

# UMass Research & Expenditures Report

**FY 2021**

Office of the President, Institutional Research



University of Massachusetts

Amherst • Boston • Dartmouth • Lowell • Medical School • UMassOnline

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# Key Highlights



**\$752M**

UMass Total R&D Expenditures FY 2021



**9.4%**

1-Year Change in UMass Total R&D Expenditures (vs. FY 2020)



**18.9%**

5-Year Change in UMass Total R&D Expenditures (vs. FY 2016)



**#3\***

State Ranking among MA universities in R&D Expenditures FY 2020



**\$704M**

UMass STEM R&D Expenditures FY 2021




**10.7%**

1-Year Change in UMass STEM R&D Expenditures (vs. FY 2020)



**59%**

Percent of all R&D Expenditures from Life Sciences FY 2021



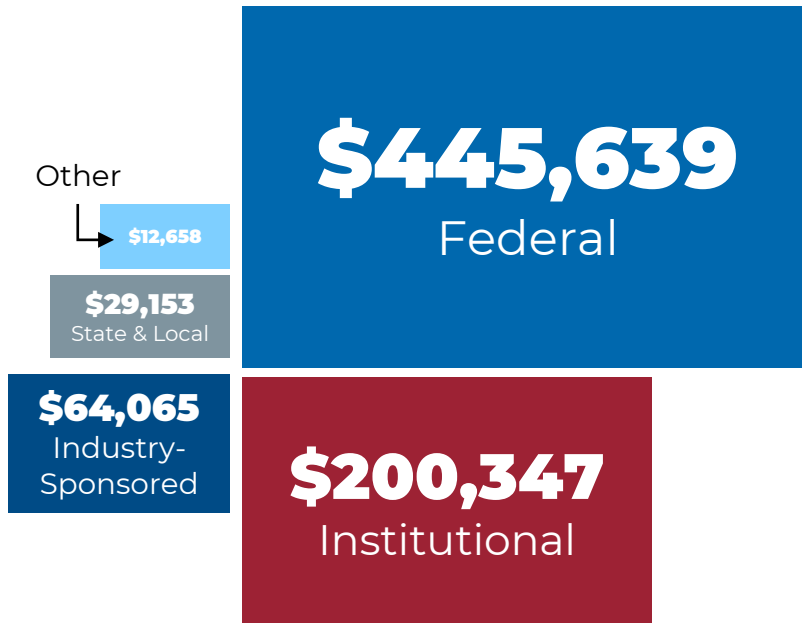
**67%\***

Percent of Total MA R&D Expenditures from Harvard, MIT, & UMass FY 2020

\* R&D expenditures data for state FY 2021 is currently not available.

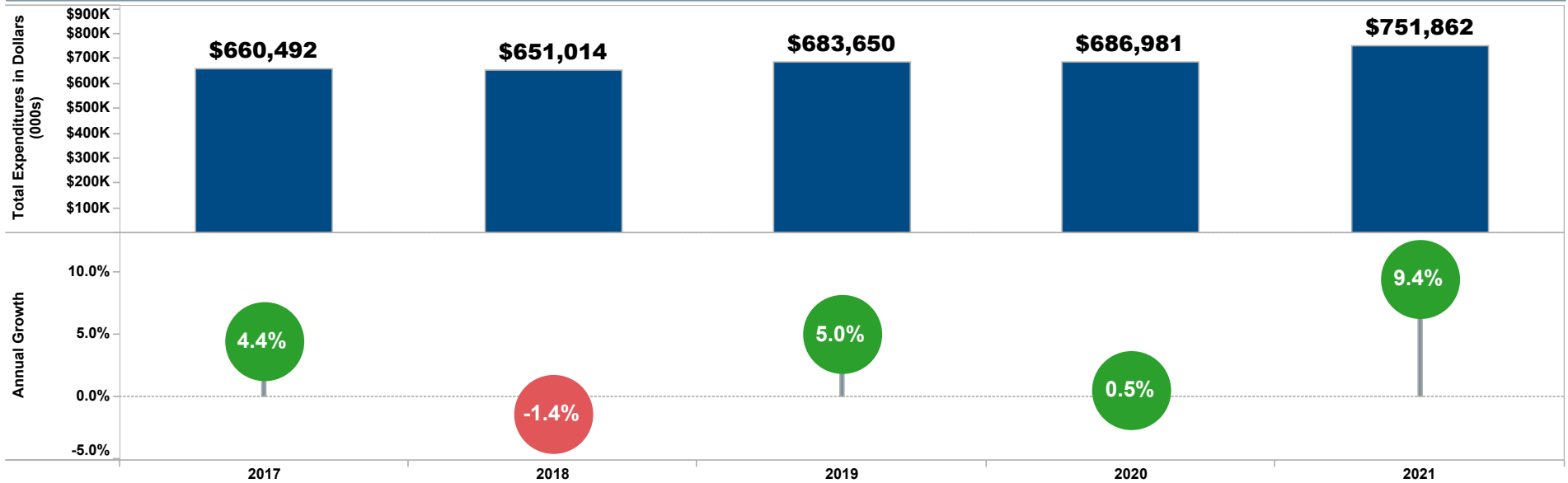
# Key Highlights

## UMASS SOURCE OF FUNDING FY 2021 (IN THOUSANDS)



| Source             | 1-Year % Change (vs. FY 2020) | 5-Year % Change (vs. FY 2016) |
|--------------------|-------------------------------|-------------------------------|
| Federal            | ▲16%                          | ▲26%                          |
| State & Local      | ▲11%                          | ▼25%                          |
| Industry Sponsored | ▼3%                           | ▲7%                           |
| Institutional      | ▲1%                           | ▲16%                          |
| Other              | ▲17%                          | ▲95%                          |

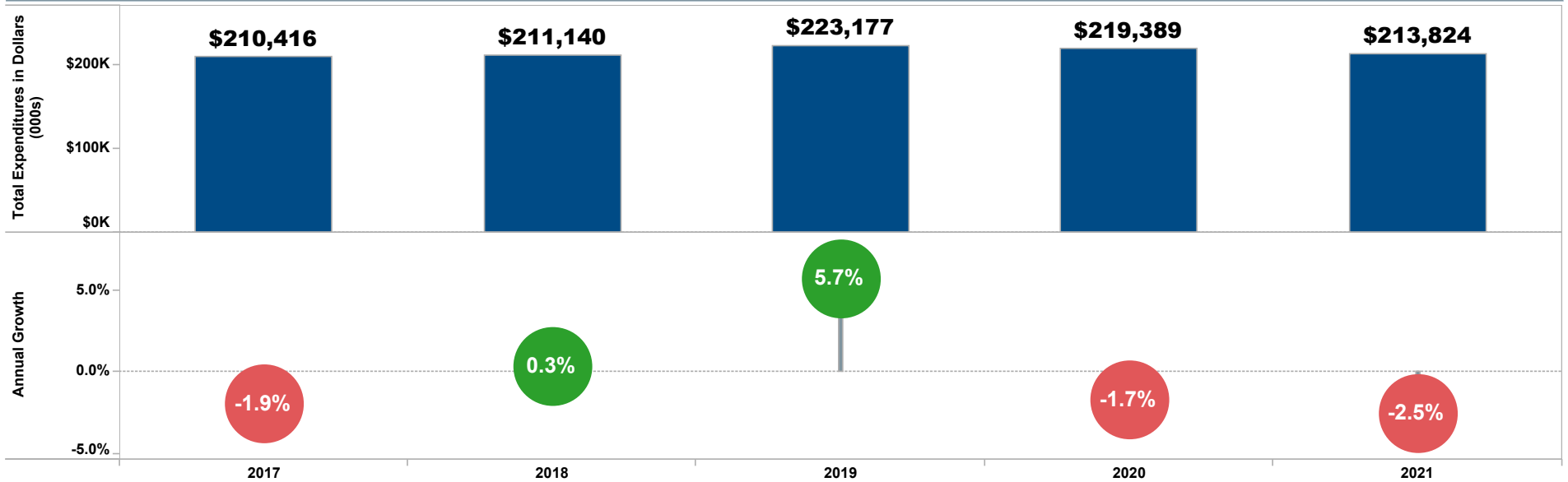
### UMass System Total R&D Expenditures FY 2017 - FY 2021



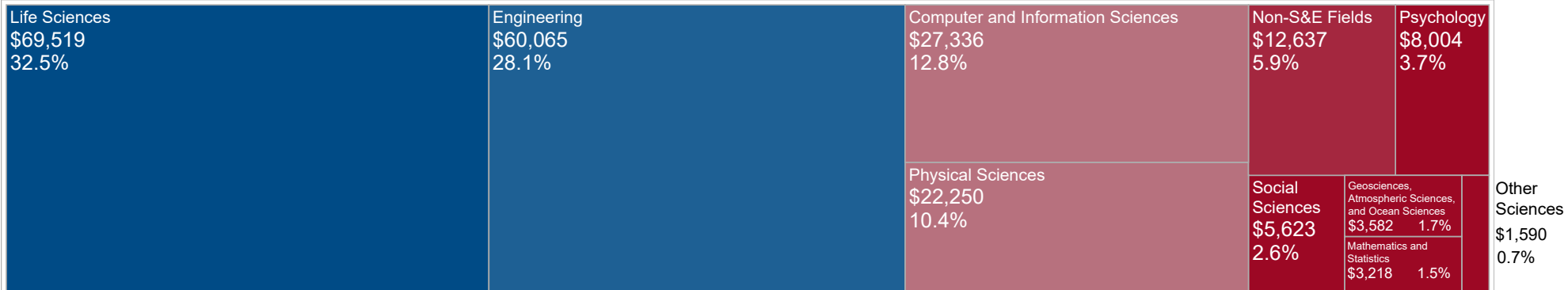
### UMass System Total R&D Expenditure by R&D Field Group FY 2021

|                                     |                                    |   |                                     |   |
|-------------------------------------|------------------------------------|---|-------------------------------------|---|
| Life Sciences<br>\$440,515<br>58.6% | Engineering<br>\$105,719<br>14.1%  | Physical Sciences<br>\$47,382<br>6.3%                 | Social Sciences<br>\$26,369<br>3.5% | Geosciences, Atmospheric Sciences, and Ocean Sciences<br>\$21,352<br>2.8% |
|                                     | Non-S&E Fields<br>\$48,065<br>6.4% | Computer and Information Sciences<br>\$39,183<br>5.2% | Psychology<br>\$14,039<br>1.9%      | Mathematics and Statistics<br>\$5,955<br>0.8%                             |
|                                     |                                    |   |                                     | Other<br>\$3,293<br>0.4%  |
|                                     |                                    |   |                                     |   |
|                                     |                                    |   |                                     |   |

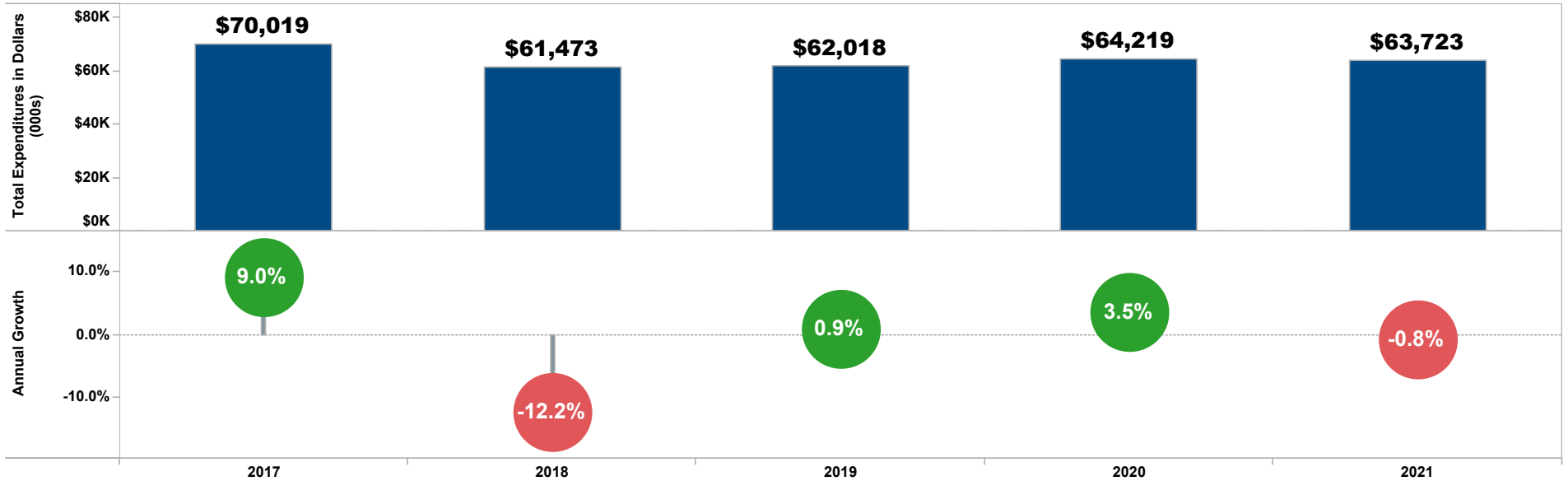
### Amherst Total R&D Expenditures FY 2017 - FY 2021



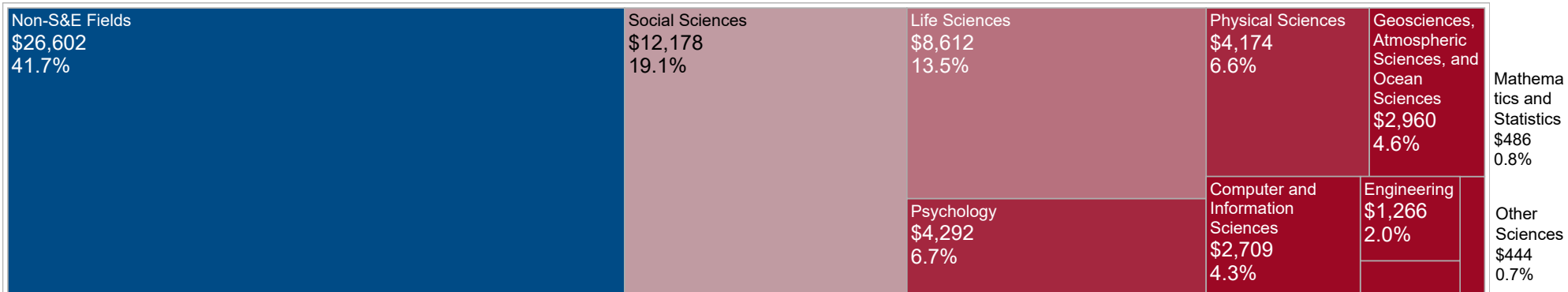
### Amherst Total R&D Expenditure by R&D Field Group FY 2021



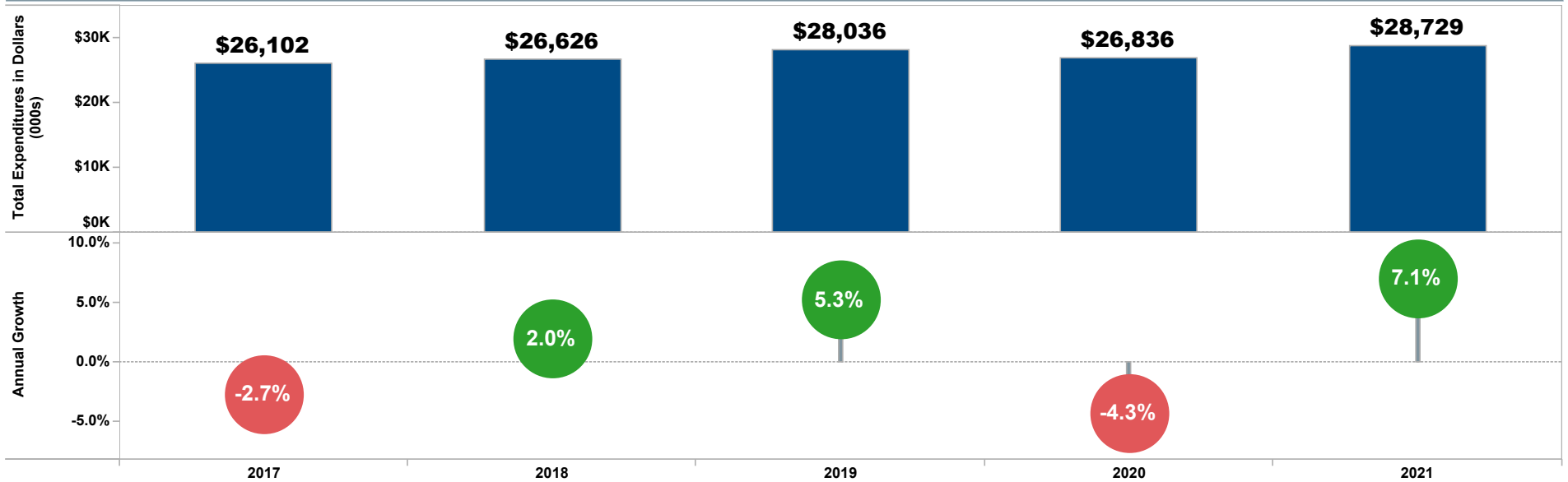
### Boston Total R&D Expenditures FY 2017 - FY 2021



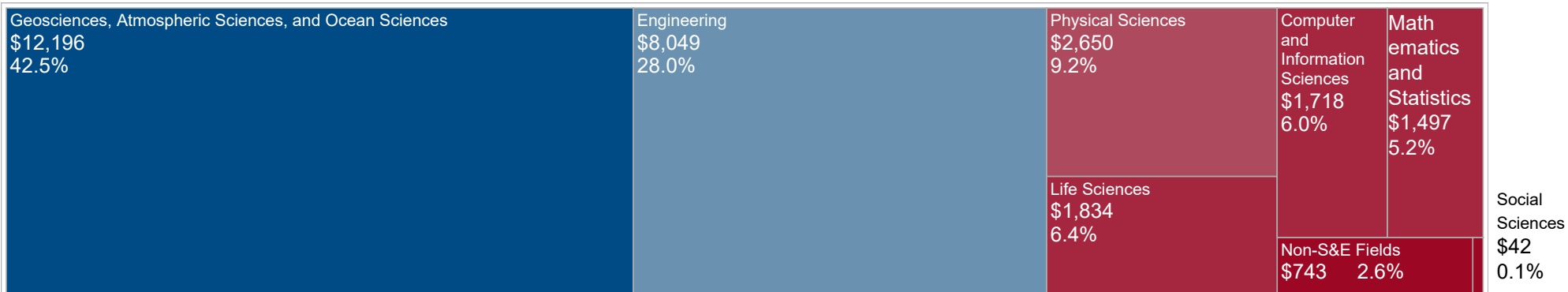
### Boston Total R&D Expenditure by R&D Field Group FY 2021



### Dartmouth Total R&D Expenditures FY 2017 - FY 2021

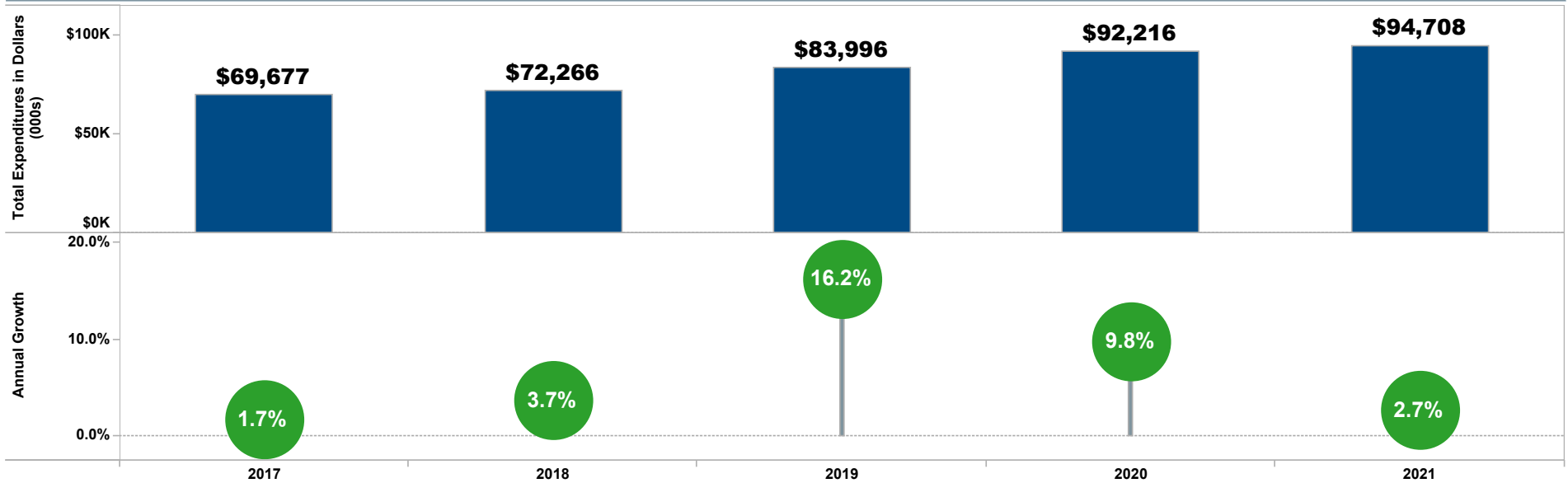


### Dartmouth Total R&D Expenditure by R&D Field Group FY 2021

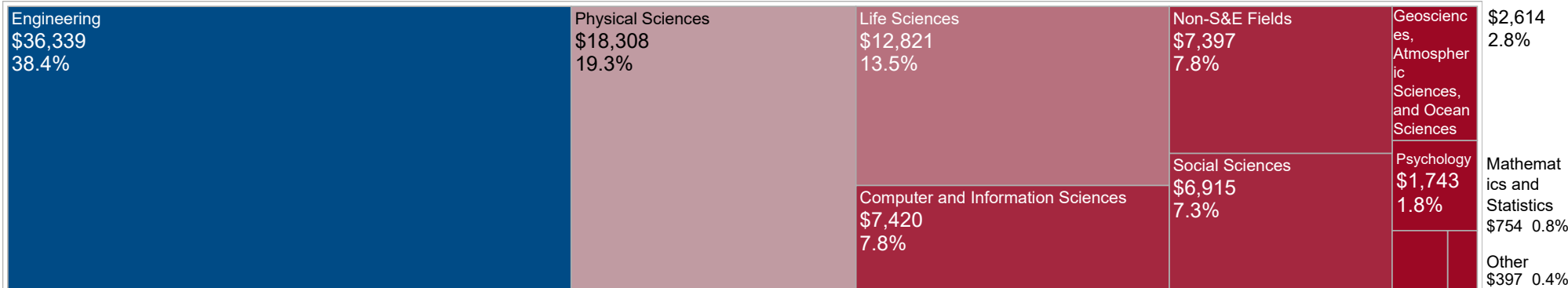




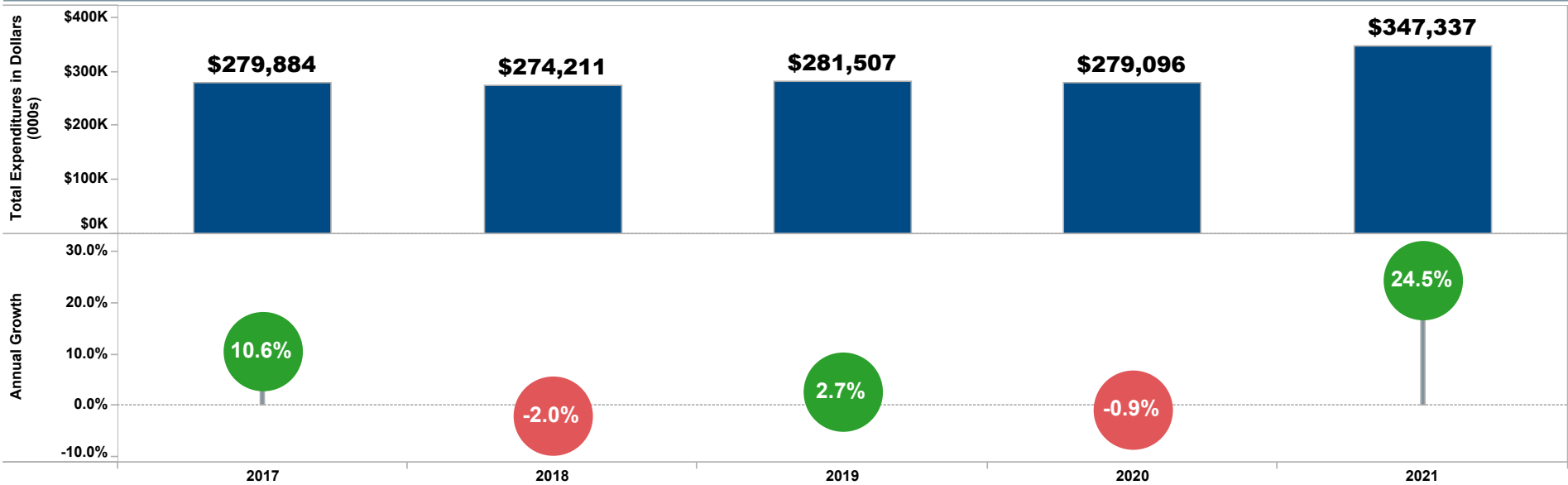
### Lowell Total R&D Expenditures FY 2017 - FY 2021



### Lowell Total R&D Expenditure by R&D Field Group FY 2021



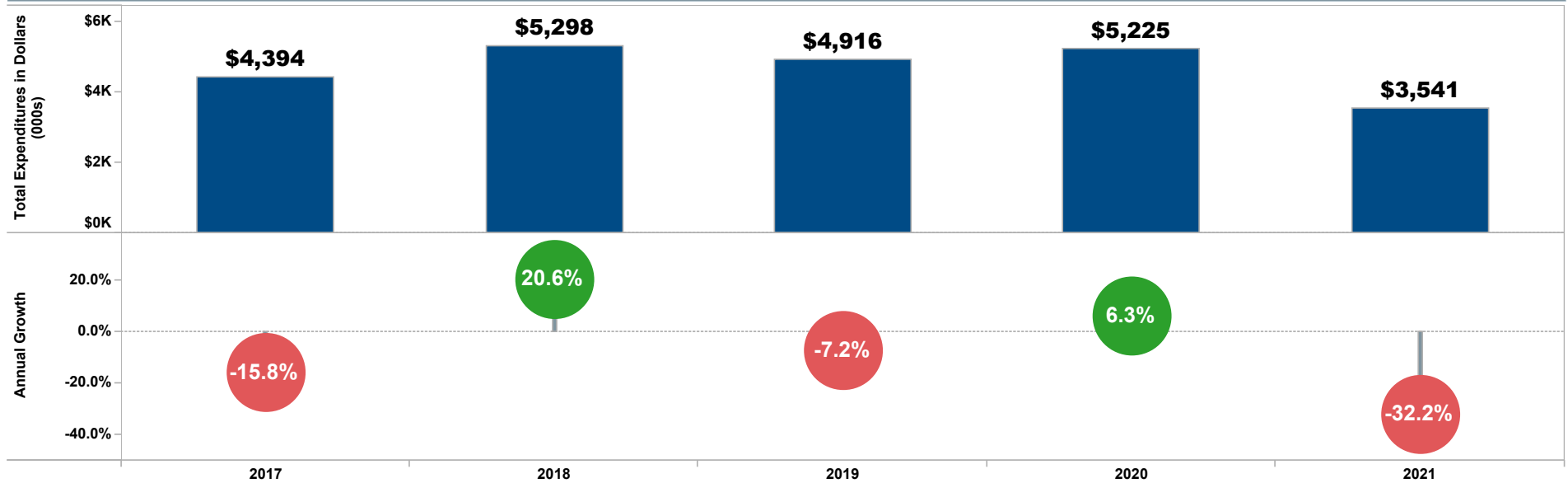
### Medical School Total R&D Expenditures FY 2017 - FY 2021



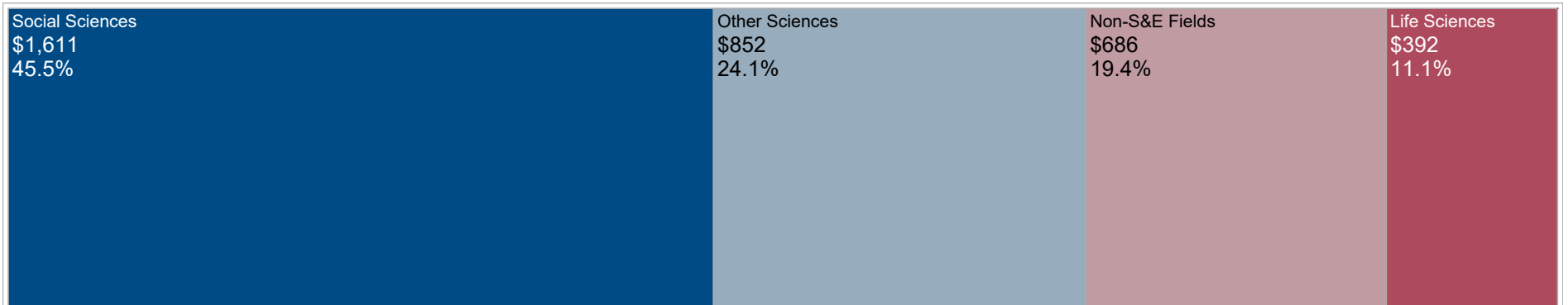
### Medical School Total R&D Expenditure by R&D Field Group FY 2021

Life Sciences  
 \$347,337  
 100.0%

### Presidents Office Total R&D Expenditures FY 2017 - FY 2021



### Presidents Office Total R&D Expenditure by R&D Field Group FY 2021



**UMass System - FY 2021 Total Expenditures by Field (Federal and Non-Federal)**

| Field Category                                | Field Group  | Field   | Federal   | Non Federal      | Grand Total      |
|---|--|---|---|------------------|------------------|
| <b>Grand Total</b>                            |  |   | <b>\$445,639</b>                                | <b>\$306,223</b> | <b>\$751,862</b> |
| <b>SCI &amp; ENG FIELDS</b>                   | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0   | \$0              | \$0              |
|   |  | Bioengineering and Biomedical Engineering                   | \$7,114   | \$3,891          | \$11,005         |
|   |  | Chemical Engineering  | \$17,170  | \$15,334         | \$32,504         |
|   |  | Civil Engineering   | \$8,391   | \$9,442          | \$17,833         |
|   |  | Electrical, Electronic, and Communications Engineering      | \$9,161   | \$11,353         | \$20,514         |
|   |  | Industrial and Manufacturing Engineering                    | \$0   | \$0              | \$0              |
|   |  | Mechanical Engineering                                      | \$11,431  | \$9,504          | \$20,935         |
|   |  | Metallurgical and Materials Engineering                     | \$0   | \$0              | \$0              |
|   |  | Other Engineering   | \$612   | \$2,316          | \$2,928          |
|   | <b>Physical Sciences</b>                                     | Astronomy and Astrophysics                                  | \$3,152   | \$964            | \$4,116          |
|   |  | Chemistry   | \$10,262  | \$10,061         | \$20,323         |
|   |  | Materials Science   | \$0   | \$0              | \$0              |
|   |  | Other Physical Sciences                                     | \$0   | \$0              | \$0              |
|   |  | Physics   | \$15,593  | \$7,350          | \$22,943         |
|   | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$947   | \$206            | \$1,153          |
|   |  | Geological and Earth Sciences                               | \$3,557   | \$2,665          | \$6,222          |
|   |  | Ocean Sciences and Marine Sciences                          | \$4,426   | \$9,551          | \$13,977         |
|   |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0   | \$0              | \$0              |
|   | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$2,800   | \$3,155          | \$5,955          |
|   | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$20,626  | \$18,557         | \$39,183         |
|   | <b>Life Sciences</b>   | Agricultural  | \$10,745  | \$6,436          | \$17,181         |
|   |  | Biological and Biomedical Sciences                          | \$122,702                                       | \$60,028         | \$182,730        |
|   |  | Health Sciences   | \$74,441  | \$46,240         | \$120,681        |
|   |  | Natural Resources and Conservation                          | \$3,777   | \$4,842          | \$8,619          |
|   |  | Other Life Sciences   | \$85,849  | \$25,455         | \$111,304        |
|   | <b>Psychology</b>  | Psychology  | \$8,685   | \$5,354          | \$14,039         |
|   | <b>Social Sciences</b>                                       | Anthropology  | \$368   | \$841            | \$1,209          |
|   |  | Economics   | \$396   | \$1,491          | \$1,887          |
|   |  | Other Social Sciences                                       | \$2,427   | \$5,952          | \$8,379          |
|   |  | Political Science and Government                            | \$322   | \$4,037          | \$4,359          |
|   |  | Sociology, Demography, and Population Studies               | \$5,561   | \$4,974          | \$10,535         |
|   | <b>Other Sciences</b>  | Other Sciences  | \$310   | \$2,973          | \$3,283          |
|   | <b>NON-SCI &amp; ENG FIELDS</b>                              | <b>Non-S&amp;E Fields</b>                                   | Business Management and Business Administration | \$410            | \$5,010          |
| Communication and Communications Technologies |  |   | \$29  | \$214            | \$243            |
| Education                                     |  |   | \$12,042  | \$19,690         | \$31,732         |
| Humanities                                    |  |   | \$324   | \$3,978          | \$4,302          |
| Law   |  |   | \$27  | \$14             | \$41             |
| Other Non-Science and Engin.                  |  |   | \$1,812   | \$3,272          | \$5,084          |
| Social Work                                   |  |   | \$0   | \$168            | \$168            |
| Visual and Performing Arts                    |  |   | \$170   | \$905            | \$1,075          |

**Amherst - FY 2021 Total Expenditures by Field (Federal and Non-Federal)**

| Field Category              | Field Group  | Field   | Federal   | Non Federal     | Grand Total      |         |
|-----------------------------|--|---|---|-----------------|------------------|---------|
| <b>Grand Total</b>          |  |   | <b>\$116,349</b>                                | <b>\$97,475</b> | <b>\$213,824</b> |         |
| <b>SCI &amp; ENG FIELDS</b> | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0   | \$0             | \$0              |         |
|                             |  | Bioengineering and Biomedical Engineering                   | \$3,017   | \$1,831         | \$4,848          |         |
|                             |  | Chemical Engineering  | \$12,630  | \$8,470         | \$21,100         |         |
|                             |  | Civil Engineering   | \$6,766   | \$7,138         | \$13,904         |         |
|                             |  | Electrical, Electronic, and Communications Engineering      | \$4,768   | \$5,019         | \$9,787          |         |
|                             |  | Industrial and Manufacturing Engineering                    | \$0   | \$0             | \$0              |         |
|                             |  | Mechanical Engineering                                      | \$4,451   | \$3,701         | \$8,152          |         |
|                             |  | Metallurgical and Materials Engineering                     | \$0   | \$0             | \$0              |         |
|                             |  | Other Engineering   | \$431   | \$1,843         | \$2,274          |         |
|                             |  | <b>Physical Sciences</b>                                    | Astronomy and Astrophysics                      | \$3,152         | \$964            | \$4,116 |
|                             | Chemistry  |   | \$6,635   | \$3,504         | \$10,139         |         |
|                             | Materials Science  |   | \$0   | \$0             | \$0              |         |
|                             | Other Physical Sciences                                      |   | \$0   | \$0             | \$0              |         |
|                             | Physics  |   | \$5,267   | \$2,728         | \$7,995          |         |
|                             | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$0   | \$0             | \$0              |         |
|                             |  | Geological and Earth Sciences                               | \$2,117   | \$1,465         | \$3,582          |         |
|                             |  | Ocean Sciences and Marine Sciences                          | \$0   | \$0             | \$0              |         |
|                             |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0   | \$0             | \$0              |         |
|                             | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$2,290   | \$928           | \$3,218          |         |
|                             | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$15,410  | \$11,926        | \$27,336         |         |
|                             | <b>Life Sciences</b>   | Agricultural  | \$10,740  | \$6,435         | \$17,175         |         |
|                             |  | Biological and Biomedical Sciences                          | \$16,284  | \$9,214         | \$25,498         |         |
|                             |  | Health Sciences   | \$6,288   | \$3,665         | \$9,953          |         |
|                             |  | Natural Resources and Conservation                          | \$3,663   | \$3,585         | \$7,248          |         |
|                             |  | Other Life Sciences   | \$291   | \$9,354         | \$9,645          |         |
|                             | <b>Psychology</b>  | Psychology  | \$5,747   | \$2,257         | \$8,004          |         |
|                             | <b>Social Sciences</b>                                       | Anthropology  | \$138   | \$411           | \$549            |         |
|                             |  | Economics   | \$396   | \$1,059         | \$1,455          |         |
|                             |  | Other Social Sciences                                       | \$307   | \$1,497         | \$1,804          |         |
|                             |  | Political Science and Government                            | \$169   | \$349           | \$518            |         |
|                             |  | Sociology, Demography, and Population Studies               | \$879   | \$418           | \$1,297          |         |
|                             | <b>Other Sciences</b>  | Other Sciences  | \$310   | \$1,280         | \$1,590          |         |
|                             | <b>NON-SCI &amp; ENG FIELDS</b>                              | <b>Non-S&amp;E Fields</b>                                   | Business Management and Business Administration | \$314           | \$1,149          | \$1,463 |
|                             |  |   | Communication and Communications Technologies   | \$29            | \$194            | \$223   |
|                             |  |   | Education                                       | \$2,061         | \$1,953          | \$4,014 |
|                             |  |   | Humanities                                      | \$16            | \$1,608          | \$1,624 |
|                             |  |   | Law   | \$27            | \$12             | \$39    |
|                             |  |   | Other Non-Science and Engin.                    | \$1,756         | \$3,170          | \$4,926 |
|                             |  |   | Social Work                                     | \$0             | \$0              | \$0     |
|                             |  |   | Visual and Performing Arts                      | \$0             | \$348            | \$348   |

### Boston - FY 2021 Total Expenditures by Field (Federal and Non-Federal)

| Field Category                                | Field Group  | Field   | Federal   | Non Federal     | Grand Total     |
|---|--|---|---|-----------------|-----------------|
| <b>Grand Total</b>                            |  |   | <b>\$23,673</b>                                 | <b>\$40,050</b> | <b>\$63,723</b> |
| <b>SCI &amp; ENG FIELDS</b>                   | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0   | \$0             | \$0             |
|   |  | Bioengineering and Biomedical Engineering                   | \$63  | \$0             | \$63            |
|   |  | Chemical Engineering  | \$0   | \$0             | \$0             |
|   |  | Civil Engineering   | \$0   | \$0             | \$0             |
|   |  | Electrical, Electronic, and Communications Engineering      | \$435   | \$472           | \$907           |
|   |  | Industrial and Manufacturing Engineering                    | \$0   | \$0             | \$0             |
|   |  | Mechanical Engineering                                      | \$0   | \$0             | \$0             |
|   |  | Metallurgical and Materials Engineering                     | \$0   | \$0             | \$0             |
|   |  | Other Engineering   | \$0   | \$296           | \$296           |
|   | <b>Physical Sciences</b>                                     | Astronomy and Astrophysics                                  | \$0   | \$0             | \$0             |
|   |  | Chemistry   | \$1,796   | \$899           | \$2,695         |
|   |  | Materials Science   | \$0   | \$0             | \$0             |
|   |  | Other Physical Sciences                                     | \$0   | \$0             | \$0             |
|   |  | Physics   | \$624   | \$855           | \$1,479         |
|   | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$0   | \$13            | \$13            |
|   |  | Geological and Earth Sciences                               | \$598   | \$568           | \$1,166         |
|   |  | Ocean Sciences and Marine Sciences                          | \$386   | \$1,395         | \$1,781         |
|   |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0   | \$0             | \$0             |
|   | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$70  | \$416           | \$486           |
|   | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$716   | \$1,993         | \$2,709         |
|   | <b>Life Sciences</b>   | Agricultural  | \$5   | \$1             | \$6             |
|   |  | Biological and Biomedical Sciences                          | \$2,827   | \$1,611         | \$4,438         |
|   |  | Health Sciences   | \$2,104   | \$957           | \$3,061         |
|   |  | Natural Resources and Conservation                          | \$114   | \$993           | \$1,107         |
|   |  | Other Life Sciences   | \$0   | \$0             | \$0             |
|   | <b>Psychology</b>  | Psychology  | \$2,031   | \$2,261         | \$4,292         |
|   | <b>Social Sciences</b>                                       | Anthropology  | \$230   | \$418           | \$648           |
|   |  | Economics   | \$0   | \$106           | \$106           |
|   |  | Other Social Sciences                                       | \$308   | \$3,071         | \$3,379         |
|   |  | Political Science and Government                            | \$153   | \$3,046         | \$3,199         |
|   |  | Sociology, Demography, and Population Studies               | \$2,478   | \$2,368         | \$4,846         |
|   | <b>Other Sciences</b>  | Other Sciences  | \$0   | \$444           | \$444           |
|   | <b>NON-SCI &amp; ENG FIELDS</b>                              | <b>Non-S&amp;E Fields</b>                                   | Business Management and Business Administration | \$0             | \$670           |
| Communication and Communications Technologies |  |   | \$0   | \$10            | \$10            |
| Education                                     |  |   | \$8,386   | \$16,039        | \$24,425        |
| Humanities                                    |  |   | \$179   | \$826           | \$1,005         |
| Law   |  |   | \$0   | \$0             | \$0             |
| Other Non-Science and Engin.                  |  |   | \$0   | \$68            | \$68            |
| Social Work                                   |  |   | \$0   | \$168           | \$168           |
| Visual and Performing Arts                    |  |   | \$170   | \$86            | \$256           |

**Dartmouth - FY 2021 Total Expenditures by Field (Federal and Non-Federal)**

| Field Category                                | Field Group  | Field   | Federal   | Non Federal     | Grand Total     |
|---|--|---|---|-----------------|-----------------|
| <b>Grand Total</b>                            |  |   | <b>\$8,223</b>                                  | <b>\$20,506</b> | <b>\$28,729</b> |
| <b>SCI &amp; ENG FIELDS</b>                   | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0   | \$0             | \$0             |
|   |  | Bioengineering and Biomedical Engineering                   | \$254   | \$972           | \$1,226         |
|   |  | Chemical Engineering  | \$0   | \$0             | \$0             |
|   |  | Civil Engineering   | \$709   | \$935           | \$1,644         |
|   |  | Electrical, Electronic, and Communications Engineering      | \$914   | \$1,796         | \$2,710         |
|   |  | Industrial and Manufacturing Engineering                    | \$0   | \$0             | \$0             |
|   |  | Mechanical Engineering                                      | \$557   | \$1,903         | \$2,460         |
|   |  | Metallurgical and Materials Engineering                     | \$0   | \$0             | \$0             |
|   |  | Other Engineering   | \$0   | \$9             | \$9             |
|   | <b>Physical Sciences</b>                                     | Astronomy and Astrophysics                                  | \$0   | \$0             | \$0             |
|   |  | Chemistry   | \$444   | \$1,490         | \$1,934         |
|   |  | Materials Science   | \$0   | \$0             | \$0             |
|   |  | Other Physical Sciences                                     | \$0   | \$0             | \$0             |
|   |  | Physics   | \$41  | \$675           | \$716           |
|   | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$0   | \$0             | \$0             |
|   |  | Geological and Earth Sciences                               | \$0   | \$0             | \$0             |
|   |  | Ocean Sciences and Marine Sciences                          | \$4,040   | \$8,156         | \$12,196        |
|   |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0   | \$0             | \$0             |
|   | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$380   | \$1,117         | \$1,497         |
|   | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$60  | \$1,658         | \$1,718         |
|   | <b>Life Sciences</b>   | Agricultural  | \$0   | \$0             | \$0             |
|   |  | Biological and Biomedical Sciences                          | \$211   | \$1,514         | \$1,725         |
|   |  | Health Sciences   | \$0   | \$109           | \$109           |
|   |  | Natural Resources and Conservation                          | \$0   | \$0             | \$0             |
|   |  | Other Life Sciences   | \$0   | \$0             | \$0             |
|   | <b>Psychology</b>  | Psychology  | \$0   | \$0             | \$0             |
|   | <b>Social Sciences</b>                                       | Anthropology  | \$0   | \$12            | \$12            |
|   |  | Economics   | \$0   | \$2             | \$2             |
|   |  | Other Social Sciences                                       | \$16  | \$6             | \$22            |
|   |  | Political Science and Government                            | \$0   | \$6             | \$6             |
|   |  | Sociology, Demography, and Population Studies               | \$0   | \$0             | \$0             |
|   | <b>Other Sciences</b>  | Other Sciences  | \$0   | \$0             | \$0             |
|   | <b>NON-SCI &amp; ENG FIELDS</b>                              | <b>Non-S&amp;E Fields</b>                                   | Business Management and Business Administration | \$0             | \$11            |
| Communication and Communications Technologies |  |   | \$0   | \$10            | \$10            |
| Education                                     |  |   | \$597   | \$123           | \$720           |
| Humanities                                    |  |   | \$0   | \$0             | \$0             |
| Law   |  |   | \$0   | \$2             | \$2             |
| Other Non-Science and Engin.                  |  |   | \$0   | \$0             | \$0             |
| Social Work                                   |  |   | \$0   | \$0             | \$0             |
| Visual and Performing Arts                    |  |   | \$0   | \$0             | \$0             |

**Lowell - FY 2021 Total Expenditures by Field (Federal and Non-Federal)**

| Field Category                                | Field Group  | Field   | Federal   | Non Federal     | Grand Total     |
|---|--|---|---|-----------------|-----------------|
| <b>Grand Total</b>                            |  |   | <b>\$48,179</b>                                 | <b>\$46,529</b> | <b>\$94,708</b> |
| <b>SCI &amp; ENG FIELDS</b>                   | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0   | \$0             | \$0             |
|   |  | Bioengineering and Biomedical Engineering                   | \$3,780   | \$1,088         | \$4,868         |
|   |  | Chemical Engineering  | \$4,540   | \$6,864         | \$11,404        |
|   |  | Civil Engineering   | \$916   | \$1,369         | \$2,285         |
|   |  | Electrical, Electronic, and Communications Engineering      | \$3,044   | \$4,066         | \$7,110         |
|   |  | Industrial and Manufacturing Engineering                    | \$0   | \$0             | \$0             |
|   |  | Mechanical Engineering                                      | \$6,423   | \$3,900         | \$10,323        |
|   |  | Metallurgical and Materials Engineering                     | \$0   | \$0             | \$0             |
|   |  | Other Engineering   | \$181   | \$168           | \$349           |
|   | <b>Physical Sciences</b>                                     | Astronomy and Astrophysics                                  | \$0   | \$0             | \$0             |
|   |  | Chemistry   | \$1,387   | \$4,168         | \$5,555         |
|   |  | Materials Science   | \$0   | \$0             | \$0             |
|   |  | Other Physical Sciences                                     | \$0   | \$0             | \$0             |
|   |  | Physics   | \$9,661   | \$3,092         | \$12,753        |
|   | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$947   | \$193           | \$1,140         |
|   |  | Geological and Earth Sciences                               | \$842   | \$632           | \$1,474         |
|   |  | Ocean Sciences and Marine Sciences                          | \$0   | \$0             | \$0             |
|   |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0   | \$0             | \$0             |
|   | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$60  | \$694           | \$754           |
|   | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$4,440   | \$2,980         | \$7,420         |
|   | <b>Life Sciences</b>   | Agricultural  | \$0   | \$0             | \$0             |
|   |  | Biological and Biomedical Sciences                          | \$2,921   | \$2,731         | \$5,652         |
|   |  | Health Sciences   | \$2,921   | \$3,334         | \$6,255         |
|   |  | Natural Resources and Conservation                          | \$0   | \$264           | \$264           |
|   |  | Other Life Sciences   | \$0   | \$650           | \$650           |
|   | <b>Psychology</b>  | Psychology  | \$907   | \$836           | \$1,743         |
|   | <b>Social Sciences</b>                                       | Anthropology  | \$0   | \$0             | \$0             |
|   |  | Economics   | \$0   | \$246           | \$246           |
|   |  | Other Social Sciences                                       | \$1,796   | \$1,336         | \$3,132         |
|   |  | Political Science and Government                            | \$0   | \$404           | \$404           |
|   |  | Sociology, Demography, and Population Studies               | \$2,204   | \$929           | \$3,133         |
|   | <b>Other Sciences</b>  | Other Sciences  | \$0   | \$397           | \$397           |
|   | <b>NON-SCI &amp; ENG FIELDS</b>                              | <b>Non-S&amp;E Fields</b>                                   | Business Management and Business Administration | \$96            | \$3,180         |
| Communication and Communications Technologies |  |   | \$0   | \$0             | \$0             |
| Education                                     |  |   | \$928   | \$993           | \$1,921         |
| Humanities                                    |  |   | \$129   | \$1,544         | \$1,673         |
| Law   |  |   | \$0   | \$0             | \$0             |
| Other Non-Science and Engin.                  |  |   | \$56  | \$0             | \$56            |
| Social Work                                   |  |   | \$0   | \$0             | \$0             |
| Visual and Performing Arts                    |  |   | \$0   | \$471           | \$471           |



**Medical School - FY 2021 Total Expenditures by Field (Federal and Non-Federal)**

| Field Category                                | Field Group  | Field   | Federal   | Non Federal     | Grand Total      |
|---|--|---|---|-----------------|------------------|
| <b>Grand Total</b>                            |  |   | <b>\$248,873</b>                                | <b>\$98,464</b> | <b>\$347,337</b> |
| <b>SCI &amp; ENG FIELDS</b>                   | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0   | \$0             | \$0              |
|   |  | Bioengineering and Biomedical Engineering                   | \$0   | \$0             | \$0              |
|   |  | Chemical Engineering  | \$0   | \$0             | \$0              |
|   |  | Civil Engineering   | \$0   | \$0             | \$0              |
|   |  | Electrical, Electronic, and Communications Engineering      | \$0   | \$0             | \$0              |
|   |  | Industrial and Manufacturing Engineering                    | \$0   | \$0             | \$0              |
|   |  | Mechanical Engineering                                      | \$0   | \$0             | \$0              |
|   |  | Metallurgical and Materials Engineering                     | \$0   | \$0             | \$0              |
|   |  | Other Engineering   | \$0   | \$0             | \$0              |
|   | <b>Physical Sciences</b>                                     | Astronomy and Astrophysics                                  | \$0   | \$0             | \$0              |
|   |  | Chemistry   | \$0   | \$0             | \$0              |
|   |  | Materials Science   | \$0   | \$0             | \$0              |
|   |  | Other Physical Sciences                                     | \$0   | \$0             | \$0              |
|   |  | Physics   | \$0   | \$0             | \$0              |
|   | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$0   | \$0             | \$0              |
|   |  | Geological and Earth Sciences                               | \$0   | \$0             | \$0              |
|   |  | Ocean Sciences and Marine Sciences                          | \$0   | \$0             | \$0              |
|   |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0   | \$0             | \$0              |
|   | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$0   | \$0             | \$0              |
|   | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$0   | \$0             | \$0              |
|   | <b>Life Sciences</b>   | Agricultural  | \$0   | \$0             | \$0              |
|   |  | Biological and Biomedical Sciences                          | \$100,459                                       | \$44,958        | \$145,417        |
|   |  | Health Sciences   | \$62,856  | \$38,055        | \$100,911        |
|   |  | Natural Resources and Conservation                          | \$0   | \$0             | \$0              |
|   |  | Other Life Sciences   | \$85,558  | \$15,451        | \$101,009        |
|   | <b>Psychology</b>  | Psychology  | \$0   | \$0             | \$0              |
|   | <b>Social Sciences</b>                                       | Anthropology  | \$0   | \$0             | \$0              |
|   |  | Economics   | \$0   | \$0             | \$0              |
|   |  | Other Social Sciences                                       | \$0   | \$0             | \$0              |
|   |  | Political Science and Government                            | \$0   | \$0             | \$0              |
|   |  | Sociology, Demography, and Population Studies               | \$0   | \$0             | \$0              |
|   | <b>Other Sciences</b>  | Other Sciences  | \$0   | \$0             | \$0              |
|   | <b>NON-SCI &amp; ENG FIELDS</b>                              | <b>Non-S&amp;E Fields</b>                                   | Business Management and Business Administration | \$0             | \$0              |
| Communication and Communications Technologies |  |   | \$0   | \$0             | \$0              |
| Education                                     |  |   | \$0   | \$0             | \$0              |
| Humanities                                    |  |   | \$0   | \$0             | \$0              |
| Law   |  |   | \$0   | \$0             | \$0              |
| Other Non-Science and Engin.                  |  |   | \$0   | \$0             | \$0              |
| Social Work                                   |  |   | \$0   | \$0             | \$0              |
| Visual and Performing Arts                    |  |   | \$0   | \$0             | \$0              |

**Presidents Office - FY 2021 Total Expenditures by Field (Federal and Non-Federal)**

| Field Category                  | Field Group  | Field   | Federal      | Non Federal    | Grand Total    |
|---------------------------------|--|---|--------------|----------------|----------------|
| <b>Grand Total</b>              |  |   | <b>\$342</b> | <b>\$3,199</b> | <b>\$3,541</b> |
| <b>SCI &amp; ENG FIELDS</b>     | <b>Engineering</b>   | Aerospace, Aeronautical, and Astronautical Engineering      | \$0          | \$0            | \$0            |
|                                 |  | Bioengineering and Biomedical Engineering                   | \$0          | \$0            | \$0            |
|                                 |  | Chemical Engineering  | \$0          | \$0            | \$0            |
|                                 |  | Civil Engineering   | \$0          | \$0            | \$0            |
|                                 |  | Electrical, Electronic, and Communications Engineering      | \$0          | \$0            | \$0            |
|                                 |  | Industrial and Manufacturing Engineering                    | \$0          | \$0            | \$0            |
|                                 |  | Mechanical Engineering                                      | \$0          | \$0            | \$0            |
|                                 |  | Metallurgical and Materials Engineering                     | \$0          | \$0            | \$0            |
|                                 |  | Other Engineering   | \$0          | \$0            | \$0            |
|                                 | <b>Physical Sciences</b>                                     | Astronomy and Astrophysics                                  | \$0          | \$0            | \$0            |
|                                 |  | Chemistry   | \$0          | \$0            | \$0            |
|                                 |  | Materials Science   | \$0          | \$0            | \$0            |
|                                 |  | Other Physical Sciences                                     | \$0          | \$0            | \$0            |
|                                 |  | Physics   | \$0          | \$0            | \$0            |
|                                 | <b>Geosciences, Atmospheric Sciences, and Ocean Sciences</b> | Atmospheric Science and Meteorology                         | \$0          | \$0            | \$0            |
|                                 |  | Geological and Earth Sciences                               | \$0          | \$0            | \$0            |
|                                 |  | Ocean Sciences and Marine Sciences                          | \$0          | \$0            | \$0            |
|                                 |  | Other Geosciences, Atmospheric Sciences, and Ocean Sciences | \$0          | \$0            | \$0            |
|                                 | <b>Mathematics and Statistics</b>                            | Mathematics and Statistics                                  | \$0          | \$0            | \$0            |
|                                 | <b>Computer and Information Sciences</b>                     | Computer and Information Sciences                           | \$0          | \$0            | \$0            |
|                                 | <b>Life Sciences</b>   | Agricultural  | \$0          | \$0            | \$0            |
|                                 |  | Biological and Biomedical Sciences                          | \$0          | \$0            | \$0            |
|                                 |  | Health Sciences   | \$272        | \$120          | \$392          |
|                                 |  | Natural Resources and Conservation                          | \$0          | \$0            | \$0            |
|                                 |  | Other Life Sciences   | \$0          | \$0            | \$0            |
|                                 | <b>Psychology</b>  | Psychology  | \$0          | \$0            | \$0            |
|                                 | <b>Social Sciences</b>                                       | Anthropology  | \$0          | \$0            | \$0            |
|                                 |  | Economics   | \$0          | \$78           | \$78           |
|                                 |  | Other Social Sciences                                       | \$0          | \$42           | \$42           |
|                                 |  | Political Science and Government                            | \$0          | \$232          | \$232          |
|                                 |  | Sociology, Demography, and Population Studies               | \$0          | \$1,259        | \$1,259        |
|                                 | <b>Other Sciences</b>  | Other Sciences  | \$0          | \$852          | \$852          |
| <b>NON-SCI &amp; ENG FIELDS</b> | <b>Non-S&amp;E Fields</b>                                    | Business Management and Business Administration             | \$0          | \$0            | \$0            |
|                                 |  | Communication and Communications Technologies               | \$0          | \$0            | \$0            |
|                                 |  | Education   | \$70         | \$582          | \$652          |
|                                 |  | Humanities  | \$0          | \$0            | \$0            |
|                                 |  | Law   | \$0          | \$0            | \$0            |
|                                 |  | Other Non-Science and Engin.                                | \$0          | \$34           | \$34           |
|                                 |  | Social Work   | \$0          | \$0            | \$0            |
|                                 |  | Visual and Performing Arts                                  | \$0          | \$0            | \$0            |

**FY 2017 - FY 2021 R&D Expenditures in Dollars (000s) by Source - Details**

| Source  | Campus Name              | Fiscal Year      |                  |                  |                  |                  |                  |
|---|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|   |                          | 2016             | 2017             | 2018             | 2019             | 2020             | 2021             |
| <b>Federal</b>                                      | <b>Amherst</b>           | \$106,269        | \$108,871        | \$110,654        | \$117,359        | \$116,170        | \$116,349        |
|   | <b>Boston</b>            | \$30,608         | \$29,934         | \$30,412         | \$25,083         | \$27,575         | \$23,673         |
|   | <b>Dartmouth</b>         | \$6,548          | \$7,370          | \$7,156          | \$7,353          | \$6,506          | \$8,223          |
|   | <b>Lowell</b>            | \$27,694         | \$29,471         | \$30,086         | \$35,309         | \$41,304         | \$48,179         |
|   | <b>Medical School</b>    | \$181,446        | \$200,232        | \$194,953        | \$197,388        | \$192,938        | \$248,873        |
|   | <b>Presidents Office</b> | \$1,124          | \$721            | \$643            | \$488            | \$488            | \$342            |
|   | <b>UMASS System</b>      | <b>\$353,689</b> | <b>\$376,599</b> | <b>\$373,904</b> | <b>\$382,980</b> | <b>\$384,981</b> | <b>\$445,639</b> |
| <b>State &amp; Local</b>                            | <b>Amherst</b>           | \$25,021         | \$21,257         | \$9,620          | \$12,409         | \$7,779          | \$8,595          |
|   | <b>Boston</b>            | \$5,388          | \$6,990          | \$2,075          | \$2,369          | \$3,325          | \$7,113          |
|   | <b>Dartmouth</b>         | \$1,864          | \$1,976          | \$1,751          | \$1,603          | \$1,644          | \$1,422          |
|   | <b>Lowell</b>            | \$2,300          | \$2,583          | \$4,523          | \$6,390          | \$8,471          | \$4,201          |
|   | <b>Medical School</b>    | \$1,646          | \$160            | \$82             | \$477            | \$1,410          | \$5,405          |
|   | <b>Presidents Office</b> | \$2,870          | \$2,688          | \$3,309          | \$3,226          | \$3,533          | \$2,417          |
|   | <b>UMASS System</b>      | <b>\$39,089</b>  | <b>\$35,654</b>  | <b>\$21,360</b>  | <b>\$26,474</b>  | <b>\$26,162</b>  | <b>\$29,153</b>  |
| <b>Institutional</b>                                | <b>Amherst</b>           | \$65,358         | \$65,698         | \$72,017         | \$70,889         | \$75,307         | \$71,954         |
|   | <b>Boston</b>            | \$22,886         | \$27,949         | \$23,998         | \$28,163         | \$25,435         | \$25,532         |
|   | <b>Dartmouth</b>         | \$17,189         | \$15,104         | \$16,119         | \$17,421         | \$16,761         | \$16,908         |
|   | <b>Lowell</b>            | \$31,572         | \$31,014         | \$31,612         | \$36,658         | \$35,980         | \$36,562         |
|   | <b>Medical School</b>    | \$35,713         | \$42,064         | \$44,237         | \$43,238         | \$45,329         | \$49,135         |
|   | <b>Presidents Office</b> | \$544            | \$367            | \$318            | \$240            | \$285            | \$256            |
|   | <b>UMASS System</b>      | <b>\$173,262</b> | <b>\$182,196</b> | <b>\$188,301</b> | <b>\$196,609</b> | <b>\$199,097</b> | <b>\$200,347</b> |
| <b>Other</b>  | <b>Amherst</b>           | \$2,007          | \$1,225          | \$1,313          | \$3,508          | \$3,551          | \$3,737          |
|   | <b>Boston</b>            | \$434            | \$326            | \$345            | \$620            | \$191            | \$354            |
|   | <b>Dartmouth</b>         | \$187            | \$234            | \$249            | \$232            | \$264            | \$175            |
|   | <b>Lowell</b>            | \$831            | \$314            | \$1,406          | \$1,084          | \$1,898          | \$658            |
|   | <b>Medical School</b>    | \$3,022          | \$2,900          | \$4,092          | \$7,085          | \$4,811          | \$7,713          |
|   | <b>Presidents Office</b> | \$25             | \$4              | \$7              | \$61             | \$75             | \$21             |
|   | <b>UMASS System</b>      | <b>\$6,506</b>   | <b>\$5,003</b>   | <b>\$7,412</b>   | <b>\$12,590</b>  | <b>\$10,790</b>  | <b>\$12,658</b>  |
| <b>Industry-Sponsored : Business</b>                | <b>Amherst</b>           | \$8,336          | \$8,016          | \$9,381          | \$10,026         | \$7,702          | \$7,710          |
|   | <b>Boston</b>            | \$1,291          | \$1,279          | \$1,413          | \$1,675          | \$2,075          | \$2,222          |
|   | <b>Dartmouth</b>         | \$831            | \$557            | \$909            | \$1,140          | \$1,354          | \$1,488          |
|   | <b>Lowell</b>            | \$4,775          | \$4,841          | \$3,588          | \$3,460          | \$3,263          | \$3,444          |
|   | <b>Medical School</b>    | \$11,483         | \$14,324         | \$12,585         | \$16,386         | \$15,073         | \$16,669         |
|   | <b>Presidents Office</b> | \$180            | \$39             | \$266            | \$323            | \$242            | \$1              |
|   | <b>UMASS System</b>      | <b>\$26,896</b>  | <b>\$29,056</b>  | <b>\$28,142</b>  | <b>\$33,010</b>  | <b>\$29,709</b>  | <b>\$31,534</b>  |
| <b>Industry-Sponsored : Nonprofit organizations</b> | <b>Amherst</b>           | \$7,585          | \$5,349          | \$8,155          | \$8,986          | \$8,880          | \$5,479          |
|   | <b>Boston</b>            | \$3,616          | \$3,541          | \$3,230          | \$4,108          | \$5,618          | \$4,829          |
|   | <b>Dartmouth</b>         | \$205            | \$861            | \$442            | \$287            | \$307            | \$513            |
|   | <b>Lowell</b>            | \$1,322          | \$1,454          | \$1,051          | \$1,095          | \$1,300          | \$1,664          |
|   | <b>Medical School</b>    | \$19,789         | \$20,204         | \$18,262         | \$16,933         | \$19,535         | \$19,542         |
|   | <b>Presidents Office</b> | \$476            | \$575            | \$755            | \$578            | \$602            | \$504            |
|   | <b>UMASS System</b>      | <b>\$32,993</b>  | <b>\$31,984</b>  | <b>\$31,895</b>  | <b>\$31,987</b>  | <b>\$36,242</b>  | <b>\$32,531</b>  |
| <b>Grand Total</b>                                  |                          | <b>\$632,435</b> | <b>\$660,492</b> | <b>\$651,014</b> | <b>\$683,650</b> | <b>\$686,981</b> | <b>\$751,862</b> |