

ANNUAL R&D EXPENDITURES FY2008



UNIVERSITY OF MASSACHUSETTS
Amherst-Boston-Dartmouth-Lowell-Worcester

*UMASS Presidents Office
Office of Institutional Research
March 2009*

Introduction

The *FY 2008 Annual Research and Development Expenditures* Report presents information on the research and development expenditures for the University of Massachusetts System. It is based on data that our five campuses provide to the National Science Foundation (NSF) through its annual Survey of Research and Development Expenditures at Universities and Colleges. The report is comprised of three sections: Total R&D Expenditures (pages 1-7), Science & Engineering R&D Expenditures (pages 9-13), and Life Sciences R&D Expenditures (pages 14-15). In addition to the FY2008 data, this report also provides trend data in many cases.

A Note on the Definition and Criteria For ‘R&D Expenditures’ - According to the National Science Foundation Survey of Research And Development Expenditures, “(*Separately budgeted*) *R&D Expenditures* include all funds expended for activities that are specifically organized to produce research outcomes. These activities are either commissioned by an agency external to the institution or are separately budgeted by an organizational unit within the institution. *Expenditures* are funds actually spent by an institution during its fiscal year. *Separately budgeted R&D equipment purchased from current funds* includes all research equipment purchased under sponsored research project awards.” www.nsf.org. Please note that the NSF R&D Expenditures data do not include research monies expended in any training or education activities.

Major Highlights:

- **UMass Total R&D Expenditures** - Total FY2008 R&D expenditures for the University of Massachusetts System was reported at \$435 million, which represents a 9.5% increase from the FY2007 total of \$397 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 a higher rate than the national trend for all U.S. institutions. In FY2007 (most recent comparison data available), while the UMass system reflected an annual growth rate of 7.8%, All U.S. Institutions reflected a growth rate of 3.7%.
- **UMass R&D Expenditures in Science and Engineering** – In FY2008, an estimated \$418 million (96.2%) of our R&D expenditures are in the sciences and engineering (S&E).
- **UMass State Ranking in Science and Engineering R&D Expenditures** - Among Massachusetts colleges and universities, UMass ranks 3rd in S&E expenditures. UMass, MIT, Harvard and BU together account for 78% of the academic science and engineering R&D expenditures in the state. (Rankings based on FY 2007 data).
- **UMass R&D Expenditures by Funding Source (FY2008)** - In terms of funding sources for Science and Engineering research, 66% is from the federal government, 18% is from institutional sources, 2% is from state and local government, 7% is from industry and 7% is from other sources (e.g., private foundations).
- **UMass Areas of Funding Growth** – Between the reporting cycles FY2007-08, industry sponsorship increased 11.9%, institutional funding increased 2%, other funding increased 31.9%, and federal funding increased 11.7% from the prior year.

- **Life Sciences Continues to Comprise More Than Half of all R&D Expenditures at UMass -**
At \$247 million, life sciences constitute more than half of UMass' total R&D expenditures (56.8%). FY2008 distribution of R&D expenditures by field is:

Life Sciences	56.8%	Social Sciences	3.1%
Physical Sciences	6.4%	Non Sciences/Engineering	3.8%
Engineering	15.5%	Psychology	2.8%
Computer Sciences	4.8%	Mathematical Sciences	1.1%
Environmental Sciences	4.7%	Other Sciences	1.0%

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.

Please Note: Following the implementation system-wide of ERP research administration software in 2007, significant improvements have been made to the methodology used to gather, analyze, and report the FY2008 R&D Expenditures data. Although variations at the aggregate level are not overly significant, there might be a slight impact of possible methodological inconsistencies for trended data at the sub-category levels. Comparison to data from prior years should be made with this awareness, as campuses are currently in the process of reviewing their methodology.

Barbara Velardi
Research Associate

Neena Verma
Director of Institutional Research

TOTAL R&D EXPENDITURES

- **FY2004 - FY2008**
 - UMASS SYSTEM 1
 - UMASS AMHERST 2
 - UMASS BOSTON 3
 - UMASS DARTMOUTH 4
 - UMASS LOWELL 5
 - UMASS WORCESTER 6
- **TOTAL R&D EXPENDITURES BY FIELD FY2008** 7

SCIENCE & ENGINEERING R&D EXPENDITURES

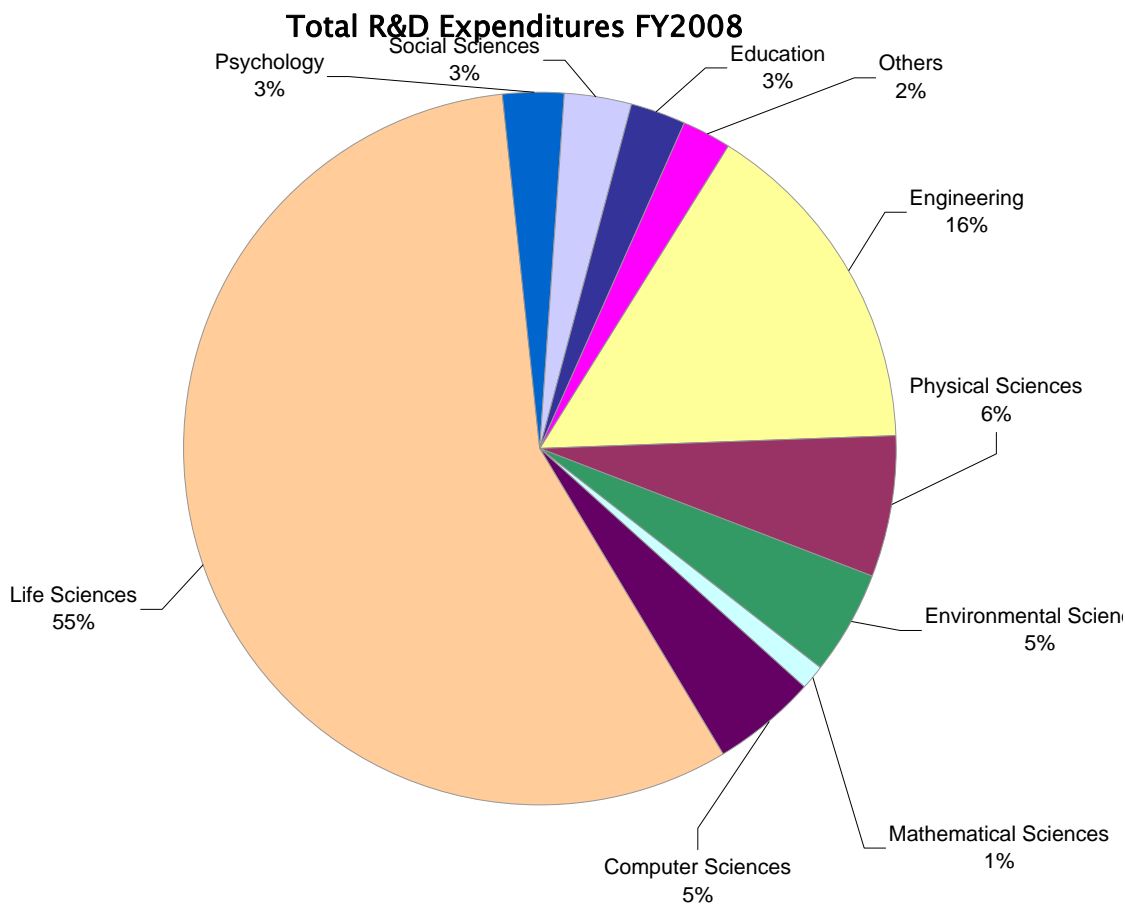
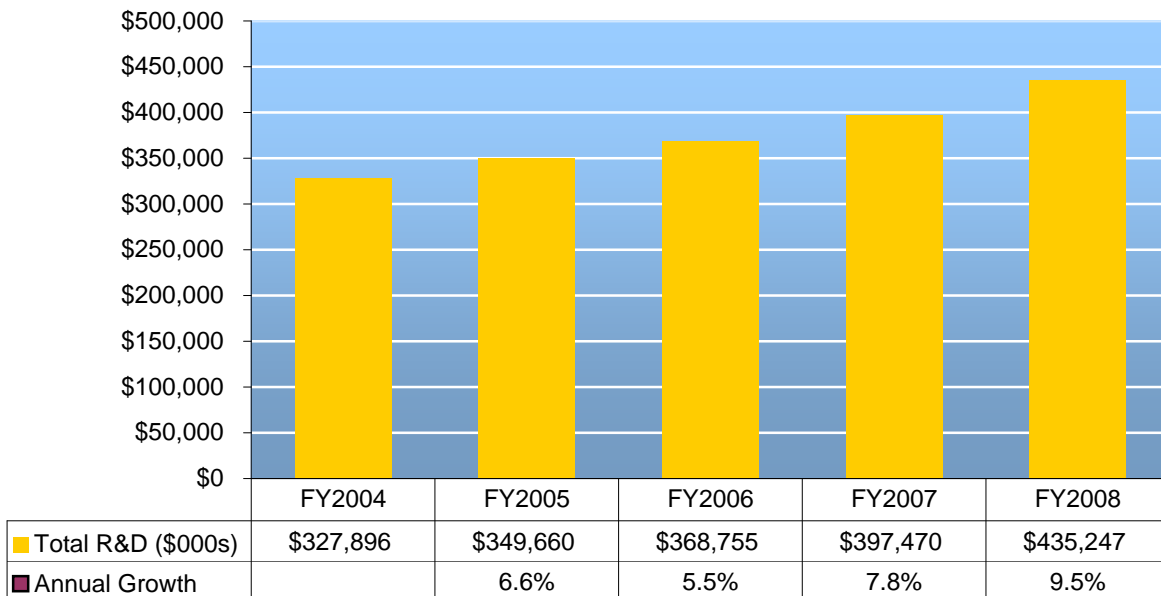
- **FY2004 - FY2008**
- **EXPENDITURES BY SOURCE FY2008** 9
- **EXPENDITURES BY SOURCE FY2004 - FY2008** 10
- **PERCENT BASIC RESEARCH FY2008** 12
- **FEDERAL GOVERNMENT AGENCY SOURCES FY2008** 13

LIFE SCIENCES R&D EXPENDITURES

- **FY2004 - FY2008** 14
- **EXPENDITURES BY FIELD FY2008** 14
- **EXPENDITURES BY FIELD FY2004 - FY2008** 15

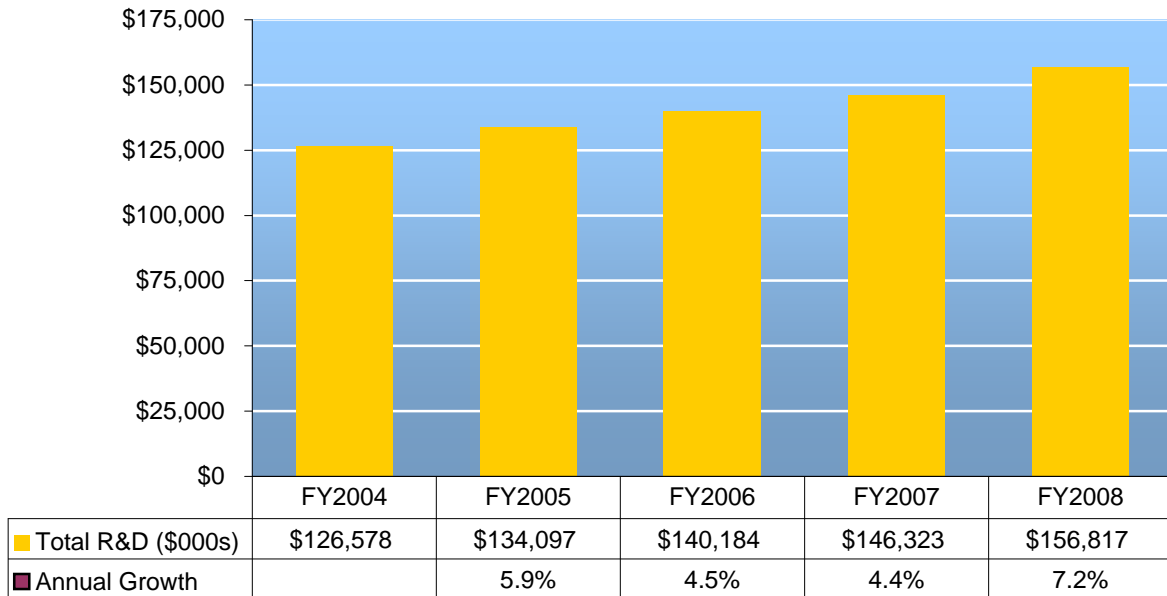
UMASS System

Total R&D Expenditures FY2004 – FY2008

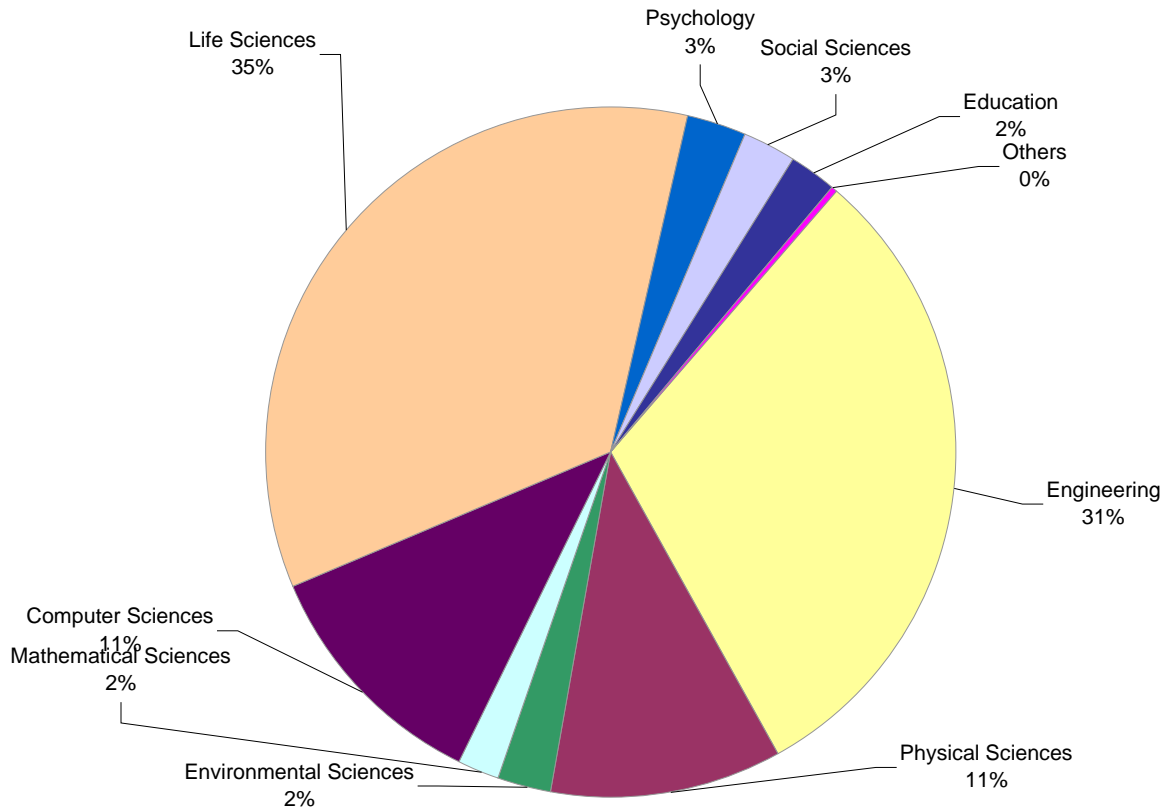


Amherst

Total R&D Expenditures FY2004 – FY2008

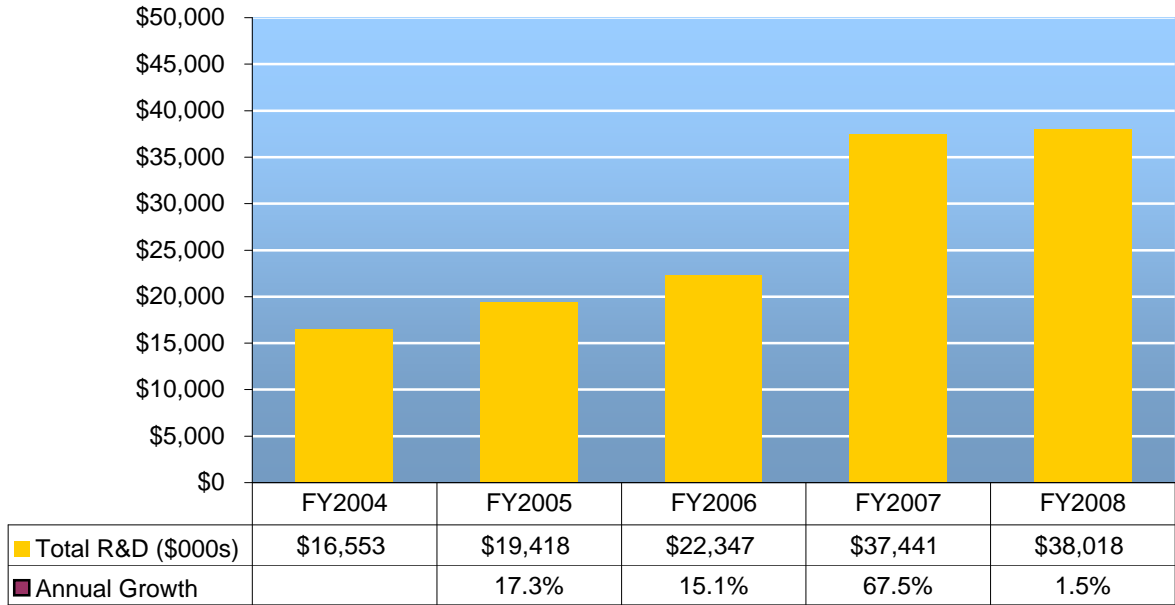


Total R&D Expenditures FY2008

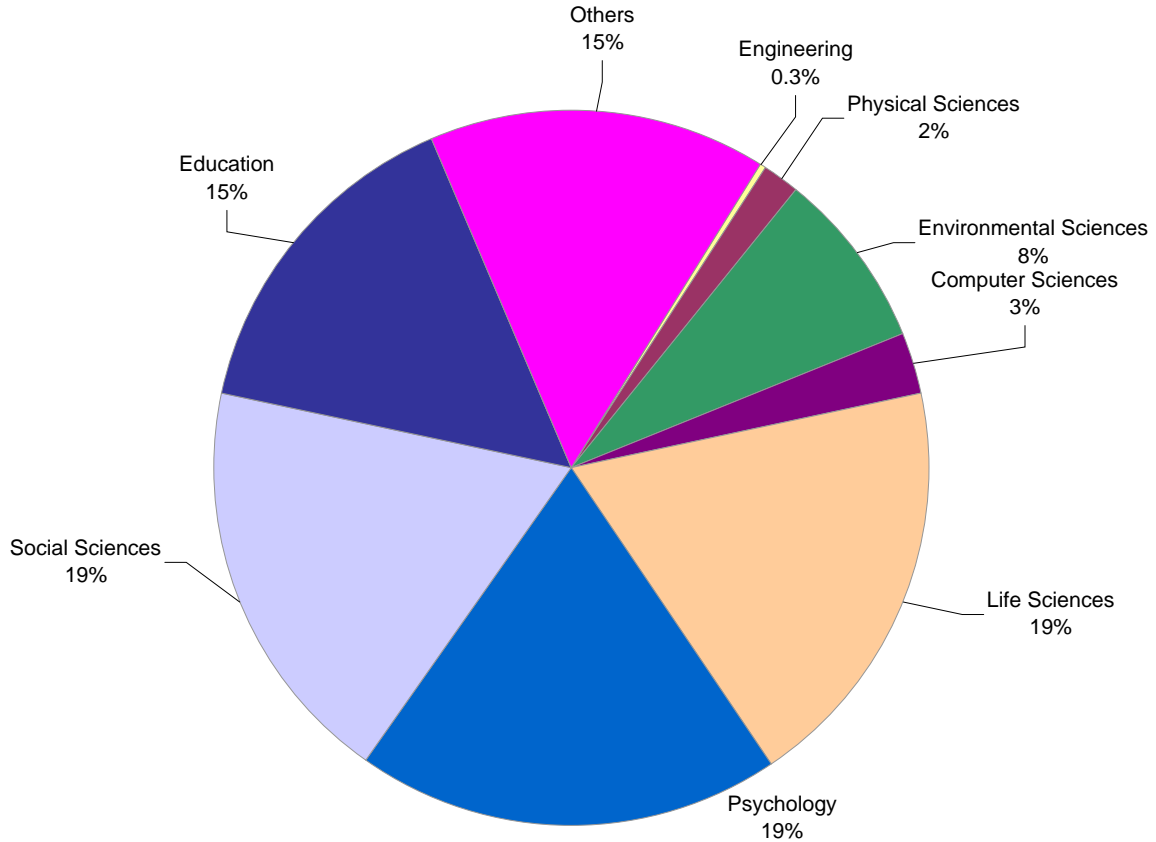


Boston

Total R&D Expenditures FY2004 – FY2008

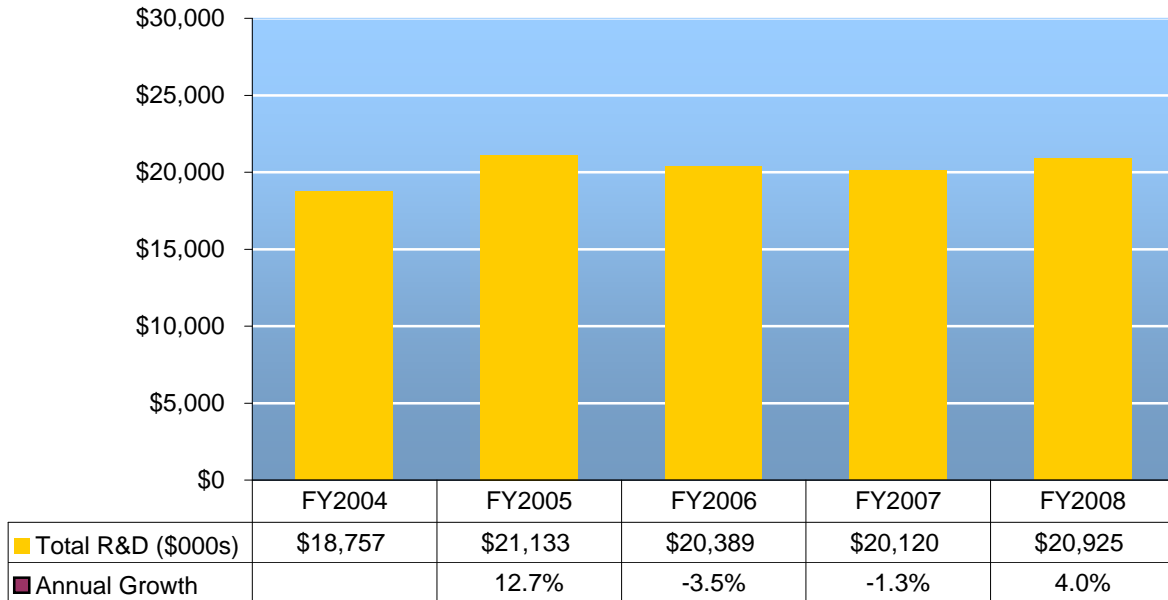


Total R&D Expenditures FY2008

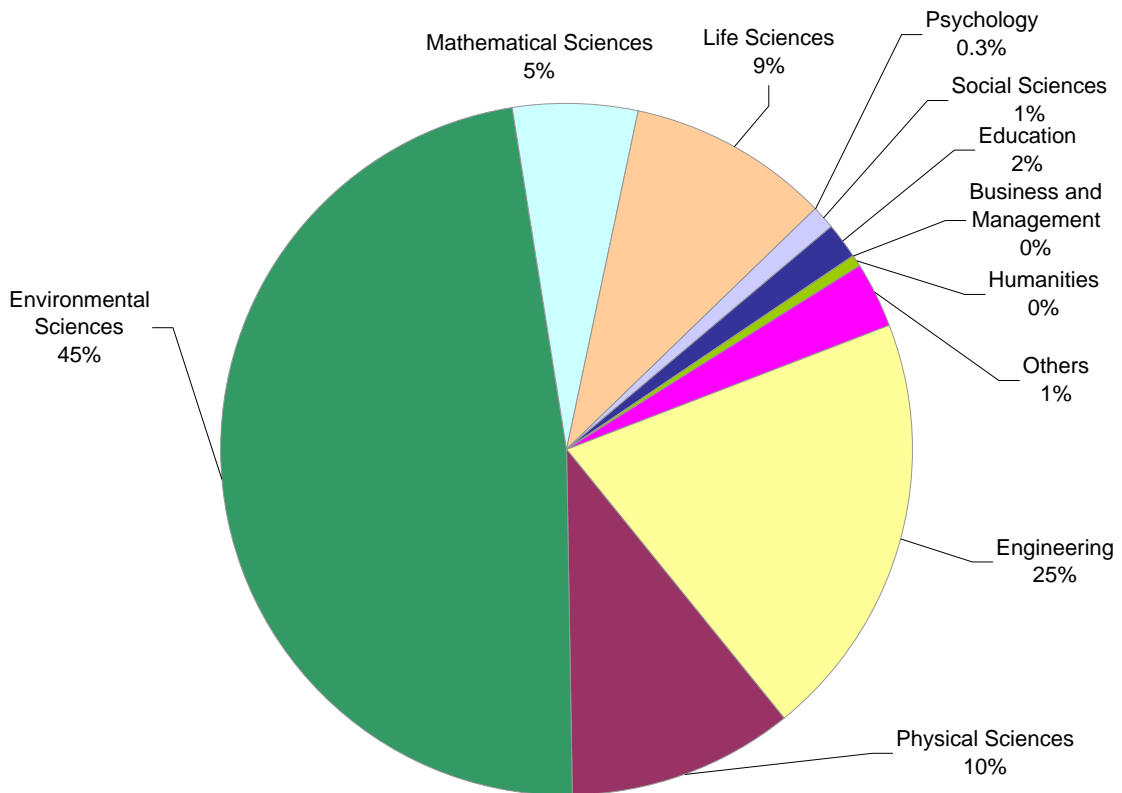


Dartmouth

Total R&D Expenditures FY2004 – FY2008

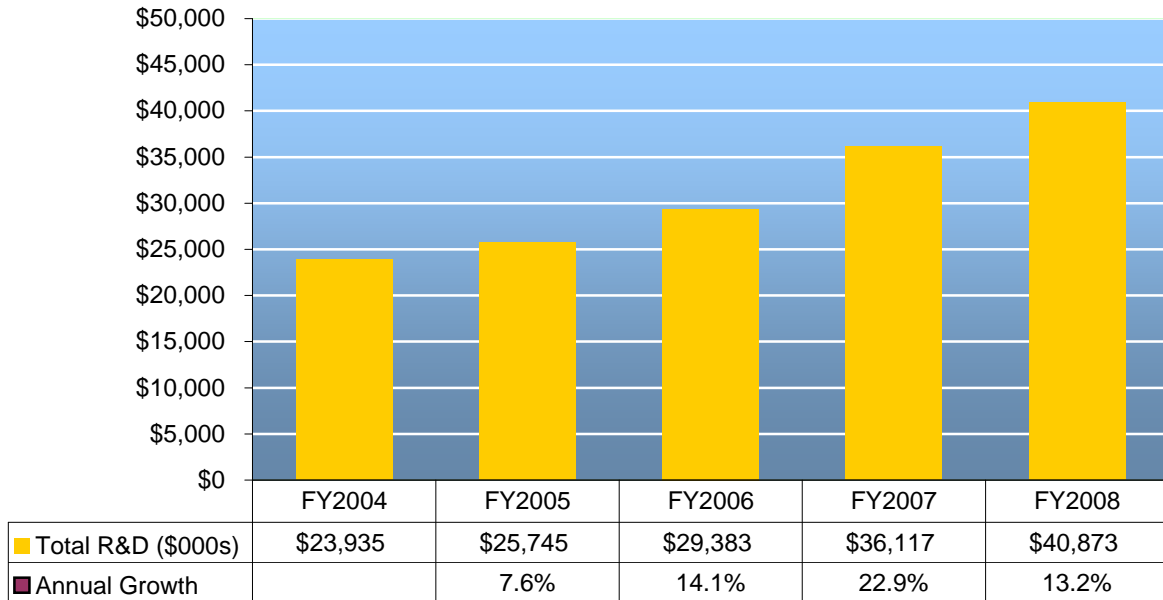


Total R&D Expenditures FY2008

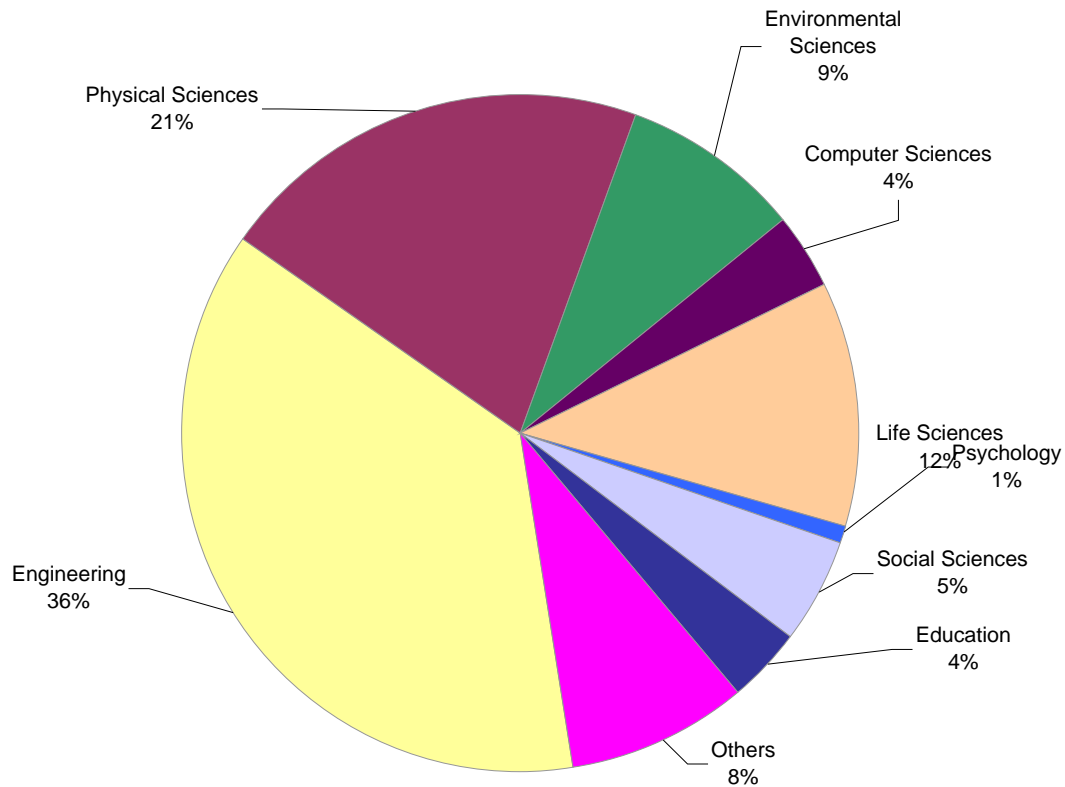


Lowell

Total R&D Expenditures FY2004 – FY2008

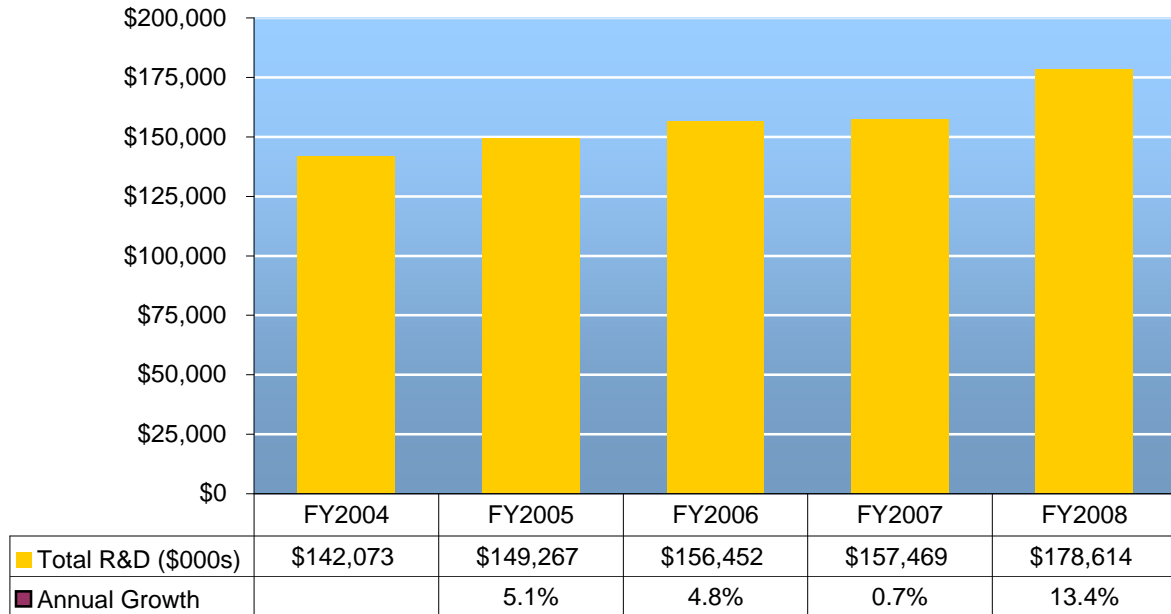


Total R&D Expenditures FY2008



Worcester

Total R&D Expenditures FY2004 – FY2008



All of Worcester's R&D
expenditures are in the life
sciences.

Total R&D Expenditures By Field FY2008

FIELD	UMA FY2008	% of UMA Total	% of Field	UMB FY2008	% of UMB Total	% of Field	UMD FY2008	% of UMD Total	% of Field	UML FY2008	% of UML Total	% of Field	UMW FY2008	% of UMW Total	% of Field	System FY2008	% of Total
Engineering (Total)	\$ 48,028	30.6%	71.1%	\$ 102	0.3%	0.2%	\$ 4,214	20.1%	6.2%	\$ 15,178	37.1%	22.5%	\$ -			\$ 67,522	15.5%
Aeronautical & Astronomical	\$ -			\$ -			\$ -	0.0%	#DIV/0!	\$ -			\$ -			\$ -	0.0%
Bioengineering/Biomedical	\$ -			\$ -			\$ -	0.0%	#DIV/0!	\$ -			\$ -			\$ -	0.0%
Chemical	\$ 20,294	12.9%	97.9%	\$ -			\$ -			\$ 439	1.1%	2.1%	\$ -			\$ 20,733	4.8%
Civil	\$ 6,472	4.1%	82.2%	\$ -			\$ 847	4.0%	10.8%	\$ 550	1.3%	7.0%	\$ -			\$ 7,869	1.8%
Electrical	\$ 14,182	9.0%	84.7%	\$ 101	0.3%	0.6%	\$ 649	3.1%	3.9%	\$ 1,818	4.4%	10.9%	\$ -			\$ 16,750	3.8%
Mechanical	\$ 6,501	4.1%	64.7%	\$ -			\$ 393	1.9%	3.9%	\$ 3,159	7.7%	31.4%	\$ -			\$ 10,053	2.3%
Metallurgical & Materials	\$ -			\$ -			\$ 1,126	5.4%	31.2%	\$ 2,483	6.1%	68.8%	\$ -			\$ 3,609	0.8%
Other	\$ 579	0.4%	6.8%	\$ 1	0.00%	0.0%	\$ 1,199	5.7%	14.1%	\$ 6,729	16.5%	79.1%	\$ -			\$ 8,508	2.0%
Physical Sciences (Total)	\$ 16,708	10.7%	59.7%	\$ 584	1.5%	2.1%	\$ 2,175	10.4%	7.8%	\$ 8,526	20.9%	30.5%	\$ -			\$ 27,993	6.4%
Astronomy	\$ 3,537	2.3%	100.0%	\$ -			\$ -			\$ -			\$ -			\$ 3,537	0.8%
Chemistry	\$ 7,342	4.7%	66.3%	\$ 283	0.7%	2.6%	\$ 1,796	8.6%	16.2%	\$ 1,651	4.0%	14.9%	\$ -			\$ 11,072	2.5%
Physics	\$ 5,829	3.7%	43.6%	\$ 301	0.8%	2.2%	\$ 379	1.8%	2.8%	\$ 6,875	16.8%	51.4%	\$ -			\$ 13,384	3.1%
Other	\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	0.0%
Environmental Sciences (Total)	\$ 3,892	2.5%	19.0%	\$ 3,128	8.2%	15.2%	\$ 10,016	47.9%	48.8%	\$ 3,499	8.6%	17.0%	\$ -			\$ 20,535	4.7%
Atmospheric	\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	
Earth Sciences	\$ 2,901	1.8%	44.6%	\$ 99	0.3%	1.5%	\$ -			\$ 3,499	8.6%	53.8%	\$ -			\$ 6,499	1.5%
Oceanography	\$ 49	0.0%	0.4%	\$ 2,131	5.6%	17.5%	\$ 10,016	47.9%	82.1%	\$ -			\$ -			\$ 12,196	2.8%
Other	\$ 942			\$ 898	2.4%	48.8%	\$ -			\$ -			\$ -			\$ 1,840	0.4%
Mathematical Sciences (Total)	\$ 3,193	2.0%	68.9%	\$ 26	0.1%	0.6%	\$ 1,235	5.9%	26.7%	\$ 177	0.4%	3.8%	\$ -			\$ 4,631	1.1%
Computer Sciences (Total)	\$ 17,808	11.4%	85.0%	\$ 1,088	2.9%	5.2%	\$ 484	2.3%	2.3%	\$ 1,561	3.8%	7.5%	\$ -			\$ 20,941	4.8%
Life Sciences (Total)	\$ 54,886	35.0%	22.2%	\$ 7,138	18.8%	2.9%	\$ 1,925	9.2%	0.8%	\$ 4,754	11.6%	1.9%	\$ 178,614	100.0%	72.2%	\$ 247,317	56.8%
Agricultural	\$ 24,478	15.6%	97.6%	\$ -			\$ 602	2.9%	2.4%	\$ -			\$ -			\$ 25,080	5.8%
Biological	\$ 22,823	14.6%	24.6%	\$ 3,384	8.9%	3.7%	\$ 970	4.6%	1.0%	\$ 1,477	3.6%	1.6%	\$ 63,980	35.8%	69.1%	\$ 92,634	21.3%
Medical	\$ 6,575	4.2%	6.4%	\$ 2,934	7.7%		\$ -			\$ -			\$ 93,501	52.3%	90.8%	\$ 103,010	23.7%
Other	\$ 1,010	0.6%	3.8%	\$ 820	2.2%	3.1%	\$ 353	1.7%	1.3%	\$ 3,277	8.0%	12.32%	\$ 21,133	11.8%	79.5%	\$ 26,593	6.1%
Psychology (Total)	\$ 4,440	2.8%	36.9%	\$ 7,255	19.1%	60.3%	\$ 14	0.1%	0.1%	\$ 313	0.8%	2.6%	\$ -			\$ 12,022	2.8%
Social Sciences (Total)	\$ 3,929	2.5%	29.5%	\$ 7,113	18.7%	53.4%	\$ 225	1.1%	1.7%	\$ 2,048	5.0%	15.4%	\$ -			\$ 13,315	3.1%
Economics	\$ 1,514	1.0%	64.6%	\$ 788	2.1%	33.6%	\$ 11	0.1%	0.5%	\$ 31	0.1%	1.3%	\$ -			\$ 2,344	0.5%
Political Science	\$ 585	0.4%	25.6%	\$ 1,516	4.0%	66.3%	\$ 181	0.9%	7.9%	\$ 4	0.0%	0.2%	\$ -			\$ 2,286	0.5%
Sociology	\$ 1,117	0.7%	45.9%	\$ 1,304	3.4%	53.6%	\$ 11	0.1%	0.5%	\$ 3	0.0%	0.1%	\$ -			\$ 2,435	0.6%
Other	\$ 713	0.5%	11.4%	\$ 3,505	9.2%	56.1%	\$ 22	0.1%	0.4%	\$ 2,010	4.9%	32.2%	\$ -			\$ 6,250	1.4%
Other Sciences (Total)	\$ -			\$ 3,838	10.1%	87.0%	\$ 143	0.7%	3.2%	\$ 430	1.1%	9.7%	\$ -			\$ 4,411	1.0%
TOTAL, SCI & ENG FIELDS	\$ 152,884	97.5%	36.5%	\$ 30,272	79.6%	7.2%	\$ 20,431	97.6%	4.9%	\$ 36,486	89.3%	8.7%	\$ 178,614	100.0%	42.7%	\$ 418,687	96.2%

Total R&D Expenditures By Field FY2008

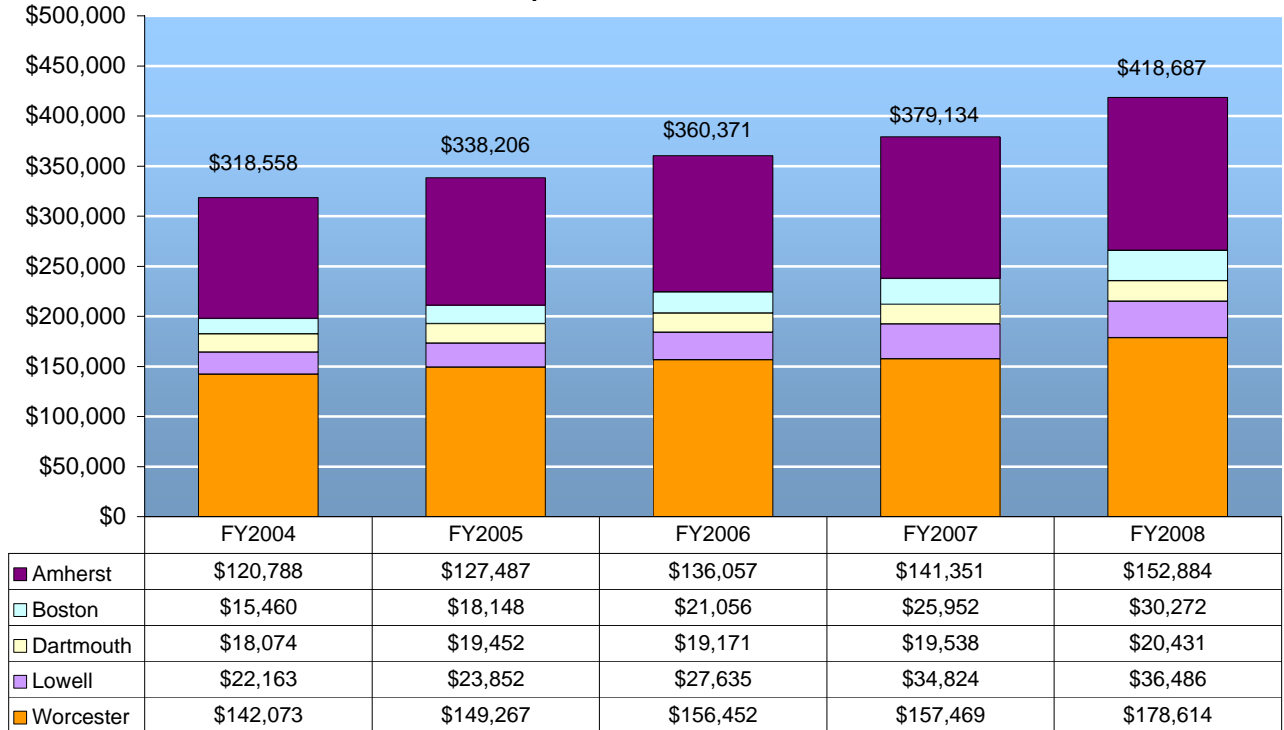
FIELD	UMA FY2008	% of UMA Total	% of Field	UMB FY2008	% of UMB Total	% of Field	UMD FY2008	% of UMD Total	% of Field	UML FY2008	% of UML Total	% of Field	UMW FY2008	% of UMW Total	% of Field	System FY2008	% of Total
Education	\$ 3,298	2.1%	30.0%	\$ 5,786	15.2%	52.6%	\$ 388	1.9%	3.5%	\$ 1,523	3.7%	13.9%	\$ -			\$ 10,995	2.5%
Law	\$ 153	0.1%	25.6%	\$ 12	0.0%	2.0%	\$ -			\$ 433	1.1%	72.4%	\$ -			\$ 598	0.1%
Humanities	\$ 87	0.1%	7.7%	\$ 955	2.5%	84.2%	\$ 92	0.4%	8.1%	\$ -			\$ -			\$ 1,134	0.3%
Visual and Performing Arts	\$ 23	0.0%	18.1%	\$ 71	0.2%	55.9%	\$ -	0.0%	0.0%	\$ 33	0.08%	26.0%	\$ -			\$ 127	0.03%
Business and Management	\$ 240	0.2%	24.7%	\$ 570	1.5%	58.6%	\$ -	0.0%	0.0%	\$ 162	0.4%	16.7%	\$ -			\$ 972	0.2%
Comm., Journalism & Library Sci	\$ 132			\$ 33	0.1%	19.6%	\$ -			\$ 3	0.0%	1.8%	\$ -			\$ 168	0.0%
Social Work	\$ -			\$ -			\$ -			\$ -			\$ -			\$ -	
Other Non-Science and Engin.	\$ -			\$ 319	0.8%	12.4%	\$ 14	0.1%	0.5%	\$ 2,233	5.5%	87.0%	\$ -			\$ 2,566	0.6%
TOTAL, NON-SCI & ENG FIELDS	\$ 3,933	2.5%	23.8%	\$ 7,746	20.4%	46.8%	\$ 494	2.4%	3.0%	\$ 4,387	10.7%	26.5%	\$ -			\$ 16,560	3.8%
TOTAL, SCI & ENG FIELDS	\$ 152,884	97.5%	36.5%	\$ 30,272	79.6%	7.2%	\$ 20,431	97.6%	4.9%	\$ 36,486	89.3%	8.7%	\$ 178,614	100.0%	42.7%	\$ 418,687	96.2%
GRAND TOTAL	\$ 156,817		36.0%	\$ 38,018		8.7%	\$ 20,925		4.8%	\$ 40,873		9.4%	\$ 178,614		41.0%	\$ 435,247	100.0%

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

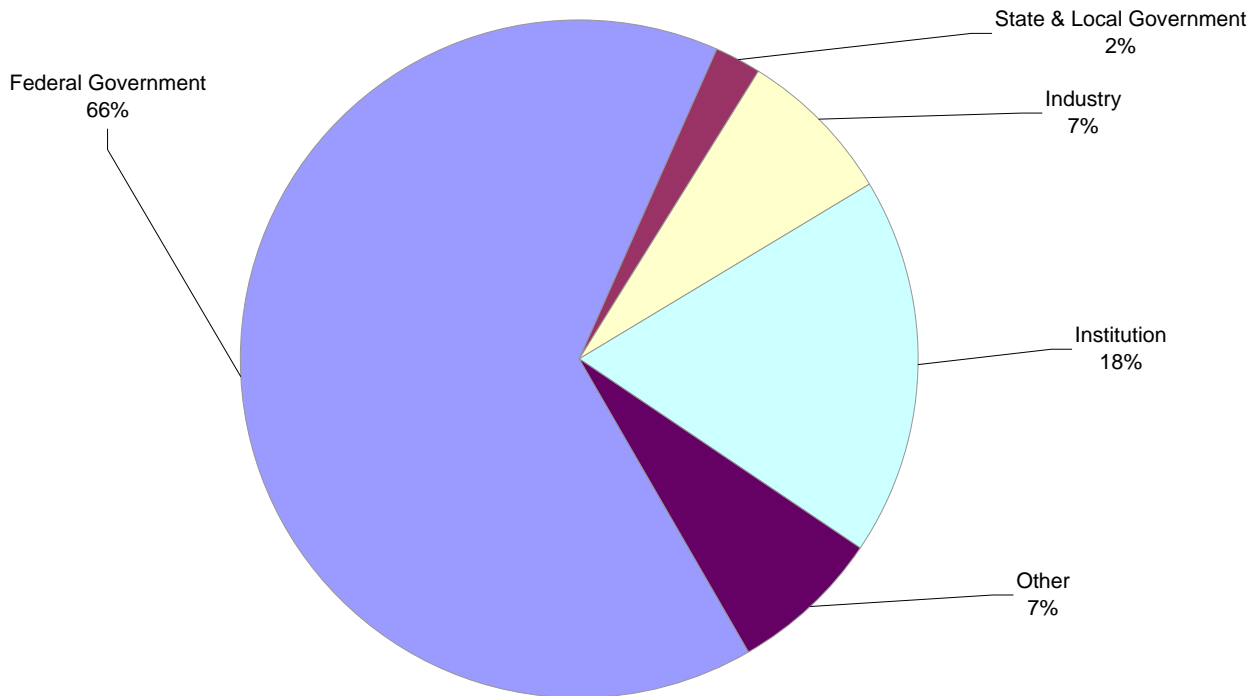
Note: % of Total is the percentage each field represents of total campus or system R&D expenditures in all fields.

% of Field is the percentage of the UMass system's expenditures in a particular field represented by that campus.

Science and Engineering R&D Expenditures UMASS System FY2004 – FY2008



Science and Engineering R&D Expenditures by Source of Funds FY2008 UMASS System



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

**Science and Engineering R&D Expenditures by Source
FY2004 – FY2008**

	Total R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$120,788	\$127,487	\$136,057	\$141,351	\$152,884	\$32,096	26.6%	\$11,533	8.2%
Boston	\$15,460	\$18,148	\$21,056	\$25,952	\$30,272	\$14,812	95.8%	\$4,320	16.6%
Dartmouth	\$18,074	\$19,452	\$19,171	\$19,538	\$20,431	\$2,357	13.0%	\$893	4.6%
Lowell	\$22,163	\$23,852	\$27,635	\$34,824	\$36,486	\$14,323	64.6%	\$1,662	4.8%
Worcester	\$142,073	\$149,267	\$156,452	\$157,469	\$178,614	\$36,541	25.7%	\$21,145	13.4%
System	\$318,558	\$338,206	\$360,371	\$379,134	\$418,687	\$100,129	31.4%	\$39,553	10.4%

	Federal R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$65,452	\$66,921	\$69,642	\$71,974	\$79,736	\$14,284	21.8%	\$7,762	10.8%
Boston	\$5,412	\$6,326	\$8,610	\$9,152	\$12,001	\$6,589	121.7%	\$2,849	31.1%
Dartmouth	\$9,199	\$9,852	\$9,515	\$11,456	\$13,087	\$3,888	42.3%	\$1,631	14.2%
Lowell	\$16,655	\$17,608	\$18,741	\$20,045	\$22,406	\$5,751	34.5%	\$2,361	11.8%
Worcester	\$126,162	\$130,680	\$136,141	\$131,226	\$145,113	\$18,951	15.0%	\$13,887	10.6%
System	\$222,880	\$231,387	\$242,649	\$243,853	\$272,343	\$49,463	22.2%	\$28,490	11.7%

	State & Local Government R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$3,597	\$3,873	\$5,684	\$5,638	\$4,699	\$1,102	30.6%	-\$939	-16.7%
Boston	\$1,001	\$2,481	\$1,662	\$1,207	\$701	-\$300	-30.0%	-\$506	-41.9%
Dartmouth	\$4,027	\$5,039	\$5,069	\$2,210	\$1,641	-\$2,386	-59.3%	-\$569	-25.7%
Lowell	\$380	\$180	\$601	\$969	\$1,088	\$708	186.3%	\$119	12.3%
Worcester	\$2	\$139	\$35	\$0	\$895	\$893	44650.0%	\$895	#DIV/0!
System	\$9,007	\$11,712	\$13,051	\$10,024	\$9,024	\$17	0.2%	-\$1,000	-10.0%

**Science and Engineering R&D Expenditures by Source
FY2004 – FY2008**

	Industry-Sponsored R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$4,914	\$4,724	\$5,934	\$5,195	\$8,182	\$3,268	66.5%	\$2,987	57.5%
Boston	\$0	\$0	\$0	\$275	\$552	\$552	#DIV/0!	\$277	100.7%
Dartmouth	\$753	\$1,252	\$1,680	\$762	\$807	\$54	7.2%	\$45	5.9%
Lowell	\$3,904	\$4,755	\$4,423	\$5,222	\$6,299	\$2,395	61.3%	\$1,077	20.6%
Worcester	\$5,903	\$8,018	\$9,465	\$16,266	\$15,192	\$9,289	157.4%	-\$1,074	-6.6%
System	\$15,474	\$18,749	\$21,502	\$27,720	\$31,032	\$15,558	100.5%	\$3,312	11.9%

	Institutional R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$38,932	\$42,887	\$45,773	\$48,755	\$49,556	\$10,624	27.3%	\$801	1.6%
Boston	\$5,861	\$6,731	\$7,007	\$11,122	\$13,048	\$7,187	122.6%	\$1,926	17.3%
Dartmouth	\$4,092	\$3,305	\$2,907	\$4,855	\$4,253	\$161	3.9%	-\$602	-12.4%
Lowell	\$1,224	\$1,309	\$3,870	\$8,588	\$6,693	\$5,469	446.8%	-\$1,895	-22.1%
Worcester	\$1,106	\$1,583	\$2,377	\$1,385	\$2,626	\$1,520	137.4%	\$1,241	89.6%
System	\$51,215	\$55,815	\$61,934	\$74,705	\$76,176	\$24,961	48.7%	\$1,471	2.0%

	Other R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$7,893	\$9,082	\$9,024	\$9,789	\$10,711	\$2,818	35.7%	\$922	9.4%
Boston	\$3,186	\$2,610	\$3,777	\$4,196	\$3,970	\$784	24.6%	-\$226	-5.4%
Dartmouth	\$3	\$4	\$0	\$255	\$643	\$640	21333.3%	\$388	152.2%
Lowell	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
Worcester	\$8,900	\$8,847	\$8,434	\$8,592	\$14,788	\$5,888	66.2%	\$6,196	72.1%
System	\$19,982	\$20,543	\$21,235	\$22,832	\$30,112	\$10,130	50.7%	\$7,280	31.9%

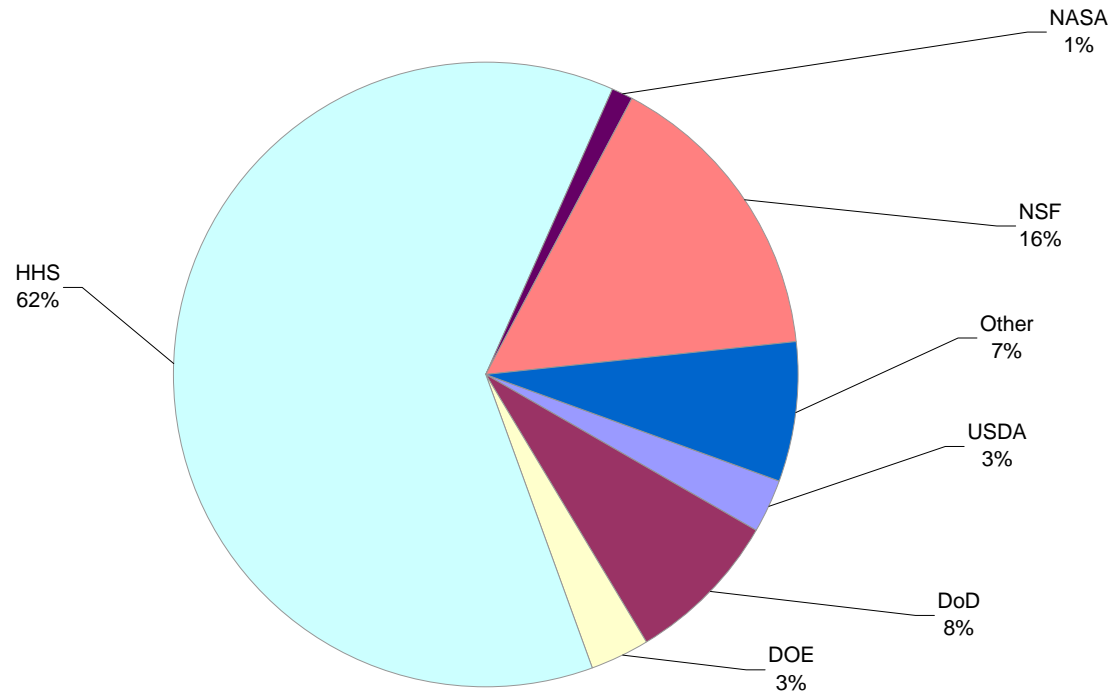
Source: Campus NSF surveys. All dollars are in thousands.

**Science and Engineering R&D Expenditures
Percent Basic Research FY2008**

FY08 Basic Research as a Percent of:		
	Federal R&D	Total R&D
Amherst	70%	70%
Boston	100%	100%
Dartmouth	90%	90%
Lowell	81%	81%
Worcester	65%	54%

Source: Campus NSF surveys.

**Science and Engineering R&D Expenditures
by Federal Government Agency Sources FY2008
UMASS System**

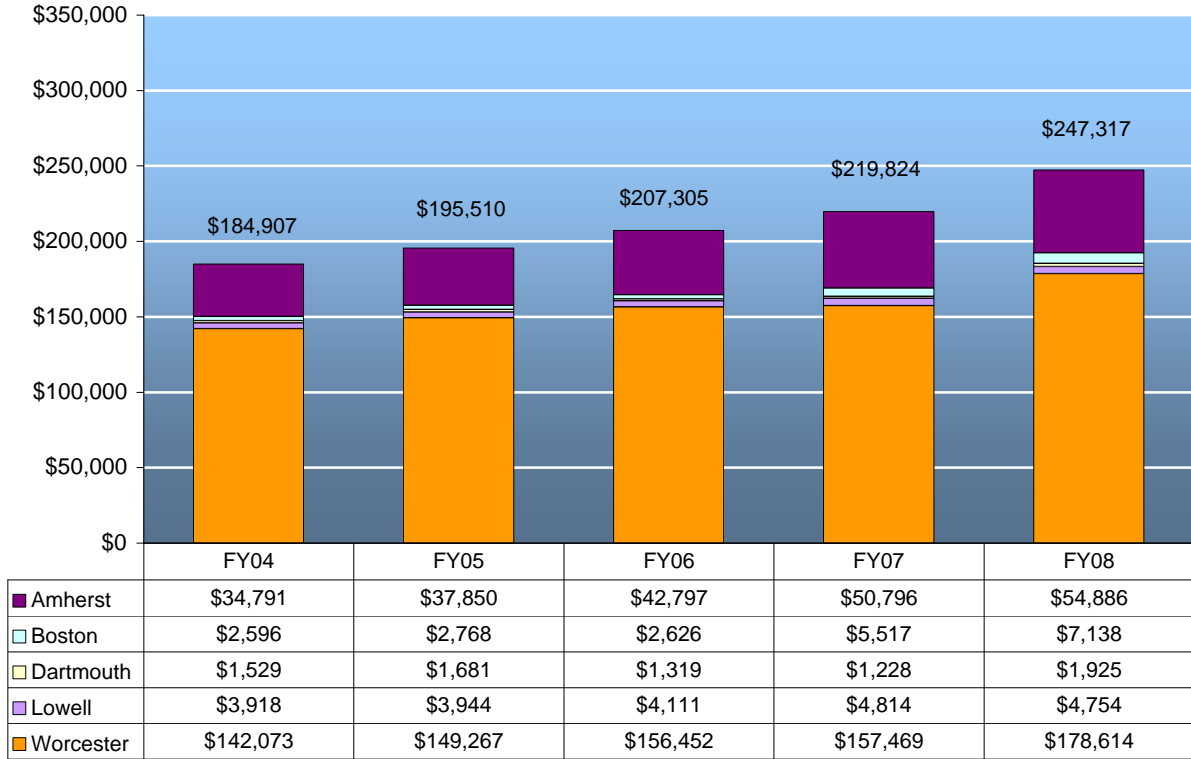


	Total Federal \$	USDA	% of Campus Total	DoD	% of Campus Total	DOE	% of Campus Total	HHS	% of Campus Total	NASA	% of Campus Total	NSF	% of Campus Total	Other	% of Campus Total
Amherst	\$ 79,736	\$ 7,109	8.9%	\$ 8,155	10.2%	\$ 6,799	8.5%	\$ 18,385	23.1%	\$ 1,799	2.3%	\$ 32,764	41.1%	\$ 4,725	5.9%
Boston	\$ 12,001	\$ -	0.0%	\$ 244	2.0%	\$ 865	7.2%	\$ 4,373	36.4%	\$ 30	0.2%	\$ 2,500	20.8%	\$ 3,989	33.2%
Dartmouth	\$ 13,087	\$ 762	5.8%	\$ 1,510	11.5%	\$ -	0.0%	\$ 413	3.2%	\$ 166	1.3%	\$ 1,985	15.2%	\$ 8,251	63.0%
Lowell	\$ 22,406	\$ -	0.0%	\$ 9,388	41.9%	\$ 594	2.7%	\$ 5,436	24.3%	\$ 164	0.7%	\$ 4,588	20.5%	\$ 2,236	10.0%
Worcester	\$ 145,113	\$ -	0.0%	\$ 2,462	1.7%	\$ 8	0.0%	\$ 141,034	97.2%	\$ 450	0.3%	\$ 572	0.4%	\$ 587	0.4%
System	\$ 272,343	\$ 7,871	2.9%	\$ 21,759	8.0%	\$ 8,266	3.0%	\$ 169,641	62.3%	\$ 2,609	1.0%	\$ 42,409	15.6%	\$ 19,788	7.3%

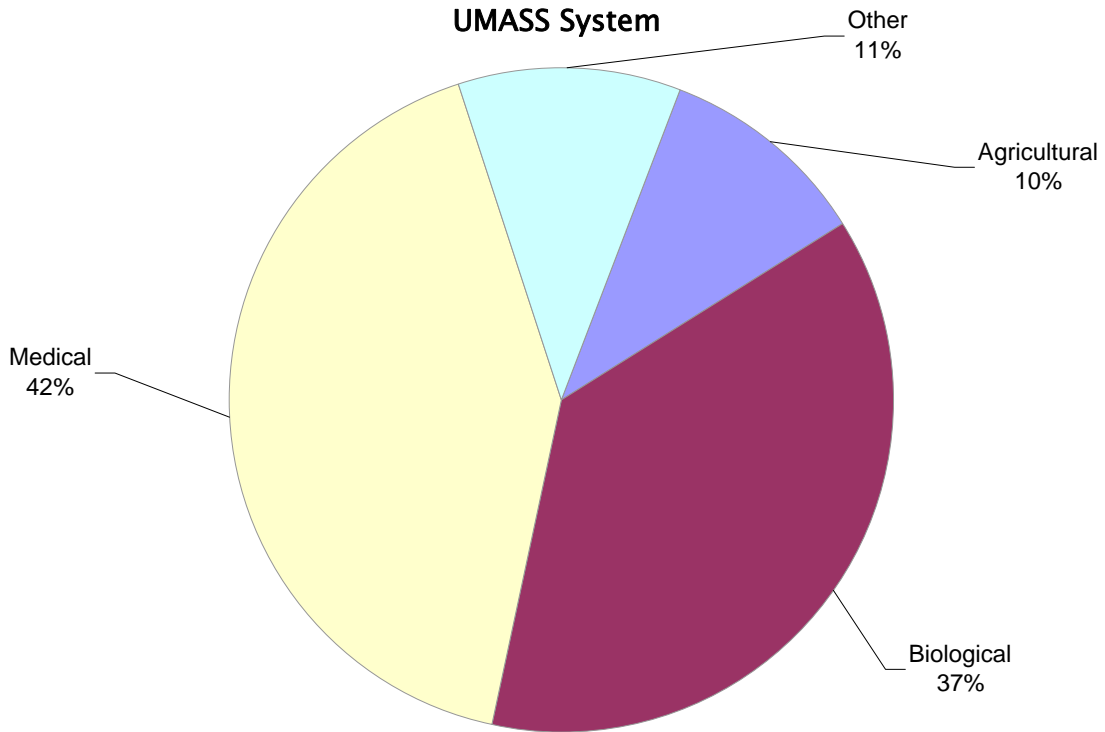
Source: Campus NSF surveys. All dollars are in thousands.

Note: HHS includes NIH

Life Sciences R&D Expenditures UMASS System FY2004 – FY2008



Life Sciences R&D Expenditures by Field FY2008 UMASS System



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

**Life Sciences R&D Expenditures by Field
FY2004 – FY2008**

	Life Sciences R&D Expenditures								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$34,791	\$37,850	\$42,797	\$50,796	\$54,886	\$20,095	57.8%	\$4,090	8.1%
Boston	\$2,596	\$2,768	\$2,626	\$5,517	\$7,138	\$4,542	175.0%	\$1,621	29.4%
Dartmouth	\$1,529	\$1,681	\$1,319	\$1,228	\$1,925	\$396	25.9%	\$697	56.8%
Lowell	\$3,918	\$3,944	\$4,111	\$4,814	\$4,754	\$836	21.3%	-\$60	-1.2%
Worcester	\$142,073	\$149,267	\$156,452	\$157,469	\$178,614	\$36,541	25.7%	\$21,145	13.4%
System	\$184,907	\$195,510	\$207,305	\$219,824	\$247,317	\$62,410	33.8%	\$27,493	12.5%

	Agricultural								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$15,321	\$17,017	\$19,183	\$20,795	\$24,478	\$9,157	59.8%	\$3,683	17.7%
Boston	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
Dartmouth	\$1,064	\$1,180	\$744	\$739	\$602	-\$462	-43.4%	-\$137	-18.5%
Lowell	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
Worcester	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
System	\$16,385	\$18,197	\$19,927	\$21,534	\$25,080	\$8,695	53.1%	\$3,546	16.5%

	Biological								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$16,148	\$16,309	\$17,996	\$22,757	\$22,823	\$6,675	41.3%	\$66	0.3%
Boston	\$1,485	\$1,417	\$1,439	\$2,345	\$3,384	\$1,899	127.9%	\$1,039	44.3%
Dartmouth	\$169	\$190	\$263	\$465	\$970	\$801	474.0%	\$505	108.6%
Lowell	\$1,200	\$1,036	\$885	\$1,378	\$1,477	\$277	23.1%	\$99	7.2%
Worcester	\$57,951	\$58,543	\$61,571	\$56,562	\$63,980	\$6,029	10.4%	\$7,418	13.1%
System	\$76,953	\$77,495	\$82,154	\$83,507	\$92,634	\$15,681	20.4%	\$9,127	10.9%

**Life Sciences R&D Expenditures by Field
FY2004 – FY2008**

	Medical								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$1,062	\$1,804	\$3,191	\$5,401	\$6,575	\$5,513	519.1%	\$1,174	21.7%
Boston	\$0	\$0	\$0	\$2,984	\$2,934	\$2,934		-\$50	-1.7%
Dartmouth	\$0	\$0	\$0	\$0	\$0	\$0		\$0	
Lowell	\$2,715	\$2,886	\$0	\$0	\$0	-\$2,715	-100.0%	\$0	
Worcester	\$65,176	\$69,314	\$76,250	\$82,470	\$93,501	\$28,325	43.5%	\$11,031	13.4%
System	\$68,953	\$74,004	\$79,441	\$90,855	\$103,010	\$34,057	49.4%	\$12,155	13.4%

	Other Life Sciences								
	FY04	FY05	FY06	FY07	FY08	5-Year Change FY04 - FY08		1-Year Change FY07 - FY08	
						\$	%	\$	%
Amherst	\$2,260	\$2,720	\$2,427	\$1,843	\$1,010	-\$1,250	-55.3%	-\$833	-45.2%
Boston	\$1,111	\$1,351	\$1,187	\$188	\$820	-\$291	-26.2%	\$632	336.2%
Dartmouth	\$296	\$311	\$312	\$24	\$353	\$57	19.3%	\$329	1370.8%
Lowell	\$3	\$22	\$3,226	\$3,436	\$3,277	\$3,274	109133.3%	-\$159	-4.6%
Worcester	\$18,946	\$21,410	\$18,631	\$18,437	\$21,133	\$2,187	11.5%	\$2,696	14.6%
System	\$22,616	\$25,814	\$25,783	\$23,928	\$26,593	\$3,977	17.6%	\$2,665	11.1%

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