

CALS Budget & Operating Performance Guide

A Guide to Help Determine RCM Performance Within CALS

CALS Business Services & Data Solutions Team

FY 2016 Projection (April 28)

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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.

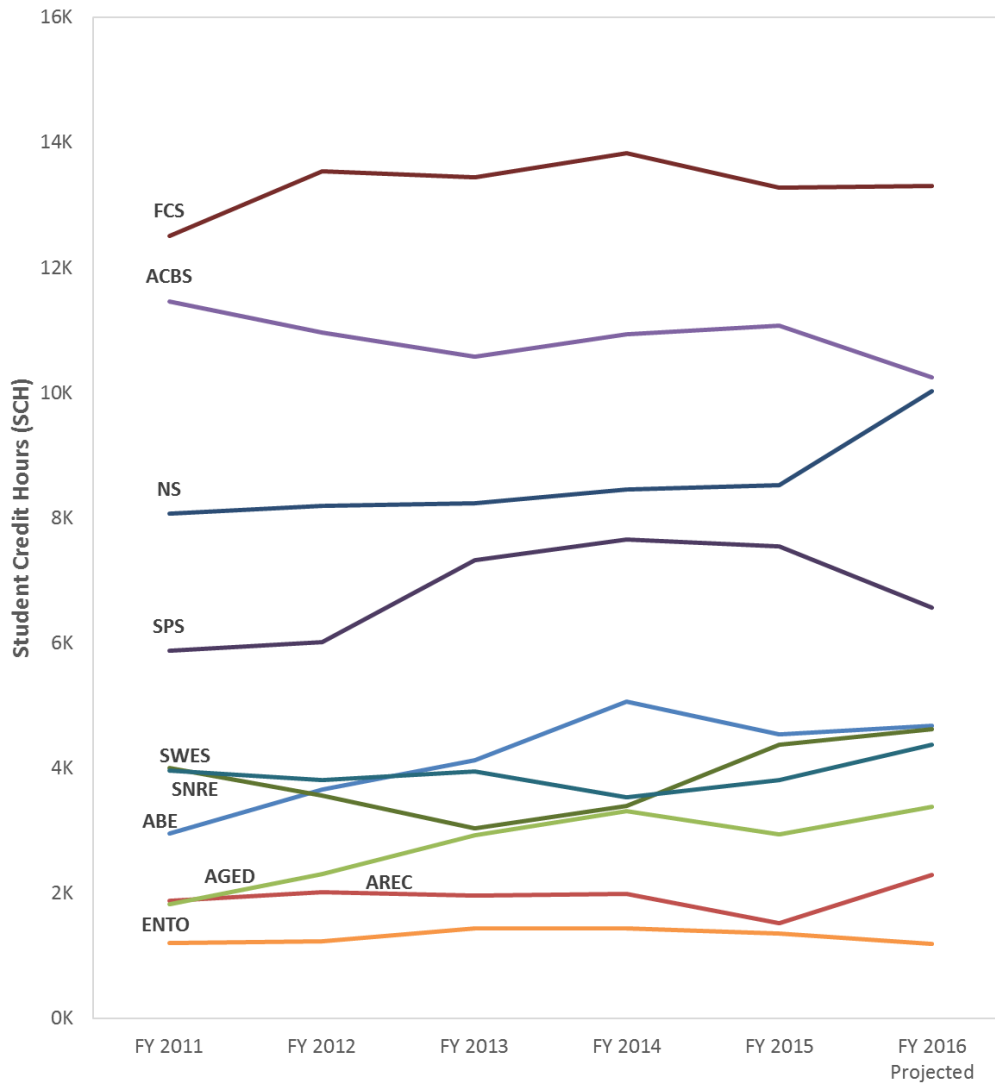
Dual majors and split programs are equally divided.

- **Agriculture & Biosystems Engineering majors** are split with the College of Engineering.
- **Geographic Information Systems certificate** is split with the College of Science.
- **Agricultural Education's teaching emphasis majors** are split with respective colleges.

Finalized figures are from a Fiscal Year-End snapshot.

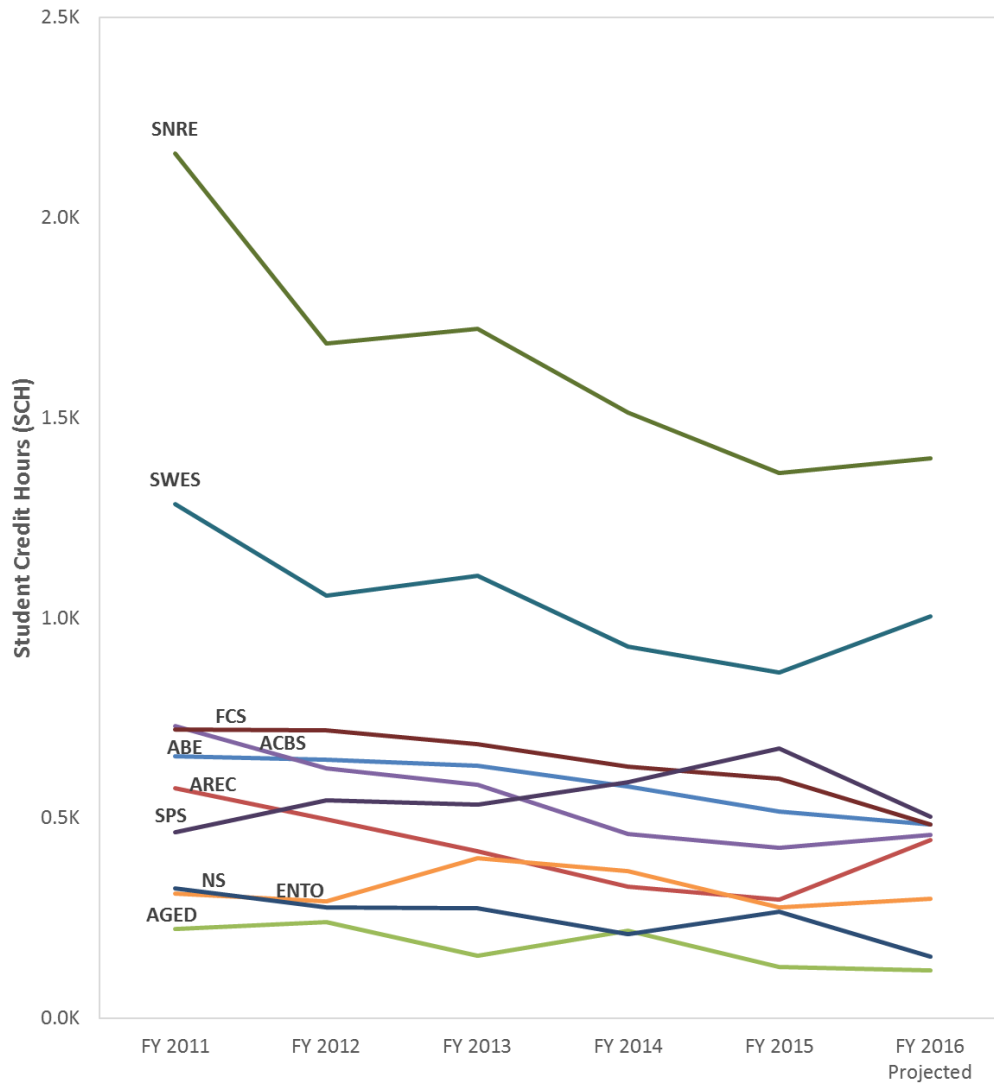
Projected figures are a combination of a Fall Term-End snapshot and a Spring Census snapshot.

Undergraduate SCH Trends using RCM



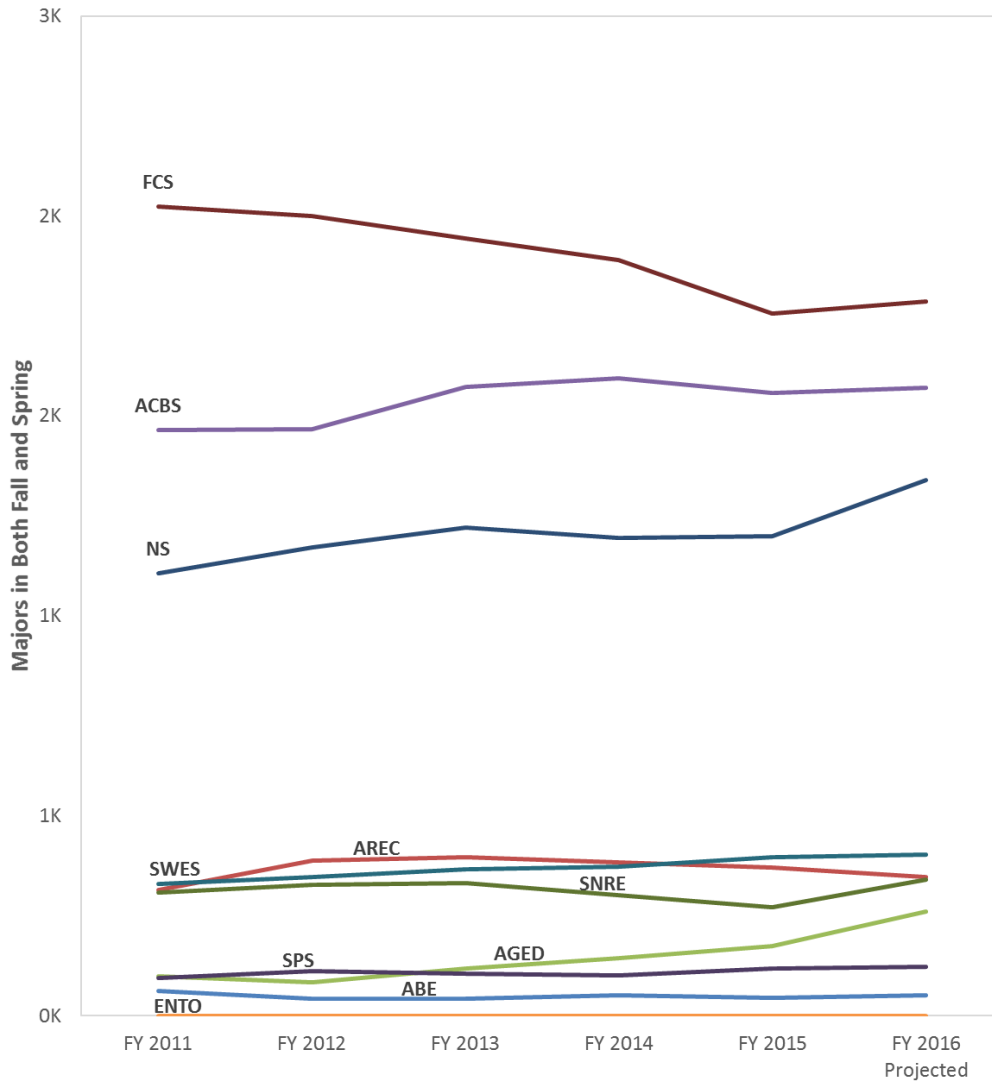
Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016 Projected	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	2,950	3,653	4,132	5,062	4,540	4,679	140	3%
Agric & Resource Econ	1,876	2,025	1,966	1,993	1,521	2,288	767	50%
Agricultural Education	1,821	2,307	2,933	3,321	2,944	3,379	435	15%
Animal&Biomedical Sciences	11,461	10,962	10,581	10,942	11,069	10,247	(822)	(7%)
Entomology	1,199	1,227	1,447	1,445	1,354	1,194	(159)	(12%)
Nutritional Sciences	8,066	8,198	8,236	8,460	8,523	10,026	1,504	18%
Sch of Family & Consum Sci	12,513	13,540	13,450	13,831	13,283	13,311	28	0%
Sch of Natural Resources	4,000	3,565	3,037	3,392	4,382	4,627	245	6%
School of Plant Sciences	5,872	6,013	7,328	7,655	7,541	6,564	(977)	(13%)
Soil Water and Enviro Sci	3,959	3,813	3,954	3,537	3,817	4,375	558	15%
Total (Rounded)	53,717	55,302	57,063	59,637	58,973	60,691	1,718	3%
Average	5,372	5,530	5,706	5,964	5,897	6,069	172	7%
Median	3,980	3,733	4,043	4,300	4,461	4,653	192	4%

Graduate SCH Trends using RCM



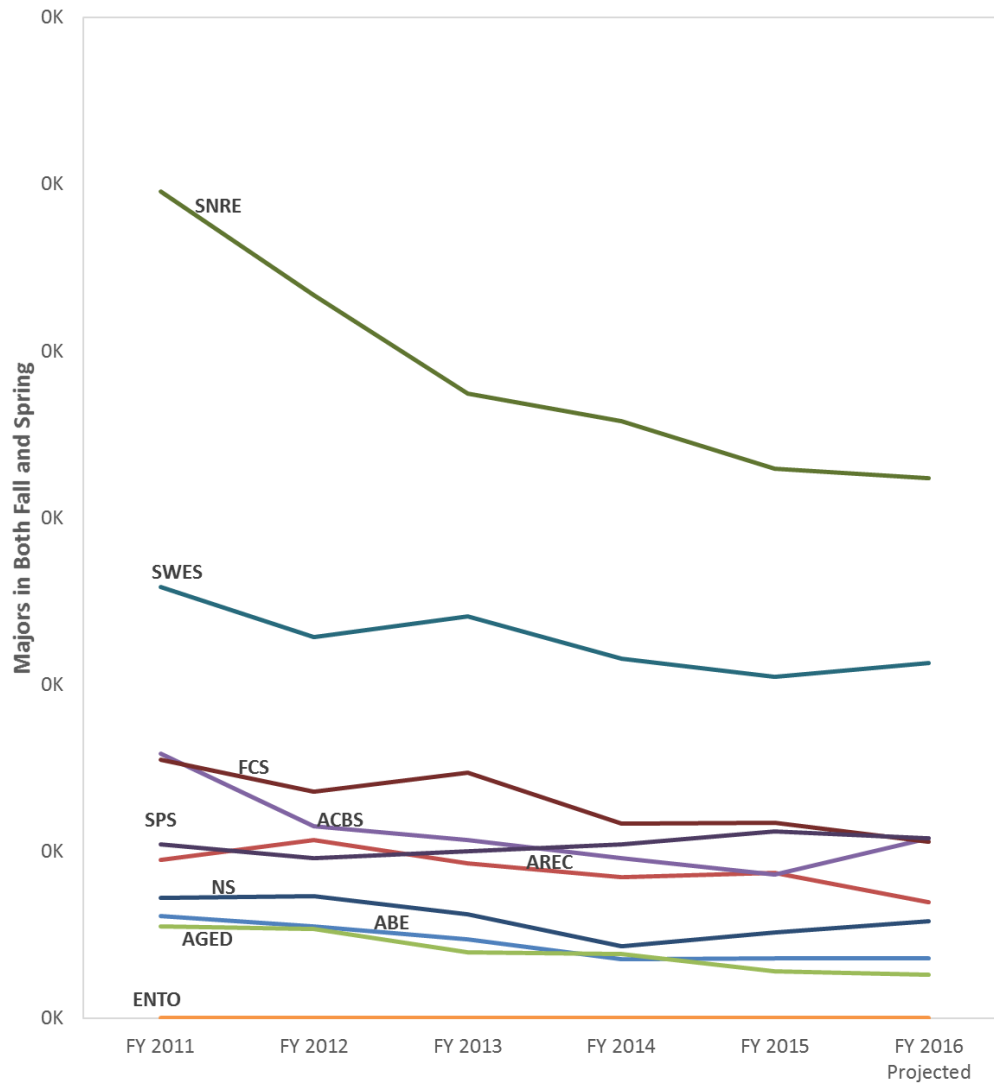
Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016 Projected	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	654	645	631	579	516	485	(31)	(6%)
Agric & Resource Econ	574	496	417	329	297	445	148	50%
Agricultural Education	222	240	156	219	129	120	(9)	(7%)
Animal&Biomedical Sciences	731	624	583	461	426	457	32	7%
Entomology	311	291	399	367	277	299	22	8%
Nutritional Sciences	325	276	274	210	267	153	(114)	(43%)
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	1,398	37	3%
School of Plant Sciences	466	544	534	589	674	504	(170)	(25%)
Soil Water and Enviro Sci	1,284	1,055	1,105	928	864	1,003	139	16%
Total (Rounded)	7,448	6,575	6,505	5,822	5,410	5,348	(62)	(1%)
Average	745	657	651	582	541	535	(6)	(2%)
Median	614	584	558	520	471	471	6	(2%)

Undergraduate Major Trends using RCM



Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016 Projected	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	63	42	44	53	46	51	5	10%
Agric & Resource Econ	315	388	397	383	371	347	(24)	(6%)
Agricultural Education	99	83	118	145	174	260	86	49%
Animal&Biomedical Sciences	1,464	1,466	1,573	1,595	1,557	1,570	13	1%
Entomology	0	0	0	0	0	0	0	0%
Nutritional Sciences	1,106	1,171	1,220	1,194	1,199	1,339	140	12%
Sch of Family & Consum Sci	2,023	1,999	1,944	1,889	1,755	1,787	32	2%
Sch of Natural Resources	308	328	331	301	272	341	69	25%
School of Plant Sciences	95	112	105	101	118	123	5	4%
Soil Water and Enviro Sci	330	347	367	374	398	403	6	1%
Total (Rounded)	5,803	5,936	6,099	6,034	5,889	6,220	331	6%
Average	580	594	610	603	589	622	33	10%
Median	312	338	349	337	322	344	9	3%

Graduate Major Trends using RCM



Unit	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016 Projected	2015 - 2016 # Change	2015 - 2016 % Change
Agric & Biosystems Engr	31	28	24	18	18	18	0	0%
Agric & Resource Econ	48	54	46	42	44	35	(9)	(20%)
Agricultural Education	28	27	20	19	14	13	(1)	(7%)
Animal&Biomedical Sciences	79	58	54	48	43	54	11	26%
Entomology	0	0	0	0	0	0	0	0%
Nutritional Sciences	36	37	31	22	26	29	3	13%
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	107	4	4%
Total (Rounded)	727	649	605	546	526	524	(1)	(0%)
Average	73	65	61	55	53	52	(0)	0%
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.

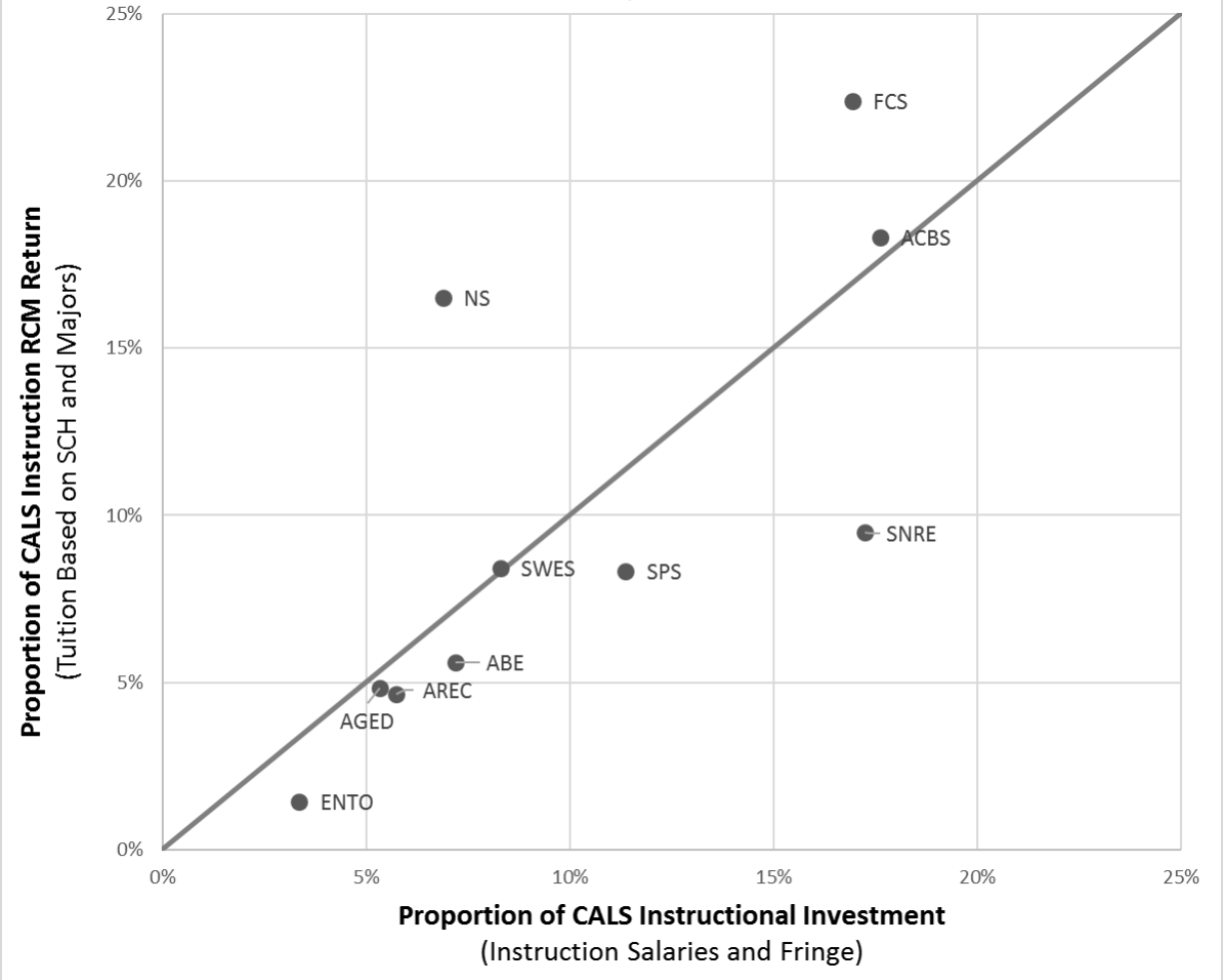
Projected revenues are derived from a Fall Term-End snapshot and a Spring Term Census snapshot.

Fiscal Year 2016 is a projection.

Unit	SCH Undergraduate	SCH Graduate	SCH Total	Majors Undergraduate	Majors Graduate	Majors Total
Agric & Biosystems Engr	4,679	485	5,164	51	18	69
Agric & Resource Econ	2,288	445	2,733	347	35	382
Agricultural Education	3,379	120	3,499	260	13	273
Animal&Biomedical Sciences	10,247	457	10,704	1,570	54	1,624
Entomology	1,194	299	1,493	0	0	0
Nutritional Sciences	10,026	153	10,179	1,339	29	1,368
Sch of Family & Consum Sci	13,311	485	13,796	1,787	53	1,840
Sch of Natural Resources	4,627	1,398	6,025	341	162	502
School of Plant Sciences	6,564	504	7,068	123	54	177
Soil Water and Enviro Sci	4,375	1,003	5,378	403	107	510
Total	60,691	5,348	66,039	6,220	524	6,744
Average	6,069	535	6,604	622	52	674
Median	4,653	471	5,702	344	44	442

Unit	SCH Undergraduate Revenue	SCH Graduate Revenue	SCH Total Revenue	Majors Undergraduate Revenue	Majors Graduate Revenue	Majors Total Revenue
Agric & Biosystems Engr	\$1,530,062	\$116,347	\$1,646,410	\$70,246	\$70,704	\$140,950
Agric & Resource Econ	\$748,176	\$106,800	\$854,976	\$482,677	\$136,812	\$619,489
Agricultural Education	\$1,104,926	\$28,800	\$1,133,726	\$361,660	\$51,064	\$412,724
Animal&Biomedical Sciences	\$3,350,726	\$109,716	\$3,460,442	\$2,183,870	\$212,112	\$2,395,982
Entomology	\$390,572	\$71,760	\$462,332	\$0	\$0	\$0
Nutritional Sciences	\$3,278,662	\$36,701	\$3,315,363	\$1,862,549	\$113,912	\$1,976,461
Sch of Family & Consum Sci	\$4,352,818	\$116,309	\$4,469,127	\$2,485,717	\$208,184	\$2,693,901
Sch of Natural Resources	\$1,513,170	\$335,489	\$1,848,658	\$473,636	\$636,022	\$1,109,657
School of Plant Sciences	\$2,146,438	\$120,847	\$2,267,285	\$170,398	\$212,112	\$382,510
Soil Water and Enviro Sci	\$1,430,511	\$240,773	\$1,671,283	\$560,573	\$418,686	\$979,259
Total	\$19,846,062	\$1,283,542	\$21,129,603	\$8,651,325	\$2,059,608	\$10,710,932
Average	\$1,984,606	\$128,354	\$2,112,960	\$865,132	\$205,961	\$1,071,093
Median	\$1,521,616	\$113,012	\$1,759,971	\$478,156	\$172,498	\$799,374

Proportional Return on Investment in CALS Instruction, FY 2016



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 Instructional ROI Ratio
Agric & Biosystems Engr	\$1,683,952	\$535,952	\$535,952	\$1,148,001	05.6%	07.2%	0.78
Agric & Resource Econ	\$1,400,047	\$428,075	\$428,075	\$971,972	04.7%	05.7%	0.81
Agricultural Education	\$1,452,871	\$398,189	\$398,189	\$1,054,682	04.8%	05.3%	0.90
Animal&Biomedical Sciences	\$5,508,216	\$1,312,532	\$1,312,532	\$4,195,684	18.3%	17.6%	1.04
Entomology	\$436,323	\$249,881	\$249,881	\$186,442	01.5%	03.4%	0.43
Nutritional Sciences	\$4,964,669	\$512,385	\$512,385	\$4,452,284	16.5%	06.9%	2.40
Sch of Family & Consum Sci	\$6,729,802	\$1,260,928	\$1,260,928	\$5,468,874	22.4%	16.9%	1.32
Sch of Natural Resources	\$2,851,028	\$1,283,194	\$1,283,194	\$1,567,834	09.5%	17.2%	0.55
School of Plant Sciences	\$2,504,407	\$847,011	\$847,011	\$1,657,396	08.3%	11.4%	0.73
Soil Water and Enviro Sci	\$2,535,887	\$618,310	\$618,310	\$1,917,578	08.4%	08.3%	1.02
CALS Total	\$30,067,202	\$7,446,457	\$7,446,457	\$22,620,746	100.0%	100.0%	N/A
Average	\$3,006,720	\$744,646	\$744,646	\$2,262,075	10.0%	10.0%	1.00
Median	\$2,520,147	\$577,131	\$577,131	\$1,612,615	08.4%	07.8%	0.86

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	\$271,543	\$921,014
Agric & Resource Econ	\$83,812	\$267,439
Agricultural Education	\$53,961	\$675,229
Animal&Biomedical Sciences	\$730,059	\$2,103,846
Entomology	\$474,359	\$1,559,562
Nutritional Sciences	\$349,593	\$954,933
Sch of Family & Consum Sci	\$243,079	\$975,556
Sch of Natural Resources	\$763,676	\$3,976,977
School of Plant Sciences	\$902,646	\$3,801,257
Soil Water and Enviro Sci	\$1,052,684	\$3,856,905
Total	\$4,925,412	\$19,092,717
Average	\$492,541	\$1,909,272
Median	\$411,976	\$1,267,559

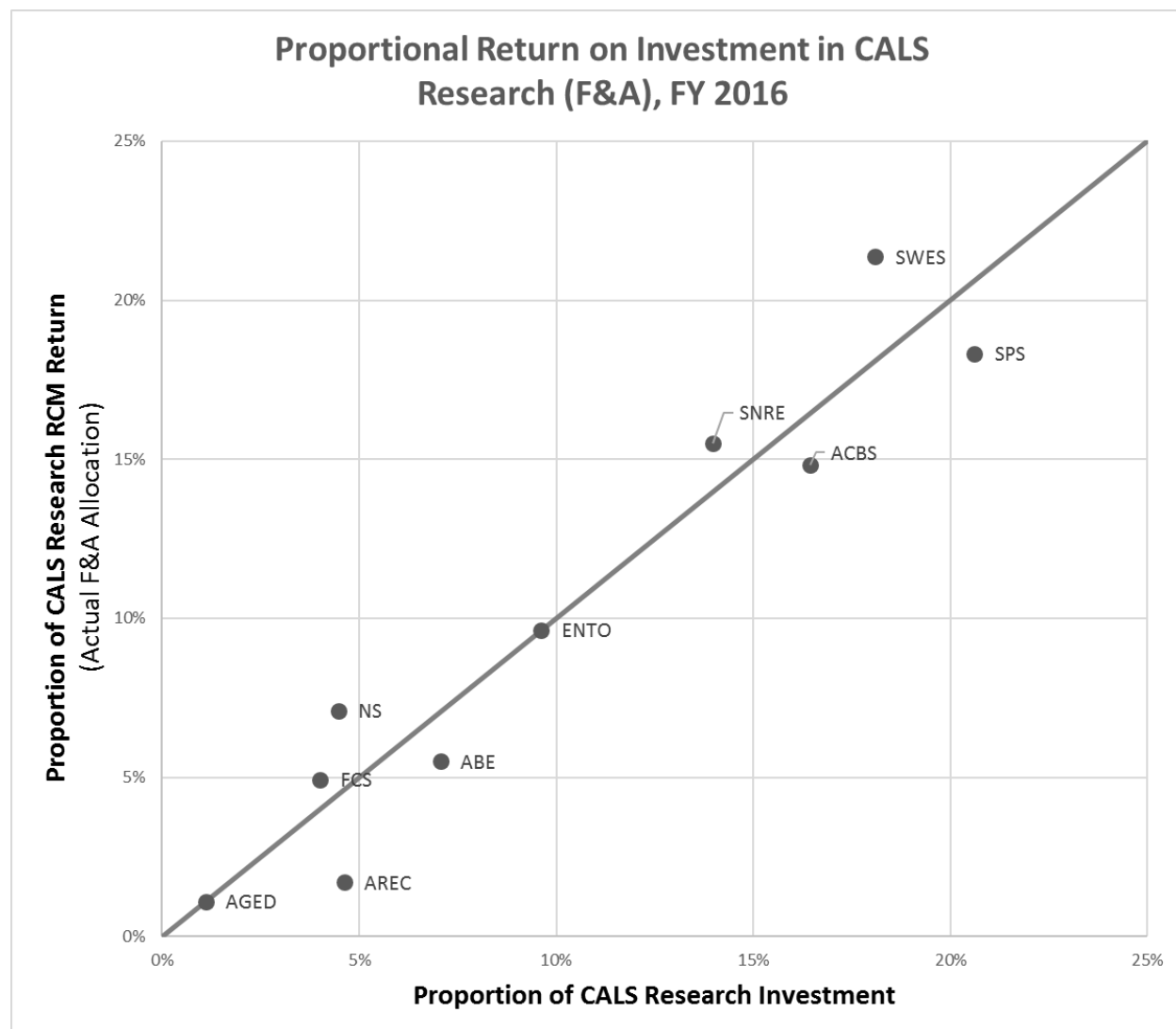
Performance on Research Investments

Unit	Foregone F&A Costs	Share of AES		CALS Venture Investments	CALS Subsidy Costs	Total Investments (and Costs)	Cost Sharing Expenditures
		Personnel and Fringe Investments	Personnel and Fringe Investments				
Agric & Biosystems Engr	\$212,845	\$423,198	\$1,205,366	\$119,040	\$31,581	\$1,992,030	\$133,311
Agric & Resource Econ	\$57,073	\$11,123	\$1,211,707	\$0	\$24,193	\$1,304,096	\$57,351
Agricultural Education	\$159,465	\$0	\$152,994	\$0	\$0	\$312,459	\$0
Animal&Biomedical Sciences	\$416,468	\$727,906	\$3,058,115	\$278,100	\$162,234	\$4,642,824	\$190,729
Entomology	\$331,683	\$884,519	\$1,165,191	\$119,040	\$215,445	\$2,715,878	\$107,388
Nutritional Sciences	\$124,768	\$0	\$1,043,225	\$0	\$92,777	\$1,260,769	\$21,867
Sch of Family & Consum Sci	\$271,518	\$0	\$452,849	\$292,057	\$114,473	\$1,130,897	\$3,542
Sch of Natural Resources	\$1,036,266	\$280,880	\$2,586,280	\$0	\$40,023	\$3,943,450	\$157,078
School of Plant Sciences	\$1,019,626	\$1,188,928	\$3,239,520	\$119,040	\$248,200	\$5,815,314	\$146,562
Soil Water and Enviro Sci	\$619,199	\$917,271	\$3,315,322	\$119,040	\$132,840	\$5,103,673	\$184,883
CALS Total	\$4,248,912	\$4,433,825	\$17,430,570	\$1,046,318	\$1,061,766	\$28,221,391	\$1,002,711
Average	\$424,891	\$443,382	\$1,743,057	\$104,632	\$106,177	\$2,822,139	\$100,271
Median	\$301,600	\$352,039	\$1,208,536	\$119,040	\$103,625	\$2,353,954	\$120,349

Refer to the Appendix for details regarding AES splits.

Ventures and Subsidies are projections.

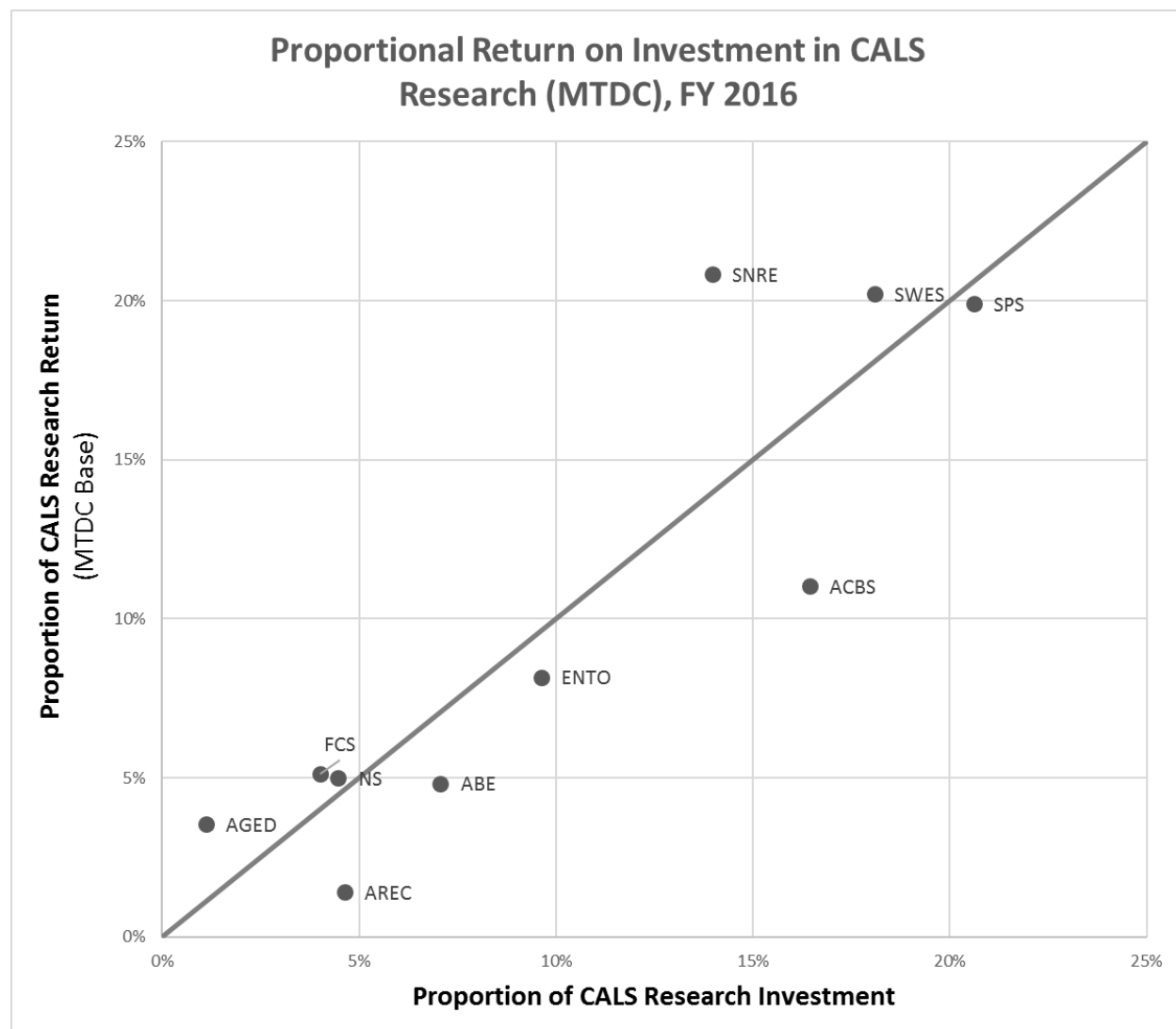
Performance on Research Investments and F&A Returns



Unit	Total Investments (and Costs)	F&A Return		% of Total Investments	Proportional Research ROI Ratio (F&A Form)
		Less Investments with AES Splits	% of F&A Return		
Agric & Biosystems Engr	\$1,992,030	(\$1,720,487)	05.5%	07.1%	0.78
Agric & Resource Econ	\$1,304,096	(\$1,220,284)	01.7%	04.6%	0.37
Agricultural Education	\$312,459	(\$258,498)	01.1%	01.1%	0.99
Animal&Biomedical Sciences	\$4,642,824	(\$3,912,765)	14.8%	16.5%	0.90
Entomology	\$2,715,878	(\$2,241,520)	09.6%	09.6%	1.00
Nutritional Sciences	\$1,260,769	(\$911,176)	07.1%	04.5%	1.59
Sch of Family & Consum Sci	\$1,130,897	(\$887,818)	04.9%	04.0%	1.23
Sch of Natural Resources	\$3,943,450	(\$3,179,774)	15.5%	14.0%	1.11
School of Plant Sciences	\$5,815,314	(\$4,912,668)	18.3%	20.6%	0.89
Soil Water and Enviro Sci	\$5,103,673	(\$4,050,988)	21.4%	18.1%	1.18
CALS Total	\$28,221,391	(\$23,295,979)	100.0%	100.0%	N/A
Average	\$2,822,139	(\$2,329,598)	10.0%	10.0%	1.00
Median	\$2,353,954	(\$1,981,003)	08.4%	08.3%	1.00

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	\$1,992,030	(\$1,071,017)	04.8%	07.1%	0.68
Agric & Resource Econ	\$1,304,096	(\$1,036,657)	01.4%	04.6%	0.30
Agricultural Education	\$312,459	\$362,770	03.5%	01.1%	3.19
Animal&Biomedical Sciences	\$4,642,824	(\$2,538,978)	11.0%	16.5%	0.67
Entomology	\$2,715,878	(\$1,156,317)	08.2%	09.6%	0.85
Nutritional Sciences	\$1,260,769	(\$305,837)	05.0%	04.5%	1.12
Sch of Family & Consum Sci	\$1,130,897	(\$155,340)	05.1%	04.0%	1.28
Sch of Natural Resources	\$3,943,450	\$33,526	20.8%	14.0%	1.49
School of Plant Sciences	\$5,815,314	(\$2,014,058)	19.9%	20.6%	0.97
Soil Water and Enviro Sci	\$5,103,673	(\$1,246,767)	20.2%	18.1%	1.12
CALS Total	\$28,221,391	(\$9,128,674)	100.0%	100.0%	N/A
Average	\$2,822,139	(\$912,867)	10.0%	10.0%	1.17
Median	\$2,353,954	(\$1,053,837)	06.6%	08.3%	1.04

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.

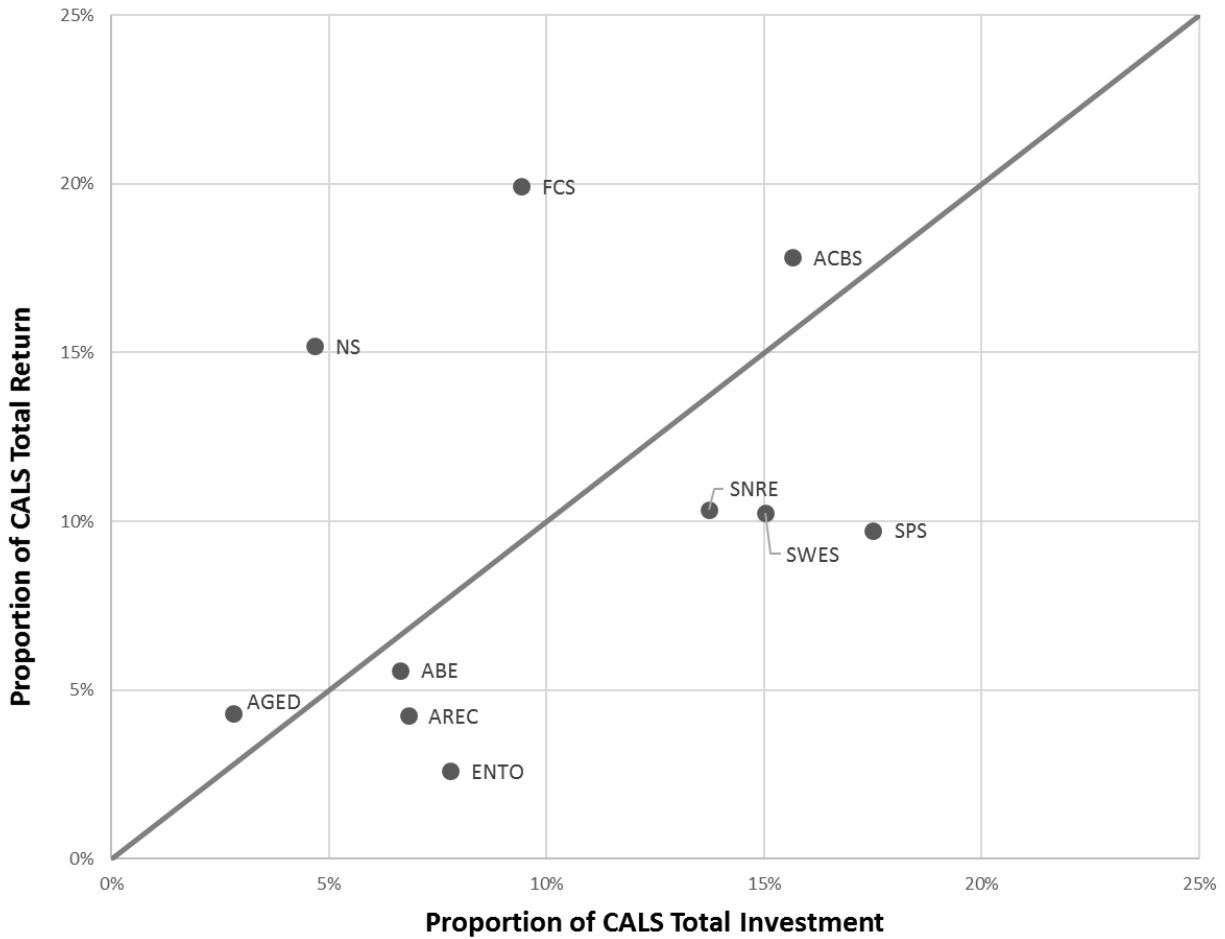
The University normalizes colleges based on a national study on the cost of doing business in respective academic disciplines associated with units (known as the *Delaware Cost Study*). This normalization is applied based on natural costs using one of three factors: 1.2, 1.0, and 0.8. As an example, 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. So, the Proportional returns include the normalization factor 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	\$1,683,952	\$271,543	\$921,014	\$1,955,495	\$2,604,966
Agric & Resource Econ	\$1,400,047	\$83,812	\$267,439	\$1,483,859	\$1,667,486
Agricultural Education	\$1,452,871	\$53,961	\$675,229	\$1,506,832	\$2,128,101
Animal&Biomedical Sciences	\$5,508,216	\$730,059	\$2,103,846	\$6,238,275	\$7,612,062
Entomology	\$436,323	\$474,359	\$1,559,562	\$910,682	\$1,995,885
Nutritional Sciences	\$4,964,669	\$349,593	\$954,933	\$5,314,262	\$5,919,601
Sch of Family & Consum Sci	\$6,729,802	\$243,079	\$975,556	\$6,972,881	\$7,705,358
Sch of Natural Resources	\$2,851,028	\$763,676	\$3,976,977	\$3,614,704	\$6,828,004
School of Plant Sciences	\$2,504,407	\$902,646	\$3,801,257	\$3,407,053	\$6,305,664
Soil Water and Enviro Sci	\$2,535,887	\$1,052,684	\$3,856,905	\$3,588,572	\$6,392,793
CALS Total	\$30,067,202	\$4,925,412	\$19,092,717	\$34,992,614	\$49,159,920
Average	\$3,006,720	\$492,541	\$1,909,272	\$3,499,261	\$4,915,992
Median	\$2,520,147	\$411,976	\$1,267,559	\$3,497,813	\$6,112,633
Standard Deviation	\$1,944,303	\$332,133	\$1,370,626	\$2,000,196	\$2,366,802
Maximum	\$6,729,802	\$1,052,684	\$3,976,977	\$6,972,881	\$7,705,358
Minimum	\$436,323	\$53,961	\$267,439	\$910,682	\$1,667,486

Unit	Total Investment on Instruction	Total Investment on Research	Total Investment
Agric & Biosystems Engr	\$535,952	\$1,992,030	\$2,527,982
Agric & Resource Econ	\$428,075	\$1,304,096	\$1,732,171
Agricultural Education	\$398,189	\$312,459	\$710,649
Animal&Biomedical Sciences	\$1,312,532	\$4,642,824	\$5,955,356
Entomology	\$249,881	\$2,715,878	\$2,965,760
Nutritional Sciences	\$512,385	\$1,260,769	\$1,773,154
Sch of Family & Consum Sci	\$1,260,928	\$1,130,897	\$2,391,825
Sch of Natural Resources	\$1,283,194	\$3,943,450	\$5,226,644
School of Plant Sciences	\$847,011	\$5,815,314	\$6,662,326
Soil Water and Enviro Sci	\$618,310	\$5,103,673	\$5,721,982
CALS Total	\$7,446,457	\$28,221,391	\$35,667,848
Average	\$744,646	\$2,822,139	\$3,566,785
Median	\$577,131	\$2,353,954	\$2,746,871
Standard Deviation	\$383,152	\$1,825,876	\$2,006,214
Maximum	\$1,312,532	\$5,815,314	\$6,662,326
Minimum	\$249,881	\$312,459	\$710,649

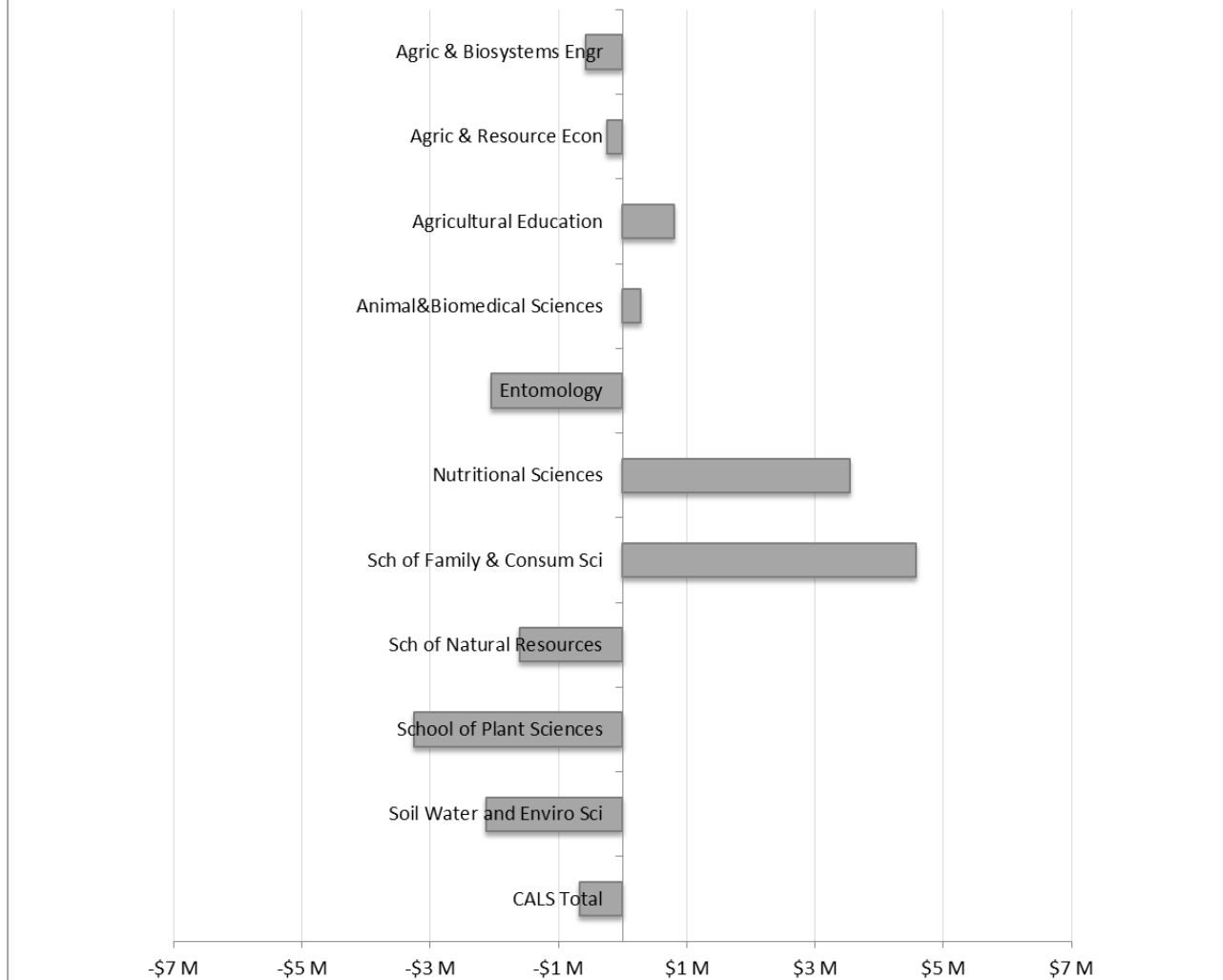
Combined Proportional Return on Investment in CALS Instruction and F&A, FY 2016



Unit	Normalization Factor on Investment	Proportional Total Investment	Proportional Total Return (F&A Form)	Return on Investment Ratio (F&A Form)
Agric & Biosystems Engr	1.20	06.6%	05.6%	0.84
Agric & Resource Econ	0.80	06.8%	04.2%	0.62
Agricultural Education	0.80	02.8%	04.3%	1.54
Animal&Biomedical Sciences	1.20	15.6%	17.8%	1.14
Entomology	1.20	07.8%	02.6%	0.33
Nutritional Sciences	1.20	04.7%	15.2%	3.26
Sch of Family & Consum Sci	0.80	09.4%	19.9%	2.12
Sch of Natural Resources	1.20	13.7%	10.3%	0.75
School of Plant Sciences	1.20	17.5%	09.7%	0.56
Soil Water and Enviro Sci	1.20	15.0%	10.3%	0.68
CALS Total	N/A	100.0%	100.0%	1.00
Average	1.08	10.0%	10.0%	1.17
Median	1.20	08.6%	10.0%	0.80

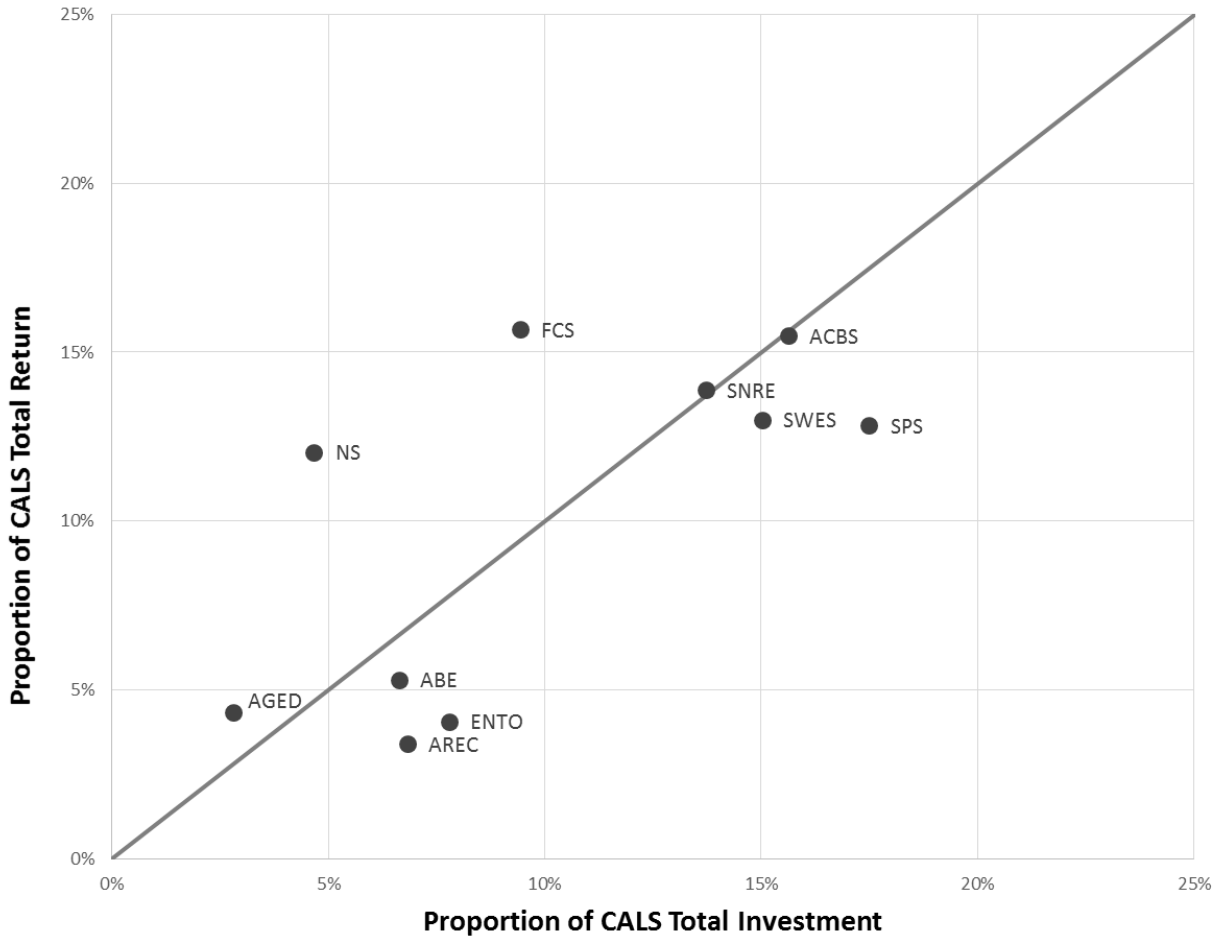
Reference: FY 2015 Combined (F&A Form) ROI average was 1.19, and the median was 0.78.

Total Return Less Investments (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	\$1,148,001	(\$1,720,487)	(\$572,486)
Agric & Resource Econ	\$971,972	(\$1,220,284)	(\$248,313)
Agricultural Education	\$1,054,682	(\$258,498)	\$796,184
Animal&Biomedical Sciences	\$4,195,684	(\$3,912,765)	\$282,919
Entomology	\$186,442	(\$2,241,520)	(\$2,055,078)
Nutritional Sciences	\$4,452,284	(\$911,176)	\$3,541,108
Sch of Family & Consum Sci	\$5,468,874	(\$887,818)	\$4,581,056
Sch of Natural Resources	\$1,567,834	(\$3,179,774)	(\$1,611,941)
School of Plant Sciences	\$1,657,396	(\$4,912,668)	(\$3,255,272)
Soil Water and Enviro Sci	\$1,917,578	(\$4,050,988)	(\$2,133,410)
CALS Total	\$22,620,746	(\$23,295,979)	(\$675,234)
Average	\$2,262,075	(\$2,329,598)	(\$67,523)
Median	\$1,612,615	(\$1,981,003)	(\$410,399)

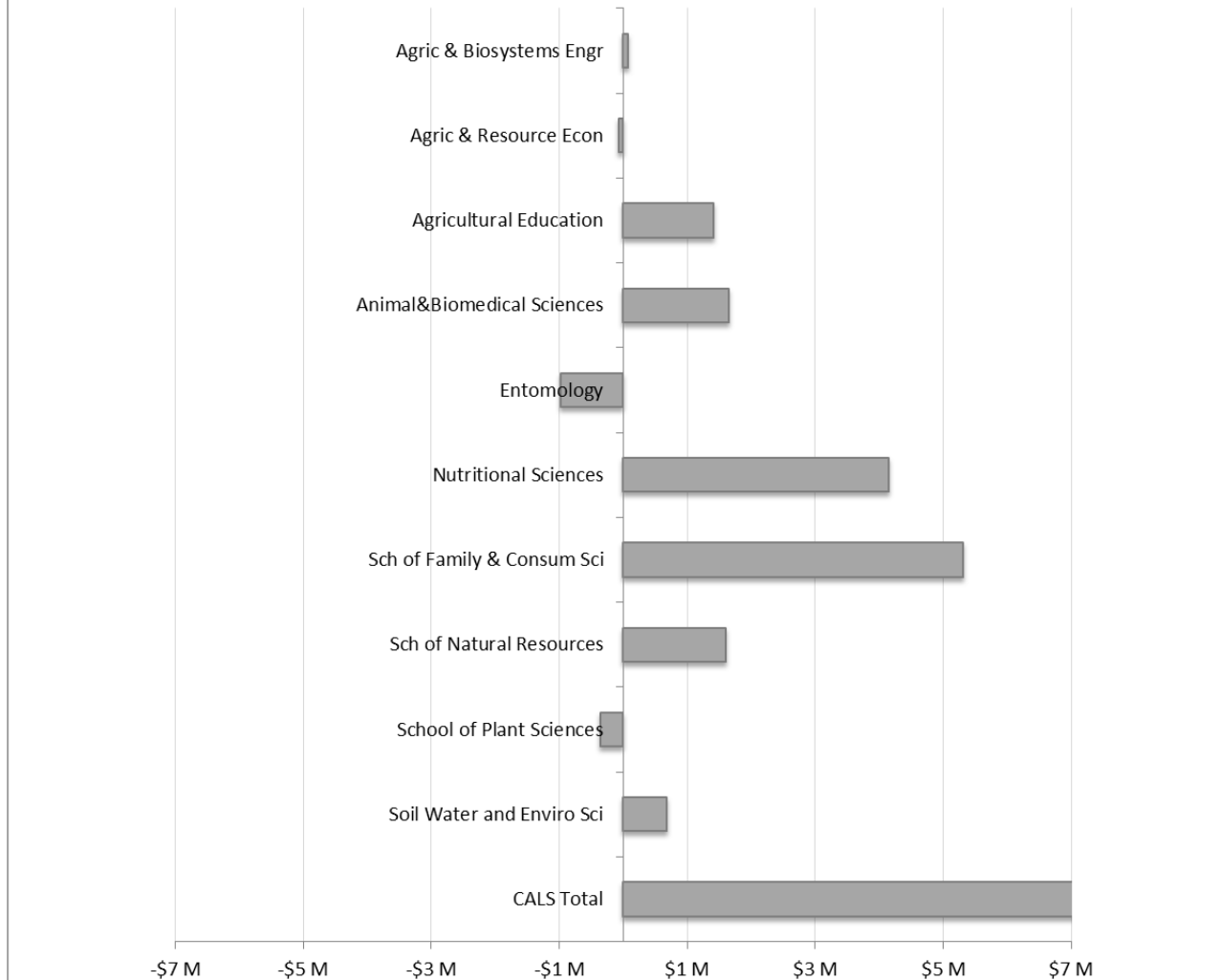
Combined Proportional Return on Investment in CALS Instruction and MTDC, FY 2016



Unit	Normalization Factor on Investment	Proportional Total Investment	Proportional Total Return (MTDC Form)	Return on Investment Ratio (MTDC Form)
Agric & Biosystems Engr	1.20	06.6%	05.3%	0.80
Agric & Resource Econ	0.80	06.8%	03.4%	0.50
Agricultural Education	0.80	02.8%	04.3%	1.55
Animal&Biomedical Sciences	1.20	15.6%	15.5%	0.99
Entomology	1.20	07.8%	04.1%	0.52
Nutritional Sciences	1.20	04.7%	12.0%	2.59
Sch of Family & Consum Sci	0.80	09.4%	15.7%	1.66
Sch of Natural Resources	1.20	13.7%	13.9%	1.01
School of Plant Sciences	1.20	17.5%	12.8%	0.73
Soil Water and Enviro Sci	1.20	15.0%	13.0%	0.87
CALS Total	N/A	100.0%	100.0%	1.00
Average	1.08	10.0%	10.0%	1.11
Median	1.20	08.6%	12.4%	0.93

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

Total Return Less Investments (MTDC Method)



Unit	Instruction Return Less Investments	Research Return Less Investments (MTDC Form)	Total Return Less Investments (MTDC Form)
Agric & Biosystems Engr	\$1,148,001	(\$1,071,017)	\$76,984
Agric & Resource Econ	\$971,972	(\$1,036,657)	(\$64,685)
Agricultural Education	\$1,054,682	\$362,770	\$1,417,452
Animal&Biomedical Sciences	\$4,195,684	(\$2,538,978)	\$1,656,706
Entomology	\$186,442	(\$1,156,317)	(\$969,875)
Nutritional Sciences	\$4,452,284	(\$305,837)	\$4,146,447
Sch of Family & Consum Sci	\$5,468,874	(\$155,340)	\$5,313,534
Sch of Natural Resources	\$1,567,834	\$33,526	\$1,601,360
School of Plant Sciences	\$1,657,396	(\$2,014,058)	(\$356,662)
Soil Water and Enviro Sci	\$1,917,578	(\$1,246,767)	\$670,810
CALS Total	\$22,620,746	(\$9,128,674)	\$13,492,072
Average	\$2,262,075	(\$912,867)	\$1,349,207
Median	\$1,612,615	(\$1,053,837)	\$1,044,131

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.