The Higher Education Research and Development Survey (HERD) is the primary source of information on R&D expenditures at U.S. colleges and universities. The annual survey collects information on R&D expenditures by field of research and source of funds.

### Examples of Disciplines: Computer and Information Sciences and Engineering Fields of R&D

#### A. Computer and Information Sciences
- Artificial intelligence
- Data processing
- Computer software and media applications
- Information technology
- Computer and information technology administration and management
- Computer systems analysis
- Computer systems networking and telecommunications
- Computer science

#### B. Engineering

1. **Aerospace, Aeronautical, and Astronautical Engineering**
   - Aerodynamics
   - Aerospace engineering
   - Space technology

2. **Bioengineering and Biomedical Engineering**
   - Biological and biosystems engineering
   - Biomaterials engineering
   - Biomedical technology
   - Medical engineering

3. **Chemical Engineering**
   - Biochemical engineering
   - Chemical and biomolecular engineering
   - Engineering chemistry
   - Paper science
   - Petroleum refining process
   - Polymer, plastics engineering

4. **Civil Engineering**
   - Architectural engineering
   - Construction engineering
   - Engineering management, administration
   - Environmental, environmental health engineering
   - Geotechnical and geoenvironmental engineering
   - Sanitary engineering
   - Structural engineering
   - Surveying engineering
   - Transportation and highway engineering
   - Water resources engineering

5. **Electrical, Electronic, and Communications Engineering**
   - Communications engineering
   - Computer engineering
   - Computer hardware engineering
   - Computer software engineering
   - Electrical and electronics engineering
   - Laser and optical engineering
   - Power
   - Telecommunications engineering

6. **Industrial and Manufacturing Engineering**
   - Geophysical, geological engineering
   - Materials engineering
   - Metallurgical engineering
   - Mining and mineral engineering
   - Textile sciences and engineering
   - Welding

9. **Other Engineering**
   - Agricultural engineering
   - Engineering design
   - Engineering mechanics, physics, and science
   - Engineering physics
   - Engineering science
   - Forest engineering
   - Nanotechnology
   - Naval architecture and marine engineering
   - Nuclear engineering
   - Ocean engineering
   - Petroleum engineering
   - Other engineering fields that cannot be classified using the fields listed above

### Examples of Disciplines: Geosciences, Atmospheric Sciences, and Ocean Sciences Fields of R&D

#### C. Geosciences, Atmospheric Sciences, and Ocean Sciences

1. **Atmospheric Science and Meteorology**
   - Aeronomy
   - Atmospheric chemistry and climatology
   - Atmospheric physics and dynamics
   - Extraterrestrial atmospheres
   - Meteorology
   - Solar
   - Weather modification

2. **Geological and Earth Sciences**
   - Earth and planetary sciences
   - Geochrometry
   - Geodesy and gravity
   - Geology
   - Geomagnetism
   - Geophysics and seismology
   - Hydrology and water resources
   - Mineralogy and petrology
   - Paleomagnetism
   - Paleontology
   - Physical geography
   - Stratigraphy and sedimentation
   - Surveying

3. **Ocean Sciences and Marine Sciences**
   - Biological oceanography
   - Geological oceanography
   - Marine biology
   - Marine oceanography
   - Marine sciences
   - Oceanography, chemical and physical

4. **Other Geosciences, Atmospheric Sciences, and Ocean Sciences**
   - Other fields that cannot be classified using the fields listed above
### Examples of Disciplines: Life Sciences Fields of R&D

<table>
<thead>
<tr>
<th>D. Life Sciences</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Agricultural Sciences</strong></td>
<td></td>
</tr>
<tr>
<td>Agricultural business and management</td>
<td>Agricultural chemistry</td>
</tr>
</tbody>
</table>

| **2. Biological and Biomedical Sciences** |  |
| Allergies and immunology | Biochemistry, biophysics, and molecular biology | Biogeography | Biology and biomedical sciences, general |  |

| **3. Health Sciences** |  |
| Advanced, graduate dentistry and oral sciences | Allied health and medical assisting services | Bioethics, medical ethics | Clinical medicine research | Clinical/medical laboratory science/research and allied professions |  |

### Examples of Disciplines: Mathematics and Statistics, Physical Sciences, and Psychology Fields of R&D

<table>
<thead>
<tr>
<th>E. Mathematics and Statistics</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applied mathematics</strong></td>
<td>Mathematics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>F. Physical Sciences</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Astronomy and Astrophysics</strong></td>
<td></td>
</tr>
<tr>
<td>Astronomy</td>
<td>Astrophysics</td>
</tr>
<tr>
<td><strong>2. Chemistry</strong></td>
<td></td>
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<tr>
<td>(except Biochemistry—report in Biological and Biomedical Sciences)</td>
<td>Analytical chemistry</td>
</tr>
<tr>
<td><strong>3. Materials Science</strong></td>
<td></td>
</tr>
<tr>
<td>Materials chemistry</td>
<td>Materials science</td>
</tr>
<tr>
<td><strong>4. Physics</strong></td>
<td></td>
</tr>
<tr>
<td>Acoustics</td>
<td>Atomic, molecular physics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>G. Psychology</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical psychology</td>
<td>Counseling and applied psychology</td>
</tr>
</tbody>
</table>
### Examples of Disciplines: Social Sciences and Other Sciences Fields of R&D

#### H. Social Sciences

1. **Anthropology**
   - Cultural anthropology
   - Medical anthropology
   - Physical and biological anthropology

2. **Economics**
   - Applied economics
   - Business development
   - Development economics and international development
   - Econometrics and quantitative economics
   - Industrial economics
   - International economics
   - Labor economics
   - Managerial economics
   - Public finance and fiscal policy

3. **Political Science and Government**
   - Comparative government
   - Government
   - Legal systems
   - Political economy
   - Political science
   - Political theory

4. **Sociology, Demography, and Population Studies**
   - Comparative and historical sociology
   - Complex organizations
   - Cultural and social structure
   - Demography and population studies
   - Group interactions
   - Rural sociology
   - Social problems and welfare theory
   - Sociology

5. **Other Social Sciences**
   - Archaeology
   - Area, ethnic, cultural, gender, and group studies
   - Cartography
   - Criminal science and corrections
   - Criminology
   - Geography
   - Gerontology, social sciences
   - International relations and national security studies
   - Linguistics
   - Public policy analysis
   - Regional studies
   - Urban studies, affairs

#### I. Other Sciences

Use this category for R&D that involves at least one S&E field (rows A–H) if it is impossible to report multidisciplinary or interdisciplinary R&D expenditures in specific fields.

### Examples of Disciplines: Non-S&E Fields of R&D

#### J. Non-S&E Fields

1. **Business**
   - Management and Business Administration
   - Business administration
   - Business management
   - Business, managerial economics
   - Management information systems and services
   - Marketing management and research

2. **Communication and Communications Technologies**
   - Communication and media studies
   - Communications technologies
   - Journalism
   - Radio, television, and digital communication

3. **Education**
   - Education administration and supervision
   - Education research
   - Teacher education, specific levels and methods
   - Teaching fields

4. **Humanities**
   - English language and literature, letters
   - Foreign languages and literatures
   - History, including history and philosophy of science and technology
   - Humanities, general
   - Liberal arts and sciences
   - Philosophy and religious studies
   - Theology and religious vocations

5. **Law**
   - Law
   - Legal studies

6. **Social Work**
   - (no specific examples)

7. **Visual and Performing Arts**
   - Drama, theatre arts and stagecraft
   - Film, video, and photographic arts
   - Fine and studio arts
   - Music

8. **Other Non-S&E Fields**
   - Architecture
   - City, urban, community, and regional planning
   - Family, consumer sciences and human sciences
   - Foods, nutrition, and wellness studies
   - Landscape architecture
   - Library science
   - Military technology and applied science
   - Parks, sports, recreation, fitness and fitness
   - Public administration and public affairs
   - Other non-S&E fields that cannot be classified using the fields listed above

   Also, use this category for R&D that involves multiple non-S&E fields if it is impossible to report multidisciplinary or interdisciplinary R&D expenditures in specific fields.