

CALS Budget & Operating Performance Guide

For Data-Informed Decisions and Equity of Contribution
Towards Our Mission Delivery

CALS Business Services & Data Solutions Team
FY 2016 Final (September 27, version 2)

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Introduction

The University of Arizona (UA) allocates resources using Responsibility Centered Management (RCM). The College of Agriculture & Life Sciences (CALs) strives to **balance the metrics of RCM with our shared mission and vision.**

Mission is more important than money. RCM is simply a tool to achieve our mission. Unit Heads will better lead by focusing their efforts on growing our mission.

Teach more. Perform more sponsored research. Engage in more Extension activities. Reduce costs. Deliver on goals. Strive to achieve for our shared mission.

Purpose & Goal

The *CALS Budget & Operating Performance Guide* is utilized to **assist in measuring the Return on Investment (ROI)** for each unit within CALs in the context of RCM.

The goal for this document is to provide **transparency** and **understanding** for units to enable and empower meaningful discussion.

Considerations

This document will be continually revised to better attain this goal and provide current figures. It is not for measuring or evaluating specific faculty or program performance. The figures in this document are **derived from RCM calculations**. The figures in this document are limited to Teaching & Research. Cooperative Extension is outside RCM and performance metrics are not included in this guide.

Questions

Should questions or concerns arise, be sure to direct them to **Jeff Ratje**, the Associate Dean for Finance & Administration, and the **CALS Data Solutions Team**. We welcome your feedback.

Instruction Performance

The Instruction component is comprised of metrics on both investments and returns.

Returns are defined as revenues to the College.

The instruction component places the metrics on axes where one axis is the return (revenue) to CALS and the other is the investment. Investments are defined as budgets allocated to units from CALS and costs to CALS due to activities from units.

Instruction returns are based upon Majors and Student Credit Hours (SCH). Calculating a dollar amount per major or SCH provides an idea of how much money is generated to the University by colleges and units. The actual amount of money allocated to the College is less than what is reflected in this document due to taxes and other factors.

Academic Units in CALS should focus on primary metrics and proportional performance, not on the dollar amounts. Dollars are used solely to merge financial and academic data. The primary metrics for the returns on the Instruction side in RCM are: 1) the number of SCH, 2) the number of majors, and subsequently 3) the number of students.

Performance with Student Credit Hours (SCH) and Majors

Instruction figures are limited to Fall and Spring terms.

Undergraduate SCH is tied to units by the owner of the position of the instructor teaching a course. Arrangements for exceptions can be made but need significant reasons to do so and must be formally discussed with appropriate College Deans and Unit Heads.

Graduate SCH is calculated per student per term per major, based on net tuition and units taken. For the sake of simplicity in this presentation, we are generalizing this to \$/SCH, where the number of Graduate SCH is calculated the same as Undergraduate SCH. This results in figures for Graduate revenue that differ from the actual RCM Model but not *proportionally* at the unit level (viz., the ratios between units remain the same).

Graduate Interdisciplinary Programs (GIDPs) performance is based solely on SCH.

Majors can count as two per year per student: enrolled major in Spring and enrolled major in Fall.

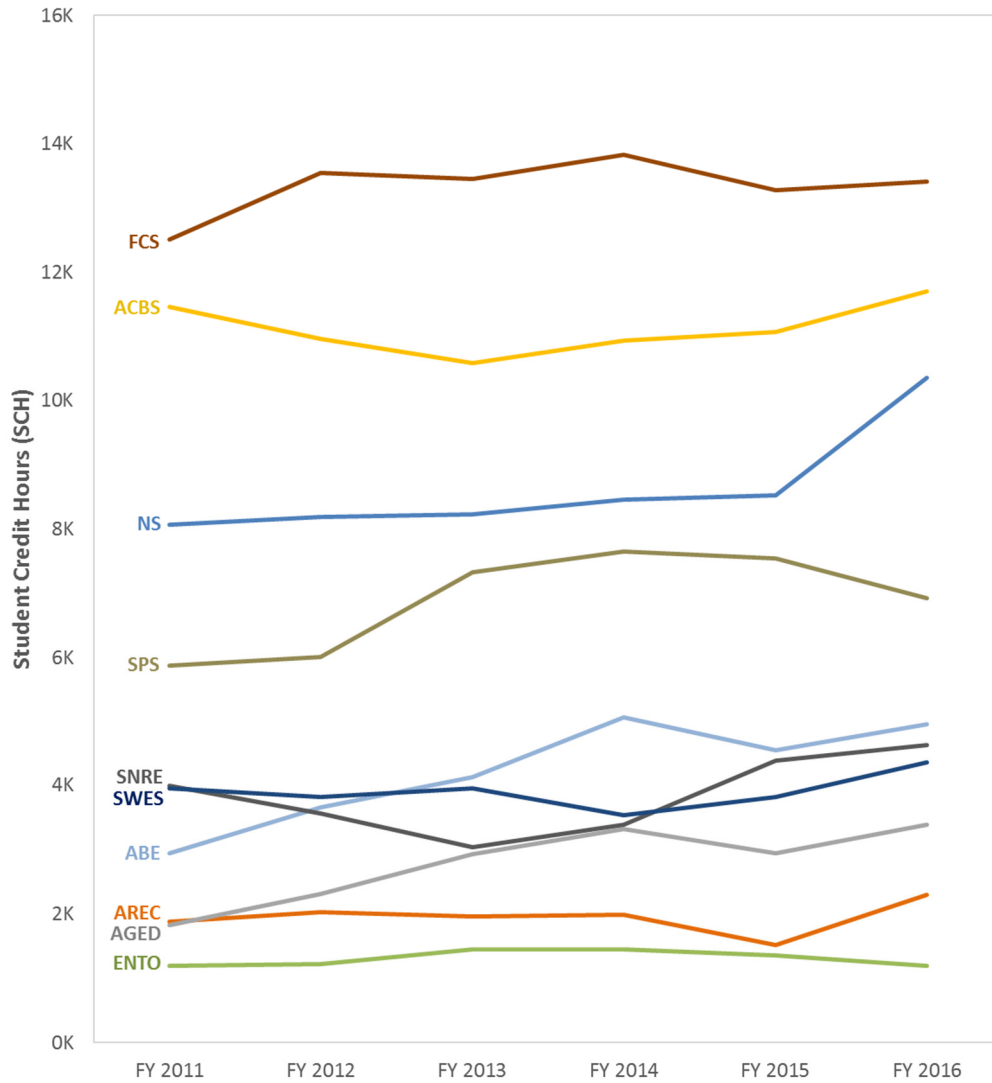
Dual majors and split programs are equally divided.

- **Agriculture & Biosystems Engineering majors** are split with Engineering.
- **Geographic Information Systems certificate** is split with Social & Behavioral Sciences.
- **Agricultural Education's teaching emphasis majors** are split with respective colleges.

Finalized figures are from a Fiscal Year-End snapshot.

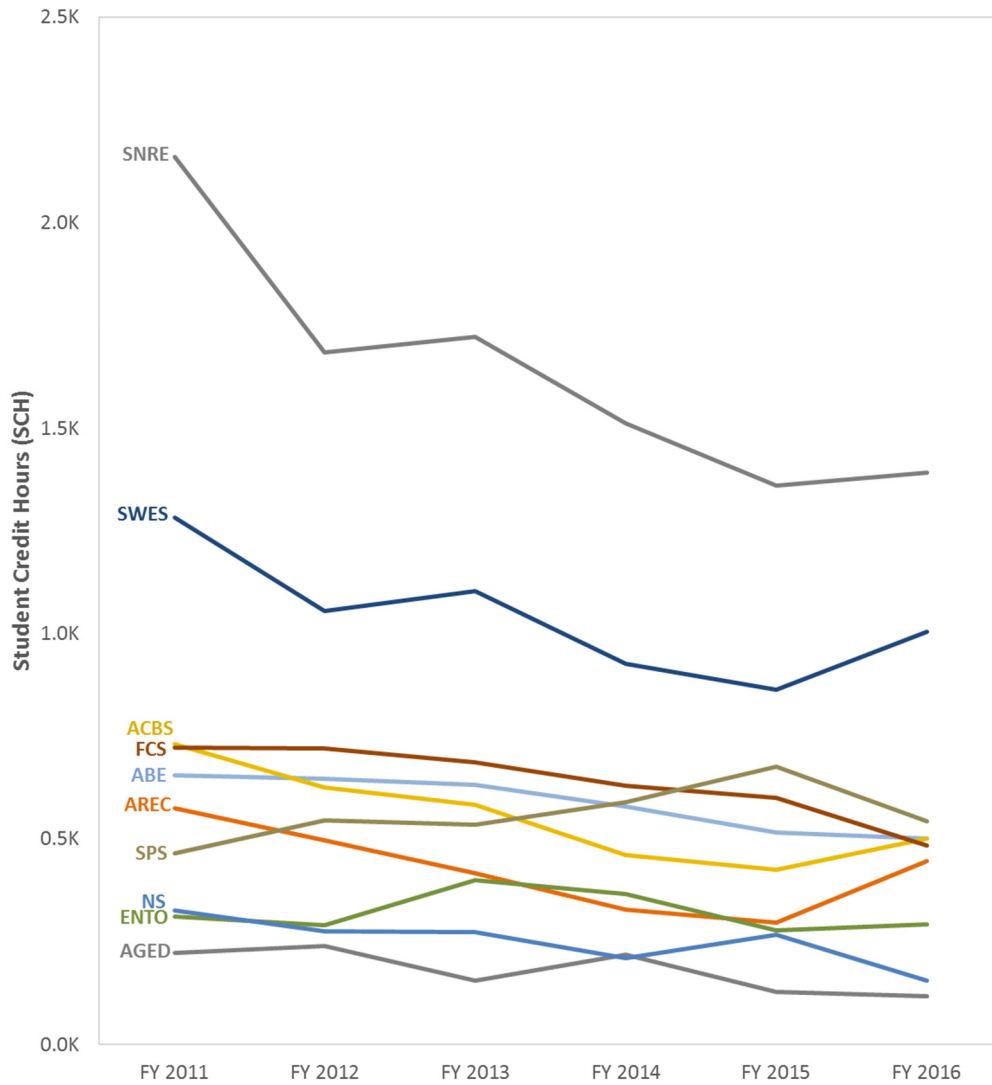
Projected figures are a combination of a Fall Term-End snapshot and a Spring Census snapshot.

Undergraduate SCH Trends using UA RCM Data and Methods



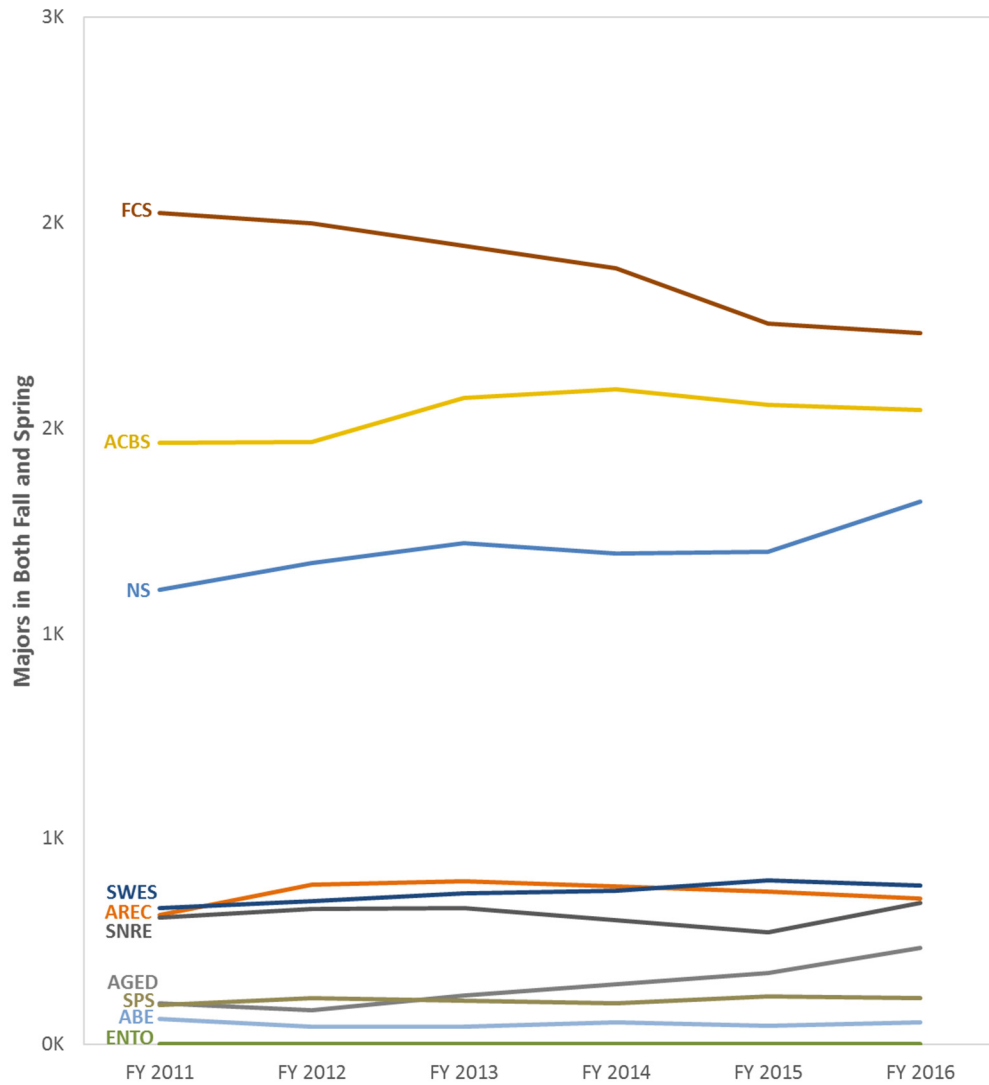
Unit	Unit Label	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	2015 - 2016	
								# Change	% Change
Agric & Biosystems Engr	ABE	2,950	3,653	4,132	5,062	4,540	4,947	407	9%
Agric & Resource Econ	AREC	1,876	2,025	1,966	1,993	1,521	2,304	783	52%
Agricultural Education	AGED	1,821	2,307	2,933	3,321	2,944	3,385	441	15%
Animal&Biomedical Sciences	ACBS	11,461	10,962	10,581	10,942	11,069	11,708	639	6%
Entomology	ENTO	1,199	1,227	1,447	1,445	1,354	1,190	(164)	(12%)
Nutritional Sciences	NS	8,066	8,198	8,236	8,460	8,523	10,354	1,831	21%
Sch of Family & Consum Sci	FCS	12,513	13,540	13,450	13,831	13,283	13,410	127	1%
Sch of Natural Resources	SNRE	4,000	3,565	3,037	3,392	4,382	4,623	241	6%
School of Plant Sciences	SPS	5,872	6,013	7,328	7,655	7,541	6,923	(618)	(8%)
Soil Water and Enviro Sci	SWES	3,959	3,813	3,954	3,537	3,817	4,363	546	14%
College	CALS	53,717	55,302	57,063	59,637	58,973	63,207	4,234	7%
Average	Average	5,372	5,530	5,706	5,964	5,897	6,321	423	10%
Median	Median	3,980	3,733	4,043	4,300	4,461	4,785	424	7%

Graduate SCH Trends using UA RCM Data and Methods



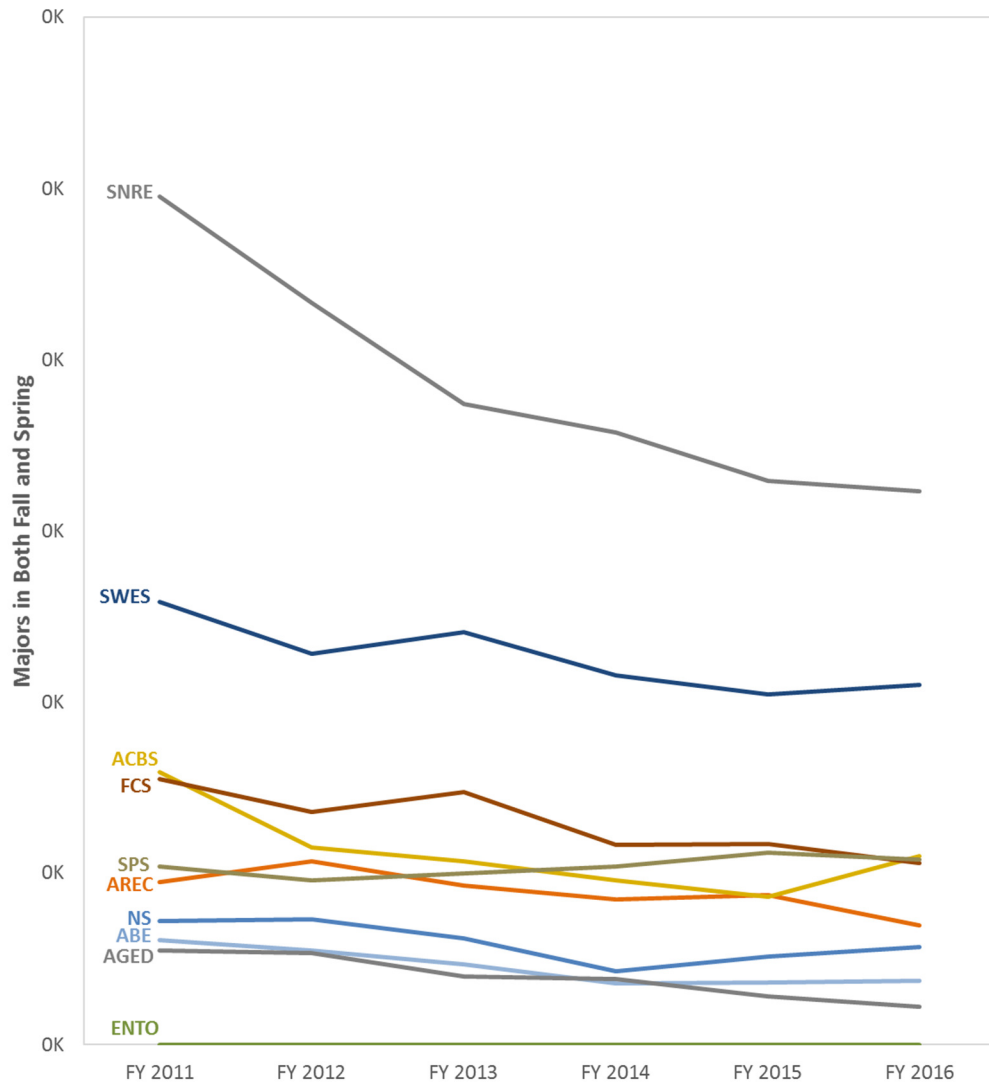
Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	654	645	631	579	516	501	(15)	(3%)
Agric & Resource Econ	574	496	417	329	297	445	148	50%
Agricultural Education	222	240	156	219	129	118	(11)	(9%)
Animal&Biomedical Sciences	731	624	583	461	426	500	75	18%
Entomology	311	291	399	367	277	293	16	6%
Nutritional Sciences	325	276	274	210	267	156	(111)	(41%)
Sch of Family & Consum Sci	722	718	685	628	599	485	(114)	(19%)
Sch of Natural Resources	2,159	1,685	1,722	1,513	1,361	1,392	30	2%
School of Plant Sciences	466	544	534	589	674	543	(131)	(19%)
Soil Water and Enviro Sci	1,284	1,055	1,105	928	864	1,006	142	16%
College	7,448	6,575	6,505	5,822	5,410	5,439	29	1%
Average	745	657	651	582	541	544	3	0%
Median	614	584	558	520	471	492	2	(0%)

Undergraduate Major Trends using UA RCM Data and Methods



Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	63	42	44	53	46	54	8	16%
Agric & Resource Econ	315	388	397	383	371	355	(16)	(4%)
Agricultural Education	99	83	118	145	174	234	60	34%
Animal&Biomedical Sciences	1,464	1,466	1,573	1,595	1,557	1,543	(14)	(1%)
Entomology	0	0	0	0	0	0	0	0%
Nutritional Sciences	1,106	1,171	1,220	1,194	1,199	1,322	123	10%
Sch of Family & Consum Sci	2,023	1,999	1,944	1,889	1,755	1,730	(25)	(1%)
Sch of Natural Resources	308	328	331	301	272	345	73	27%
School of Plant Sciences	95	112	105	101	118	112	(6)	(5%)
Soil Water and Enviro Sci	330	347	367	374	398	386	(12)	(3%)
College	5,803	5,936	6,099	6,034	5,889	6,080	191	3%
Average	580	594	610	603	589	608	19	7%
Median	312	338	349	337	322	350	(3)	(0%)

Graduate Major Trends using UA RCM Data and Methods



Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	31	28	24	18	18	19	1	3%
Agric & Resource Econ	48	54	46	42	44	35	(9)	(20%)
Agricultural Education	28	27	20	19	14	11	(3)	(21%)
Animal&Biomedical Sciences	79	58	54	48	43	55	12	28%
Entomology	0	0	0	0	0	0	0	0%
Nutritional Sciences	36	37	31	22	26	29	3	11%
Sch of Family & Consum Sci	78	68	74	58	59	53	(6)	(9%)
Sch of Natural Resources	248	217	187	179	165	162	(3)	(2%)
School of Plant Sciences	52	48	50	52	56	54	(2)	(4%)
Soil Water and Enviro Sci	129	114	120	108	102	105	3	3%
College	727	649	605	546	526	522	(4)	(1%)
Average	73	65	61	55	53	52	(0)	(1%)
Median	50	51	48	45	43	44	(1)	(1%)

Performance with Instruction Investments & Returns

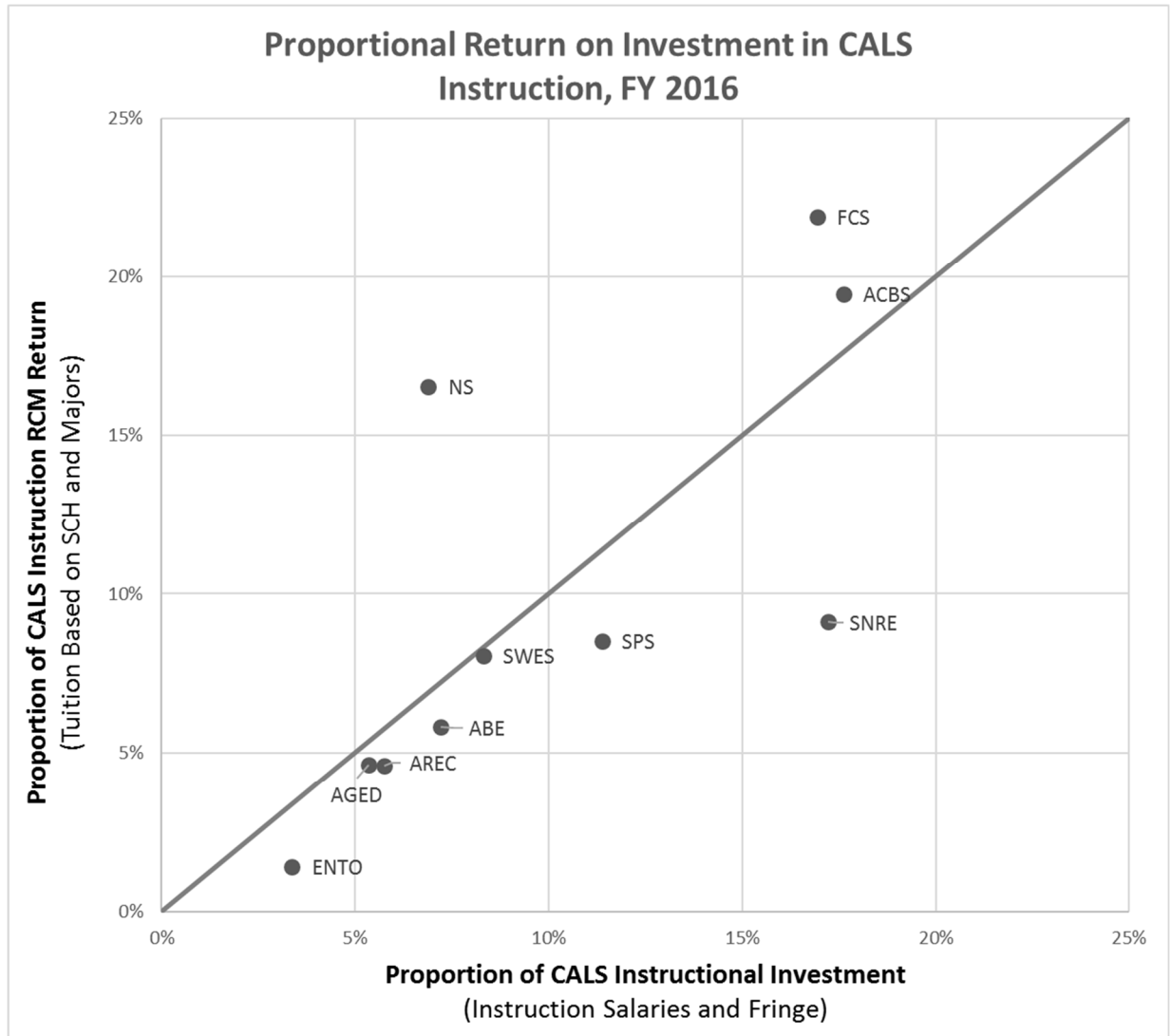
Instruction Returns are based upon revenue generated from SCH and Majors, not the number of students.

Finalized revenues are derived from a snapshot at the end of the Fiscal Year.

Projected revenues are derived from a Fall Term-End snapshot and a Spring Term Census snapshot.

Unit	SCH Undergraduate	SCH Graduate	SCH Total	Majors Undergraduate	Majors Graduate	Majors Total
Agric & Biosystems Engr	4,947	501	5,448	54	19	72
Agric & Resource Econ	2,304	445	2,749	355	35	390
Agricultural Education	3,385	118	3,503	234	11	245
Animal&Biomedical Sciences	11,708	500	12,209	1,543	55	1,598
Entomology	1,190	293	1,483	0	0	0
Nutritional Sciences	10,354	156	10,510	1,322	29	1,351
Sch of Family & Consum Sci	13,410	485	13,895	1,730	53	1,783
Sch of Natural Resources	4,623	1,392	6,015	345	162	506
School of Plant Sciences	6,923	543	7,466	112	54	166
Soil Water and Enviro Sci	4,363	1,006	5,369	386	105	491
College	63,207	5,439	68,646	6,080	522	6,601
Average	6,321	544	6,865	608	52	660
Median	4,785	492	5,731	350	44	440

Unit	SCH Undergraduate Revenue	SCH Graduate Revenue	SCH Total Revenue	Majors Undergraduate Revenue	Majors Graduate Revenue	Majors Total Revenue
Agric & Biosystems Engr	\$1,617,516	\$120,241	\$1,737,757	\$74,419	\$72,668	\$147,087
Agric & Resource Econ	\$753,545	\$106,800	\$860,345	\$493,805	\$136,812	\$630,617
Agricultural Education	\$1,106,888	\$28,320	\$1,135,208	\$325,494	\$43,208	\$368,702
Animal&Biomedical Sciences	\$3,828,594	\$120,065	\$3,948,659	\$2,146,313	\$216,040	\$2,362,353
Entomology	\$389,056	\$70,380	\$459,437	\$0	\$0	\$0
Nutritional Sciences	\$3,385,630	\$37,479	\$3,423,109	\$1,838,902	\$111,948	\$1,950,850
Sch of Family & Consum Sci	\$4,385,191	\$116,311	\$4,501,502	\$2,406,430	\$208,184	\$2,614,614
Sch of Natural Resources	\$1,511,868	\$333,967	\$1,845,835	\$479,200	\$635,040	\$1,114,239
School of Plant Sciences	\$2,263,926	\$130,331	\$2,394,257	\$155,097	\$212,112	\$367,209
Soil Water and Enviro Sci	\$1,426,587	\$241,493	\$1,668,079	\$536,926	\$412,754	\$949,680
College	\$20,668,802	\$1,305,387	\$21,974,189	\$8,456,585	\$2,048,766	\$10,505,351
Average	\$2,066,880	\$130,539	\$2,197,419	\$845,658	\$204,877	\$1,050,535
Median	\$1,564,692	\$118,188	\$1,791,796	\$486,502	\$172,498	\$790,149



Unit	Return on Instruction Based on Tuition Revenue	Personnel and Fringe Investments	Total Investments	Return on Instruction Less Investments	% of Total Return	% of Total Investments	Proportional Instruction ROI Ratio
Agric & Biosystems Engr	\$1,884,843	\$535,952	\$535,952	\$1,348,891	05.8%	07.2%	0.81
Agric & Resource Econ	\$1,490,963	\$428,075	\$428,075	\$1,062,888	04.6%	05.7%	0.80
Agricultural Education	\$1,503,910	\$398,189	\$398,189	\$1,105,721	04.6%	05.3%	0.87
Animal&Biomedical Sciences	\$6,311,012	\$1,312,532	\$1,312,532	\$4,998,479	19.4%	17.6%	1.10
Entomology	\$459,437	\$249,881	\$249,881	\$209,555	01.4%	03.4%	0.42
Nutritional Sciences	\$5,373,959	\$512,385	\$512,385	\$4,861,574	16.5%	06.9%	2.40
Sch of Family & Consum Sci	\$7,116,116	\$1,260,928	\$1,260,928	\$5,855,189	21.9%	16.9%	1.29
Sch of Natural Resources	\$2,960,075	\$1,283,194	\$1,283,194	\$1,676,881	09.1%	17.2%	0.53
School of Plant Sciences	\$2,761,465	\$847,011	\$847,011	\$1,914,454	08.5%	11.4%	0.75
Soil Water and Enviro Sci	\$2,617,760	\$618,310	\$618,310	\$1,999,450	08.1%	08.3%	0.97
College	\$32,479,539	\$7,446,457	\$7,446,457	\$25,033,083	100.0%	100.0%	N/A
Average	\$3,247,954	\$744,646	\$744,646	\$2,503,308	10.0%	10.0%	0.99
Median	\$2,689,613	\$577,131	\$577,131	\$1,795,668	08.3%	07.8%	0.84

Reference: FY 2015 Instructional ROI average was 0.96, and the median was 0.78.

Research Performance

The Research component is comprised of metrics on both investments and returns. *Returns* are defined as revenues to the College. *Investments* are defined as budgets allocated to units from CALS and costs to CALS due to activities from units.

Research returns are based upon Facilities & Administrative (F&A) returns or Modified Total Direct Costs (MTDC). The actual amount of money allocated to the College is less than what is reflected in this document due to taxes and other factors.

Performance on Research Returns (F&A and MTDC)

Unit	Return on Research Based on F&A Return	Return on Research Based on MTDC Return
Agric & Biosystems Engr	\$256,731	\$921,568
Agric & Resource Econ	\$86,297	\$271,348
Agricultural Education	\$56,320	\$704,717
Animal&Biomedical Sciences	\$776,245	\$2,232,453
Entomology	\$481,718	\$1,598,126
Nutritional Sciences	\$385,540	\$1,033,450
Sch of Family & Consum Sci	\$253,177	\$995,623
Sch of Natural Resources	\$808,643	\$4,114,013
School of Plant Sciences	\$992,518	\$4,084,041
Soil Water and Enviro Sci	\$1,054,571	\$3,802,400
Total	\$5,151,758	\$19,757,740
Average	\$515,176	\$1,975,774
Median	\$433,629	\$1,315,788

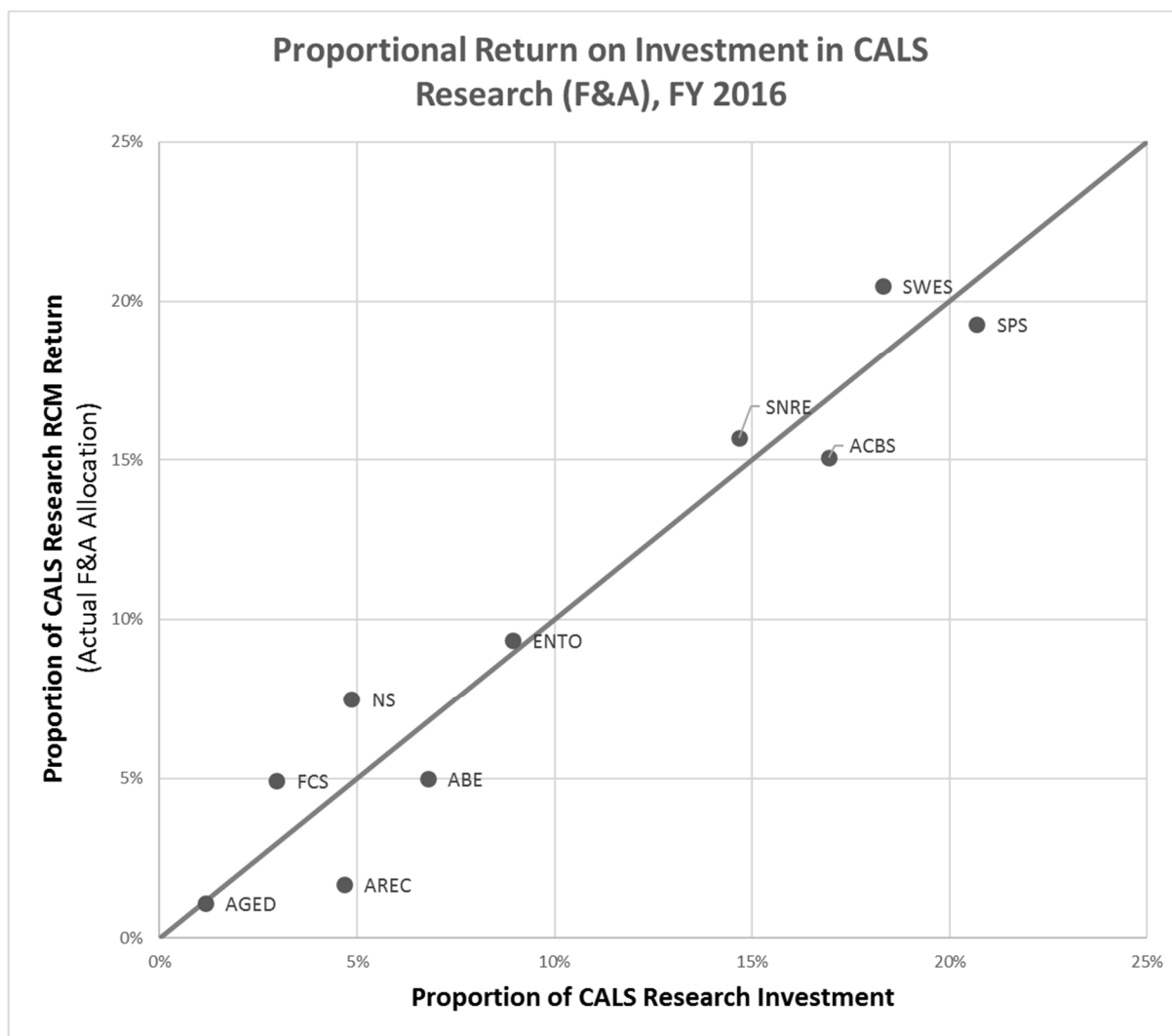
Performance on Research Investments

Unit	Share of AES						Total Investments (and Costs)	Cost Sharing Expenditures
	Foregone F&A Costs	Personnel and Fringe Investments	Personnel and Fringe Investments	CALS Venture Investments	CALS Subsidy Costs			
Agric & Biosystems Engr	\$226,188	\$423,198	\$1,205,366	\$0	\$3,416	\$1,858,168	\$164,207	
Agric & Resource Econ	\$57,417	\$11,123	\$1,211,707	\$0	\$1,584	\$1,281,831	\$61,577	
Agricultural Education	\$165,872	\$0	\$152,994	\$0	\$0	\$318,866	\$0	
Animal&Biomedical Sciences	\$443,323	\$727,906	\$3,058,115	\$98,873	\$306,287	\$4,634,504	\$319,136	
Entomology	\$342,931	\$884,519	\$1,165,191	\$0	\$49,122	\$2,441,763	\$151,355	
Nutritional Sciences	\$129,933	\$0	\$1,043,225	\$104,508	\$51,311	\$1,328,977	\$30,794	
Sch of Family & Consum Sci	\$274,210	\$0	\$452,849	\$82,426	\$0	\$809,486	\$7,058	
Sch of Natural Resources	\$1,063,538	\$280,880	\$2,586,280	\$26,265	\$56,175	\$4,013,138	\$230,779	
School of Plant Sciences	\$1,076,942	\$1,188,928	\$3,239,520	\$0	\$149,130	\$5,654,520	\$376,648	
Soil Water and Enviro Sci	\$643,509	\$917,271	\$3,315,322	\$0	\$128,468	\$5,004,571	\$279,043	
Total	\$4,423,863	\$4,433,825	\$17,430,570	\$312,072	\$745,493	\$27,345,823	\$1,620,597	
Average	\$442,386	\$443,382	\$1,743,057	\$31,207	\$74,549	\$2,734,582	\$162,060	
Median	\$308,571	\$352,039	\$1,208,536	\$0	\$50,217	\$2,149,965	\$157,781	

Refer to the Appendix for details regarding AES splits.

Ventures and Subsidies are projections.

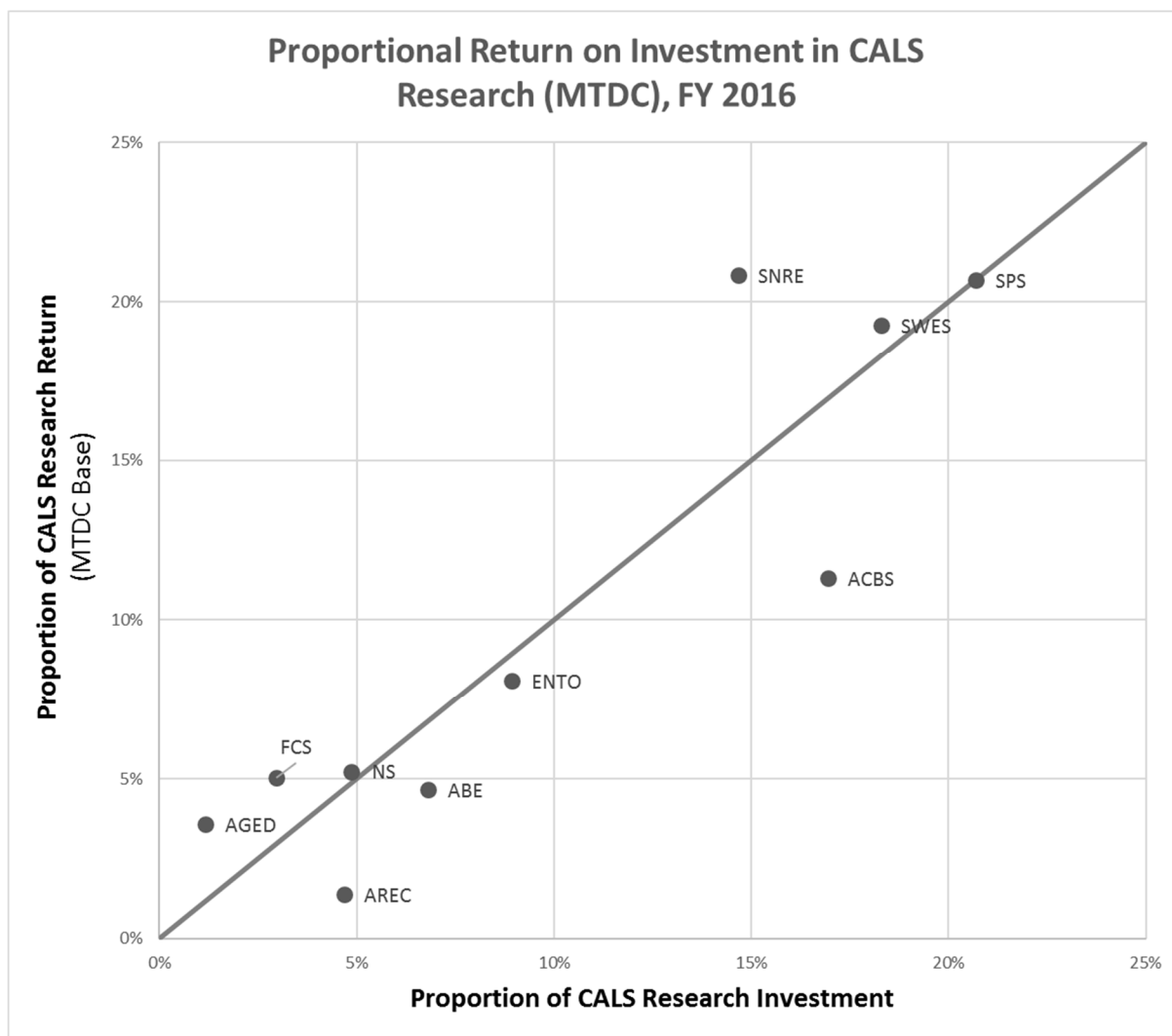
Performance on Research Investments and F&A Returns



Unit	Total Investments (and Costs)	F&A Return Less Investments with AES Splits	% of F&A Return	% of Total Investments	Proportional Research ROI Ratio (F&A Form)
Agric & Biosystems Engr	\$1,858,168	(\$1,601,437)	05.0%	06.8%	0.73
Agric & Resource Econ	\$1,281,831	(\$1,195,534)	01.7%	04.7%	0.36
Agricultural Education	\$318,866	(\$262,546)	01.1%	01.2%	0.94
Animal&Biomedical Sciences	\$4,634,504	(\$3,858,259)	15.1%	16.9%	0.89
Entomology	\$2,441,763	(\$1,960,045)	09.4%	08.9%	1.05
Nutritional Sciences	\$1,328,977	(\$943,437)	07.5%	04.9%	1.54
Sch of Family & Consum Sci	\$809,486	(\$556,308)	04.9%	03.0%	1.66
Sch of Natural Resources	\$4,013,138	(\$3,204,496)	15.7%	14.7%	1.07
School of Plant Sciences	\$5,654,520	(\$4,662,002)	19.3%	20.7%	0.93
Soil Water and Enviro Sci	\$5,004,571	(\$3,950,000)	20.5%	18.3%	1.12
Total	\$27,345,823	(\$22,194,065)	100.0%	100.0%	N/A
Average	\$2,734,582	(\$2,219,406)	10.0%	10.0%	1.03
Median	\$2,149,965	(\$1,780,741)	08.4%	07.9%	0.99

Reference: FY 2015 Research ROI average was 1.20, and the median was 0.99.

Performance on Research Investments and MTDC Returns



Unit	Total Investments (and Costs)	MTDC Return Less Investments with AES Splits	% of MTDC Return	% of Total Investments	Proportional Research ROI Ratio (MTDC Form)
Agric & Biosystems Engr	\$1,858,168	(\$936,599)	04.7%	06.8%	0.69
Agric & Resource Econ	\$1,281,831	(\$1,010,483)	01.4%	04.7%	0.29
Agricultural Education	\$318,866	\$385,851	03.6%	01.2%	3.06
Animal&Biomedical Sciences	\$4,634,504	(\$2,402,051)	11.3%	16.9%	0.67
Entomology	\$2,441,763	(\$843,637)	08.1%	08.9%	0.91
Nutritional Sciences	\$1,328,977	(\$295,526)	05.2%	04.9%	1.08
Sch of Family & Consum Sci	\$809,486	\$186,137	05.0%	03.0%	1.70
Sch of Natural Resources	\$4,013,138	\$100,875	20.8%	14.7%	1.42
School of Plant Sciences	\$5,654,520	(\$1,570,480)	20.7%	20.7%	1.00
Soil Water and Enviro Sci	\$5,004,571	(\$1,202,170)	19.2%	18.3%	1.05
Total	\$27,345,823	(\$7,588,083)	100.0%	100.0%	N/A
Average	\$2,734,582	(\$758,808)	10.0%	10.0%	1.19
Median	\$2,149,965	(\$890,118)	06.7%	07.9%	1.03

Reference: FY 2015 Research ROI average was 1.41, and the median was 0.96.

Combined Instruction and Research Performance

A more comprehensive view of your performance combines instruction and research measures.

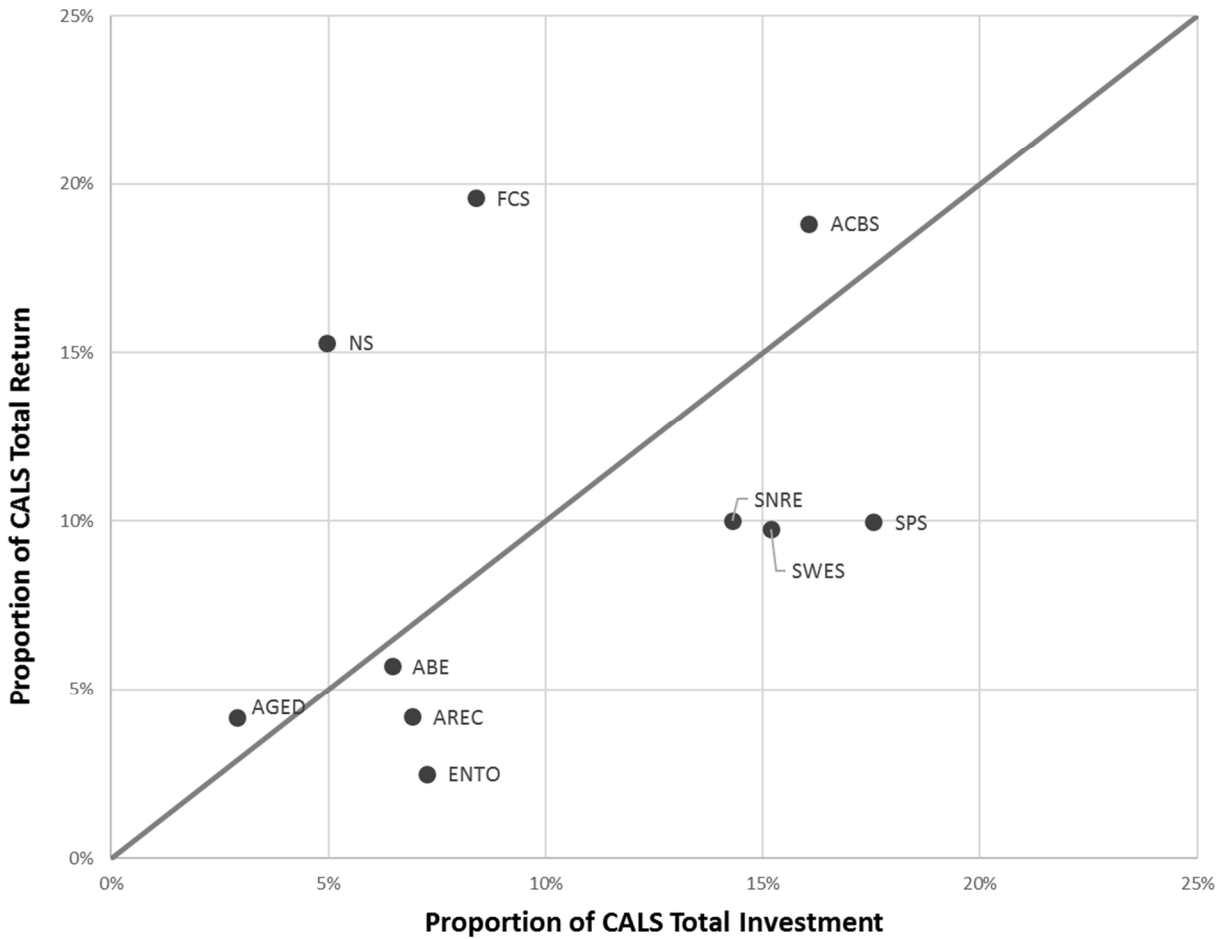
The University normalizes colleges based on a national study on the cost of doing business in respective academic disciplines associated with units (known as the *Delaware Cost Study*). This normalization is applied based on natural costs using one of three factors: 1.2, 1.0, and 0.8. As an example, physical and lab sciences require costlier equipment and startup packages than humanities, so they would be assigned a higher factor. CALS has been assigned a 1.0 due to the diversity of disciplines in the college.

The combined view of unit performance includes a normalization factor assigned to each individual unit similarly based on the Delaware Cost Study. This is used to better measure proportional performance. The Proportional returns include the normalization factor on CALS investments in units while the Total Return views exclude it.

Unit	Return on Instruction Based on Tuition	Return on Research Based on F&A	Return on Research Based on MTDC	Total Return (F&A Form)	Total Return (MTDC Form)
Agric & Biosystems Engr	\$1,884,843	\$256,731	\$921,568	\$2,141,574	\$2,806,411
Agric & Resource Econ	\$1,490,963	\$86,297	\$271,348	\$1,577,259	\$1,762,311
Agricultural Education	\$1,503,910	\$56,320	\$704,717	\$1,560,230	\$2,208,627
Animal&Biomedical Sciences	\$6,311,012	\$776,245	\$2,232,453	\$7,087,256	\$8,543,465
Entomology	\$459,437	\$481,718	\$1,598,126	\$941,154	\$2,057,563
Nutritional Sciences	\$5,373,959	\$385,540	\$1,033,450	\$5,759,499	\$6,407,409
Sch of Family & Consum Sci	\$7,116,116	\$253,177	\$995,623	\$7,369,294	\$8,111,739
Sch of Natural Resources	\$2,960,075	\$808,643	\$4,114,013	\$3,768,717	\$7,074,088
School of Plant Sciences	\$2,761,465	\$992,518	\$4,084,041	\$3,753,983	\$6,845,506
Soil Water and Enviro Sci	\$2,617,760	\$1,054,571	\$3,802,400	\$3,672,330	\$6,420,160
College	\$32,479,539	\$5,151,758	\$19,757,740	\$37,631,297	\$52,237,279
Average	\$3,247,954	\$515,176	\$1,975,774	\$3,763,130	\$5,223,728
Median	\$2,689,613	\$433,629	\$1,315,788	\$3,713,157	\$6,413,785
Standard Deviation	\$2,129,418	\$349,418	\$1,415,719	\$2,197,086	\$2,553,196
Maximum	\$7,116,116	\$1,054,571	\$4,114,013	\$7,369,294	\$8,543,465
Minimum	\$459,437	\$56,320	\$271,348	\$941,154	\$1,762,311

Unit	Total Investment on Instruction	Total Investment on Research	Instruction % Investment	Research % Investment	Total Investment
Agric & Biosystems Engr	\$535,952	\$1,858,168	22%	78%	\$2,394,119
Agric & Resource Econ	\$428,075	\$1,281,831	25%	75%	\$1,709,906
Agricultural Education	\$398,189	\$318,866	56%	44%	\$717,055
Animal&Biomedical Sciences	\$1,312,532	\$4,634,504	22%	78%	\$5,947,036
Entomology	\$249,881	\$2,441,763	9%	91%	\$2,691,644
Nutritional Sciences	\$512,385	\$1,328,977	28%	72%	\$1,841,361
Sch of Family & Consum Sci	\$1,260,928	\$809,486	61%	39%	\$2,070,413
Sch of Natural Resources	\$1,283,194	\$4,013,138	24%	76%	\$5,296,332
School of Plant Sciences	\$847,011	\$5,654,520	13%	87%	\$6,501,531
Soil Water and Enviro Sci	\$618,310	\$5,004,571	11%	89%	\$5,622,880
College	\$7,446,457	\$27,345,823			\$34,792,280
Average	\$744,646	\$2,734,582			\$3,479,228
Median	\$577,131	\$2,149,965			\$2,542,882
Standard Deviation	\$383,152	\$1,827,704			\$2,008,649
Maximum	\$1,312,532	\$5,654,520			\$6,501,531
Minimum	\$249,881	\$318,866			\$717,055

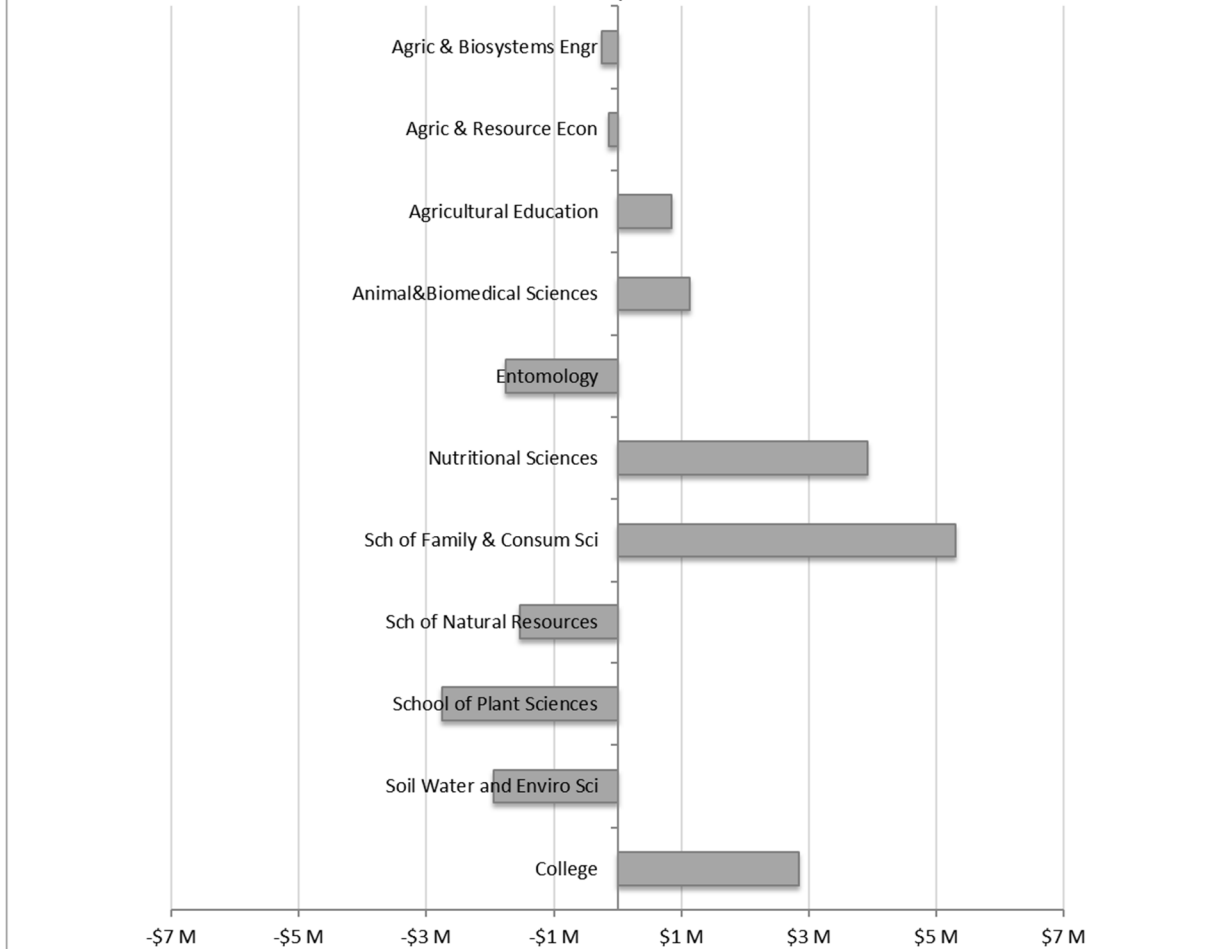
Combined Proportional Return on Investment in CALS Instruction and F&A, FY 2016



Unit	Normalization		Proportional Return on Investment	
	Factor on Investment	Proportional Total Investment	Total Return (F&A Form)	Ratio (F&A Form)
Agric & Biosystems Engr	1.20	06.5%	05.7%	0.88
Agric & Resource Econ	0.80	06.9%	04.2%	0.61
Agricultural Education	0.80	02.9%	04.1%	1.43
Animal&Biomedical Sciences	1.20	16.1%	18.8%	1.17
Entomology	1.20	07.3%	02.5%	0.34
Nutritional Sciences	1.20	05.0%	15.3%	3.08
Sch of Family & Consum Sci	0.80	08.4%	19.6%	2.34
Sch of Natural Resources	1.20	14.3%	10.0%	0.70
School of Plant Sciences	1.20	17.6%	10.0%	0.57
Soil Water and Enviro Sci	1.20	15.2%	09.8%	0.64
College	N/A	100.0%	100.0%	1.00
Average	1.08	10.0%	10.0%	1.16
Median	1.20	07.8%	09.9%	0.79

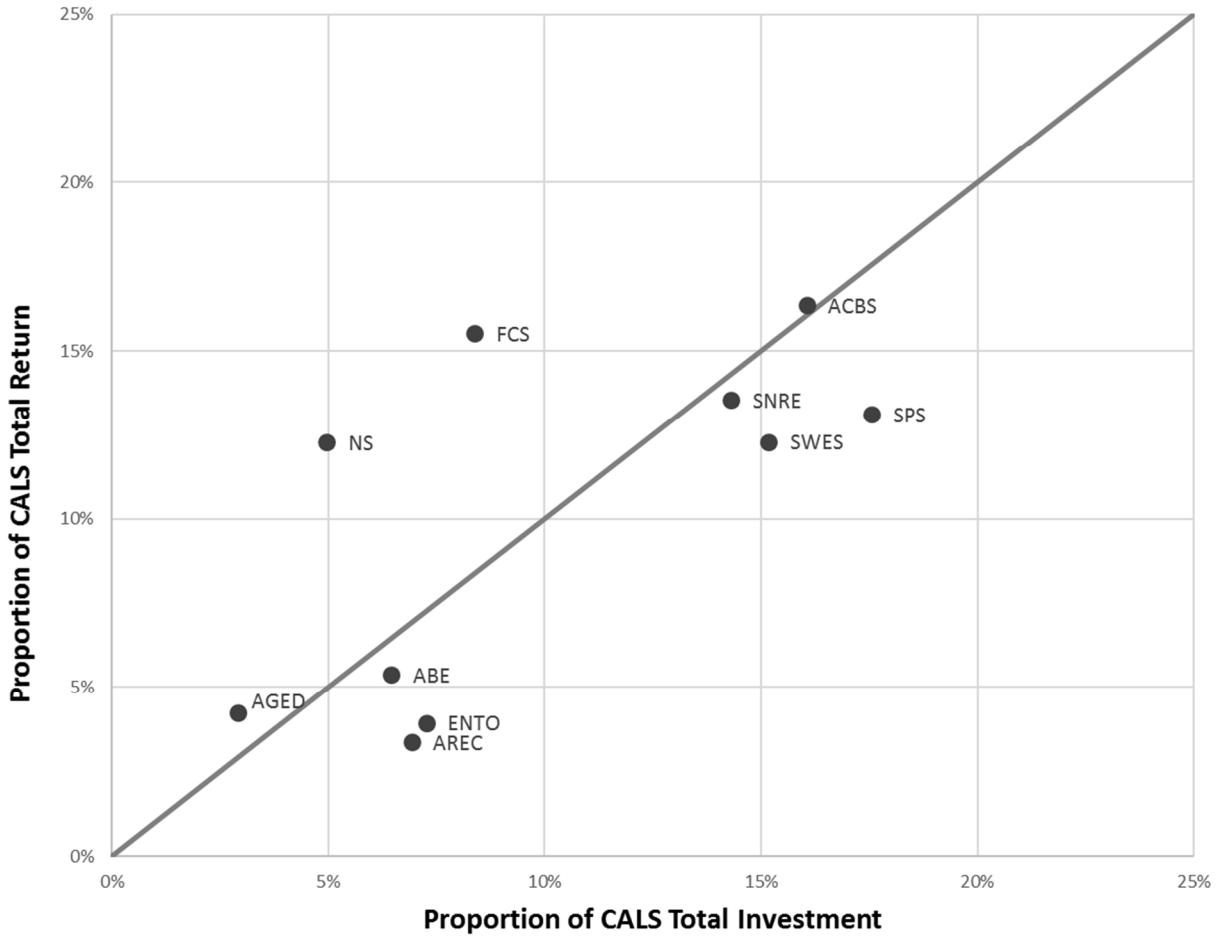
Reference: FY 2015 Combined (F&A Form) ROI average was 1.19, and the median was 0.78.

Total Return Less Investments Prenormalized, F&A Method



Unit	Instruction Return Less Investments	Research Return Less Investments (F&A Form)	Total Return Less Investments (F&A Form)
Agric & Biosystems Engr	\$1,348,891	(\$1,601,437)	(\$252,545)
Agric & Resource Econ	\$1,062,888	(\$1,195,534)	(\$132,647)
Agricultural Education	\$1,105,721	(\$262,546)	\$843,175
Animal&Biomedical Sciences	\$4,998,479	(\$3,858,259)	\$1,140,220
Entomology	\$209,555	(\$1,960,045)	(\$1,750,490)
Nutritional Sciences	\$4,861,574	(\$943,437)	\$3,918,138
Sch of Family & Consum Sci	\$5,855,189	(\$556,308)	\$5,298,880
Sch of Natural Resources	\$1,676,881	(\$3,204,496)	(\$1,527,615)
School of Plant Sciences	\$1,914,454	(\$4,662,002)	(\$2,747,548)
Soil Water and Enviro Sci	\$1,999,450	(\$3,950,000)	(\$1,950,550)
College	\$25,033,083	(\$22,194,065)	\$2,839,018
Average	\$2,503,308	(\$2,219,406)	\$283,902
Median	\$1,795,668	(\$1,780,741)	(\$192,596)

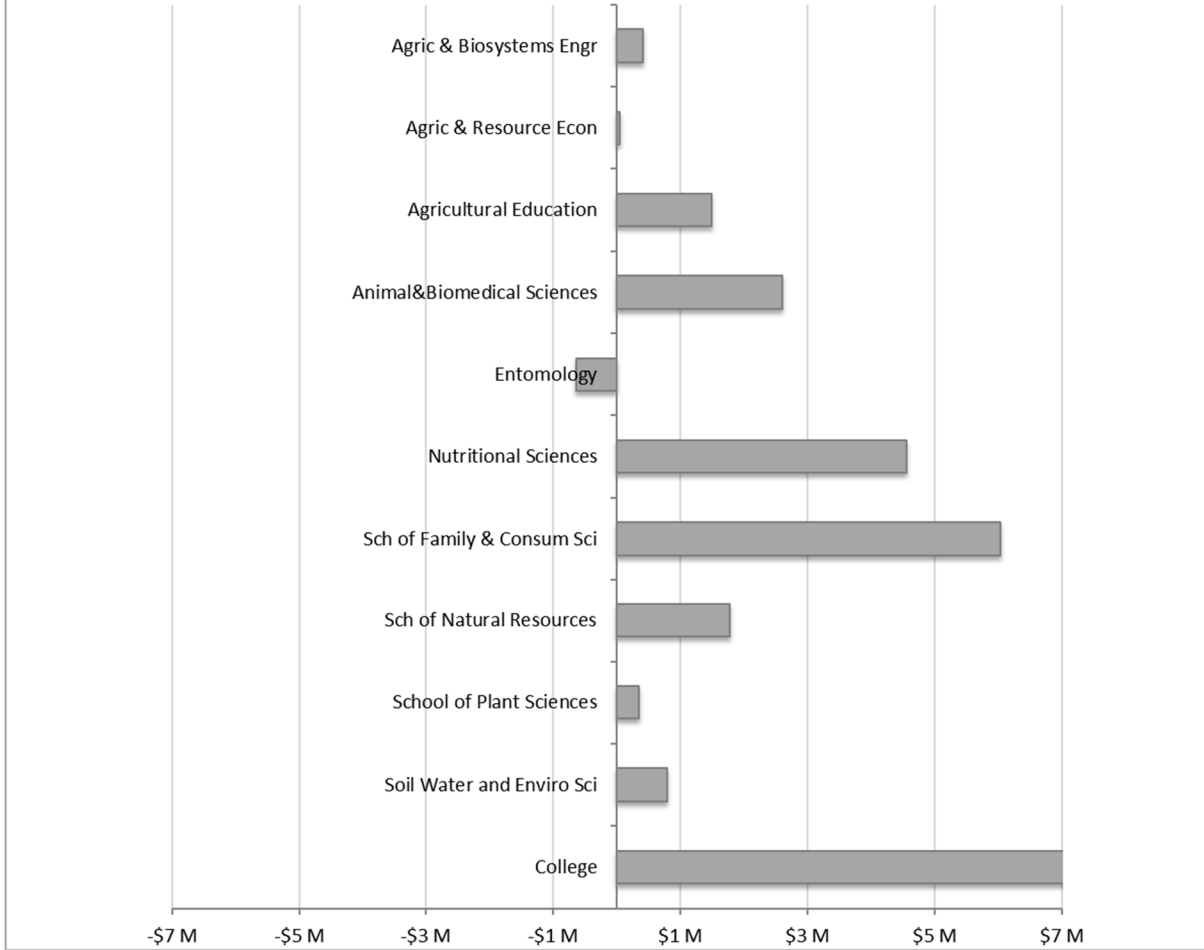
Combined Proportional Return on Investment in CALS Instruction and MTDC, FY 2016



Unit	Normalization Factor on Investment	Proportional Total Investment	Proportional Total Return (MTDC Form)	Return on Investment Ratio (MTDC Form)
Agric & Biosystems Engr	1.20	06.5%	05.4%	0.83
Agric & Resource Econ	0.80	06.9%	03.4%	0.49
Agricultural Education	0.80	02.9%	04.2%	1.46
Animal&Biomedical Sciences	1.20	16.1%	16.4%	1.02
Entomology	1.20	07.3%	03.9%	0.54
Nutritional Sciences	1.20	05.0%	12.3%	2.47
Sch of Family & Consum Sci	0.80	08.4%	15.5%	1.85
Sch of Natural Resources	1.20	14.3%	13.5%	0.95
School of Plant Sciences	1.20	17.6%	13.1%	0.75
Soil Water and Enviro Sci	1.20	15.2%	12.3%	0.81
College	N/A	100.0%	100.0%	1.00
Average	1.08	10.0%	10.0%	1.11
Median	1.20	07.8%	12.3%	0.89

Reference: FY 2015 Combined (F&A Form) ROI average was 1.14, and the median was 0.95.

Total Return Less Investments Prenormalized, MTDC Method



Unit	Instruction Return Less Investments	Research Return Less Investments (MTDC Form)	Total Return Less Investments (MTDC Form)
Agric & Biosystems Engr	\$1,348,891	(\$936,599)	\$412,292
Agric & Resource Econ	\$1,062,888	(\$1,010,483)	\$52,404
Agricultural Education	\$1,105,721	\$385,851	\$1,491,572
Animal&Biomedical Sciences	\$4,998,479	(\$2,402,051)	\$2,596,429
Entomology	\$209,555	(\$843,637)	(\$634,082)
Nutritional Sciences	\$4,861,574	(\$295,526)	\$4,566,048
Sch of Family & Consum Sci	\$5,855,189	\$186,137	\$6,041,325
Sch of Natural Resources	\$1,676,881	\$100,875	\$1,777,756
School of Plant Sciences	\$1,914,454	(\$1,570,480)	\$343,975
Soil Water and Enviro Sci	\$1,999,450	(\$1,202,170)	\$797,280
College	\$25,033,083	(\$7,588,083)	\$17,444,999
Average	\$2,503,308	(\$758,808)	\$1,744,500
Median	\$1,795,668	(\$890,118)	\$1,144,426

Appendix

Percentage Splits to Academic Units per AES Unit, 2016

Academic Unit	Campus AC	Maricopa AC	Safford AC	VV-Ranch	Yuma AC	Arboretum	AZ VDL
Agric & Biosystems Engr	7%	10%	10%	0%	20%	0%	0%
Agric & Resource Econ	0%	0%	0%	5%	0%	0%	0%
Agricultural Education	0%	0%	0%	0%	0%	0%	0%
Animal&Biomedical Sciences	30%	0%	0%	55%	0%	0%	100%
Entomology	5%	40%	0%	0%	30%	0%	0%
Nutritional Sciences	0%	0%	0%	0%	0%	0%	0%
Sch of Family & Consum Sci	0%	0%	0%	0%	0%	0%	0%
Sch of Natural Resources	14%	0%	0%	40%	0%	0%	0%
School of Plant Sciences	34%	12%	25%	0%	40%	100%	0%
Soil Water and Enviro Sci	10%	38%	65%	0%	10%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%

The AES splits were determined by using a survey to the AES Unit Heads for work occurring in FY 2016. They based the splits upon the research activities of faculty members and Farm Service Agreements for each site. The survey was modeled after one used to compile data for the USDA-NIFA Financial Summary.