



**The University of Massachusetts**

*Amherst • Boston • Dartmouth • Lowell • Worcester • UMassOnline*



# **FY2012 Annual R&D Expenditures Report**

*Office of Institutional Research  
UMass President's Office  
March 2013*

**TOTAL R&D EXPENDITURES – UMASS SYSTEM AND CAMPUSES**

• <b>INTRODUCTION AND HIGHLIGHTS</b>	<i>1</i>
• <b>FY 2008 – FY 2012</b>	
○ UMASS SYSTEM	<i>2</i>
○ UMASS AMHERST	<i>3</i>
○ UMASS BOSTON	<i>4</i>
○ UMASS DARTMOUTH	<i>5</i>
○ UMASS LOWELL	<i>6</i>
○ UMASS WORCESTER	<i>7</i>
○ UMASS PRESIDENT’S OFFICE	<i>7</i>
• <b>TOTAL R&amp;D EXPENDITURES BY FIELD FY2012</b>	<i>8</i>
• <b>R&amp;D EXPENDITURES BY SOURCE OF FUNDS FY2012</b>	<i>10</i>
• <b>FEDERAL GOVERNMENT AGENCY SOURCES FY20112</b>	<i>13</i>

**LIFE SCIENCES R&D EXPENDITURES**

• <b>TOTAL LIFE SCIENCES R&amp;D EXPENDITURES BY UMASS CAMPUSES FY2008-FY2012</b>	<i>14</i>
• <b>TOTAL LIFE SCIENCES R&amp;D EXPENDITURES BY FIELD UMASS SYSTEM FY2008-FY2012</b>	<i>14</i>
• <b>UMASS SYSTEM LIFE SCIENCES R&amp;D EXPENDITURES BY FIELD AND UMASS CAMPUSES FY2008–FY 2012</b>	<i>15</i>

## Introduction

The *FY2012 Annual Research and Development Expenditures Report* presents information on the research and development expenditures for the University of Massachusetts System. This report is based on data that our five campuses provide to the National Science Foundation (NSF) through its Higher Education Research and Development Survey (previously known as the annual Survey of Research and Development Expenditures at Universities and Colleges). In addition to the FY2012 data, this report also provides trend data in many cases.

The report is comprised of two sections: Total R&D Expenditures (pages 1-13) and Life Sciences R&D Expenditures (pages 14-16).

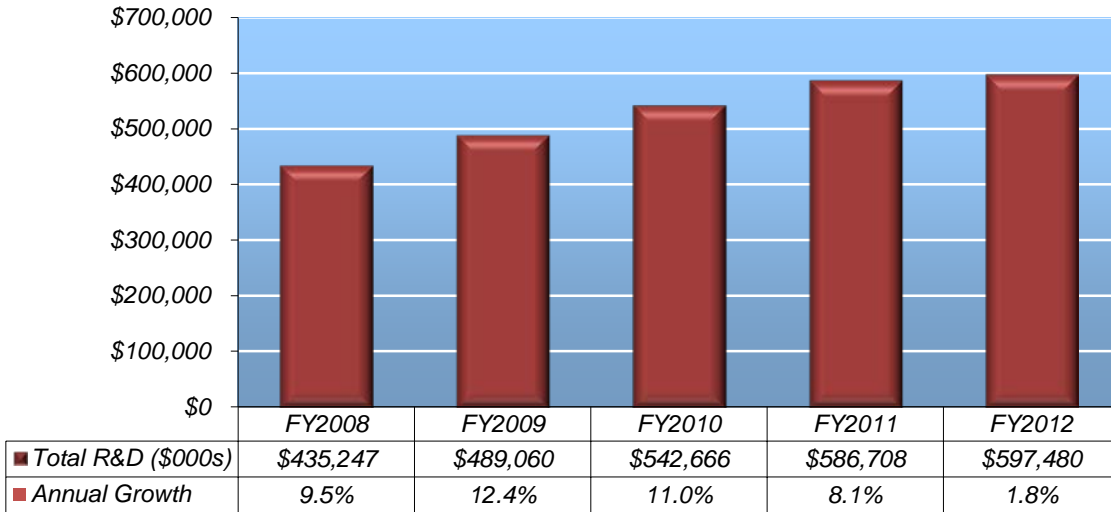
### Major Highlights:

- **UMASS Total R&D Expenditures** – Total FY2012 R&D Expenditures for the University of Massachusetts System was reported at \$597.5 million, which represents an 2% increase from the FY2011 total of \$586.7 million.
- **Growth in Total R&D Expenditures (UMASS versus All U.S. Institutions)** – Total R&D expenditures for the University of Massachusetts System has grown at slightly higher rate than the national trend for all U.S. institutions. In FY2011 (most recent comparison data available), while the UMASS system reflected an annual growth rate of 8.1% over the previous year, All U.S. Institutions reflected a growth rate of 6.3%.
- **UMASS R&D Expenditures in Science and Engineering** – In FY2012, an estimated \$539.2 million (90%) of our R&D expenditures were in the sciences and engineering (S&E).
- **UMASS State Ranking in Total R&D Expenditures** – Among Massachusetts colleges and universities, UMASS ranked 3<sup>rd</sup> in Total R&D Expenditures, behind only MIT and Harvard. In 2012, UMASS comprised one-fifth (20%) of the Total Expenditures of all MA institutions. UMASS, MIT, Harvard and BU together account for 79% of the academic science and engineering R&D expenditures in the state. (Rankings based on FY2011 data).
- **UMASS R&D Expenditures by Funding Source (FY2012)** – In terms of funding sources, 65% is from the federal government, 25% is from institutional sources, 2% is from state and local government, 3% from businesses, 4% from non-profit organizations, and less than 1% is from other sources (e.g., private foundations).
- **UMASS Areas of Funding Growth** – Between the reporting cycles FY2011-12, industry/business sponsorship dropped slightly from 9% to 7%, and institutional funds increased a percentage point from 24% to 25%. State and local government funding remained steady at 2% of all funds. Federal funding dropped slightly from 66% to 65% of all funds.
- **Life Sciences Continues to Comprise More Than Half of all R&D Expenditures at UMASS** – At \$341 million, the life sciences constitute more than half of UMASS's total R&D expenditures (57%). FY2012 distribution of R&D expenditures by field is:

Life Sciences	57%	Social Sciences	3.0%
Physical Sciences	8.5%	Other Non-Sciences/Engg.	1.3%
Engineering	11.5%	Psychology	1.9%
Computer Sciences	4.2%	Mathematical Sciences	0.7%
Environmental Sciences	2.9%	Other Sciences	0.5%

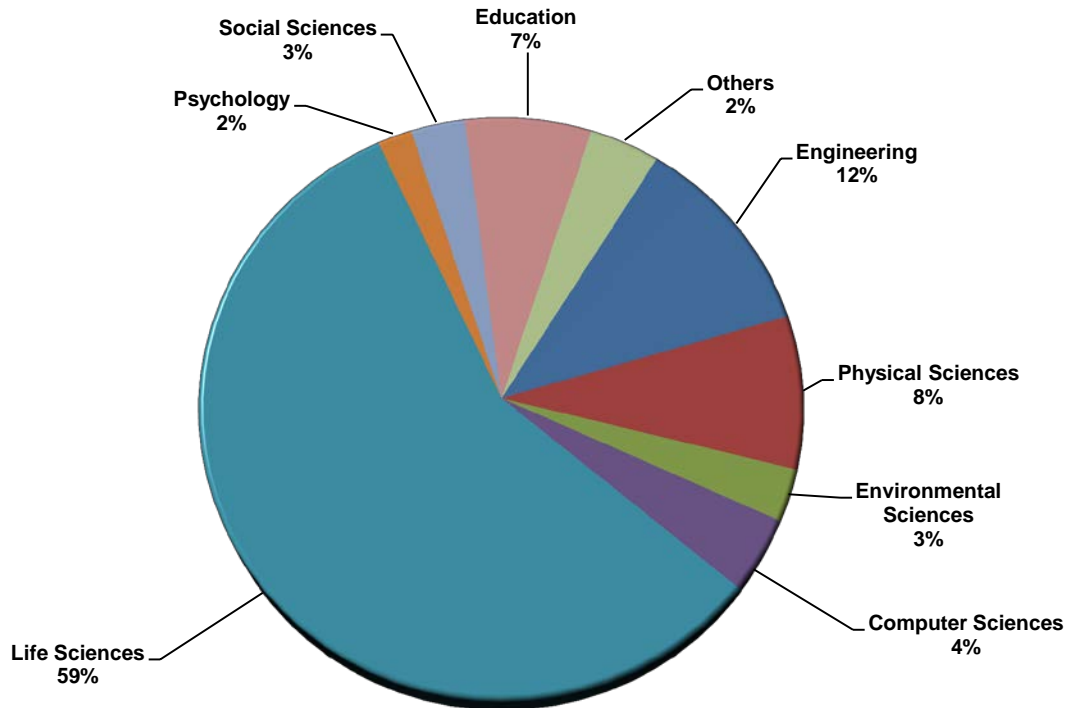
# UMASS System

Total R&D Expenditures FY2008 - FY2012



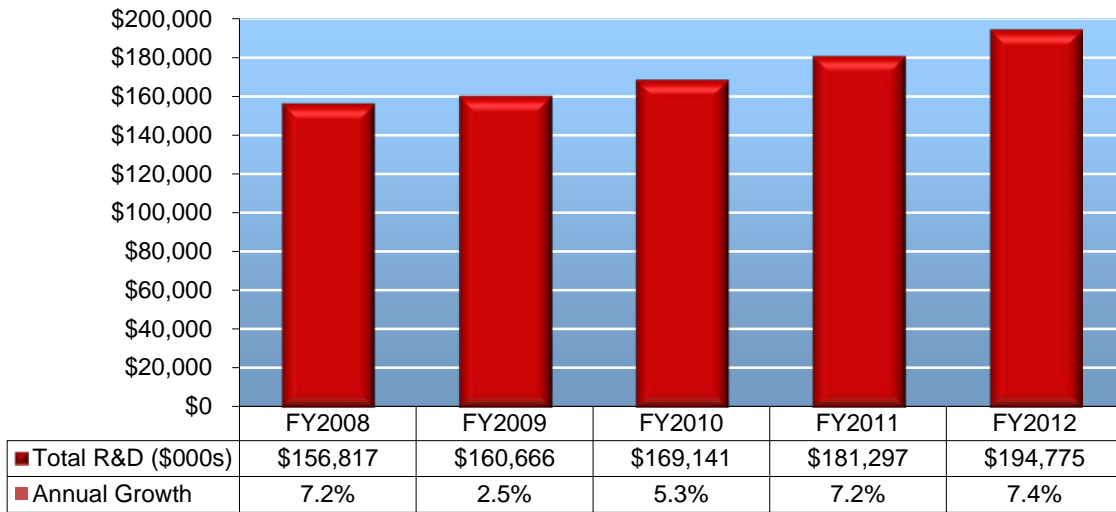
FY 2010 figures have been revised from the FY 2010 R&D Report publication (\$542,668).

Total R&D Expenditures FY2012



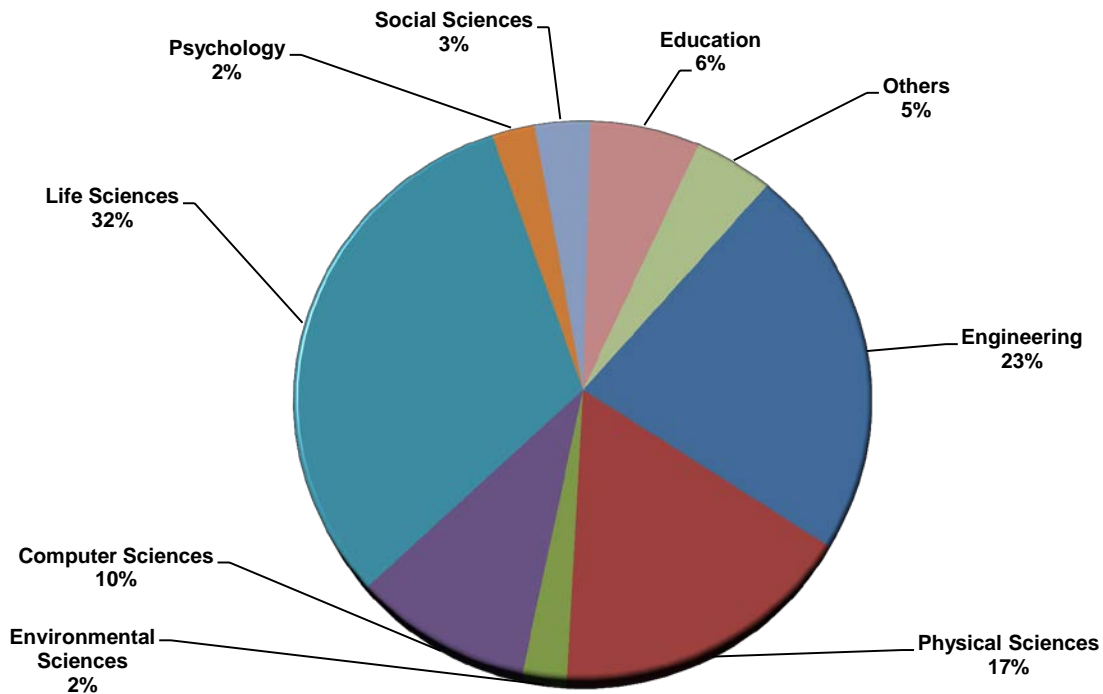
# Amherst

## Total R&D Expenditures FY2008 – FY2012



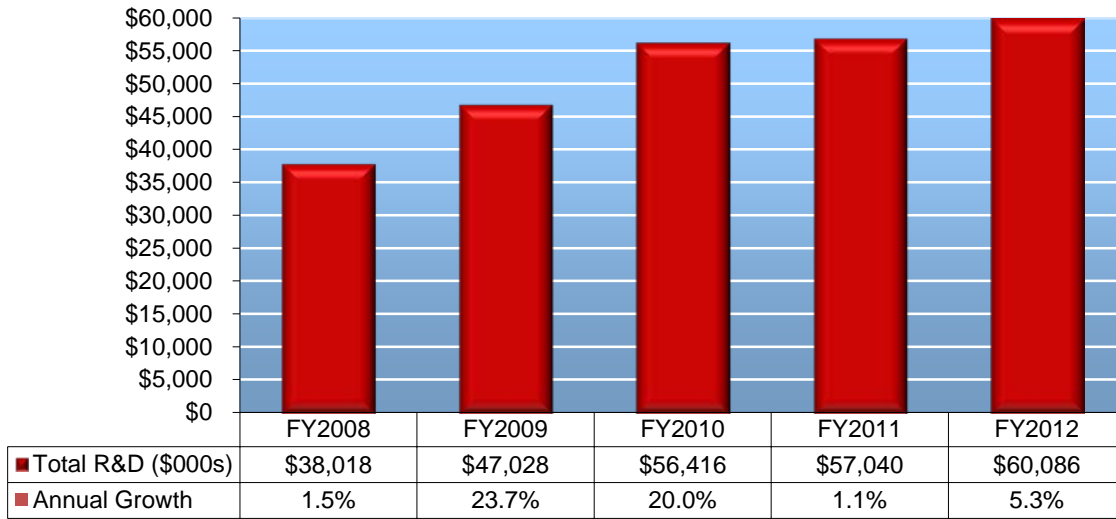
Note: UMA FY2010 figures have been revised since the FY2010 R&D Report publication.

## Total R&D Expenditures FY2012

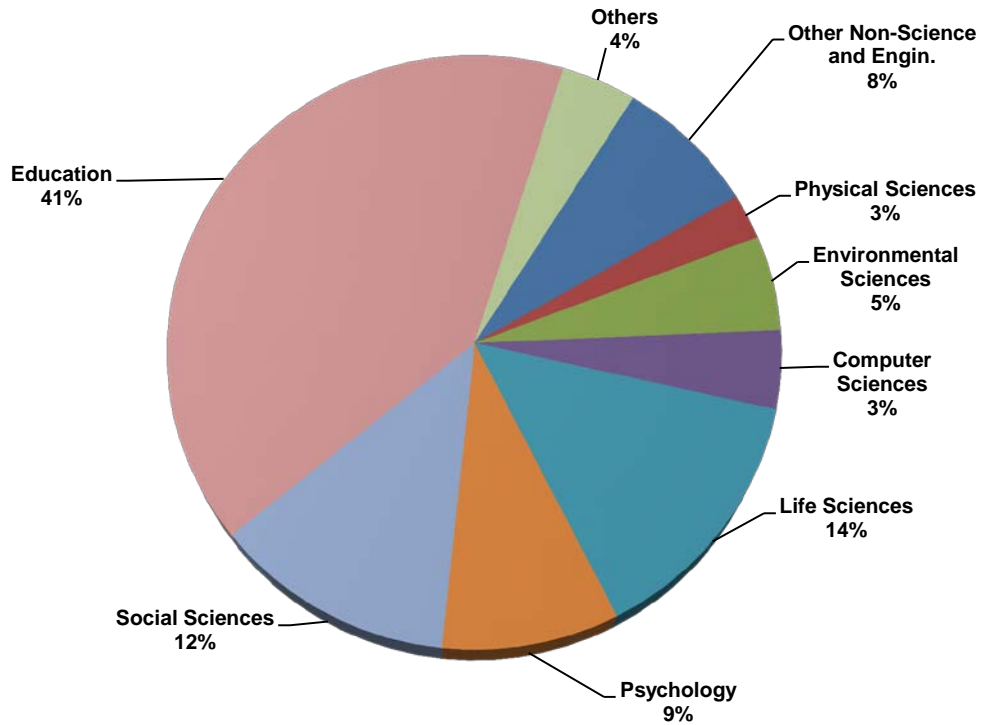


# Boston

## Total R&D Expenditures FY2008 – FY2012

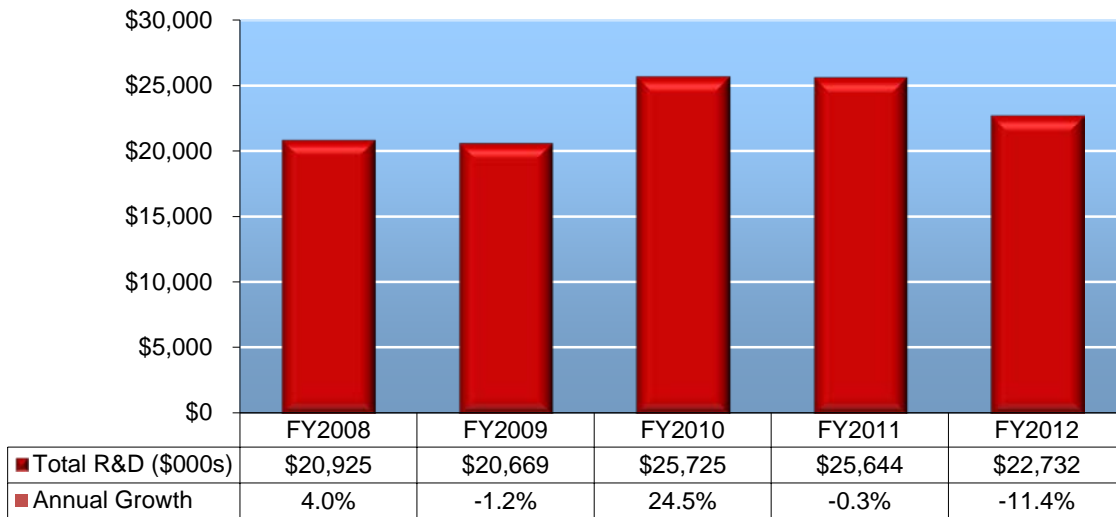


## Total R&D Expenditures FY2012

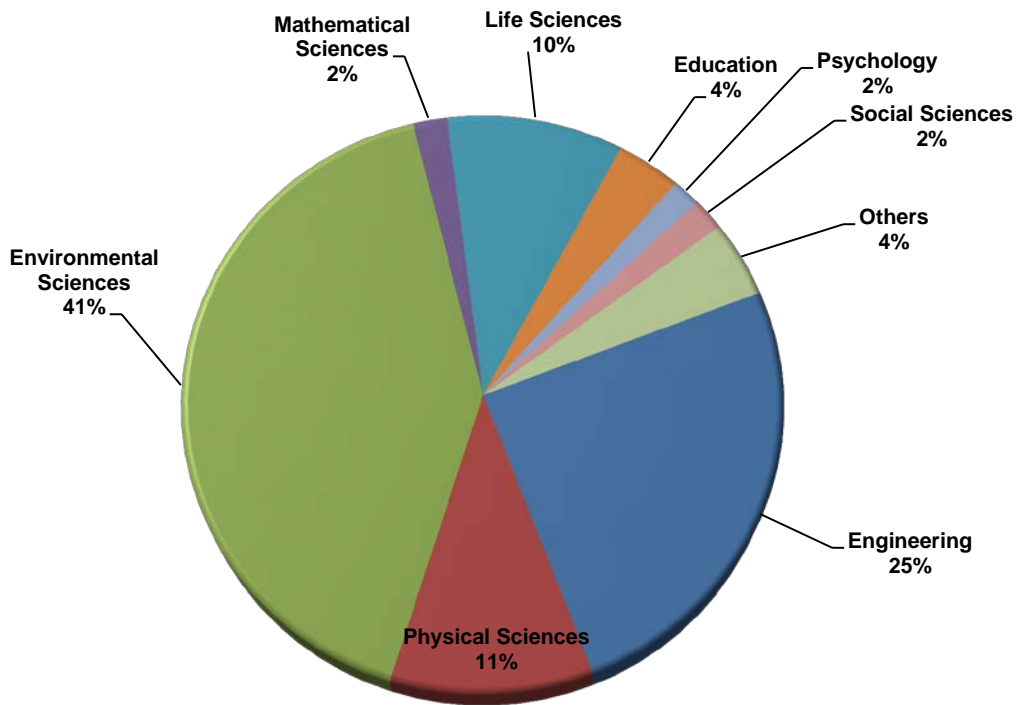


# Dartmouth

## Total R&D Expenditures FY2008 – FY2012

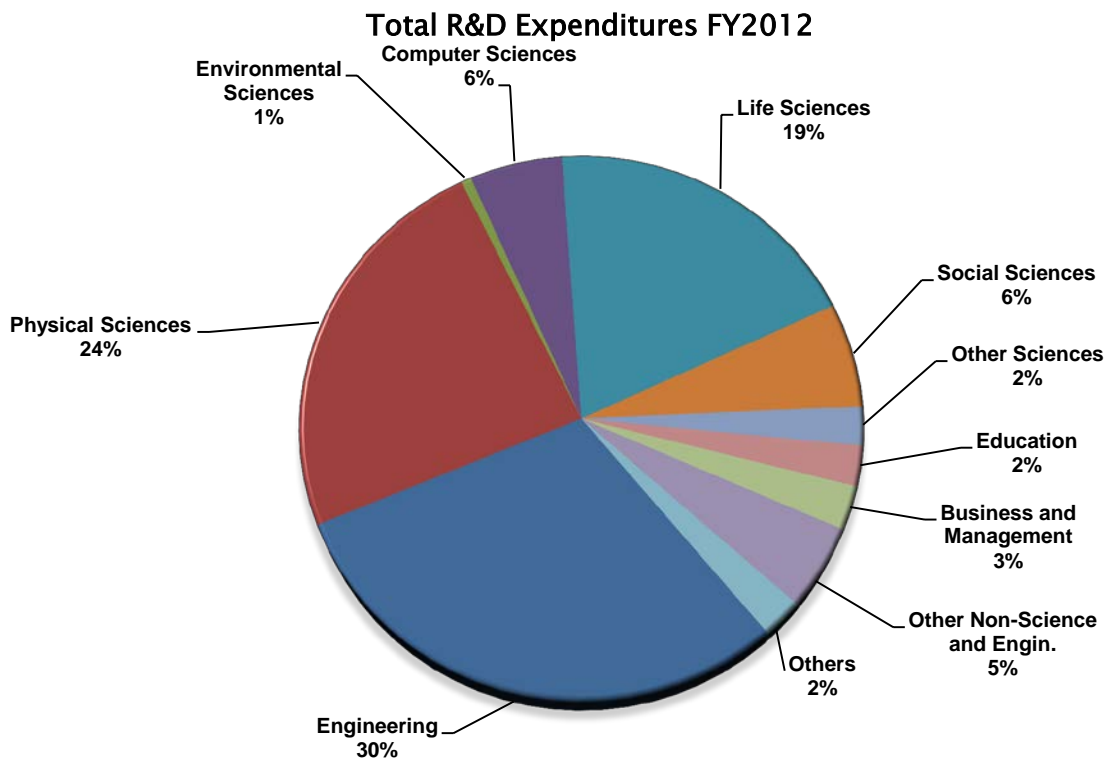
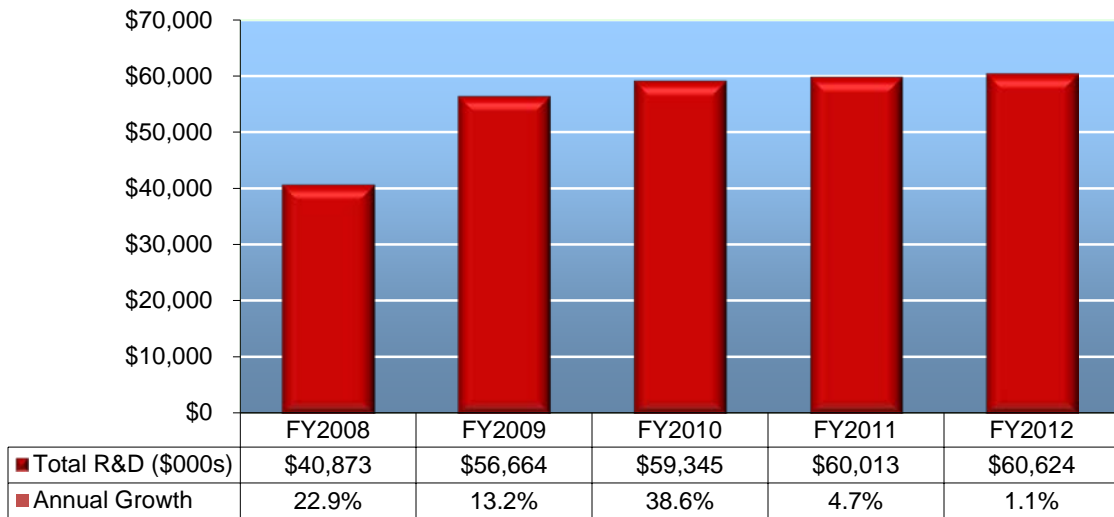


## Total R&D Expenditures FY2012



# Lowell

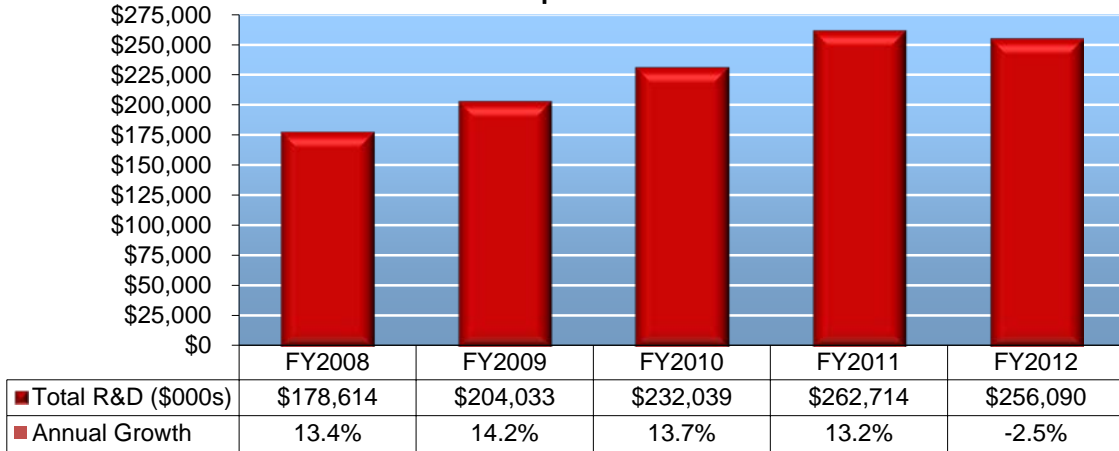
## Total R&D Expenditures FY2008 – FY2012





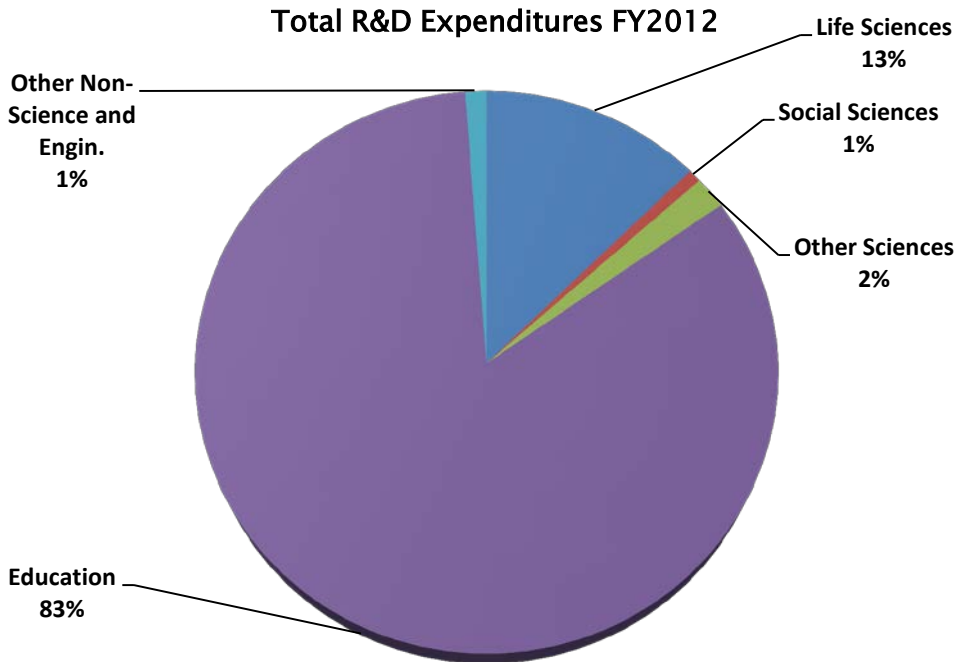
## Worcester

### Total R&D Expenditures FY2008 – FY2012



**All of Worcester's R&D expenditures are in the Life Sciences.**

## President's Office



**FY 2012 Total R&D Expenditures by Field (Federal and Non-Federal)**

FIELD	UMA						UMB						UMD					
	Federal		Non-Federal		% of UMA		Federal		Non-Federal		% of UMB		Federal		Non-Federal		% of UMD	
					Total	% of Field					Total	% of Field			UMD Total	Total	% of Field	
<b>Engineering (Total)</b>	\$ 24,580	\$20,119	\$ 44,699	22.9%	65.1%	\$ 155	\$ 43	\$ 198	0.3%	0.3%	\$ 2,376	\$ 3,315	\$ 5,691	25.0%	8.3%			
Aeronautical & Astronomical	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Bioengineering/Biomedical	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	\$101	\$133	\$234	1.0%	36.1%			
Chemical	\$ 9,244	\$6,435	\$15,679	8.0%	66.5%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Civil	\$ 3,075	\$5,208	\$8,283	4.3%	74.9%	\$0	\$0	\$0	0.0%	0.0%	\$949	\$472	\$1,421	6.3%	12.9%			
Electrical	\$ 8,403	\$5,280	\$13,683	7.0%	72.0%	\$155	\$43	\$198	0.3%	1.0%	\$963	\$487	\$1,450	6.4%	7.6%			
Mechanical	\$ 3,737	\$3,071	\$6,808	3.5%	67.6%	\$0	\$0	\$0	0.0%	0.0%	\$192	\$407	\$599	2.6%	5.9%			
Metallurgical & Materials	\$121	\$0	\$121	0.1%	27.7%	\$0	\$0	\$0	0.0%	0.0%	\$80	\$236	\$316	1.4%	72.3%			
Other	\$0	\$125	\$125	0.06%	3.2%	\$0	\$0	\$0	0.0%	0.0%	\$91	\$1,580	\$1,671	7.4%	43.4%			
<b>Physical Sciences (Total)</b>	\$ 21,754	\$10,485	\$ 32,239	16.6%	63.6%	\$ 1,196	\$ 310	\$ 1,506	2.5%	3.0%	\$ 953	\$ 1,463	\$ 2,416	10.6%	4.8%			
Astronomy	\$ 3,616	\$1,314	\$4,930	2.5%	100.0%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Chemistry	\$13,446	\$6,547	\$19,993	10.3%	77.6%	\$587	\$140	\$727	1.2%	2.8%	\$467	\$1,125	\$1,592	7.0%	6.2%			
Physics	\$ 4,692	\$2,624	\$ 7,316	3.8%	36.6%	\$609	\$170	\$779	1.3%	3.9%	\$486	\$338	\$824	3.6%	4.1%			
Other	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
<b>Environmental Sciences (Total)</b>	\$ 3,113	\$1,600	\$ 4,713	2.4%	26.9%	\$ 1,729	\$ 1,367	\$ 3,096	5.2%	17.6%	\$ 4,958	\$ 4,401	\$ 9,359	41.2%	53.3%			
Atmospheric	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Earth Sciences	\$ 2,879	\$1,168	\$4,047	2.1%	91.3%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Oceanography	\$0	\$0	\$0	0.0%	0.0%	\$1,680	\$1,032	\$2,712	4.5%	22.5%	\$4,958	\$4,401	\$9,359	41.2%	77.5%			
Other	\$ 234	\$432	\$666	0.3%	63.4%	\$49	\$335	\$384	0.6%	36.6%	\$0	\$0	\$0	0.0%	0.0%			
<b>Mathematical Sciences (Total)</b>	\$ 2,174	\$1,080	\$3,254	1.7%	78.7%	\$ 47	\$ 8	\$ 55	0.1%	1.3%	\$ 188	\$ 255	\$ 443	1.9%	10.7%			
<b>Computer Sciences (Total)</b>	\$ 12,617	\$6,181	\$ 18,798	9.7%	74.6%	\$ 1,923	\$ 646	\$ 2,569	4.3%	10.2%	\$ 357	\$ 146	\$ 503	2.2%	2.0%			
<b>Life Sciences (Total)</b>	\$ 36,579	\$25,420	\$ 61,999	31.8%	18.2%	\$ 5,999	\$ 2,444	\$ 8,443	14.1%	2.5%	\$ 1,240	\$ 989	\$ 2,229	9.8%	0.7%			
Agricultural	\$16,924	\$12,957	\$29,881	15.3%	96.2%	\$0	\$0	\$0	0.0%	0.0%	\$777	\$393	\$1,170	5.1%	3.8%			
Biological	\$15,765	\$9,316	\$25,081	12.9%	20.6%	\$1,947	\$826	\$2,773	4.6%	2.3%	\$457	\$481	\$938	4.1%	0.8%			
Medical	\$ 3,459	\$2,817	\$6,276	3.2%	4.6%	\$3,093	\$1,252	\$4,345	7.2%	3.2%	\$0	\$0	\$0	0.0%	0.0%			
Other	\$ 431	\$330	\$761	0.4%	1.5%	\$959	\$366	\$1,325	2.2%	2.7%	\$6	\$115	\$121	0.5%	0.2%			
<b>Psychology (Total)</b>	\$ 3,300	\$1,565	\$ 4,865	2.5%	43.7%	\$ 3,751	\$ 1,727	\$ 5,478	9.1%	49.2%	\$ 253	\$ 105	\$ 358	1.6%	3.2%			
<b>Social Sciences (Total)</b>	\$ 1,745	\$4,418	\$ 6,163	3.2%	34.5%	\$ 2,849	\$ 4,675	\$ 7,524	12.5%	42.1%	\$ 4	\$ 395	\$ 399	1.8%	2.2%			
Economics	\$ 830	\$1,746	\$ 2,576	1.3%	69.8%	\$186	\$154	\$340	0.6%	9.2%	\$0	\$65	\$65	0.3%	1.8%			
Political Science	\$ 439	\$691	\$1,130	0.6%	26.4%	\$1,042	\$1,715	\$2,757	4.6%	64.3%	\$4	\$329	\$333	1.5%	7.8%			
Sociology	\$ 281	\$1,329	\$1,610	0.8%	45.4%	\$780	\$926	\$1,706	2.8%	48.1%	\$0	\$1	\$1	0.0%	0.0%			
Other	\$ 195	\$652	\$847	0.4%	13.4%	\$841	\$1,880	\$2,721	4.5%	42.9%	\$0	\$0	\$0	0.0%	0.0%			
<b>Other Sciences (Total)</b>	\$ 608	\$869	\$1,477	0.8%	47.6%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$158	\$158	0.7%	5.1%			
<b>TOTAL, SCI &amp; ENG FIELDS</b>	\$ 106,470	\$71,737	\$ 178,207	91.5%	33.1%	\$ 17,649	\$ 11,220	\$ 28,869	48.0%	5.4%	\$ 10,329	\$ 11,227	\$ 21,556	94.8%	4.0%			
FIELD	% of UMA						% of UMB						% of UMD					
	Federal	Non-Federal	UMA Total	Total	% of Field	Federal	Non-Federal	UMB Total	Total	% of Field	Federal	Non-Federal	UMD Total	Total	% of Field			
Education	\$ 8,284	\$4,118	\$12,402	6.4%	29.5%	\$14,614	\$10,041	\$24,655	41.0%	58.7%	\$650	\$177	\$827	3.6%	2.0%			
Law	\$0	\$4	\$4	0.0%	100.0%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Humanities	\$ 36	\$1,292	\$1,328	0.7%	42.1%	\$1,012	\$135	\$1,147	1.9%	36.3%	\$0	\$139	\$139	0.6%	4.4%			
Visual and Performing Arts	\$12	\$412	\$424	0.2%	84.8%	\$0	\$40	\$40	0.1%	8.0%	\$0	\$4	\$4	0.0%	0.8%			
Business and Management	\$370	\$1,050	\$1,420	0.7%	37.6%	\$0	\$698	\$698	1.2%	18.5%	\$0	\$101	\$101	0.4%	2.7%			
Comm., Journalism & Library Sci	\$108	\$882	\$990	0.5%	96.7%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$6	\$6	0.0%	0.6%			
Social Work	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%	\$0	\$0	\$0	0.0%	0.0%			
Other Non-Science and Engin.	\$0	\$0	\$0	0.0%	0.0%	\$0	\$4,677	\$4,677	7.8%	59.8%	\$0	\$99	\$99	0.4%	1.3%			
<b>TOTAL, NON-SCI &amp; ENG FIELDS</b>	\$ 8,810	\$7,758	\$16,568	8.5%	28.4%	\$15,626	\$15,591	\$31,217	52.0%	53.6%	\$650	\$526	\$1,176	5.2%	2.0%			
<b>TOTAL, SCI &amp; ENG FIELDS</b>	\$ 106,470	\$71,737	\$ 178,207	91.5%	33.1%	\$ 17,649	\$ 11,220	\$ 28,869	48.0%	5.4%	\$ 10,329	\$ 11,227	\$ 21,556	94.8%	4.0%			
<b>GRAND TOTAL</b>	\$ 115,280	\$79,495	\$ 194,775	100.0%	32.6%	\$ 33,275	\$ 26,811	\$ 60,086	100.0%	10.1%	\$ 10,979	\$ 11,753	\$ 22,732	100.0%	3.8%			

Source: Campus NSF surveys. All dollars are in thousands.  
 Note: Percent of Total is the percentage each field represents of total campus or system R&D expenditures in all fields.

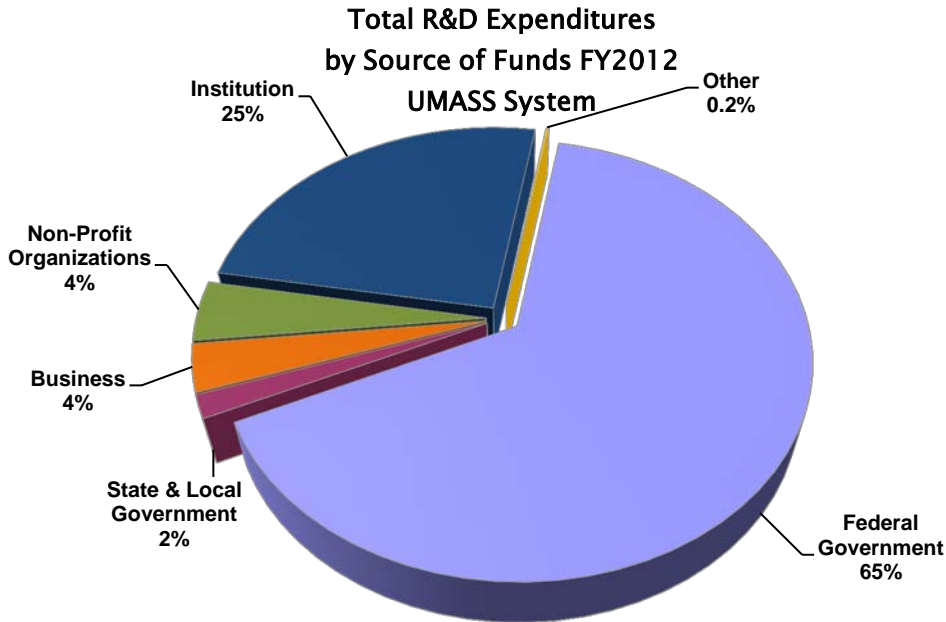
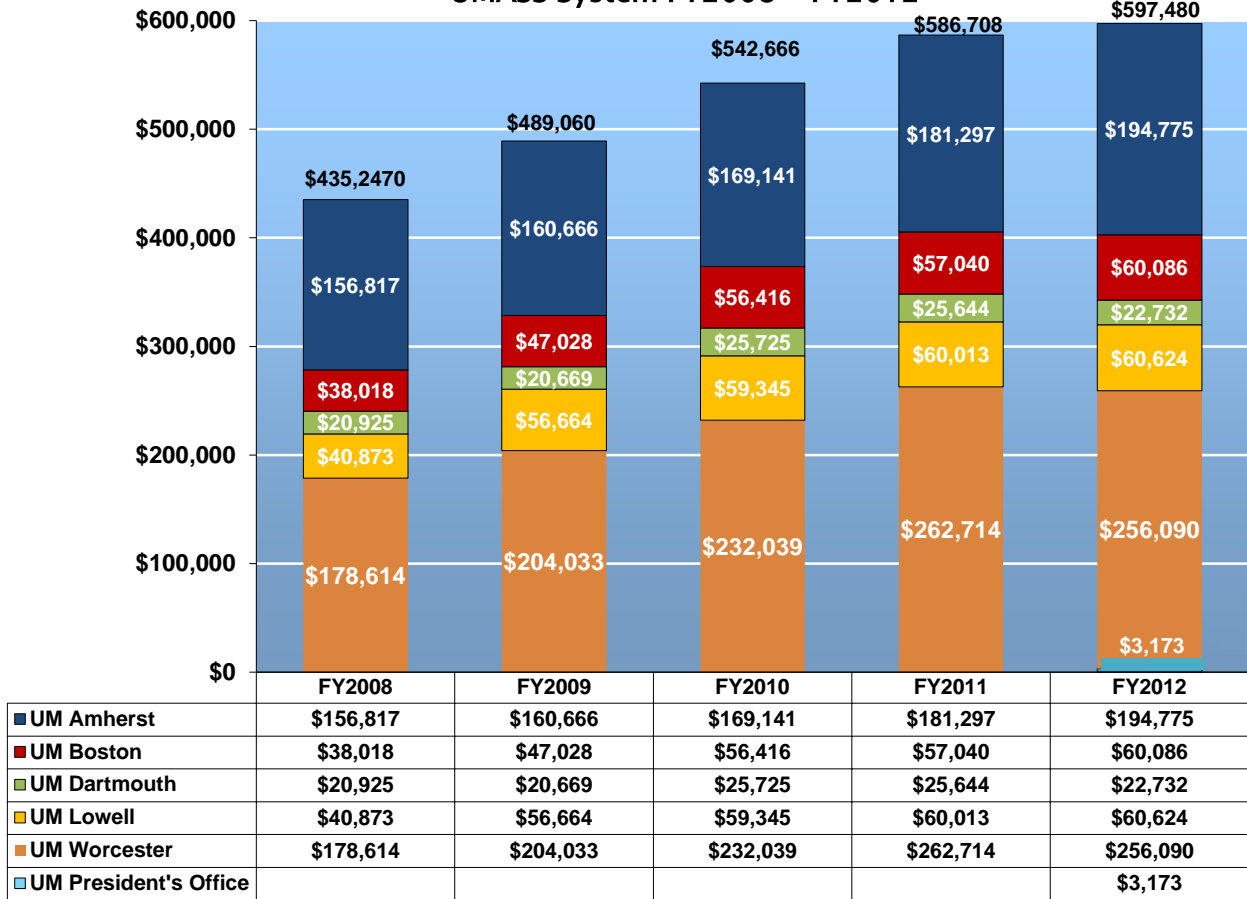
**FY 2012 Total R&D Expenditures by Field (Federal and Non-Federal)**

FIELD	UML					UMW					UMPO					UMass System			
	Federal	Non-Federal	UML Total	% of UML Total	% of Field	Federal	Non-Federal	UMW Total	% of UMW Total	% of Field	Federal	Non-Federal	UMPO Total	% of UMPO Total	% of Field	Federal	Non-Federal	System Total	% of System
<b>Engineering (Total)</b>	\$ 7,149	\$ 10,924	\$ 18,073	29.8%	26.3%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 34,260	\$ 34,401	\$ 68,661	11.5%
Aeronautical & Astronomical	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%
Bioengineering/Biomedical	\$ -	\$ 415	\$ 415	0.7%	63.9%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 101	\$ 548	\$ 649	0.1%
Chemical	\$ 3,286	\$ 4,627	\$ 7,913	13.1%	33.5%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 12,530	\$ 11,062	\$ 23,592	3.9%
Civil	\$ 827	\$ 523	\$ 1,350	2.2%	12.2%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 4,851	\$ 6,203	\$ 11,054	1.9%
Electrical	\$ 1,629	\$ 2,046	\$ 3,675	6.1%	19.3%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 11,150	\$ 7,856	\$ 19,006	3.2%
Mechanical	\$ 1,407	\$ 1,255	\$ 2,662	4.4%	26.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 5,336	\$ 4,733	\$ 10,069	1.7%
Metallurgical & Materials	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 201	\$ 236	\$ 437	0.1%
Other	\$ -	\$ 2,058	\$ 2,058	3.4%	53.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 91	\$ 3,763	\$ 3,854	0.6%
<b>Physical Sciences (Total)</b>	\$ 8,668	\$ 5,895	\$ 14,563	24.0%	28.7%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 32,571	\$ 18,153	\$ 50,724	8.5%
Astronomy	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 3,616	\$ 1,314	\$ 4,930	0.8%
Chemistry	\$ 1,331	\$ 2,135	\$ 3,466	5.7%	13.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 15,831	\$ 9,947	\$ 25,778	4.3%
Physics	\$ 7,337	\$ 3,760	\$ 11,097	18.3%	55.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 13,124	\$ 6,892	\$ 20,016	3.4%
Other	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%
<b>Environmental Sciences (Total)</b>	\$ 200	\$ 184	\$ 384	0.6%	2.2%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 10,000	\$ 7,552	\$ 17,552	2.9%
Atmospheric	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%
Earth Sciences	\$ 200	\$ 184	\$ 384	0.6%	8.7%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 3,079	\$ 1,352	\$ 4,431	0.7%
Oceanography	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 6,638	\$ 5,433	\$ 12,071	2.0%
Other	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 283	\$ 767	\$ 1,050	0.2%
<b>Mathematical Sciences (Total)</b>	\$ 50	\$ 334	\$ 384	0.6%	9.3%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 2,459	\$ 1,677	\$ 4,136	0.7%
<b>Computer Sciences (Total)</b>	\$ 1,890	\$ 1,437	\$ 3,327	5.5%	13.2%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 16,787	\$ 8,410	\$ 25,197	4.2%
<b>Life Sciences (Total)</b>	\$ 6,171	\$ 5,474	\$ 11,645	19.2%	3.4%	\$ 202,149	\$ 53,941	\$ 256,090	100.0%	75.1%	\$ 402	\$ -	\$ 402	12.7%	0.1%	\$ 252,540	\$ 88,268	\$ 340,808	57.0%
Agricultural	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 17,701	\$ 13,350	\$ 31,051	5.2%
Biological	\$ 1,064	\$ 935	\$ 1,999	3.3%	1.6%	\$ 74,579	\$ 16,561	\$ 91,140	35.6%	74.7%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 93,812	\$ 28,119	\$ 121,931	20.4%
Medical	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 98,105	\$ 28,927	\$ 127,032	49.6%	92.1%	\$ 263	\$ -	\$ 263	8.3%	0.2%	\$ 104,920	\$ 32,996	\$ 137,916	23.1%
Other	\$ 5,107	\$ 4,539	\$ 9,646	15.9%	19.3%	\$ 29,465	\$ 8,453	\$ 37,918	14.8%	76.0%	\$ 139	\$ -	\$ 139	4.4%	0.3%	\$ 36,107	\$ 13,803	\$ 49,910	8.4%
<b>Psychology (Total)</b>	\$ 23	\$ 417	\$ 440	0.7%	3.9%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 7,327	\$ 3,814	\$ 11,141	1.9%
<b>Social Sciences (Total)</b>	\$ 1,519	\$ 2,233	\$ 3,752	6.2%	21.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 24	\$ -	\$ 24	0.8%	0.1%	\$ 6,141	\$ 11,721	\$ 17,862	3.0%
Economics	\$ 277	\$ 427	\$ 704	1.2%	19.1%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 7	\$ -	\$ 7	0.2%	0.2%	\$ 1,300	\$ 2,392	\$ 3,692	0.6%
Political Science	\$ 38	\$ 27	\$ 65	0.1%	1.5%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 1,523	\$ 2,762	\$ 4,285	0.7%
Sociology	\$ -	\$ 211	\$ 211	0.3%	6.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 17	\$ -	\$ 17	0.5%	0.5%	\$ 1,078	\$ 2,467	\$ 3,545	0.6%
Other	\$ 1,204	\$ 1,568	\$ 2,772	4.6%	43.7%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 2,240	\$ 4,100	\$ 6,340	1.1%
<b>Other Sciences (Total)</b>	\$ -	\$ 1,412	\$ 1,412	2.3%	45.5%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 59	\$ -	\$ 59	1.9%	1.9%	\$ 667	\$ 2,439	\$ 3,106	0.5%
<b>TOTAL, SCI &amp; ENG FIELDS</b>	\$ 25,670	\$ 28,310	\$ 53,980	89.0%	10.0%	\$ 202,149	\$ 53,941	\$ 256,090	100.0%	47.5%	\$ 485	\$ -	\$ 485	15.3%	0.1%	\$ 362,752	\$ 176,435	\$ 539,187	90.2%
FIELD	Federal	Non-Federal	UML Total	% of UML Total	% of Field	Federal	Non-Federal	UMW Total	% of UMW Total	% of Field	Federal	Non-Federal	UMPO Total	% of UMPO Total	% of Field	Federal	Non-Federal	System Total	% of Total
Education	\$ 431	\$ 1,049	\$ 1,480	2.4%	3.5%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 1,131	\$ 1,518	\$ 2,649	83.5%	6.3%	\$ 25,110	\$ 16,903	\$ 42,013	7.0%
Law	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ 4	\$ 4	0.0%
Humanities	\$ -	\$ 542	\$ 542	0.9%	17.2%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 1,048	\$ 2,108	\$ 3,156	0.5%
Visual and Performing Arts	\$ -	\$ 32	\$ 32	0.1%	6.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 12	\$ 488	\$ 500	0.1%
Business and Management	\$ 111	\$ 1,448	\$ 1,559	2.6%	41.3%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 481	\$ 3,297	\$ 3,778	0.6%
Comm., Journalism & Library Sci	\$ 19	\$ 9	\$ 28	0.0%	2.7%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 127	\$ 897	\$ 1,024	0.2%
Social Work	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ -	\$ -	\$ -	0.0%
Other Non-Science and Engin.	\$ 555	\$ 2,448	\$ 3,003	5.0%	38.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 39	\$ -	\$ 39	1.2%	0.5%	\$ 594	\$ 7,224	\$ 7,818	1.3%
<b>TOTAL, NON-SCI &amp; ENG FIELDS</b>	\$ 1,116	\$ 5,528	\$ 6,644	11.0%	11.4%	\$ -	\$ -	\$ -	0.0%	0.0%	\$ 1,170	\$ 1,518	\$ 2,688	84.7%	4.6%	\$ 27,372	\$ 30,921	\$ 58,293	9.8%
<b>TOTAL, SCI &amp; ENG FIELDS</b>	\$ 25,670	\$ 28,310	\$ 53,980	89.0%	10.0%	\$ 202,149	\$ 53,941	\$ 256,090	100.0%	47.5%	\$ 485	\$ -	\$ 485	15.3%	0.1%	\$ 362,752	\$ 176,435	\$ 539,187	90.2%
<b>GRAND TOTAL</b>	\$ 26,786	\$ 33,838	\$ 60,624	100.0%	10.1%	\$ 202,149	\$ 53,941	\$ 256,090	100.0%	42.9%	\$ 1,655	\$ 1,518	\$ 3,173	100.0%	0.5%	\$ 390,124	\$ 207,356	\$ 597,480	100.0%

Source: Campus NSF surveys. All dollars

Note: Percent of Total is the percentage e

### Total R&D Expenditures UMASS System FY2008 – FY2012



Source: Campus NSF surveys. All dollars are in thousands.

## R&D Expenditures by Source

(Dollars in Thousands)

FY2005- FY2009											FY2010 - FY2012				
	Total R&D Expenditures (S&E)										Total R&D Expenditures				
		FY05	FY06	FY07	FY08	FY09	5-Year Change FY05 - FY09		1-Year Change FY08 - FY09		FY10	FY11	FY12	1-Year Change FY11-12	
							\$	%	\$	%				\$	%
Amherst	\$127,487	\$136,057	\$141,351	\$152,884	\$156,216	\$28,729	22.5%	\$3,332	2.2%	\$169,141	\$181,297	\$194,775	\$13,478	7%	
Boston	\$18,148	\$21,056	\$25,952	\$30,272	\$36,637	\$18,489	101.9%	\$6,365	21.0%	\$56,416	\$57,040	\$60,086	\$3,046	5%	
Dartmouth	\$19,452	\$19,171	\$19,538	\$20,431	\$19,343	-\$109	-0.6%	-\$1,088	-5.3%	\$25,725	\$25,644	\$22,732	-\$2,912	-11%	
Lowell	\$23,852	\$27,635	\$34,824	\$36,486	\$52,431	\$28,579	119.8%	\$15,945	43.7%	\$59,345	\$60,013	\$60,624	\$611	1%	
Worcester	\$149,267	\$156,452	\$157,469	\$178,614	\$204,033	\$54,766	36.7%	\$25,419	14.2%	\$232,039	\$262,714	\$256,090	-\$6,624	-3%	
President's Office												\$3,173	\$3,173	NA	
System	\$338,206	\$360,371	\$379,134	\$418,687	\$468,660	\$130,454	38.6%	\$49,973	11.9%	\$542,668	\$586,708	\$594,307	\$7,599	1%	
Federal R&D Expenditures (S&E)											Federal Total R&D Expenditures				
	FY05	FY06	FY07	FY08	FY09	5-Year Change FY05 - FY09		1-Year Change FY08 - FY09		FY10	FY11	FY12	1-Year Change FY11-12		
						\$	%	\$	%				\$	%	
	Amherst	\$66,921	\$69,642	\$71,974	\$79,736	\$80,163	\$13,242	19.8%	\$427	0.5%	\$97,937	\$107,683	\$202,149	\$94,466	88%
Boston	\$6,326	\$8,610	\$9,152	\$12,001	\$13,536	\$7,210	114.0%	\$1,535	12.8%	\$24,527	\$26,958	\$33,275	\$6,317	23%	
Dartmouth	\$9,852	\$9,515	\$11,456	\$13,087	\$9,667	-\$185	-1.9%	-\$3,420	-26.1%	\$12,236	\$13,657	\$10,979	-\$2,678	-20%	
Lowell	\$17,608	\$18,741	\$20,045	\$22,406	\$23,083	\$5,475	31.1%	\$677	3.0%	\$25,550	\$27,960	\$26,786	-\$1,174	-4%	
Worcester	\$130,680	\$136,141	\$131,226	\$145,113	\$145,834	\$15,154	11.6%	\$721	0.5%	\$178,293	\$208,244	\$202,149	-\$6,095	-3%	
President's Office												\$1,655	\$1,655	NA	
System	\$231,387	\$242,649	\$243,853	\$272,343	\$272,283	\$40,896	17.7%	-\$60	0.0%	\$338,543	\$384,502	\$476,993	\$92,491	24%	
State & Local Government R&D Expenditures (S&E)											State & Local Total R&D Expenditures				
	FY05	FY06	FY07	FY08	FY09	5-Year Change FY05 - FY09		1-Year Change FY08 - FY09		FY10	FY11	FY12	1-Year Change FY11-12		
						\$	%	\$	%				\$	%	
	Amherst	\$3,873	\$5,684	\$5,638	\$4,699	\$5,439	\$1,566	40.4%	\$740	15.7%	\$4,567	\$3,166	\$4,358	\$1,192	38%
Boston	\$2,481	\$1,662	\$1,207	\$701	\$949	-\$1,532	-61.7%	\$248	35.4%	\$3,652	\$2,417	\$1,356	-\$1,061	-44%	
Dartmouth	\$5,039	\$5,069	\$2,210	\$1,641	\$1,312	-\$3,727	-74.0%	-\$329	-20.0%	\$657	\$821	\$1,313	\$492	60%	
Lowell	\$180	\$601	\$969	\$1,088	\$1,466	\$1,286	714.4%	\$378	34.7%	\$1,910	\$1,745	\$1,941	\$196	11%	
Worcester	\$139	\$35	\$0	\$895	\$5,265	\$5,126	3687.8%	\$4,370	488.3%	\$1,506	\$1,290	\$647	-\$643	-50%	
President's Office												\$1,101	\$1,101	NA	
System	\$11,712	\$13,051	\$10,024	\$9,024	\$14,431	\$2,719	23.2%	\$5,407	59.9%	\$12,292	\$9,439	\$10,069	\$630	7%	

Source: Campus NSF surveys. All dollars are in thousands.

Note: Prior to the FY 2010 reporting cycle (FY 2005-FY 2009), R&D Expenditures data by Source represents Science and Engineering figures only; Due to changes in the NSF Survey for the FY 2010 reporting cycle (and moving forward), R&D Expenditures by Source data now comprises Total R&D Expenditures figures: Science and Engineering plus Non-Science & Engineering. For reference purposes, historical data FY2005-FY2009 will be maintained until the next 5-year trend data is complete. Note 2: UMA FY2010 figures have been revised since the FY2010 R&D Report publication.

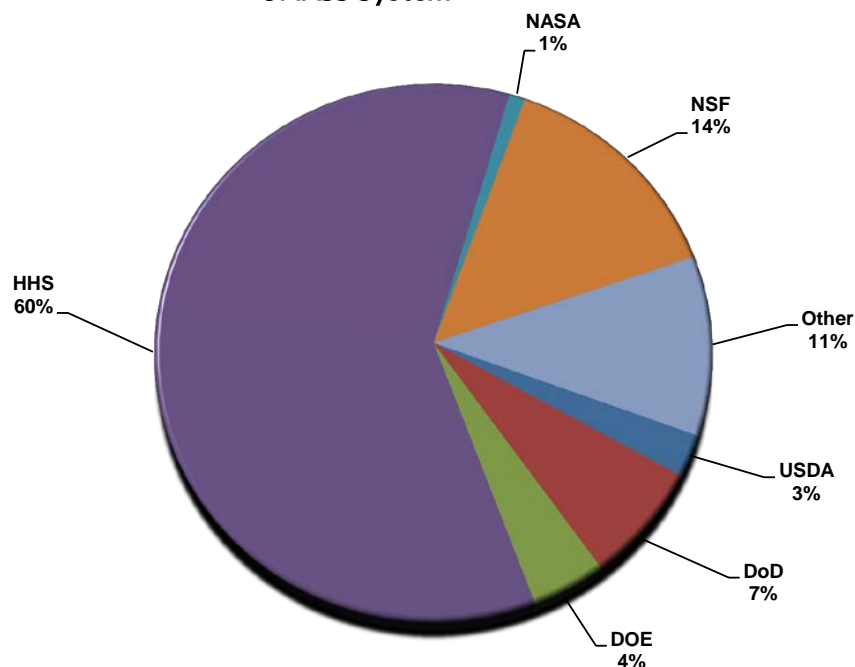
## R&D Expenditures by Source (Cont'd)

FY2005 - FY2009										FY2010- FY2012							
	Industry-Sponsored R&D Expenditures (S&E)									Industry-Sponsored Total R&D Expenditure							
	FY05	FY06	FY07	FY08	FY09	5-Year Change FY05 - FY09		1-Year Change FY08 - FY09		FY10			FY11			FY12	
						\$	%	\$	%	Business	Non-Profits	Total	Business	Non-Profits	Total	Business	Non-Profits
Amherst	\$4,724	\$5,934	\$5,195	\$8,182	\$8,505	\$3,781	80.0%	\$323	3.9%	\$6,234	\$6,675	\$12,909	\$6,048	\$6,476	\$12,524	\$6,485	\$6,102
Boston	\$0	\$0	\$275	\$552	\$333	\$333	NA	-\$219	-39.7%	\$91	\$5,902	\$5,993	\$188	\$4,933	\$5,121	\$160	\$2,670
Dartmouth	\$1,252	\$1,680	\$762	\$807	\$816	-\$436	-34.8%	\$9	1.1%	\$633	\$392	\$1,025	\$503	\$301	\$804	\$519	\$334
Lowell	\$4,755	\$4,423	\$5,222	\$6,299	\$6,772	\$2,017	42.4%	\$473	7.5%	\$4,460	\$1,779	\$6,239	\$3,726	\$2,426	\$6,152	\$3,914	\$2,983
Worcester	\$8,018	\$9,465	\$16,266	\$15,192	\$14,090	\$6,072	75.7%	-\$1,102	-7.3%	\$14,198	\$14,524	\$28,722	\$11,747	\$15,747	\$27,494	\$9,749	\$14,278
President's Office																\$60	\$427
<b>System</b>	<b>\$18,749</b>	<b>\$21,502</b>	<b>\$27,720</b>	<b>\$31,032</b>	<b>\$30,516</b>	<b>\$11,767</b>	<b>62.8%</b>	<b>-\$516</b>	<b>-1.7%</b>	<b>\$25,616</b>	<b>\$29,272</b>	<b>\$58,703</b>	<b>\$22,212</b>	<b>\$29,883</b>	<b>\$52,095</b>	<b>\$20,887</b>	<b>\$26,794</b>
FY2005 - FY2009										FY2010 - FY2012							
	Institutional R&D Expenditures (S&E)									Institutional Total R&D Expenditures							
	FY05	FY06	FY07	FY08	FY09	5-Year Change FY05 - FY09		1-Year Change FY08 - FY09		FY10	FY11	FY12	1-Year Change FY11-FY12				
						\$	%	\$	%				\$	%			
Amherst	\$42,887	\$45,773	\$48,755	\$49,556	\$50,647	\$7,760	18.1%	\$1,091	2.2%	\$52,426	\$57,156	\$ 61,924	\$4,768	8.3%			
Boston	\$6,731	\$7,007	\$11,122	\$13,048	\$15,993	\$9,262	137.6%	\$2,945	22.6%	\$21,997	\$22,350	\$ 22,569	\$219	1.0%			
Dartmouth	\$3,305	\$2,907	\$4,855	\$4,253	\$7,164	\$3,859	116.8%	\$2,911	68.4%	\$11,807	\$10,123	\$ 9,371	-\$752	-7.4%			
Lowell	\$1,309	\$3,870	\$8,588	\$6,693	\$21,110	\$19,801	1512.7%	\$14,417	215.4%	\$25,583	\$24,131	\$ 24,880	\$749	3.1%			
Worcester	\$1,583	\$2,377	\$1,385	\$2,626	\$20,916	\$19,333	1221.3%	\$18,290	696.5%	\$23,518	\$25,686	\$28,813	\$3,127	12.2%			
President's Office												\$ 384	\$384	NA			
<b>System</b>	<b>\$55,815</b>	<b>\$61,934</b>	<b>\$74,705</b>	<b>\$76,176</b>	<b>\$115,830</b>	<b>\$60,015</b>	<b>107.5%</b>	<b>\$39,654</b>	<b>52.1%</b>	<b>\$135,331</b>	<b>\$139,446</b>	<b>\$147,941</b>	<b>\$8,495</b>	<b>6.1%</b>			
Other R&D Expenditures (S&E)										Other Total R&D Expenditures							
	FY05	FY06	FY07	FY08	FY09	5-Year Change FY05 - FY09		1-Year Change FY08 - FY09		FY10	FY11	FY12	1-Year Change FY11-FY12				
						\$	%	\$	%				\$	%			
Amherst	\$9,082	\$9,024	\$9,789	\$10,711	\$11,462	\$2,380	26.2%	\$751	7.0%	\$1,302	\$768	\$626	-\$142	-18%			
Boston	\$2,610	\$3,777	\$4,196	\$3,970	\$5,826	\$3,216	123.2%	\$1,856	46.8%	\$247	\$194	\$56	-\$138	-71%			
Dartmouth	\$4	\$0	\$255	\$643	\$384	\$380	9500.0%	-\$259	-40.3%	\$0	\$239	\$216	-\$23	-10%			
Lowell	\$0	\$0	\$0	\$0	\$0	\$0	NA	\$0	NA	\$63	\$25	\$120	\$95	380%			
President's Office												\$0	\$0	NA			
Worcester	\$8,847	\$8,434	\$8,592	\$14,788	\$17,928	\$9,081	102.6%	\$3,140	21.2%	\$0	\$0	\$0	\$0	NA			
<b>System</b>	<b>\$20,543</b>	<b>\$21,235</b>	<b>\$22,832</b>	<b>\$30,112</b>	<b>\$35,600</b>	<b>\$15,057</b>	<b>73.3%</b>	<b>\$5,488</b>	<b>18.2%</b>	<b>\$1,612</b>	<b>\$1,226</b>	<b>\$1,018</b>	<b>-\$208</b>	<b>-17%</b>			

Source: Campus NSF surveys. All dollars are in thousands.

Note: Prior to the FY 2010 reporting cycle (FY 2005-FY 2009), R&D Expenditures data by Source represents Science and Engineering figures only; Due to changes in the NSF Survey for the FY 2010 reporting cycle (and moving forward), R&D Expenditures by Source data now comprises Total R&D Expenditures figures: Science and Engineering plus Non-Science & Engineering. For reference purposes, historical data FY2005-FY2009 will be maintained until the next 5-year trend data is complete. Note 2: UMA FY2010 figures have been revised since the FY2010 R&D Report Publication.

**Total R&D Expenditures  
by Federal Government Agency Sources FY2012  
UMASS System**

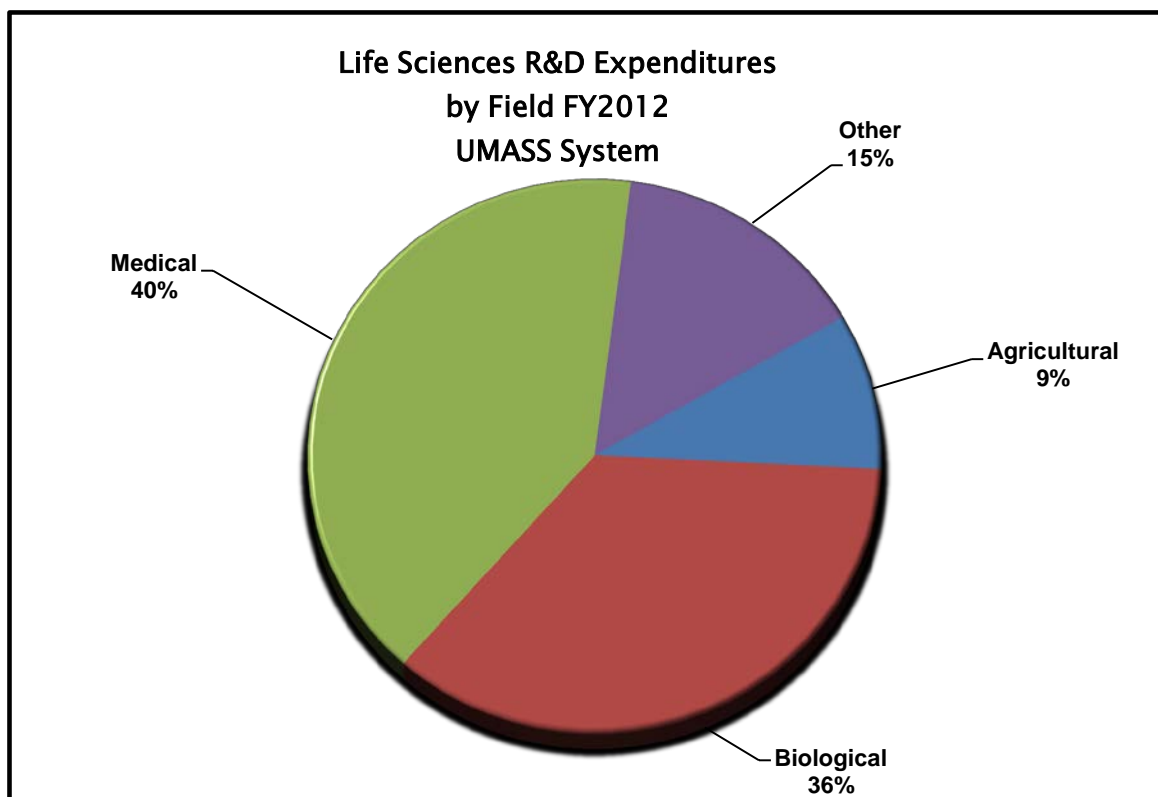
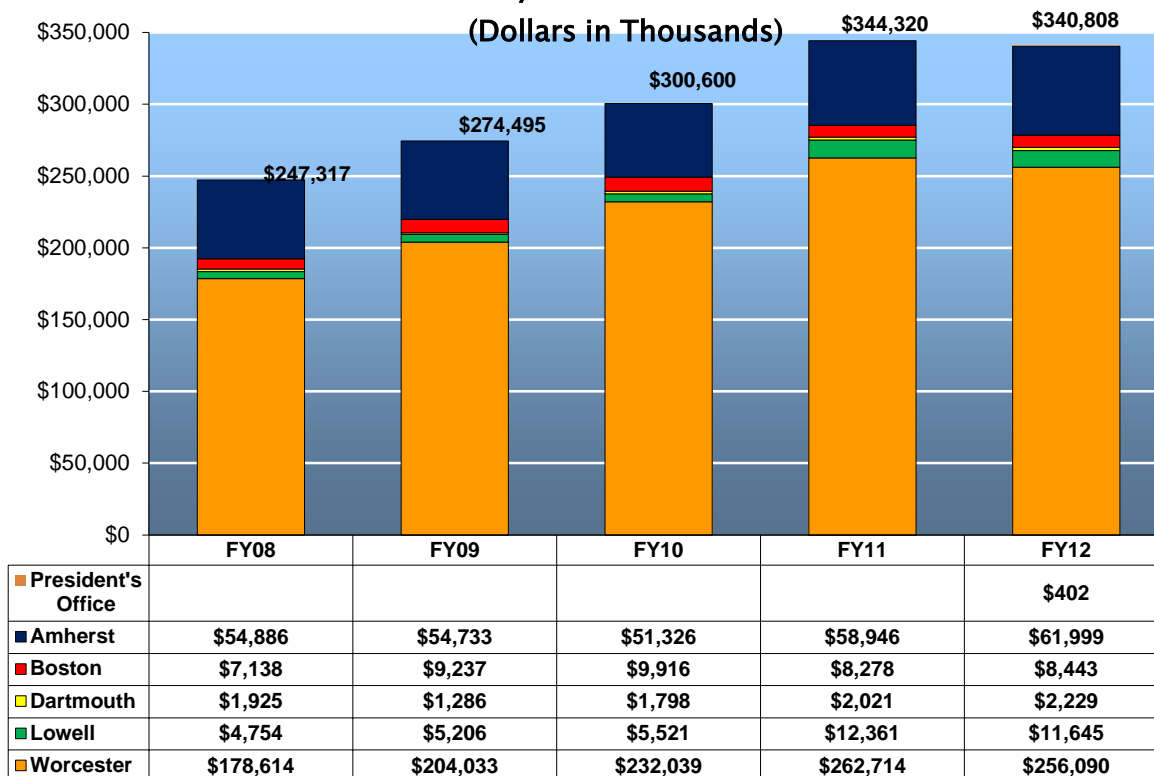


	Total Federal \$	USDA	% of Campus Total	DoD	% of Campus Total	DOE	% of Campus Total	HHS	% of Campus Total	NASA	% of Campus Total	NSF	% of Campus Total	Other	% of Campus Total
<b>Amherst</b>	\$ 115,280	\$ 9,677	8.4%	\$ 10,545	9.1%	\$ 13,474	11.7%	\$ 21,089	18.3%	\$ 2,954	2.6%	\$ 41,407	35.9%	\$ 16,134	14.0%
<b>Boston</b>	\$ 33,275	\$ 47	0.1%	\$ 558	1.7%	\$ 897	2.7%	\$ 12,332	37.1%	\$ 365	1.1%	\$ 5,349	16.1%	\$ 13,727	41.3%
<b>Dartmouth</b>	\$ 10,979	\$ 189	1.7%	\$ 1,577	14.4%	\$ 731	6.7%	\$ 426	3.9%	\$ 42	0.4%	\$ 2,303	21.0%	\$ 5,711	52.0%
<b>Lowell</b>	\$ 26,786	\$ -	0.0%	\$ 9,638	36.0%	\$ 1,257	4.7%	\$ 6,135	22.9%	\$ 347	1.3%	\$ 5,336	19.9%	\$ 4,073	15.2%
<b>President's Office</b>	\$ 1,655	\$ -	0.0%	\$ -	0.0%	\$ -	0.0%	\$ 466	28.2%	\$ 23	1.4%	\$ 185	11.2%	\$ 981	59.3%
<b>Worcester</b>	\$ 202,149	\$ 62	0.2%	\$ 4,883	2.4%	\$ -	0.0%	\$ 194,717	96.3%	\$ -	0.0%	\$ 980	0.5%	\$ 1,507	0.7%
<b>System</b>	\$ 390,124	\$ 9,975	2.6%	\$ 27,201	7.0%	\$ 16,359	4.2%	\$ 235,165	60.3%	\$ 3,731	1.0%	\$ 55,560	14.2%	\$ 42,133	10.8%

Source: Campus NSF surveys. All dollars are in thousands.

Note: HHS includes NIH

## Life Sciences R&D Expenditures UMASS System FY2008 – FY2012



*Note: UMA FY2010 figures have been revised since the FY2010 R&D Report Publication.*

*Source: Campus NSF surveys. All dollars are in thousands.*



**Life Sciences R&D Expenditures by Field  
FY2008 – FY2012**

*(Dollars in Thousands)*

	Total Life Sciences R&D								
	FY08	FY09	FY10	FY11	FY12	5-Year Change FY08 - FY12		1-Year Change FY11-FY12	
						\$	%	\$	%
<b>Amherst</b>	\$54,886	\$54,733	\$51,326	\$58,946	\$61,999	\$7,113	13%	\$3,053	5%
<b>Boston</b>	\$7,138	\$9,237	\$9,916	\$8,278	\$8,443	\$1,305	18%	\$165	2%
<b>Dartmouth</b>	\$1,925	\$1,286	\$1,798	\$2,021	\$2,229	\$304	16%	\$208	10%
<b>Lowell</b>	\$4,754	\$5,206	\$5,521	\$12,361	\$11,645	\$6,891	145%	-\$716	-6%
<b>Worcester</b>	\$178,614	\$204,033	\$232,039	\$262,714	\$256,090	\$77,476	43%	-\$6,624	-3%
<b>President's Office</b>					\$402	NA	NA	NA	NA
<b>System</b>	<b>\$247,317</b>	<b>\$274,495</b>	<b>\$300,600</b>	<b>\$344,320</b>	<b>\$340,808</b>	<b>\$93,491</b>	<b>38%</b>	<b>-\$3,512</b>	<b>-1%</b>

	Agricultural								
	FY08	FY09	FY10	FY11	FY12	5-Year Change FY08 - FY12		1-Year Change FY11-FY12	
						\$	%	\$	%
<b>Amherst</b>	\$24,478	\$23,088	\$21,708	\$28,669	\$29,881	\$5,403	22%	\$1,212	4%
<b>Boston</b>	\$0	\$0	\$0	\$0	\$0	\$0	NA	\$0	NA
<b>Dartmouth</b>	\$602	\$531	\$645	\$946	\$1,170	\$568	94%	\$224	24%
<b>Lowell</b>	\$0	\$0	\$0	\$0	\$0	\$0	NA	\$0	NA
<b>Worcester</b>	\$0	\$0	\$0	\$0	\$0	\$0	NA	\$0	NA
<b>President's Office</b>					\$0	\$0	NA	\$0	NA
<b>System</b>	<b>\$25,080</b>	<b>\$23,619</b>	<b>\$22,353</b>	<b>\$29,615</b>	<b>\$31,051</b>	<b>\$5,971</b>	<b>24%</b>	<b>\$1,436</b>	<b>5%</b>

	Biological								
	FY08	FY09	FY10	FY11	FY12	5-Year Change FY08 - FY12		1-Year Change FY11-FY12	
						\$	%	\$	%
<b>Amherst</b>	\$22,823	\$23,323	\$22,494	\$23,276	\$25,081	\$2,258	10%	\$1,805	8%
<b>Boston</b>	\$3,384	\$3,020	\$2,537	\$2,581	\$2,773	-\$611	-18%	\$192	7%
<b>Dartmouth</b>	\$970	\$711	\$1,120	\$1,004	\$938	-\$32	-3%	-\$66	-7%
<b>Lowell</b>	\$1,477	\$1,531	\$1,281	\$1,553	\$1,999	\$522	35%	\$446	29%
<b>Worcester</b>	\$63,980	\$72,851	\$77,718	\$88,359	\$91,140	\$27,160	42%	\$2,781	3%
<b>President's Office</b>					\$0	\$0	NA	\$0	NA
<b>System</b>	<b>\$92,634</b>	<b>\$101,436</b>	<b>\$105,150</b>	<b>\$116,773</b>	<b>\$121,931</b>	<b>\$29,297</b>	<b>32%</b>	<b>\$5,158</b>	<b>4%</b>

*Note: UMA FY2010 figures have been revised since the FY2010 R&D Report Publication.*

**Life Sciences R&D Expenditures by Field  
FY2008 – FY2012**

*(Dollars in Thousands)*

<b>Medical</b>									
	FY08	FY09	FY10	FY11	FY12	5-Year Change FY08 - FY12		1-Year Change FY11-FY12	
						\$	%	\$	%
						<b>Amherst</b>	\$6,575	\$7,237	\$6,411
<b>Boston</b>	\$2,934	\$3,493	\$4,697	\$4,675	\$4,345	\$1,411	48%	-\$330	-7%
<b>Dartmouth</b>	\$0	\$0	\$0	\$0	\$0	\$0	NA	\$0	NA
<b>Lowell</b>	\$0	\$0	\$0	\$252	\$0	\$0	NA	-\$252	-100%
<b>Worcester</b>	\$93,501	\$104,417	\$124,323	\$133,598	\$127,032	\$33,531	36%	-\$6,566	-5%
<b>President's Office</b>					\$263	\$263	NA	\$263	NA
<b>System</b>	<b>\$103,010</b>	<b>\$115,147</b>	<b>\$135,431</b>	<b>\$144,998</b>	<b>\$137,916</b>	<b>\$34,906</b>	<b>34%</b>	<b>-\$7,082</b>	<b>-5%</b>

<b>Other</b>									
	FY08	FY09	FY10	FY11	FY12	5-Year Change FY08 - FY12		1-Year Change FY11-FY12	
						\$	%	\$	%
						<b>Amherst</b>	\$1,010	\$1,085	\$713
<b>Boston</b>	\$820	\$2,724	\$2,682	\$1,022	\$1,325	\$505	62%	\$303	30%
<b>Dartmouth</b>	\$353	\$44	\$33	\$71	\$121	-\$232	-66%	\$50	70%
<b>Lowell</b>	\$3,277	\$3,675	\$4,240	\$10,556	\$9,646	\$6,369	194%	-\$910	-9%
<b>Worcester</b>	\$21,133	\$26,765	\$ 29,998	\$ 40,757	\$ 37,918	\$16,785	79%	-\$2,839	-7%
<b>President's Office</b>					\$139	\$139	NA	\$139	NA
<b>System</b>	<b>\$26,593</b>	<b>\$34,293</b>	<b>\$ 37,666</b>	<b>\$52,934</b>	<b>\$49,910</b>	<b>\$23,317</b>	<b>88%</b>	<b>-\$3,024</b>	<b>-6%</b>

Source: Campus NSF surveys and WebCASPAR. All dollars are in thousands.

Note: UMA FY2010 figures have been revised since the FY2010 R&D Report Publication.

## EPILOGUE

---

The *FY2012 Annual Research and Development Expenditures Report* presents information on the research and development expenditures for the University of Massachusetts System.

**The NSF Survey Definition for Research and development (R&D)** is “creative work conducted systematically to increase the stock of knowledge (research) and to use this stock of knowledge to devise new applications (development). R&D covers three activities defined below—basic research, applied research, and development.”

It covers three activities defined below:

- Basic research is undertaken primarily to acquire new knowledge without any particular application or use in mind.
- Applied research is conducted to gain the knowledge or understanding to meet a specific, recognized need.
- Development is the systematic use of the knowledge or understanding gained from research directed toward the production of useful materials, devices, systems, or methods, including the design and development of prototypes and processes.

*Source: FY 2012 HERD Survey*

### Changes to Questions

- **Question 1.** Row d, Nonprofit organizations. An instruction has been added to specify that funds from your institution’s 501(c)3 foundation be reported in row e1 (institutionally financed research).
- **Question 1.** Row e3, Unrecovered indirect costs. The wording has been modified to emphasize that only your externally funded R&D should be used to calculate these costs.
- **Questions 7 and 8.** Row a has been clarified to mean U.S. higher education institutions. Foreign institutions should be reported in row d.

### New question

- **Question 1.1.** This question asks if four different types of institutionally financed R&D expenditures were included in Question 1, row e1, both on the current FY 2012 survey and on the FY 2011 survey.

Additional highlights as well as rankings and comparative data can be found in the expanded version of this report (to be released shortly). Please contact us at the University of Massachusetts President’s Office, Office of Institutional Research, if you would like to obtain a hard copy.

Barbara Velardi  
Institutional Research Associate

Neena Verma  
Director of Institutional Research

Maureen Regan  
Senior Institutional Research Analyst