                                                                                                                             | 43.0106                  | Forensic science and technology           |                       |
| 45.07                             |                                     | Geography and cartography                                                                                                             | 43.0107                  | Criminal justice/police science           |                       |
| 45.09                             |                                     | International relations and affairs                                                                                                   | 43.0111                  | Criminalistics and criminal science       |                       |
| 45.10                             |                                     | Political science and government                                                                                                      |                          |                                           |                       |
| <b>Other sciences</b>             |                                     | Use this category when multidisciplinary, interdisciplinary, or other aspects make classification under one primary field impossible. |                          |                                           |                       |



*Thank you. This is the end of Part 1. Part 2, which is bound separately, covers your institution's computing and networking capacity.*









National Science Foundation  
National Institutes of Health



## Part 2: Computing and Networking Capacity (for research and instructional activities)

### FY 2009 Survey of Science and Engineering Research Facilities

Who should be contacted if clarification of Part 2 answers is necessary?

Name:

Telephone:

Title/position:

E-mail address:

Please complete the questionnaire and submit it according to the arrangements you made with your institutional coordinator named in the label above. You may complete this questionnaire online at [www.facilitiesurvey.org](http://www.facilitiesurvey.org). You will need to click on "Part 2" and then enter the survey ID and password printed on the label above.

If you have a question, please contact Lorraine Lewis of Westat via e-mail at [facilitiesurvey@westat.com](mailto:facilitiesurvey@westat.com) or call 1-888-811-1838. The survey director at the National Science Foundation is Dr. Leslie Christovich.

If you do not have exact figures for any part of this questionnaire, please provide estimates.

Thank you for your participation.

OMB #3145-0101



## Changes from previous survey cycle

- **Question 1 on total bandwidth** has been modified to include bandwidth to the National LambdaRail.
- **Question 3 on bandwidth to the National LambdaRail** has been added.
- **15 questions from the last survey cycle have been deleted** (question numbers shown below refer to those appearing in the FY 2007 survey):
  - Commodity internet connections (Question 4)
  - Type of desktop port cable (Question 8)
  - High-performance computing clusters (Questions 14-19)
  - High-performance computing architectures (Questions 21, 23, 25, and 26)
  - High-performance computing and administrative functions (Questions 27, 33, and 35)

## Question 1: Total bandwidth

1. At the end of your FY 2009, what was your institution's total bandwidth to the commodity internet (Internet1), Internet2, and the National LambdaRail (NLR)? What is your estimate of this total for your institution at the end of your FY 2010?

**Bandwidth** is the amount of data that can be transmitted in a given amount of time, measured in bits per second.

**Commodity internet (Internet1)** is the general public, multiuse network often called the "Internet."

**Internet2** is a high-performance hybrid optical packet network. The network was designed to provide next-generation production services as well as a platform for the development of new networking ideas and protocols.

**National LambdaRail (NLR)** is an advanced optical network infrastructure for research and education. NLR enables cutting-edge exploration in the sciences and network research.

*Please do not include:*

- Redundant connections, which are not normally active but available if a failure occurs with the active connection;
- Burstable bandwidth;
- Standard modems (57,600 bps or slower);
- DSL (Digital Subscriber Lines), communication over copper wires;
- Cable modems;
- ISDN (Integrated Services Digital Network), a communications standard for sending voice, video, and data over telephone lines.

*Please include networking capacity for research, instruction, and residence halls.*

### Total bandwidth

(Mark one "X" for each column.)

| Speed                                                                                 | At end of<br>FY 2009     | Estimated at<br>end of<br>FY 2010 |
|---------------------------------------------------------------------------------------|--------------------------|-----------------------------------|
| a. <i>No bandwidth to commodity internet, Internet2, or National LambdaRail</i> ..... | <input type="checkbox"/> | <input type="checkbox"/>          |
| b. Less than 1.6 megabits/second .....                                                | <input type="checkbox"/> | <input type="checkbox"/>          |
| c. 1.6 to 9 megabits/second .....                                                     | <input type="checkbox"/> | <input type="checkbox"/>          |
| d. 10 megabits/second.....                                                            | <input type="checkbox"/> | <input type="checkbox"/>          |
| e. 11 to 45 megabits/second .....                                                     | <input type="checkbox"/> | <input type="checkbox"/>          |
| f. 46 to 99 megabits/second .....                                                     | <input type="checkbox"/> | <input type="checkbox"/>          |
| g. 100 megabits/second.....                                                           | <input type="checkbox"/> | <input type="checkbox"/>          |
| h. 101 to 155 megabits/second .....                                                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| i. 156 to 622 megabits/second .....                                                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| j. 623 to 999 megabits/second .....                                                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| k. 1 to 2.4 gigabits/second .....                                                     | <input type="checkbox"/> | <input type="checkbox"/>          |
| l. 2.5 to 9 gigabits/second .....                                                     | <input type="checkbox"/> | <input type="checkbox"/>          |
| m. 10 gigabits/second .....                                                           | <input type="checkbox"/> | <input type="checkbox"/>          |
| n. More than 10 gigabits/second.....                                                  | <input type="checkbox"/> | <input type="checkbox"/>          |
| o. Other ( <i>Please specify</i> ).....                                               | <input type="checkbox"/> | <input type="checkbox"/>          |
| _____                                                                                 |                          |                                   |
| _____                                                                                 |                          |                                   |



## Question 2: Internet2 bandwidth

Questions 2–11 include networking capacity for: research, instruction, and residence halls.

2. At the end of your FY 2009, what was your institution’s bandwidth to Internet2? What is your estimate of the bandwidth to Internet2 at the end of your FY 2010?

**Bandwidth** is the amount of data that can be transmitted in a given amount of time, measured in bits per second.

**Internet2** is a high-performance hybrid optical packet network. The network was designed to provide next-generation production services as well as a platform for the development of new networking ideas and protocols.

*Please do not include redundant connections.* A redundant connection is not normally active but is available if a failure occurs with the active connection.

### Bandwidth for Internet2

(Mark one “X” for each column.)

| Speed                                     | At end of<br>FY 2009     | Estimated at<br>end of<br>FY 2010 |
|-------------------------------------------|--------------------------|-----------------------------------|
| a. <i>No bandwidth to Internet2</i> ..... | <input type="checkbox"/> | <input type="checkbox"/>          |
| b. Less than 1.6 megabits/second .....    | <input type="checkbox"/> | <input type="checkbox"/>          |
| c. 1.6 to 9 megabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| d. 10 megabits/second.....                | <input type="checkbox"/> | <input type="checkbox"/>          |
| e. 11 to 45 megabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| f. 46 to 99 megabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| g. 100 megabits/second.....               | <input type="checkbox"/> | <input type="checkbox"/>          |
| h. 101 to 155 megabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| i. 156 to 622 megabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| j. 623 to 999 megabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| k. 1 to 2.4 gigabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| l. 2.5 to 9 gigabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| m. 10 gigabits/second .....               | <input type="checkbox"/> | <input type="checkbox"/>          |
| n. More than 10 gigabits/second.....      | <input type="checkbox"/> | <input type="checkbox"/>          |
| o. Other ( <i>Please specify.</i> ).....  | <input type="checkbox"/> | <input type="checkbox"/>          |
| <input type="text"/>                      |                          |                                   |
| <input type="text"/>                      |                          |                                   |

### Question 3: National LambdaRail (NLR) bandwidth

3. At the end of your FY 2009, what was your institution's bandwidth to National LambdaRail (NLR)? What is your estimate of the bandwidth to National LambdaRail at the end of your FY 2010?

**Bandwidth** is the amount of data that can be transmitted in a given amount of time, measured in bits per second.

**National LambdaRail (NLR)** is an advanced optical network infrastructure for research and education. NLR enables cutting-edge exploration in the sciences and network research.

*Please do not include redundant connections.* A redundant connection is not normally active but is available if a failure occurs with the active connection.

#### Bandwidth for National LambdaRail

(Mark one "X" for each column.)

| Speed                                               | At end of<br>FY 2009     | Estimated at<br>end of<br>FY 2010 |
|-----------------------------------------------------|--------------------------|-----------------------------------|
| a. <i>No bandwidth to National LambdaRail</i> ..... | <input type="checkbox"/> | <input type="checkbox"/>          |
| b. Less than 1.6 megabits/second .....              | <input type="checkbox"/> | <input type="checkbox"/>          |
| c. 1.6 to 9 megabits/second .....                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| d. 10 megabits/second.....                          | <input type="checkbox"/> | <input type="checkbox"/>          |
| e. 11 to 45 megabits/second .....                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| f. 46 to 99 megabits/second .....                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| g. 100 megabits/second.....                         | <input type="checkbox"/> | <input type="checkbox"/>          |
| h. 101 to 155 megabits/second .....                 | <input type="checkbox"/> | <input type="checkbox"/>          |
| i. 156 to 622 megabits/second .....                 | <input type="checkbox"/> | <input type="checkbox"/>          |
| j. 623 to 999 megabits/second .....                 | <input type="checkbox"/> | <input type="checkbox"/>          |
| k. 1 to 2.4 gigabits/second .....                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| l. 2.5 to 9 gigabits/second .....                   | <input type="checkbox"/> | <input type="checkbox"/>          |
| m. 10 gigabits/second .....                         | <input type="checkbox"/> | <input type="checkbox"/>          |
| n. More than 10 gigabits/second.....                | <input type="checkbox"/> | <input type="checkbox"/>          |
| o. Other ( <i>Please specify</i> ).....             | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                                     |                          |                                   |
|                                                     |                          |                                   |

## Question 4: Commodity internet (Internet1) bandwidth

4. At the end of your FY 2009, what was your institution's bandwidth to the commodity internet (Internet1)? What is your estimate of the bandwidth to the commodity internet at the end of your FY 2010?

**Bandwidth** is the amount of data that can be transmitted in a given amount of time, measured in bits per second.

**Commodity internet (Internet1)** is the general public, multiuse network often called the "Internet."

Please do not include:

- Redundant connections, which are not normally active but available if a failure occurs with the active connection;
- Burstable bandwidth;
- Standard modems (57,600 bps or slower);
- DSL (Digital Subscriber Lines), communication over copper wires;
- Cable modems;
- ISDN (Integrated Services Digital Network), a communications standard for sending voice, video, and data over telephone lines.

### Bandwidth for commodity internet

(Mark one "X" for each column.)

| Speed                                       | At end of<br>FY 2009     | Estimated at<br>end of<br>FY 2010 |
|---------------------------------------------|--------------------------|-----------------------------------|
| a. No bandwidth to commodity internet ..... | <input type="checkbox"/> | <input type="checkbox"/>          |
| b. Less than 1.6 megabits/second .....      | <input type="checkbox"/> | <input type="checkbox"/>          |
| c. 1.6 to 9 megabits/second .....           | <input type="checkbox"/> | <input type="checkbox"/>          |
| d. 10 megabits/second.....                  | <input type="checkbox"/> | <input type="checkbox"/>          |
| e. 11 to 45 megabits/second .....           | <input type="checkbox"/> | <input type="checkbox"/>          |
| f. 46 to 99 megabits/second .....           | <input type="checkbox"/> | <input type="checkbox"/>          |
| g. 100 megabits/second.....                 | <input type="checkbox"/> | <input type="checkbox"/>          |
| h. 101 to 155 megabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| i. 156 to 622 megabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| j. 623 to 999 megabits/second .....         | <input type="checkbox"/> | <input type="checkbox"/>          |
| k. 1 to 2.4 gigabits/second .....           | <input type="checkbox"/> | <input type="checkbox"/>          |
| l. 2.5 to 9 gigabits/second .....           | <input type="checkbox"/> | <input type="checkbox"/>          |
| m. 10 gigabits/second .....                 | <input type="checkbox"/> | <input type="checkbox"/>          |
| n. More than 10 gigabits/second.....        | <input type="checkbox"/> | <input type="checkbox"/>          |
| o. Other (Please specify.).....             | <input type="checkbox"/> | <input type="checkbox"/>          |
|                                             |                          |                                   |
|                                             |                          |                                   |

## Question 5: Bandwidth through consortia

5. At the end of your FY 2009, did your institution obtain any of its bandwidth through a consortium? Do you expect to obtain bandwidth through a consortium at the end of your FY 2010?

A **consortium** is a collaboration of any combination of educational institutions (e.g., university system, K-12), state and local agencies, network infrastructure operators (e.g., Internet2), vendors, health care organizations, or non-profit organizations with the purpose of coordinating and facilitating networking activities.

**Bandwidth** is the amount of data that can be transmitted in a given amount of time, measured in bits per second.

*(Mark one "X" for each row.)*

| <b>Fiscal year</b>                                        | <b>Yes</b>               | <b>No</b>                |
|-----------------------------------------------------------|--------------------------|--------------------------|
| a. Bandwidth through consortia at the end of FY 2009..... | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Bandwidth through consortia at the end of FY 2010..... | <input type="checkbox"/> | <input type="checkbox"/> |

*Please provide the names of all consortia through which you expect to obtain bandwidth at the end of your FY 2010.*

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## Question 6: High-performance network connections

6. At the end of your FY 2009, did your institution have connections to any of the following high-performance networks? Do you expect to have connections to any of these networks at the end of your FY 2010?

A **high-performance network** is characterized by high bandwidth, low latency, and low rates of packet loss. Additionally, a high-performance network is able to support delay-sensitive, bandwidth-intensive applications such as distributed computing, real-time access, and control of remote instrumentation.

**Internet2** is a high-performance hybrid optical packet network. The network was designed to provide next-generation production services as well as a platform for the development of new networking ideas and protocols.

**National LambdaRail (NLR)** is an advanced optical network infrastructure for research and education. NLR enables cutting-edge exploration in the sciences and network research.

**ESnet** is the Department of Energy's Energy Sciences Network.

**NREN** is the NASA Research and Education Network.

(Mark one "X" for each row.)

| At the end of FY 2009                                                                        | Yes                      | No                       |
|----------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| a. Internet2.....                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. National LambdaRail.....                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| c. Federal government research network<br>(e.g., Department of Energy ESnet, NASA NREN)..... | <input type="checkbox"/> | <input type="checkbox"/> |
| d. State or regional high-performance network .....                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| e. Other ( <i>Please specify.</i> ).....                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| _____                                                                                        |                          |                          |
| _____                                                                                        |                          |                          |

| Estimated at the end of FY 2010                                                              | Yes                      | No                       |
|----------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| f. Internet2.....                                                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| g. National LambdaRail.....                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |
| h. Federal government research network<br>(e.g., Department of Energy ESnet, NASA NREN)..... | <input type="checkbox"/> | <input type="checkbox"/> |
| i. State or regional high-performance network .....                                          | <input type="checkbox"/> | <input type="checkbox"/> |
| j. Other ( <i>Please specify.</i> ).....                                                     | <input type="checkbox"/> | <input type="checkbox"/> |
| _____                                                                                        |                          |                          |
| _____                                                                                        |                          |                          |

## Question 7: Desktop port connections

7. At the end of your FY 2009, what percentage of your institution's desktop ports had hardwire connections at each of the speeds listed below? What percentage do you estimate will be at these speeds at the end of your FY 2010? If your answer is between 0 and 1 percent, please round to 1 percent.

Please report on the *capacity of the ports themselves* and not the speed of the workstations connected to them. Also, *do not include servers* when determining your responses.

| Speed of connection                      | Percentage of desktop ports |                             |
|------------------------------------------|-----------------------------|-----------------------------|
|                                          | At end of FY 2009           | Estimated at end of FY 2010 |
| a. 10 megabits/second or less .....      | <input type="text"/> %      | <input type="text"/> %      |
| b. 100 megabits/second.....              | <input type="text"/> %      | <input type="text"/> %      |
| c. 1 gigabit/second or more .....        | <input type="text"/> %      | <input type="text"/> %      |
| d. Other ( <i>Please specify.</i> )..... | <input type="text"/> %      | <input type="text"/> %      |
| <input type="text"/>                     |                             |                             |
| <b>Total</b>                             | <b>100%</b>                 | <b>100%</b>                 |

## Question 8: Dark fiber

8. At the end of your FY 2009, did your institution own any dark fiber to your institution's internet service provider (ISP) or between your institution's buildings? Do you plan to acquire any dark fiber to your ISP or between your institution's buildings during your FY 2010?

**Dark fiber** is fiber-optic cable that has already been laid but is not being used. Include only fiber that was dark (i.e., unlit) when it was purchased by your institution.

(Mark one "X" for each row.)

| Owned at the end of FY 2009                  | Yes                      | No                       |
|----------------------------------------------|--------------------------|--------------------------|
| a. To your institution's ISP.....            | <input type="checkbox"/> | <input type="checkbox"/> |
| b. Between your institution's buildings..... | <input type="checkbox"/> | <input type="checkbox"/> |
| To be acquired during FY 2010                | Yes                      | No                       |
| c. To your institution's ISP.....            | <input type="checkbox"/> | <input type="checkbox"/> |
| d. Between your institution's buildings..... | <input type="checkbox"/> | <input type="checkbox"/> |

## Question 9: Speed on your network

9. At the end of your FY 2009, what was the *distribution speed* (or backbone speed) that a desktop computer on your network could connect to another computer *on your institution's* network? What distribution speed will your institution have at the end of your FY 2010?

(Mark one "X" for each column.)

| Speed                                   | At end of<br>FY 2009     | Estimated at<br>end of<br>FY 2010 |
|-----------------------------------------|--------------------------|-----------------------------------|
| a. Less than 1.6 megabits/second .....  | <input type="checkbox"/> | <input type="checkbox"/>          |
| b. 1.6 to 9 megabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| c. 10 megabits/second.....              | <input type="checkbox"/> | <input type="checkbox"/>          |
| d. 11 to 45 megabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| e. 46 to 99 megabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| f. 100 megabits/second.....             | <input type="checkbox"/> | <input type="checkbox"/>          |
| g. 101 to 155 megabits/second .....     | <input type="checkbox"/> | <input type="checkbox"/>          |
| h. 156 to 622 megabits/second .....     | <input type="checkbox"/> | <input type="checkbox"/>          |
| i. 623 to 999 megabits/second .....     | <input type="checkbox"/> | <input type="checkbox"/>          |
| j. 1 to 2.4 gigabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| k. 2.5 to 9 gigabits/second .....       | <input type="checkbox"/> | <input type="checkbox"/>          |
| l. 10 gigabits/second .....             | <input type="checkbox"/> | <input type="checkbox"/>          |
| m. More than 10 gigabits/second.....    | <input type="checkbox"/> | <input type="checkbox"/>          |
| n. Other ( <i>Please specify</i> )..... | <input type="checkbox"/> | <input type="checkbox"/>          |
| <input type="text"/>                    |                          |                                   |
| <input type="text"/>                    |                          |                                   |
| <input type="text"/>                    |                          |                                   |





## Question 12: Architectures for centrally administered high-performance computing (HPC) of 1 teraflop or faster

12. At the end of your FY 2009, did your institution provide centrally administered high-performance computing (HPC) of 1 teraflop or faster at peak performance for each type of architecture listed below?

**Centrally administered HPC** is located within a distinct organizational unit with a staff and a budget and is generally available to the campus community. The unit has a stated mission that includes supporting HPC needs of faculty and researchers.

*If some of your high-performance computing systems are slower than 1 teraflop and some are faster, please report only the systems that are 1 teraflop or faster. For example, if you have 2 clusters of ½ teraflop and 1 cluster of 1 teraflop, report information for the 1 teraflop system. Or, if you have 3 clusters of ½ teraflop each, then you would report that you have no high-performance computing with a cluster architecture.*

**Had at end of FY 2009**

*(Mark one "X" for each row.)*

**Centrally administered HPC architectures**

|                                                                                                                                                                                                                                                                            | Yes                      | No                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|
| a. <b>Cluster</b> .....<br>This architecture uses multiple commodity systems with an Ethernet based or high-performance interconnect network to perform as a single system.                                                                                                | <input type="checkbox"/> | <input type="checkbox"/> |
| b. <b>Massively parallel processors (MPP)</b> .....<br>This architecture uses multiple processors within a single system with a high-performance interconnect network. Each processor uses its own memory and operating system.                                            | <input type="checkbox"/> | <input type="checkbox"/> |
| c. <b>Symmetric multiprocessors (SMP)</b> .....<br>This architecture uses multiple processors sharing the same memory and operating system to simultaneously work on individual pieces of a program.                                                                       | <input type="checkbox"/> | <input type="checkbox"/> |
| d. <b>Parallel vector processors (PVP)</b> .....<br>This architecture uses multiple vector processors sharing the same memory and operating system to simultaneously work on individual pieces of a program.                                                               | <input type="checkbox"/> | <input type="checkbox"/> |
| e. <b>Experimental/Emerging architecture</b> <i>(Please describe.)</i> .....<br>This architecture uses technologies not currently in common use for HPC systems (e.g., an accelerator-based architecture).<br><input style="width: 100%;" type="text"/>                    | <input type="checkbox"/> | <input type="checkbox"/> |
| f. <b>Special purpose architecture</b> <i>(Please describe.)</i> .....<br>This custom-designed architecture uses established technology that supports a special purpose system that is dedicated to a single type of problem.<br><input style="width: 100%;" type="text"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| g. <b>Other architecture</b> <i>(Please describe.)</i> .....<br><input style="width: 100%;" type="text"/>                                                                                                                                                                  | <input type="checkbox"/> | <input type="checkbox"/> |

### Question 13: HPC centrally administered resources

13. In Question 12 (a–g), did you report having any centrally administered high-performance computing of 1 teraflop or faster at the end of your FY 2009?

Yes (Check this box and go to Question 14).....

No (Check this box and go to Question 24).....

### Question 14: Centrally administered clusters of 1 teraflop or faster

14. At the end of your FY 2009, what was the peak theoretical performance of a) your *fastest* computing cluster of 1 teraflop or faster, and b) *all* your computing clusters of 1 teraflop or faster (including the fastest one)? Include only clusters that are centrally administered.

**A computing cluster** uses multiple commodity systems with an Ethernet based or high-performance interconnect network to perform as a single system.

*If some of your cluster systems* for high-performance computing are slower than 1 teraflop and some are faster, please report only the systems that are 1 teraflop or faster. For example, if you have one cluster system at ½ teraflop and another at 1 ½ teraflops, report only the one at 1 ½ teraflops.

*If you have only one cluster that is 1 teraflop or faster*, report the same number for rows a and b.

If your institution did not administer any such clusters, check this box and go to Question 15 .....

Number of  
teraflops

a. Fastest cluster of 1 teraflop or faster.....

b. All computing clusters of 1 teraflop or more  
(including the fastest cluster).....

### Question 15: Centrally administered MPP of 1 teraflop or faster

15. At the end of your FY 2009, what was the peak theoretical performance of a) your *fastest* MPP system of 1 teraflop or faster, and b) *all* your MPP systems of 1 teraflop or faster (including the fastest one)? Include only MPP systems that are centrally administered.

**Massively parallel processing (MPP) systems** use multiple processors within a single system with a high-performance interconnect network. Each processor uses its own memory and operating system.

*If some of your MPP systems* for high-performance computing are slower than 1 teraflop and some are faster, please report only the systems that are 1 teraflop or faster. For example, if you have one MPP system at ½ teraflop and another at 1 ½ teraflops, report only the one at 1 ½ teraflops.

*If you have only one system that is 1 teraflop or faster*, report the same number for rows a and b.

If your institution did not administer any such MPP systems, check this box and go to Question 16.....

Number of teraflops

- a. Fastest MPP system of 1 teraflop or faster .....
- b. All MPP systems of 1 teraflop or more (including the fastest system) .....

### Question 16: Centrally administered SMP of 1 teraflop or faster

16. At the end of your FY 2009, what was the peak theoretical performance of a) your *fastest* SMP system of 1 teraflop or faster, and b) *all* your SMP systems of 1 teraflop or faster (including the fastest one)? Include only SMP systems that are centrally administered.

**Symmetric multiprocessing (SMP) systems** use multiple processors sharing the same memory and operating system to simultaneously work on individual pieces of a program.

*If some of your SMP systems* for high-performance computing are slower than 1 teraflop and some are faster, please report only the systems that are 1 teraflop or faster. For example, if you have one SMP system at ½ teraflop and another at 1 ½ teraflops, report only the one at 1 ½ teraflops.

*If you have only one system that is 1 teraflop or faster*, report the same number for rows a and b.

If your institution did not administer any such SMP systems, check this box and go to Question 17.....

Number of teraflops

- a. Fastest SMP system of 1 teraflop or faster .....
- b. All SMP systems of 1 teraflop or more (including the fastest system) .....

**Question 17: Centrally administered experimental/emerging computing systems of 1 teraflop or faster**

17. At the end of your FY 2009, how many experimental/emerging computing systems of 1 teraflop or faster did your institution administer? Include only systems that are centrally administered.

**Experimental/Emerging computing systems** use technologies not currently in common use for HPC systems (e.g., an accelerator-based architecture).

If your institution did not administer any such systems, check this box and go to Question 18 .....

Number of experimental/emerging computing systems of 1 teraflop or faster .....

**Question 18: Centrally administered special purpose computing systems of 1 teraflop or faster**

18. At the end of your FY 2009, how many special purpose computing systems of 1 teraflop or faster did your institution administer? Include only systems that are centrally administered.

**Special purpose computing systems** use a custom-designed architecture using established technology that supports a special purpose system that is dedicated to a single problem.

If your institution did not administer any such systems, check this box and go to Question 19 .....

Number of special purpose computing systems of 1 teraflop or faster .....

**Question 19: External users of centrally administered HPC of 1 teraflop or faster**

19. During your FY 2009, which types of external users listed below used any of your institution's centrally administered HPC of 1 teraflop or faster?

**Used HPC during  
FY 2009**

*(Mark one "X" for each row.)*

| <b>Type of external user</b>                                                                                                                              | Yes                      | No                       | Uncertain                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|
| a. <b>Colleges and universities</b> .....<br>Include public and private academic institutions and systems.                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b. <b>Governments</b> .....<br>Include local, state, and regional jurisdictions.                                                                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c. <b>Non-profit organizations</b> .....<br>Include legal entities chartered to serve the public interest and that are exempt from most federal taxation. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| d. <b>Industry</b> .....<br>Include for-profit companies, either publicly or privately held.                                                              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| e. <b>Other</b> <i>(Please describe.)</i> .....                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <input style="width: 400px; height: 15px;" type="text"/>                                                                                                  |                          |                          |                          |
| <input style="width: 400px; height: 15px;" type="text"/>                                                                                                  |                          |                          |                          |

**Question 20: Usable online storage for centrally administered HPC of 1 teraflop or faster**

20. At the end of your FY 2009, what was the total of the **usable** online storage available for centrally administered HPC?

**Usable storage** is the amount of space for data storage that is available for use after the space overhead required by file systems and applicable RAID (redundant array of independent disks) configurations is removed.

**Online storage** includes all storage providing immediate access for files and data from your HPC systems (of at least 1 teraflop). Storage can be either locally available to specific HPC systems or made available via the network. For example, storage may be available via SAN (storage area network) or NAS (network attached storage) environments.

(Mark one "X")

- a. None .....
- b. Less than 1 terabyte .....
- c. 1 to 5 terabytes.....
- d. 6 to 10 terabytes.....
- e. 11 to 25 terabytes.....
- f. 26 to 50 terabytes.....
- g. 51 to 100 terabytes.....
- h. 101 to 250 terabytes.....
- i. 251 to 500 terabytes.....
- j. 501 to 1,000 terabytes.....
- k. 1,001 or more terabytes (*Please specify.*).....
- l. Uncertain .....

## Question 21: Usable shared storage for centrally administered HPC of 1 teraflop or faster

21. At the end of your FY 2009, how much of the usable online storage reported in Question 20 was shared storage?

**Usable storage** is the amount of space for data storage that is available for use after the space overhead required by file systems and applicable RAID (redundant array of independent disks) configurations is removed.

**Online storage** includes all storage providing immediate access for files and data from your HPC systems (of at least 1 teraflop). Storage can be either locally available to specific HPC systems or made available via the network. For example, storage may be available via SAN (storage area network) or NAS (network attached storage) environments.

**Shared storage** includes the portion of online storage that is available simultaneously to multiple HPC systems (of at least 1 teraflop) via a network making use of SAN, NAS, file system mounting, or similar technologies.

(Mark one "X")

- a. None .....
- b. Less than 1 terabyte .....
- c. 1 to 5 terabytes.....
- d. 6 to 10 terabytes.....
- e. 11 to 25 terabytes.....
- f. 26 to 50 terabytes.....
- g. 51 to 100 terabytes.....
- h. 101 to 250 terabytes.....
- i. 251 to 500 terabytes.....
- j. 501 to 1,000 terabytes.....
- k. 1,001 or more terabytes (*Please specify.*).....
- l. Uncertain .....

**Question 22: Archival storage for centrally administered HPC of 1 teraflop or faster**

22. At the end of your FY 2009, what was the total archival storage available specifically for centrally administered HPC?  
*Do not* include backup storage.

**Archival storage** is off-line, typically long-term storage for files and data that does not support immediate access from your HPC resources.

(Mark one "X")

- a. None .....
- b. Less than 100 terabytes.....
- c. 101 to 250 terabytes.....
- d. 251 to 500 terabytes.....
- e. 501 to 750 terabytes.....
- f. 751 to 1,000 terabytes.....
- g. 1,001 to 5,000 terabytes.....
- h. 5,001 to 10,000 terabytes.....
- i. 10,001 or more terabytes (*Please specify.*).....   
\_\_\_\_\_
- j. Uncertain .....

**Question 23: Conditioned machine room space for centrally administered HPC of 1 teraflop or faster**

23. At the end of your FY 2009, what was the total net assignable square feet (NASF) of conditioned machine room space for all centrally administered HPC at your institution?

**Net assignable square feet (NASF)** is the sum of all areas on all floors of a building assigned to, or available to be assigned to, an occupant for a specific use, such as research or instruction. NASF is measured from the inside faces of walls.

**Conditioned machine rooms** are specifically designed to house computing systems and are engineered to keep processors at a cool temperature so they can run efficiently and effectively.

Conditioned machine room space .....  NASF





***Thank you. This is the end of Part 2. Please submit this part of the survey according to the arrangements you made with your institutional coordinator (named on the label on the front cover of the survey questionnaire).***

